IMICA01

Contribute to Housekeeping in Motor Vehicle Environments

Overview

This NOS is about the routine maintenance of the workplace, carrying out basic, non-specialist checks of relevant workplace equipment, cleaning the work area and using resources as directed.

Performance criteria

You must be able to:

1. select and use suitable personal protective equipment throughout all housekeeping and equipment maintenance activities
2. select and use cleaning equipment which is of the right type and suitable for the task
3. use resources as directed and for their intended purpose only following workplace procedures
4. follow workplace policies, schedules and manufacturers' instructions when cleaning and maintaining equipment
5. ensure your equipment maintenance activities keep your equipment fit for purpose
6. clean the work area(s), for which you are responsible, at the specified time and frequency
7. store your equipment in a safe manner which permits ease of access and identification for use
8. carry out housekeeping activities safely and in a way which minimises inconvenience to customers and staff
9. ensure your housekeeping activities keep your work area clean and free from debris and waste materials
10. dispose of used cleaning agents, materials and debris to comply with relevant legal, environmental and workplace requirements
11. report any faulty or damaged equipment to the relevant person(s) clearly and promptly
12. report any anticipated delays in completion to the relevant person(s) promptly

Knowledge and understanding

You need to know and understand:

1. the scope of your job responsibilities for the use and maintenance of equipment and your work area
2. workplace policies, schedules and legislation for housekeeping activities and equipment maintenance
3. the manufacturer's requirements for the cleaning and general, non-specialist maintenance of the equipment for which you are responsible
4. the regulations and information sources applicable to workshop cleaning and maintenance activities for which you are responsible
5. the importance of reporting faults quickly to the relevant person
6. the importance of reporting anticipated delays to the relevant person(s) promptly
7. how to select and use equipment appropriate to the task
8. how to store equipment safely and accessibly
9. how to report faulty or damaged equipment
10. how to work safely when cleaning and maintaining equipment
11. how to select and use work area cleaning equipment, materials and agents
12. how to clean and maintain the equipment and work areas for which you are responsible
13. how to dispose of unused cleaning agents, materials and debris to comply with relevant legal, environmental and workplace requirements
14. the properties and hazards associated with the use of cleaning agents and materials
15. the importance of wearing personal protective equipment
16. the importance of using resources as directed and for their intended purpose only

Scope/range

1. Equipment maintenance covers:

a. routine checks on equipment
b. cleaning equipment
c. visual inspection of electrical equipment

2. Housekeeping activities cover:

a. day to day work area cleaning
b. clearing away
c. dealing with spillages
d. disposal of waste, used materials and debris taking into account relevant environmental factors

3. Motor Vehicle could include:

a. Light Vehicles
b. Heavy Vehicles/Commercial Vehicles
c. Motorcycles
d. Lift Trucks
e. Heavy Vehicle Trailers
f. Caravan and Motorhomes

IMICA01

Contribute to Housekeeping in Motor Vehicle Environments

Developed by	IMI
Version Number	2
Date Approved	October 2014
Indicative Review Date	October 2017
Validity	Current
Status	Original
Originating Organisation	IMI
Original URN	IMIARBG1
Relevant Occupations	Accident Repair Technicians; Automotive Aftermarket Electrical Enhancement Technician (Automotive); Auto-electrical Technician (Automotive); Auto and Mobile Installation Technicians; Automotive Paint Supervisor; Automotive Paint Technician; Body Builder (Automotive); Body Builder Workshop Controller (Automotive); Body Repair and Alignment Technician (Automotive); Body Repair Technician (Automotive); Caravan and Motorhome Diagnostic Technician (Automotive); Caravan and Motorhome Service Technician (Automotive); Caravans and Motorhomes Diagnostic Technician (Automotive); Caravans and Motorhomes Service Technician (Automotive); Cosmetic Refinishing Technician (Automotive); Cosmetic Senior Refinishing Technician (Automotive); Heavy Vehicle Diagnostic Technician (Automotive); Heavy Vehicle Fleet/Service Manager (Automotive); Heavy Vehicle Master Technician (Automotive); Heavy Vehicle Service Technician (Automotive); Heavy Vehicle Trailer Diagnostic Technician (Automotive); Heavy Vehicle Trailer Fleet/Service Manager (Automotive); Heavy Vehicle Trailer Master Technician (Automotive); Heavy Vehicle Trailer Service Technician (Automotive); Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive);

	Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller ; Light Vehicle Diagnostic Technician (Automotive); Light Vehicle Fleet/Service Manager (Automotive); Light Vehicle Master Technician (Automotive); Light Vehicle Service Technician (Automotive); Maintenance and Repair Technicians; Maintenance Team Technician; Maintenance Fitter; Mechanical Fitter; Mechanical Maintenance Technician; Mechanical Supervisor; Mechanical, Electrical and Trim Assistant Technician (Automotive); Mechanical, Electrical and Trim Technician (Automotive); Motor Repair and Rewind Electrician; Motor Vehicle Valeting (Automotive); Motorcycle Diagnostic Technician; Motorcycle Fleet/Service Manager (Automotive); Motorcycle Master Technician (Automotive); Motorcycle Service Technician; Motorsport Technician; PDR Senior Technician (Automotive); PDR Technician (Automotive); Rental and Leasing Customer Service Advisor (Automotive); Rental and Leasing Maintenance Advisors (Automotive); Rental and Leasing Technical Service Advisor (Automotive); Roadside Assistance Manager; Roadside Assistance Operator; Roadside Assistance Operators; Roadside Assistance Senior Operator; Roadside Assistance Senior Technician; Roadside Assistance Technician; Sales Executive (Automotive); Sales Controller (Automotive); Tyre Fitting Operations (Automotive); Tyre exhaust and windscreen fitters ; Vehicle Damage Assessment Operators; Vehicle Damage Assessor (Automotive); Vehicle Fitters; Vehicle Fitting Operations (Automotive); Vehicle Parts Operative; Vehicle Parts Operators; Vehicle Parts Supervisor; Vehicle Recovery Operator; Vehicle Recovery Operators; Vehicle Recovery Technical Operator; Vehicle Sales Operators; Vehicle Trades; Vehicle Valeter (Automotive)
Suite	Accident Repair - Body; Accident Repair - Joining; Accident Repair - Paint; Accident Repair - SMART - Cosmetic; Accident Repair - SMART - PDR; Accident Repair - Mechanical, Electrical and Trim; Body Building; Maintenance and Repair - Caravans and Motorhomes; Maintenance and Repair - Heavy Vehicle; Maintenance and Repair - Heavy Vehicle Trailer; Maintenance and Repair - Lift Truck; Maintenance and Repair - Light Vehicle; Maintenance and Repair - Motorcycle; Auto Electrical and Mobile Electrical Installation; Roadside Assistance; Vehicle Damage Assessment Operations; Vehicle Fitting; Vehicle Parts Operations; Vehicle Recovery; Vehicle Sales v3
Keywords	Contribute, Housekeeping, Motor Vehicle Environments

IMICA02

Reduce Risk(s) to Health and Safety in the Motor Vehicle Environment

Overview

This NOS covers the basic, legally required health and safety duties of everyone in the workplace. This NOS does **not** require a full Risk Assessment to be undertaken. This NOS is about identifying hazards and evaluating risk(s) in the workplace as well as reducing the risk(s) to health and safety in the workplace. This NOS is about having an appreciation of identifiable risk(s) in the workplace and knowing how to identify them and deal with them.

It describes the competence required to ensure that:

- actions or lack of action do not create any health and safety risk(s)
- identifiable risk(s) in the workplace are not ignored
- sensible action is taken to put things right, including reporting situations which pose an identifiable risk(s) to people in the workplace, and seeking advice from others

Performance criteria

You must be able to:

1. carry out your working practices in accordance with relevant legislative requirements
2. identify the correct personal and vehicle protective equipment required to correctly carry out your workplace practices
3. carry out your workplace practices and workplace policies using the correct personal protective equipment
4. rectify health and safety risk(s) that are within your capability and scope of your job responsibilities
5. pass on any suggestions for reducing risk(s) to health and safety within your job role to the responsible persons
6. ensure your personal conduct in the workplace does not endanger the health and safety of yourself or other persons
7. follow the workplace policies and suppliers' or manufacturers' instructions for the safe use of equipment, materials and products and report any differences identified
8. ensure your personal presentation at work ensures the health and safety of yourself and others, meets any relevant legislative duties and is in accordance with workplace policies

Knowledge and understanding

You need to know and understand:

1. the current health and safety legislation, regulations and workplace policies that govern your working practices
2. your duties and responsibilities for current health and safety as defined by any specific legislation covering your job role and where to access the information
3. agreed workplace policies relating to controlling risk(s) to health and safety the responsible person(s) to whom you report health and safety concerns
4. what hazards may exist in your workplace
5. health and safety risk(s) which may be present in your own job role and the precautions you must take
6. the importance of remaining alert to the presence of hazards in the whole workplace
7. how to deal with and report risk(s)
8. the requirements and guidance on the precautions
9. the specific workplace policies including safe working practices covering your job role
10. suppliers' and manufacturers' instructions for the safe use of equipment, materials and products
11. the importance of personal presentation in maintaining health and safety in the workplace
12. the importance of personal conduct in maintaining the health and safety of yourself and others
13. the importance of personal protective equipment, when and where it should be used and the importance of maintaining it correctly
14. your scope and responsibility for rectifying risk(s)

Scope/range

1. Risk(s) resulting from:

a. use of tools and equipment relevant to the task
b. the use of materials or substances
c. working practices which do not conform to laid down policies
d. unsafe behaviour
e. accidental breakages and spillages
f. environmental factors
g. working at height
h. lifting operations and manual handling
i. incorrect use of personal protective equipment

2. Workplace policies covering:

a. the use of safe working methods and equipment
b. the safe use of hazardous substances
c. smoking, eating, drinking and drugs
d. what to do in the event of an emergency
e. personal presentation
f. personal protective equipment
g. lifting operations and manual handling
h. working at height
i. mobile phones and personal stereo equipment

3. Motor Vehicle could include:

a. Light Vehicles
b. Heavy Vehicles/Commercial Vehicles
c. Motorcycles
d. Lift Trucks
e. Heavy Vehicle Trailers
f. Caravan and Motorhomes

IMICA02

Reduce Risk(s) to Health and Safety in the Motor Vehicle Environment

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Validity	Current
Status	Original
Originating Organisation	IMI
Original URN	IMIARB2
Relevant Occupations	Auto-electrical Technician (Automotive); Auto and Mobile Installation Technicians; Automotive Aftermarket Electrical Enhancement Technician (Automotive); Automotive Paint Supervisor; Automotive Paint Technician; Body Builder (Automotive); Body Builder Workshop Controller (Automotive); Body Repair and Alignment Technician (Automotive); Body Repair Technician (Automotive); Caravan and Motorhome Diagnostic Technician (Automotive); Caravan and Motorhome Service Technician (Automotive); Caravans and Motorhomes Diagnostic Technician (Automotive); Caravans and Motorhomes Service Technician (Automotive); Heavy Vehicle Diagnostic Technician (Automotive); Heavy Vehicle Fleet/Service Manager (Automotive); Heavy Vehicle Master Technician (Automotive); Heavy Vehicle Service Technician (Automotive); Heavy Vehicle Trailer Diagnostic Technician (Automotive); Heavy Vehicle Trailer Fleet/Service Manager (Automotive); Heavy Vehicle Trailer Master Technician (Automotive); Heavy Vehicle Trailer Service Technician (Automotive); Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller ; Light Vehicle Diagnostic

	Technician (Automotive); Light Vehicle Fleet/Service Manager (Automotive); Light Vehicle Master Technician (Automotive); Light Vehicle Service Technician (Automotive); Maintenance and Repair Technicians; Maintenance Fitter; Maintenance Team Technician; Mechanical, Electrical and Trim Technician (Automotive); Mechanical, Electrical and Trim Assistant Technician (Automotive); Motorcycle Diagnostic Technician; Motor Vehicle Valeting (Automotive); Motorcycle Fleet/Service Manager (Automotive); Motorcycle Master Technician (Automotive); Motorcycle Service Technician; Motorsport Technician; PDR Senior Technician (Automotive); PDR Technician (Automotive); Rental and Leasing Customer Service Advisor (Automotive); Rental and Leasing Maintenance Advisors (Automotive); Rental and Leasing Technical Service Advisor (Automotive); Roadside Assistance Manager; Roadside Assistance Operator; Roadside Assistance Operators; Roadside Assistance Senior Operator; Roadside Assistance Senior Technician; Roadside Assistance Technician; Sales Controller (Automotive); Sales Executive (Automotive); Senior Automotive Paint Technician; Tyre Fitting Operations (Automotive); Tyre exhaust and windscreen fitters ; Vehicle Damage Assessment Operators; Vehicle Damage Assessor (Automotive); Vehicle Fitters; Vehicle Fitting Operations (Automotive); Vehicle Parts Operative; Vehicle Parts Operators; Vehicle Parts Supervisor; Vehicle Recovery Operator; Vehicle Recovery Operators; Vehicle Recovery Technical Operator; Vehicle Sales Operators; Vehicle Trades; Vehicle Valeter (Automotive)
Suite	Accident Repair - Body; Accident Repair - Joining; Accident Repair - Mechanical, Electrical and Trim; Accident Repair - Paint; Accident Repair - SMART - Cosmetic; Accident Repair - SMART - PDR; Auto Electrical and Mobile Electrical Installation; Body Building; Maintenance and Repair - Caravans and Motorhomes; Maintenance and Repair - Heavy Vehicle; Maintenance and Repair - Heavy Vehicle Trailer; Maintenance and Repair - Lift Truck; Maintenance and Repair - Light Vehicle; Maintenance and Repair - Motorcycle; Vehicle Damage Assessment Operations; Vehicle Fitting; Vehicle Parts Operations; Vehicle Recovery; Vehicle Sales v3
Keywords	Identify, Agree, Motor Vehicle, Customer Needs

IMICA03

Maintain Working Relationships in the Motor Vehicle Environment

Overview

This NOS is about maintaining good working relationships with all colleagues in the working environment by using effective communication and support skills.

Performance criteria

You must be able to:

1. contribute to team working by initiating ideas and co-operating with colleagues
2. respond promptly and willingly to requests for assistance from colleagues which fall within the limits of your own job responsibilities and capabilities
3. refer colleagues to the relevant person(s) where requests fall outside your responsibility and capability
4. give colleagues sufficient, accurate information and support to meet their work needs
5. make requests for assistance to colleagues clearly and courteously
6. use methods of communication which meet the needs of colleagues
7. treat colleagues in a way which shows respect for their views and opinions and promotes goodwill
8. make and keep achievable commitments to colleagues
9. inform colleagues promptly of any problems or information likely to affect their own work

Knowledge and understanding

You need to know and understand:

1. your own and your colleague's job role and limits of responsibility for giving advice and support
2. the operational constraints which may affect interaction with colleagues
3. lines of communication within your workplace
4. how to use suitable and effective communication skills when responding to and interacting with others
5. how to adapt communication methods to satisfy the needs of colleagues
6. how to report problems using appropriate methods of communication
7. the importance of developing positive working relationships with colleagues – the effect on morale, productivity, and company image
8. the importance of acknowledging other peoples' views and opinions
9. the importance of making and honouring realistic commitments to colleagues
10. the implications of inappropriate communication

Scope/range

1. Colleagues are:

a. immediate work colleagues
b. supervisors and managers

2. Requests for assistance covering:

a. technical assistance
b. personal assistance

3. Motor Vehicle could include:

a. Light Vehicles
b. Heavy Vehicles/Commercial Vehicles
c. Motorcycles
d. Lift Trucks
e. Heavy Vehicle Trailers
f. Caravan and Motorhomes

Developed by	IMI
Version Number	2
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Status	Original
Originating Organisation	IMI
Original URN	IMIARB3
Relevant Occupations	Accident Repair Technicians; Automotive Aftermarket Electrical Enhancement Technician (Automotive); Auto and Mobile Installation Technicians; Auto-electrical Technician (Automotive); Automotive Paint Supervisor; Automotive Paint Technician; Body Builder (Automotive); Body Builder Workshop Controller (Automotive); Body Repair and Alignment Technician (Automotive); Body Repair Technician (Automotive); Caravan and Motorhome Diagnostic Technician (Automotive); Caravan and Motorhome Service Technician (Automotive); Caravans and Motorhomes Diagnostic Technician (Automotive); Caravans and Motorhomes Service Technician (Automotive); Cosmetic Senior Refinishing Technician (Automotive); Cosmetic Refinishing Technician (Automotive); Heavy Vehicle Diagnostic Technician (Automotive); Heavy Vehicle Fleet/Service Manager (Automotive); Heavy Vehicle Master Technician (Automotive); Heavy Vehicle Service Technician (Automotive); Heavy Vehicle Trailer Diagnostic Technician (Automotive); Heavy Vehicle Trailer Fleet/Service Manager (Automotive); Heavy Vehicle Trailer Master Technician (Automotive); Heavy Vehicle Trailer Service Technician (Automotive); Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive);

	Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller ; Light Vehicle Diagnostic Technician (Automotive); Light Vehicle Fleet/Service Manager (Automotive); Light Vehicle Master Technician (Automotive); Light Vehicle Service Technician (Automotive); Maintenance and Repair Technicians; Mechanical, Electrical and Trim Technician (Automotive); Mechanical, Electrical and Trim Assistant Technician (Automotive); Motor Repair and Rewind Electrician; Motor Vehicle Valeting (Automotive); Motorcycle Diagnostic Technician; Motorcycle Fleet/Service Manager (Automotive); Motorcycle Master Technician (Automotive); Motorcycle Service Technician; Motorsport Technician; PDR Senior Technician (Automotive); PDR Technician (Automotive); Rental and Leasing Customer Service Advisor (Automotive); Rental and Leasing Maintenance Advisors (Automotive); Rental and Leasing Technical Service Advisor (Automotive); Roadside Assistance Manager; Roadside Assistance Operator; Roadside Assistance Operators; Roadside Assistance Senior Operator; Roadside Assistance Senior Technician; Roadside Assistance Technician; Sales Executive (Automotive); Sales Controller (Automotive); Tyre exhaust and windscreen fitters ; Tyre Fitting Operations (Automotive); Vehicle Damage Assessment Operators; Vehicle Damage Assessor (Automotive); Vehicle Fitters; Vehicle Fitting Operations (Automotive); Vehicle Parts Operative; Vehicle Parts Operators; Vehicle Parts Supervisor; Vehicle Recovery Operators; Vehicle Recovery Operator; Vehicle Recovery Technical Operator; Vehicle Valeter (Automotive)
Suite	2010 Incremental change to the NOS in Interpreting; Accident Repair - Body; Accident Repair - Joining; Accident Repair - Mechanical, Electrical and Trim; Accident Repair - Paint; Accident Repair - SMART - Cosmetic; Accident Repair - SMART - PDR; Auto Electrical and Mobile Electrical Installation; Automotive Glazing; Maintenance and Repair - Caravans and Motorhomes; Maintenance and Repair - Heavy Vehicle; Maintenance and Repair - Heavy Vehicle Trailer; Maintenance and Repair - Lift Truck; Maintenance and Repair - Light Vehicle; Maintenance and Repair - Motorcycle; Roadside Assistance; Vehicle Damage Assessment Operations; Vehicle Fitting; Vehicle Sales v3; Vehicle Recovery; Vehicle Parts Operations
Keywords	Maintain Working Relationships, Motor Vehicle Environment

IMICA04

Use of tools and equipment in Motor Vehicle Environments

Overview

This NOS is about the basic use of tools, materials and fabrications relevant to the Automotive Sector. This NOS is also about interpreting information, adopting safe and healthy working practices and selecting tools, materials and equipment. This NOS is for those working in technical support roles and is also appropriate for workshop planners.

Performance criteria

You must be able to:

1. select and use suitable personal protective equipment appropriate to the task
2. interpret the information supplied relating to the task
3. carry out pre-start preparation inspections on tools and equipment in accordance with approved procedures
4. carry out operations using tools and equipment in accordance with safe working practices to achieve the work outcome
5. highlight and identify problems associated with tools and equipment to the relevant person
6. demonstrate work skills to manufacture and repair components using measure, mark out, file, fit, tap, thread, cut, drill, finish, position and secure
7. use and maintain the relevant tools and equipment
8. dispose of waste in accordance with relevant legislation including environmental to maintain a clean work space
9. carry out checks in accordance with manufacturer's/operator's guidance, schedules, relevant legislation and official guidance and relevant organisational requirements.
10. demonstrate correct selection of materials for manufacture or repair
11. inspect, clean and store tools and equipment after use

Knowledge and understanding

You need to know and understand:

1. the relevant organisational procedures developed to report and rectify inappropriate information and unsuitable resources, and how they are implemented
2. the types of information, their source and how they are interpreted
3. the relevant organisational procedures to solve problems with the information and why it is important they are followed
4. the relevant legislation and official guidance and how it is applied
5. what the accident reporting procedures are and who is responsible for making the reports
6. why and when personal protective equipment (PPE) should be used
7. the relevant requirements for the disposal of waste, used materials and debris taking into account relevant environmental factors
8. material properties relevant to the task and their appropriate applications
9. the appropriate use of materials for fabrication and repair
10. how to file, fit, tap, thread, cut and drill mterials you are working on
11. how to select and use gaskets, sealants, seals, fittings and fasteners

Scope/range

1. Tools and equipment are:

a. hand tools
b. electrical
c. mechanical
d. pneumatic
e. hydraulic

2. Motor Vehicle could include:

a. Light Vehicles
b. Heavy Vehicles/Commercial Vehicles
c. Motorcycles
d. Lift Trucks
e. Heavy Vehicle Trailers
f. Caravan and Motorhomes

IMICA04

Use of tools and equipment in Motor Vehicle Environments

Developed by	IMI
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Date Approved	October 2014
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Validity	Current
Status	Original
Originating Organisation	IMIARB4
Original URN	IMIARB4
Relevant Occupations	Automotive Aftermarket Electrical Enhancement Technician (Automotive); Auto-electrical Technician (Automotive); Body Builder (Automotive); Body Builder Workshop Controller (Automotive); Body Repair and Alignment Technician (Automotive); Body Repair Technician (Automotive); Caravan and Motorhome Diagnostic Technician (Automotive); Caravan and Motorhome Service Technician (Automotive); Caravans and Motorhomes Diagnostic Technician (Automotive); Caravans and Motorhomes Service Technician (Automotive); Cosmetic Refinishing Technician (Automotive); Cosmetic Senior Refinishing Technician (Automotive); Heavy Vehicle Diagnostic Technician (Automotive); Heavy Vehicle Fleet/Service Manager (Automotive); Heavy Vehicle Master Technician (Automotive); Heavy Vehicle Service Technician (Automotive); Heavy Vehicle Trailer Diagnostic Technician (Automotive); Heavy Vehicle Trailer Fleet/Service Manager (Automotive); Heavy Vehicle Trailer Master Technician (Automotive); Heavy Vehicle Trailer Service Technician (Automotive); Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller ; Light Vehicle Diagnostic

	Technician (Automotive); Light Vehicle Fleet/Service Manager (Automotive); Light Vehicle Master Technician (Automotive); Light Vehicle Service Technician (Automotive); Maintenance and Repair Technicians; Maintenance Electrician; Mechanical, Electrical and Trim Assistant Technician (Automotive); Mechanical, Electrical and Trim Technician (Automotive); Motor Repair and Rewind Electrician; Motorcycle Diagnostic Technician; Motorcycle Master Technician (Automotive); Motorcycle Service Technician; PDR Technician (Automotive); PDR Senior Technician (Automotive); Roadside Assistance Operator; Roadside Assistance Operators; Roadside Assistance Senior Operator; Roadside Assistance Senior Technician; Roadside Assistance Technician; Tyre Fitting Operations (Automotive); Tyre exhaust and windscreen fitters ; Vehicle Fitters; Vehicle Fitting Operations (Automotive); Vehicle Recovery Operator; Vehicle Recovery Operators; Vehicle Recovery Technical Operator
Suite	Accident Repair - Body; Accident Repair - Joining; Accident Repair - Mechanical, Electrical and Trim; Accident Repair - SMART - Cosmetic; Accident Repair - SMART - PDR; Auto Electrical and Mobile Electrical Installation; Body Building; Maintenance and Repair - Heavy Vehicle; Maintenance and Repair - Heavy Vehicle Trailer; Maintenance and Repair - Lift Truck; Maintenance and Repair - Light Vehicle; Maintenance and Repair - Motorcycle; Maintenance and Repair - Caravans and Motorhomes; Maintenance and Repair - Motorcycle; Vehicle Recovery; Vehicle Fitting
Keywords	Tools, Equipment, Motor Vehicle Engineering

IMIARBG6
Enable learning through demonstration and instruction

Overview

This NOS is about demonstrating skills and methods to learners and instructing learners in procedures and processes.

These include; demonstrating how equipment is used, showing a learner how to do something, giving learners instructions on what to do or how to carry out a particular activity, deciding when you should use demonstration or instruction to encourage learning, reviewing the potential use of technology- based learning, checking on the progress of learners and giving feedback to learners.

IMIARBG6

Enable learning through demonstration and instruction

Performance criteria

You must be able to:

Demonstrate skills and methods to learners

P1 base the demonstration on an analysis of the skills needed and the order they must be learned in

P2 ensure that the demonstration is accurate and realistic

P3 structure the demonstration so the learner can get the most out of it

P4 encourage learners to ask questions and get explanation at appropriate stages in the demonstration

P5 give learners the opportunities to practise the skill being demonstrated and give them positive feedback

P6 give extra demonstrations of the skills being taught to reinforce learning

P7 ensure that demonstrations take place in a safe environment and allow learners to see the demonstration clearly

P8 respond to the needs of learners during the demonstration

P9 reduce distractions and disruptions as much as possible

You must be able to:

Instruct learners

P10 match instruction to the needs of the learners

P11 identify which learning outcomes will be achieved through instruction

P12 ensure that the manner, level and speed of the instruction encourages learners to take part

P13 regularly check that learners understand and adapt instruction as appropriate

P14 give learners positive feedback on the learning experience and the outcomes achieved

P15 identify anything that prevents learning and review this with the learners

IMIARBG6

Enable learning through demonstration and instruction

Knowledge and understanding

You need to know and understand:

The nature and role of demonstrations and instruction

K1 the separate areas of demonstrations which encourage learning
K2 which types of learning are best achieved and supported through demonstrations
K3 how to identify and use different learning opportunities
K4 how to structure demonstrations and instruction sessions
K5 how to choose from a range of demonstration techniques

You need to know and understand:

Principles and concepts

K6 how to put learners at their ease and encourage them to take part
K7 how to choose between demonstration and instruction as learning methods
K8 how to identify individual learning needs
K9 which factors are likely to prevent learning and how to overcome them
K10 how to check learners' understanding and progress
K11 how to put information in order and decide whether the language you will be using is appropriate
K12 how to choose and prepare appropriate materials, including technology based materials
K13 the separate areas of instructional techniques which encourage learning
K14 which types of learning are best achieved and supported through instruction

You need to know and understand:

External factors influencing human resource development

K15 how to make sure everybody acts in line with health, safety and environmental protection l legislation and best practice
K16 how to analyse and use developments in learning and new ways of delivery, including technology-based learning

IMIARBG6

Enable learning through demonstration and instruction

Developed by	IMI Ltd
Version number	1
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Indicative review date	January 2012
Validity	Current
Status	Original
Originating organisation	IMI Ltd
Original URN	G6
Relevant occupations	Maintenance and Repair Technicians; Accident Repair Technicians; Auto and Mobile Installation Technicians; Roadside Assistance Operators; Vehicle Recovery Operators; Vehicle Damage Assessment Operators; Vehicle Parts Operators; Vehicle Sales Operators
Suite	Maintenance and Repair – Light Vehicle; Heavy Vehicle, Heavy Vehicle Trailer; Motorcycle; Lift Truck; Caravans and Motorhomes; Accident Repair – Body; Paint; Joining; Mechanical, Electrical & Trim (MET); SMART Cosmetic; SMART Paintless Dent Removal (PDR); Auto electrical and Mobile Electrical Installation; Body Building; Roadside Assistance; Vehicle Recovery; Vehicle Damage Assessors; Vehicle Fitting; Vehicle Parts; Vehicle Sales
Key words	[KEYWORDS]

IMICA08

Identify and Agree the Motor Vehicle Customer Needs

Overview

This NOS is about gaining information from customers on their perceived needs; giving advice and information and agreeing a course of action; contracting for the agreed work and completing all necessary records and instructions.

Performance criteria

You must be able to:

1. obtain the relevant information from the customer to make an assessment of their own and perceived vehicle needs
2. provide customers with accurate, current and relevant advice and information on suitable vehicle inspection, repair and/or service procedures, potential courses of action, the implications of courses of action and the estimated costs
3. provide advice and information clearly and in a form and manner which the customer will understand
4. actively encourage customers to ask questions and seek clarification during your conversation.
5. support the accurate identification and clarification of customer and vehicle needs, by referring to vehicle data and operating procedures
6. agree with the customer before accepting the vehicle and record the extent and nature of the work to be undertaken, the terms and conditions of acceptance, the cost and the timescale
7. confirm your customer's understanding of the agreement you have made
8. ensure your recording systems are complete, accurate, in the format required and signed by the customer where necessary
9. pass all completed records to the next person in the process promptly
10. gain further customer approval where the contracted agreement is likely to be exceeded

Knowledge and understanding

You need to know and understand:

1. the relevant legal requirements of consumer legislation and the consequences of your own actions in respect of these
2. the different types of company and product warranties that you deal with within your organisation
3. the limits of your own responsibility for accepting and returning vehicles
4. the importance of keeping customers informed and managing their expectations
5. your workplace requirements for the completion of records and documentation
6. how to communicate effectively with, and listen to, customers
7. how to adapt your language when explaining technical matters to non-technical customers
8. how to extract the relevant information to identify and agree the motor vehicle customer needs
9. how to care for customers and achieve customer satisfaction
10. the range of options available to meet customer needs
11. the range and type of services offered by your organisation
12. the effect of non-availability of resource upon the receipt of customer vehicles and for the completion of the work
13. where and how to access costing and work completion time information

Scope/range

1. Motor Vehicle could include:

a. Light Vehicles
b. Heavy Vehicles/Commercial Vehicles
c. Motorcycles
d. Lift Trucks
e. Heavy Vehicle Trailers
f. Caravan and Motorhomes

IMICA08

Identify and Agree the Motor Vehicle Customer Needs

Developed by	IMI
Version Number	2
Date Approved	October 2014
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Validity	Current
Status	Original
Originating Organisation	IMI
Original URN	IMIARB8
Relevant Occupations	Body Builder (Automotive); Body Builder Workshop Controller (Automotive); Body Repair and Alignment Technician (Automotive); Body Repair Technician (Automotive); Caravan and Motorhome Diagnostic Technician (Automotive); Caravan and Motorhome Service Technician (Automotive); Caravans and Motorhomes Diagnostic Technician (Automotive); Caravans and Motorhomes Service Technician (Automotive); Cosmetic Senior Refinishing Technician (Automotive); Cosmetic Refinishing Technician (Automotive); Heavy Vehicle Diagnostic Technician (Automotive); Heavy Vehicle Fleet/Service Manager (Automotive); Heavy Vehicle Master Technician (Automotive); Heavy Vehicle Service Technician (Automotive); Heavy Vehicle Trailer Diagnostic Technician (Automotive); Heavy Vehicle Trailer Fleet/Service Manager (Automotive); Heavy Vehicle Trailer Master Technician (Automotive); Heavy Vehicle Trailer Service Technician (Automotive); Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller ; Light Vehicle Diagnostic Technician (Automotive); Light Vehicle Fleet/Service Manager (Automotive); Light Vehicle Master Technician (Automotive); Light Vehicle

	Service Technician (Automotive); Maintenance and Repair Technicians; Mechanical, Electrical and Trim Assistant Technician (Automotive); Mechanical, Electrical and Trim Technician (Automotive); Motorcycle Diagnostic Technician; Motorcycle Fleet/Service Manager (Automotive); Motorcycle Master Technician (Automotive); Motorcycle Service Technician; PDR Senior Technician (Automotive); PDR Technician (Automotive); Roadside Assistance Manager; Roadside Assistance Operator; Roadside Assistance Operators; Roadside Assistance Senior Operator; Roadside Assistance Senior Technician; Roadside Assistance Technician
Suite	Accident Repair - Body; Accident Repair - Joining; Accident Repair - Mechanical, Electrical and Trim; Accident Repair - SMART - Cosmetic; Accident Repair - SMART - PDR; Auto Electrical and Mobile Electrical Installation; Body Building; Maintenance and Repair - Caravans and Motorhomes; Maintenance and Repair - Heavy Vehicle; Maintenance and Repair - Heavy Vehicle Trailer; Maintenance and Repair - Lift Truck; Maintenance and Repair - Light Vehicle; Maintenance and Repair - Motorcycle; Roadside Assistance; Vehicle Fitting; Vehicle Recovery
Keywords	Reduce Risk(s), Health and Safety, Motor Vehicle Environment

IMIARBG11
Supervisory skills

Overview

This NOS is about ensuring that the work required in your area of responsibility is effectively planned and fairly allocated to individuals and/or teams. It also involves monitoring the progress and quality of the work of individuals and/or teams to ensure that the required level or standard of performance is being met and reviewing and updating plans of work in the light of developments.

The ‘area of responsibility’ may be, for example, a branch or department or functional area or an operating site within an organisation.

The NOS is recommended for first line managers and middle managers.

IMIARBG11
Supervisory skills

Performance criteria

You must be able to:

P1 confirm the work required in your area of responsibility with your manager and seek clarification, where necessary, on any outstanding points and issues

P2 plan how the work will be undertaken, seeking views from people in your area of responsibility, identifying any priorities or critical activities and making best use of the available resources

P3 ensure that work is allocated to individuals and/or teams on a fair basis taking account of skills, knowledge and understanding, experience and workloads and the opportunities for development

P4 ensure that individuals and/or teams are briefed on allocated work, showing how it fits with the vision and objectives for the area and the overall organisation, and the standard or level of expected performance

P5 recognise and seek to find out about differences in expectations and working methods of any team members from a different country or culture and promote ways of working that take account of their expectations and maximise productivity

P6 encourage individuals and/or team members to ask questions, make suggestions and seek clarification in relation to allocated work

P7 monitor the progress and quality of the work of individuals and/or teams on a regular and fair basis against the standard or level of expected performance and provide prompt and constructive feedback

P8 support individuals and/or teams in identifying and dealing with problems and unforeseen events

P9 motivate individual and/or teams to complete the work they have been allocated and provide, where requested and where possible, any additional support and/or resources to help completion

P10 monitor your area for conflict, identifying the cause(s) when it occurs and dealing with it promptly and effectively

P11 identify unacceptable or poor performance, discuss the cause(s) and agree ways of improving performance with individuals and/or teams

P12 recognise successful completion of significant pieces of work or work activities by individuals and/or teams

P13 use information collected on the performance of individuals and/or teams in any formal appraisals of performance

P14 review and update plans of work for your area, clearly communicating any changes to those affected

IMIARBG11
Supervisory skills

Knowledge and understanding

You need to know and understand:

K1 how to select and successfully apply different methods for communicating with people across an area of responsibility

K2 the importance of confirming/clarifying the work required in your area of responsibility with your manager and how to do this effectively

K3 how to identify and take due account of health and safety issues in the planning, allocation and monitoring of work

K4 how to produce a plan of work for your area of responsibility, including how to identify any priorities or critical activities and the available resources

K5 how to identify sustainable resources and ensure their effective use when planning the work for your area of responsibility

K6 the importance of seeking views from people working in your area and how to take account of their views in producing the plan of work

K7 the values, ethics, beliefs, faith, cultural conventions, perceptions and expectations of any team members from a different country or culture and how your own values, ethics, beliefs, faith, cultural conventions, perceptions, expectations, use of language, tone of voice and body language may appear to them

K8 why it is important to allocate work to individuals and/or teams on a fair basis and how to do so effectively

K9 why it is important that individuals and/or teams are briefed on allocated work and the standard or level of expected performance and how to do so effectively

K10 the importance of showing individuals and/or teams how their work fits with the vision and objectives of the area and those of the organisation

K11 ways of encouraging individuals and/or teams to ask questions and/or seek clarification in relation to the work which they have been allocated

K12 effective ways of regularly and fairly monitoring the progress and quality of work of individuals and/or teams against the standards or level of expected performance

K13 how to provide prompt and constructive feedback to individuals and/or teams

K14 why it is important to monitor your area for conflict and how to identify the cause(s) of conflict when it occurs and deal with it promptly and effectively how to take account of diversity and inclusion issues when supporting and encouraging individuals and/or teams to complete the work they have been allocated

K15 why it is important to identify unacceptable or poor performance by individuals and/or teams and how to discuss the cause(s) and agree ways of improving performance with them

K16 the type of problems and unforeseen events that may occur and how to

support individuals and/or teams in dealing with them

K17 the additional support and/or resources which individuals and/or teams might require to help them complete their work and how to assist in providing this

K18 how to select and successfully apply different methods for encouraging, motivating and supporting individuals and/or teams to complete the work they have been allocated, improve their performance and for recognising their achievements

K19 how to log information on the ongoing performance of individuals and/or teams and use this information for formal performance appraisal purposes

Industry/sector specific knowledge and understanding

K20 industry/sector requirements for the development or maintenance of knowledge, understanding and skills

K21 industry/sector specific legislation, regulations, guidelines, codes of practice relating to carrying out work

Additional Information

Skills

Listed below are the main generic 'skills' which need to be applied in allocating and monitoring the progress and quality of work in your area of responsibility. These skills are explicit/implicit in the detailed content of the NOS and are listed here as additional information.

1. Communicating
2. Consulting
3. Decision making
4. Delegating
5. Information management
6. Leadership
7. Managing conflict
8. Monitoring
9. Motivating
10. Planning
11. Problem solving
12. Providing feedback
13. Prioritising
14. Reviewing
15. Setting objectives
16. Stress management
17. Valuing and supporting others.

IMIARBG11
Supervisory skills

Developed by	IMI Ltd
Version number	1
Date approved	January 2010
Indicative review date	January 2012
Validity	Current
Status	Tailored
Originating organisation	IMI Ltd
Original URN	(MSC D6)
Relevant occupations	Engineering; Vehicle Trades
Suite	Accident Repair - Body
Key words	supervisory skills

IMIARBG12
Developing staff

Overview

This NOS is about helping members of your team address problems affecting their performance. These may be work-related problems or problems arising from their personal circumstances.

The NOS involves identifying problems affecting people's performance and discussing these in a timely way with the team members concerned to help them find a suitable solution to their problem. Sometimes you may need to refer the team member to specialist support services.

The NOS is recommended particularly for first line managers and middle managers.

IMIARBG12
Developing staff

Performance criteria

You must be able to:

- P1 give team members opportunities to approach you with problems affecting their performance
- P2 identify performance issues and bring these promptly to the attention of the team members concerned
- P3 discuss problems with team members at a time and place appropriate to the type, seriousness and complexity of the problem
- P4 gather and check information to accurately identify the problem and its cause
- P5 discuss the range of alternative courses of action and agree with the team member a timely and effective way of dealing with the problem
- P6 refer the team member to support services or specialists, where necessary
- P7 keep a confidential record of your discussions with team members about problems affecting their performance
- P8 ensure your actions are in line with your organisation's policies for managing people

IMIARBG12
Developing staff

Knowledge and understanding

You need to know and understand:

K1 the importance in giving team members opportunities to approach you with problems affecting their performance
K2 how to encourage team members to approach you with problems affecting their performance
K3 the importance of identifying performance issues and bringing these promptly to the attention of the team members concerned
K4 the importance of discussing problems with team members at a time and place appropriate to the type, seriousness and complexity of the problem
K5 how to gather and check the information you need to identify the problem and its cause
K6 the importance of identifying the problem accurately
K7 the range of alternative courses of action to deal with the problem
K8 the importance of discussing and agreeing with the team member a timely and effective way of dealing with the problem
K9 when to refer the team member to support services or specialists
K10 the importance of keeping a confidential record of your discussions with team members about problems affecting their performance, and how to do so
K11 the importance of ensuring your actions are in line with your organisation's policies for managing people and their performance

Industry/sector specific knowledge and understanding

K12 industry/sector requirements for helping team members address problems affecting their performance

Context specific knowledge and understanding

K13 the types of problems that your team members may encounter which can affect their performance
K14 your role, responsibilities and limits of authority when dealing with team members' problems
K15 the range of support services or specialists that exist inside and outside your organisation
K16 your organisation's policies for managing people and their performance

Additional Information

Skills

Listed below are the main generic ‘skills’ which need to be applied in helping team members address problems affecting their performance. These skills are explicit/implicit in the detailed content of the NOS and are listed here as additional information.

1. Acting assertively
2. Communicating
3. Consulting
4. Decision-making
5. Empathising
6. Information management
7. Managing conflict
8. Monitoring
9. Problem solving
10. Providing feedback
11. Reviewing
12. Setting objectives
13. Team building
14. Valuing and supporting others.

IMIARBG12
Developing staff

Developed by	IMI Ltd
Version number	1
Date approved	January 2010
Indicative review date	January 2012
Validity	Current
Status	Original
Originating organisation	IMI Ltd
Original URN	(MSC D8)
Relevant occupations	Engineering; Vehicle Trades
Suite	Accident Repair - Body
Key words	developing staff

IMIARBG13
Business Management

Overview

This NOS is about managing business processes to make sure the organisation delivers outputs that meet customers' needs and stakeholders' needs, and organisational and legal requirements.

The NOS is recommended for middle managers.

IMIARBG13
Business Management

Performance criteria

You must be able to:

- P1 design processes that deliver outcomes based on organisational goals and aims
- P2 ensure processes and resources are sustainable and effective in their use
- P3 identify and provide the resources you need
- P4 take account of influences that may affect and shape how processes work
- P5 link processes so that they interact across the organisation to form a complete system
- P6 provide information and support for staff and other stakeholders involved.
- P7 define process responsibilities
- P8 develop process measures that are affordable and provide enough information for people to decide how to manage the process
- P9 establish and use effective methods to review and improve the process

IMIARBG13
Business Management

Knowledge and understanding

You need to know and understand:

K1 principles and models of effective process management
K2 how to define business processes
K3 types of business process measures and how to assess their suitability
K4 how to ensure processes and resources are sustainable and effective in their use, and the importance of doing so
K5 the difference between process outputs and outcomes
K6 how to assess process changes for risk and reward against their potential investment cost
K7 how to carry out cost and benefit analysis
K8 types of analytical and problem-solving tools that you can use when developing business processes
K9 how to measure the effect of changes in the business process

You need to know and understand:

Industry/sector specific knowledge and understanding

K10 the sector and market in which your organisation works
K11 relevant sector trends, developments and competitor performance that affect your business processes

You need to know and understand:

Context specific knowledge and understanding

K12 your organisation's aims and goals
K13 your organisation's structure, values and culture
K14 how your organisation adds value through delivering its products, services and processes
K15 the needs of your actual and potential customers and other key stakeholders
K16 your organisation's products, services and processes and the interdependencies between them
K17 measures of process performance that are relevant to your organisation

IMIARBG13
Business Management

Additional Information

Skills

Listed below are the main generic ‘skills’ which need to be applied in managing business processes. These skills are explicit/implicit in the detailed content of the NOS and are listed here as additional information.
™

1. Communicating
2. Information management
3. Analysing
4. Assessing
5. Presenting information
6. Influencing
7. Persuading
8. Negotiating
9. Problem solving
10. Prioritising
11. Thinking systematically
12. Thinking creatively
13. Reviewing

IMIARBG13
Business Management

Developed by	IMI Ltd
Version number	1
Date approved	January 2010
Indicative review date	January 2012
Validity	Current
Status	Original
Originating organisation	IMI Ltd
Original URN	(MSC F3)
Relevant occupations	Engineering; Vehicle Trades; Communications Officer
Suite	Accident Repair – Body; Local Government Skills
Key words	business, management, strategy, planning

IMILT01

Carry out routine lift truck maintenance

Overview

This standard is about conducting routine maintenance, adjustment and replacement activities as part of the periodic servicing of fork lift trucks.

Performance criteria

You must be able to:

1. use suitable personal protective equipment throughout all lift truck maintenance activities
2. use suitable sources of technical information to support all your lift truck maintenance activities
3. use the correct specifications and tolerances appropriate to the lift truck you are working on, when making assessments of system and component performance
4. record details accurately and use this adapted specification as the basis for your examination and assessment where the lift truck being worked upon falls outside the manufacturer's original specification
5. examine the lift truck's systems and components following:
5.1 the manufacturer's approved examination methods
5.2 your workplace procedures
5.3 health and safety requirements
6. ensure any other problems that you notice whilst carrying out your servicing activity are reported to the relevant person(s) in authority promptly
7. carry out adjustments, replacements and replenishment of consumable materials following the manufacturer's current specification and timescales for:
7.1 the particular service interval
7.2 working methods and procedures
7.3 use of equipment
7.4 tolerances relevant to the lift truck you are working on
8. record the details accurately and report these deviations to the relevant person(s) where system adjustments cannot be made within the manufacturer's specification
9. carry out a risk assessment to avoid risk of damage to the lift truck, its systems, the surrounding environment and yourself
10. use suitable testing methods to evaluate the performance of all replaced and adjusted components and systems accurately, prior to returning the lift truck to the customer
11. report any problems or issues relating to the lift truck's condition or conformity to the relevant person(s) promptly
12. ensure your maintenance records are accurate, complete and passed to the relevant person(s) promptly in the format required
13. complete all lift truck maintenance activities within the agreed timescale
14. report any anticipated delays in completion to the relevant persons(s) in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the manufacturers' and legal requirements relating to routine maintenance activities for lift truck systems and components
2. the legal requirements relating to the lift truck
3. the health and safety legislation and workplace procedures relevant to lift truck maintenance and repair activities including PPE
4. your workplace procedures for:
4.1 recording maintenance work and any variations from the original specification
4.2 the referral of problems
4.3 reporting delays to the completion of work
5. the importance of documenting maintenance information
6. how to complete a maintenance report
7. the importance of working to agreed timescales and keeping others informed of progress
8. the relationship between time and costs
9. the importance of reporting anticipated delays to the relevant person(s) in authority promptly
10. the responsibilities towards environmental issues for:
10.1 your organisation
10.2 the customer workplace in which you are working
10.3 yourself

Use of technical information

11. how to find, interpret and use sources of technical information for scheduled maintenance activities including manufacturers' recommended timescales and on-board diagnostic displays
12. the importance of using the correct sources of technical information
13. the purpose of and how to use identification codes

Lift truck system operation

14. how power plant systems for lift trucks operate; including gas, diesel, electric and alternative fuels
15. how transmission systems and components, for internal combustion and electric lift trucks function

16. how the lifting systems, steering systems, braking systems operate
17. the purpose, operating principles, location and limits of responsibility of power storage systems (including batteries), power generating systems,(including off vehicle charging systems) starting systems
18. the operating specifications and tolerances for the type(s) of lift trucks that you are maintaining

Routine maintenance requirements

19. how to conduct scheduled, routine examination methods and assessments against specifications to identify damage, corrosion, inadequate fluid levels, leaks, wear and general condition and serviceability
20. check and make adjustments to clearances, gaps, settings, alignment, pressures, tension, speeds and levels in accordance with the manufacturers' service schedule
21. how to replenish and replace routine service components and materials in accordance with the service schedule
22. how to identify and report damage to the lift truck
23. how to identify codes and grades of lubricants
24. how to work safely avoiding damage to the lift truck and its systems

Scope/range

Scope of this standard

1. Sources of technical information include:

a. lift truck technical data

b. schedules of inspection

c. regulations

2. Examination methods include:

a. aural

b. visual

c. functional

d. measurements

3. Assessments are for:

a. malfunction

b. damage

c. fluid levels

d. leaks

e. wear

f. condition and serviceability

g. conformity

h. necessity for adjustment(s)

IMILT01

Carry out routine lift truck maintenance

Developed by	IMI
Version Number	2
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Indicative Review Date	December 2017
Validity	Current
Status	Original
Originating Organisation	IMI
Original URN	IMILT01
Relevant Occupations	Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller
Suite	Maintenance and Repair - Lift Truck
Keywords	Routine lift truck maintenance

IMILT02

Remove and replace power plant units and components

Overview

This standard is about removing and replacing units and components where dismantling and re-assembly of the power plant is required. It is also about evaluating the performance of replaced units and components. **The units and components concerned are those outside those replaced as part of normal routine, lift truck maintenance (servicing) activities.**

Performance criteria

You must be able to:

1. wear suitable personal protective equipment throughout all removal and replacement activities
2. support your removal and replacement activities by reviewing:
2.1 lift truck technical data
2.2 removal and replacement procedures
2.3 legal requirements
3. prepare, test and use all the equipment required following manufacturers' instructions
4. carry out all removal and replacement activities following:
4.1 manufacturers' instructions
4.2 your workplace procedures
4.3 health and safety requirements
5. work in a way which minimises the risk of:
5.1 damage to other lift truck systems
5.2 damage to other lift truck components and units
5.3 injury to yourself and others
5.4 contact with hazardous substances.
5.5 instability when working on the lift truck
6. ensure replaced engine units and components conform to the lift truck operating specification and any legal requirements
7. record and report any additional faults you notice during the course of your work promptly
8. use suitable testing methods to evaluate the performance of the reassembled system
9. ensure the reassembled engine system performs to the lift truck operating specification and meets any legal requirements prior to return to the customer
10. ensure your records are accurate, complete and passed to the relevant person(s) promptly in the format required
11. complete all removal and replacement activities within the agreed timescale
12. report any expected delays in completion to the relevant person(s) in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the legal requirements relating to the lift truck
2. the health and safety legislation and workplace procedures relevant to lift truck maintenance and repair activities including PPE
3. your workplace procedures for:
3.1 recording removal and replacement information
3.2 the referral of problems
3.3 reporting delays to the completion of work
4. the importance and purpose of recording removal and replacement activities
5. the importance of working to agreed timescales and keeping others informed of progress
6. the relationship between time and costs
7. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Use of technical information

8. how to find, interpret and use sources of information applicable to unit and component removal and replacement within power plant systems
9. the importance of using the correct sources of technical information
10. the purpose of and how to use identification codes

Electrical and electronic principles

11. lift truck earthing methods
12. electrical and electronic principles associated with lift truck power plant systems, including types of sensors, actuators, their application and operation
13. types of circuit protection and why these are necessary
14. electrical safety procedures
15. how warning, charging and starter circuits work
16. electrical units, terms and schematics
17. battery charging and voltage
18. electronic control system principles

Power Plant system operation and construction

19. how power plant systems and their related units and components are

constructed, dismantled and reassembled for the classification of lift truck worked upon
20. how power plants and their related units and components operate for the classification of lift truck worked upon

Equipment

21. how to prepare, test and use all the removal and replacement equipment required

Engine unit and component removal and replacement

22. how to remove and replace power plant system mechanical and electrical units and components for the classification of lift truck worked upon
23. how to file, fit, tap, thread, cut and drill plastics and metals
24. how to select and fit gaskets, sealants, fittings and fasteners
25. how to test and evaluate the performance of replacement power plant unit and components and the reassembled system against the lift truck operating specifications and any legal requirements - the use of appropriate test methods
26. the manufacturer’s specification for the type and quality of power plant units and components to be used
27. how to work safely avoiding damage to other lift truck systems, components and units and contact with leakage and hazardous substances relating to yourself and the environment

Scope/range

Scope of this standard

1. Equipment includes:
a. hand tools
b. special workshop tools and equipment
c. general workshop equipment
d. electrical testing equipment

2. Testing methods include:
a. visual
b. aural
c. functional
d. measurement

3. Unit and components include:
a. mechanical
b. electrical

4. Power plant systems and components includes:
a. diesel and gas engine mechanical systems
b. cooling systems
c. air supply and exhaust systems
d. fuel and ignition systems
e. engine electrical systems
f. lubrication systems
g. electric motor systems
h. motor control systems
i. hybrid storage systems
j. starting systems (IC)
k. charging systems

IMILT02

Remove and replace power plant units and components

Developed by	IMI
Version Number	2
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Indicative Review Date	December 2017
Validity	Current
Status	Original
Originating Organisation	IMI
Original URN	IMILT02
Relevant Occupations	Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller ; Lift Truck Service Technician (Automotive)
Suite	Maintenance and Repair - Lift Truck
Keywords	Remove replace power plant units components

IMILT03

Remove and replace lift truck electrical units and components

Overview

This standard is about removing and replacing electrical units and components previously identified as faulty or damaged or where the customer has requested replacements. It is also about evaluating the performance of replaced units and components.

The units and components concerned are those outside those replaced as part of normal routine vehicle maintenance.

Performance criteria

You must be able to:

1. wear suitable personal protective equipment throughout all removal and replacement activities
2. support your removal and replacement activities by reviewing:
2.1 lift truck technical data
2.2 removal and replacement procedures
2.3 legal requirements
3. prepare, test and use all the equipment required following manufacturers' instructions
4. carry out all removal and replacement activities following;
4.1 manufacturers' instructions
4.2 your workplace procedures
4.3 health and safety requirements
5. work in a way which minimises the risk of:
5.1 damage to other lift truck systems
5.2 damage to other lift truck components and units
5.3 injury to yourself and others
5.4 contact with hazardous substances.
5.5 instability when working on the lift truck
6. ensure replaced electrical units and components conform to the lift truck operating specification and any legal requirements
7. record and report any additional faults you notice during the course of your work promptly
8. use suitable testing methods to evaluate the performance of the reassembled system
9. ensure the reassembled system performs to the lift truck operating specification and meets any legal requirements prior to return to the customer
10. ensure your records are accurate, complete and passed to the relevant person(s) promptly in the format required
11. complete all removal and replacement activities within the agreed timescale
12. report any expected delays in completion to the relevant person(s) in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the legal requirements relating to lift trucks
2. the health and safety legislation and workplace procedures relevant to lift truck maintenance and repair activities including PPE
3. your workplace procedures for:
3.1 recording removal and replacement information
3.2 the referral of problems
3.3 reporting delays to the completion of work
4. the importance and purpose of recording removal and replacement activities
5. the importance of working to agreed timescales and keeping others informed of progress
6. the relationship between time and costs
7. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Use of technical information

8. how to find, interpret and use sources of information applicable to electrical unit and component removal and replacement
9. the importance of using the correct sources of technical information
10. the purpose of and how to use identification codes

Electrical auxiliary system operation and construction

11. how electrical auxiliary units and components are constructed, removed and replaced for the classification of lift truck worked upon
12. how electrical auxiliary units and components operate for the classification of lift truck worked upon

Equipment

13. how to prepare, test and use all the removal and replacement equipment required

Electrical and electronic principles

14. lift truck earthing methods
15. electrical and electronic principles associated with electrical systems, including types of sensors and actuators, their application and operation
16. types of circuit protection and why these are necessary
17. electrical safety procedures
18. how warning and charging and starter circuits work
19. electrical units, terms and schematics
20. electronic control system principles
21. battery principles and safety working practices

Electrical unit and component removal and replacement

22. how to remove and replace electrical units and components for the lift truck worked upon
23. how to test and evaluate the performance of replacement electrical units and components and the reassembled system against the lift truck operating specifications and any legal requirements
24. the relationship between testing methods and the electrical units and components replaced – the use of appropriate test methods
25. the manufacturer's specification for the type and quality of electrical units and components to be used
26. how to work safely avoiding damage to other lift truck systems, components and units and contact with leakage and hazardous substances relating to yourself and the environment

Scope/range

Scope of this standard:

1. Equipment includes:
a. hand tools
b. special workshop tools
c. general workshop equipment
d. electrical meters
e. electronic diagnostic tools
f. on board diagnostic tools

2. Testing methods include:
a. visual
b. aural
c. functional
d. measurement

3. Electrical units and components are for:
a. lighting systems
b. accelerator systems
c. electric warning devices
d. direction control devices
e. hydraulic systems
f. speed governing devices
g. starting and generator systems
h. charging systems
i. traction control systems
j. axle stability systems
k. electric drive, hydraulic and steering motors
l. monitoring and instrumentation systems
m. traction battery systems

IMILT03

Remove and replace lift truck electrical units and components

Developed by	IMI
Version Number	2
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Validity	Current
Status	Original
Originating Organisation	IMI
Original URN	IMILT03
Relevant Occupations	Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller
Suite	Maintenance and Repair - Lift Truck
Keywords	Remove replace lift truck electrical units components

IMILT04

Remove and replace lift truck mechanical handling and chassis units and components

Overview

This standard is about removing and replacing units and components where dismantling and re-assembly of mechanical handling and chassis systems is required. It is also about evaluating the performance of replaced units and components. The units and components concerned are those outside those replaced as part of normal routine, lift truck maintenance (servicing) activities.

Performance criteria

You must be able to:

1. wear suitable personal protective equipment throughout all removal and replacement activities
2. support your removal and replacement activities by reviewing:
2.1 lift truck technical data
2.2 removal and replacement procedures
2.3 legal requirements
3. prepare, inspect and use all the equipment required following manufacturers' instructions
4. carry out all removal and replacement activities following;
4.1 manufacturers' instructions
4.2 your workplace procedures
4.3 health and safety requirements
5. work in a way which minimises the risk of:
5.1 damage to other lift truck systems
5.2 damage to other lift truck components and units
5.3 injury to yourself and others
5.4 contact with hazardous substances
5.5 instability when working on the lift truck
6. ensure replaced mechanical handling and chassis units and components conform to the lift truck operating specification and any legal requirements
7. record and report any additional faults you notice during the course of your work promptly
8. use suitable testing methods to evaluate the performance of the reassembled system
9. ensure the reassembled mechanical handling and chassis system performs to the lift truck operating specification and meets any legal requirements prior to return to the customer
10. ensure your records are accurate, complete and passed to the relevant person(s) promptly in the format required
11. complete all removal and replacement activities within the agreed timescale
12. report any expected delays in completion to the relevant person(s)in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the legal requirements relating to the lift truck
2. the health and safety legislation and workplace procedures relevant to lift truck removal and replacement activities including PPE
3. your workplace procedures for:
3.1 recording removal and replacement information
3.2 the referral of problems
3.3 reporting delays to the completion of work
4. the importance and purpose of recording removal and replacement activities
5. the importance of working to agreed timescales and keeping others informed of progress
6. the relationship between time and costs
7. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Use of technical information

8. how to find, interpret and use sources of information applicable to unit and component removal and replacement within mechanical handling and chassis systems
9. the importance of using the correct sources of technical information
10. how to use parts lists and identification codes

Electrical and electronic principles

11. lift truck earthing methods
12. electrical and electronic principles associated with chassis and mechanical handling systems, including types of sensors and actuators, their application and operation
13. types of circuit protection and why these are necessary
14. electrical safety procedures
15. electrical units, terms and schematics
16. electronic control system principles

Hydraulics and Hydraulic Principles

17. how hydraulic lift truck systems operate including rams, pumps, motors and valve blocks
18. how to inspect hydraulic systems and components to ensure they fall within manufacturer's specifications
19. how to remove and replace hydraulic system components
20. hydraulic schematics and symbols
21. health and safety risks associated with hydraulic systems

Mechanical handling and chassis system operation and construction

22. how mechanical handling and chassis systems are constructed, dismantled and reassembled for the classification of lift truck worked upon
23. how mechanical handling and chassis systems operate for the classification of lift truck worked upon

Equipment

24. how to prepare, inspect and use all the removal and replacement equipment required
25. the regulations relating to lifting and slinging equipment

Mechanical handling and chassis system unit and component removal and replacement

26. how to remove and replace mechanical handling and chassis system mechanical, electrical and hydraulic units and components for the classification of lift truck worked upon
27. how to file, fit, tap, thread, cut and drill plastics and metals
28. how to select and use gaskets, sealants, seals, fittings and fasteners
29. how to test and evaluate the performance of replacement mechanical handling and chassis system units and components and the reassembled system against the lift truck operating specifications and any legal requirements
30. the relationship between testing methods and the mechanical handling and chassis systems units and components replaced – the use of appropriate test methods
31. when replacement units and components must meet the original equipment specification (OES) for warranty or other requirements
32. how to work safely avoiding damage to other lift truck systems, components and units and contact with leakage and hazardous substances relating to yourself and the environment

Scope/range

Scope of this standard

1. Equipment includes:
a. hand tools
b. special workshop tools
c. general workshop equipment
d. electrical testing equipment
e. lifting and slinging equipment

2. Testing methods include:
a. visual
b. aural
c. functional
d. measurement

3. Units and components include:
a. mechanical
b. electrical
c. hydraulic

4. Mechanical handling and chassis systems include:
a. mast, carriage and attachment assemblies
b. hydraulic units and components
c. steering systems
d. braking systems

Remove and replace lift truck mechanical handling and chassis units and components

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Originating Organisation	IMI
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Relevant Occupations	Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller
Suite	Maintenance and Repair - Lift Truck
Keywords	Remove replace lift truck mechanical handling chassis units components

IMILT05

Inspect Lift Trucks using prescribed methods

Overview

This standard is about carrying out a range of inspections on lift trucks using a variety of prescribed testing and inspection methods.

Performance criteria

You must be able to:

1. use suitable personal protective equipment throughout all lift truck inspection activities
2. use suitable sources of technical information to support your lift truck inspection activities
3. carry out systematic lift truck inspections following:
3.1 manufacturer's approved procedures
3.2 recognised repair methods
3.3 health and safety requirements
3.4 prescribed documentation
4. confirm all systems and components inspected, function correctly following the manufacturer's specifications
5. ensure your comparison of the lift truck against specification accurately identifies any:
5.1 differences from the lift truck specification
5.2 lift truck appearance and condition faults
6. work in a way which minimises the risk of damage to the lift truck and its systems, other people and their property
7. make suitable recommendations for **future action** based upon the results of your tests and inspections
8. ensure your records are accurate, complete and passed to the relevant person(s) in authority promptly in the format required. (This includes all lift truck related paperwork)
9. complete all lift truck inspection activities within the agreed timescale and to specification
10. report any anticipated delays in completion to the relevant person(s) in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to lift truck inspection activities including PPE
2. the health and safety legislation relevant to the inspections described in the Scope for this standard
3. your workplace procedures for:
3.1 recording lift truck inspections and any variations from acceptable tolerances
3.2 the referral of problems
3.3 reporting delays to the completion of work
4. the importance of making accurate records of the results of your tests and inspections and interpreting them correctly
5. the importance of working to agreed timescales and keeping others informed of progress
6. the relationship between time and costs
7. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Sources of information

8. how to find, interpret and use technical and product specific information
9. the importance of using technical information to perform your inspection and testing of lift trucks in accordance to LOLER and PUWER legislation

Testing methods and the conduct of Inspections

10. your responsibility and accountability when carrying out an inspection
11. how lift truck systems operate (including the power plant area, transmission area, driveline area, mechanical handling and chassis area and electrical area). The operational tolerances for the lift truck(s) on which you are working
12. how to follow procedures to carry out the systematic inspections described in the Scope of this standard
13. how to confirm the correct operation of the lift truck systems and lift truck condition
14. how to compare test and inspection results against lift truck specifications and legal requirements
15. how to record test and inspection results in the format required

16. how to make recommendations based upon the results of your inspections
17. the implications of failing to carry out lift truck inspection activities correctly
18. how to correctly complete an inspection report
19. the implications of signing workplace documentation and lift truck records

Scope/range

1. Lift truck inspections include:
a. pre-delivery inspection
b. re-work
c. final inspection
d. pre hire off hire
e. maintenance inspection

2. Test methods include:
a. visual
b. aural
c. functional
d. measurement

3. Examples of Equipment Includes:
Appropriate test equipment to correctly confirm the functionality of the system that you are inspecting; this may include measuring equipment, specialist diagnostic equipment or any type of tool required.

Glossary

Future action:
Recommended additional work with relation to safety critical items; repairing and replacing.

IMILT05

Inspect Lift Trucks using prescribed methods

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Relevant Occupations	Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller
Suite	Maintenance and Repair - Lift Truck
Keywords	Inspect lift trucks prescribed methods

IMILT06

Inspect Lift Trucks - thorough examination (Puwer and Loler)

Overview

This standard is about carrying out a range of inspections of lift trucks using a variety of testing methods and equipment.

Performance criteria

You must be able to:

1. use suitable personal protective equipment throughout all lift truck inspection activities
2. use suitable sources of technical information to support your lift truck inspection activities
3. confirm that equipment has been calibrated to meet manufacturers' and legal requirements where necessary
4. carry out systematic lift truck inspections following:
4.1 your workplace procedures
4.2 health and safety requirements
5. conduct all lift truck testing following:
5.1 the manufacturer's instructions
5.2 the recognised test methods
5.3 your workplace procedures
5.4 health and safety requirements
6. ensure your comparison of the lift truck against specification accurately identifies any:
6.1 differences from the lift truck specification
6.2 lift truck appearance and condition faults
6.3 non-compliance with statutory requirements
5. work in a way which minimises the risk of damage to the lift truck and its systems, other people and their property
6. make suitable recommendations for future action based upon the results of your tests and inspections
7. ensure your records are accurate, complete and passed to the relevant person(s) promptly in the format required
8. complete all inspection activities within the agreed timescale and to specification
9. report any anticipated delays in completion to the relevant person(s) in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to lift truck inspection activities including PPE
2. the health and safety legislation relevant to the types of lift truck inspections described in the Scope for this standard
3. your workplace procedures for:
3.1 recording lift truck inspections and any variations from acceptable tolerances
3.2 the referral of problems
3.3 reporting delays to the completion of work
4. the importance of making accurate records of the results of your tests and inspections and interpreting them correctly
5. the importance of working to agreed timescales and keeping others informed of progress
6. the relationship between time, costs and profitability
7. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Sources of information

8. how to find, interpret and use technical information
9. the importance of using technical information to perform your inspection and testing of lift trucks

Testing methods and the conduct of inspections

10. how lift truck systems operate (including the power plant area, transmission area, driveline, mechanical handling and chassis area and electrical area). The operational tolerances for the vehicle(s) on which you are working
11. how to follow procedures and processes to enable a logical and systematic inspection of lift trucks
12. how to test the operation and tolerances of lift truck systems and lift truck condition
13. how to compare test and inspection results against lift truck specifications and legal requirements
14. how to record test and inspection results in the format required
15. how to make recommendations based upon the results of your inspections

16. the full implications of failing to carry out an inspection correctly
17. the implications of signing workplace documentation and vehicle records

Scope/range

Scope of this standard

1. Lift truck inspections include:
a. thorough examination and test procedure
b. LOLER
c. PUWER

2. Test methods include:
a. visual
b. aural
c. functional
d. measurement

3. Equipment can include:
a. lift chain gauges
b. fork arm gauges
c. torque setting
d. specialist diagnostic equipment
e. measuring equipment (e. g vernier callipers, micrometer, feeler blades etc.)

Glossary

Future Action:
Recommended additional work with relation to safety critical items; repairing and replacing.

IMILT06

Inspect Lift Trucks - thorough examination (Puwer and Loler)

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Suite	Maintenance and Repair - Lift Truck
Keywords	Inspect Lift Trucks thorough examination Puwer Loler

IMILT07

Diagnose and rectify lift truck power plant units and component faults

Overview

This standard is about diagnosing and rectifying faults occurring in the lift truck power plant units, mechanical, electrical, hydraulic and fluid systems.

Performance criteria

You must be able to:

1. wear suitable personal protective equipment and protect other systems when using diagnostic methods and carrying out rectification activities
2. support the identification of faults, by reviewing lift truck:
2.1 technical data
2.2 diagnostic test procedures
3. prepare, connect and test all the required equipment following manufacturers' instructions prior to use
4. use diagnostic methods which are relevant to the symptoms presented
5. collect sufficient diagnostic information in a systematic way to enable an accurate diagnosis of engine system faults
6. identify and record any system deviation from acceptable limits accurately
7. ensure your assessment of dismantled sub-assemblies, components and units identifies their condition and suitability for repair or replacement, accurately
8. inform the relevant person(s) promptly where repairs are uneconomic or unsatisfactory to perform
9. use the equipment required, correctly and safely throughout all rectification activities
10. carry out all diagnostic and rectification activities following:
10.1 manufacturers' instructions
10.2 recognised researched repair methods
10.3 your workplace procedures
10.4 health and safety requirements
11. work in a way which minimises the risk of:
11.1 damage to other lift truck systems
11.2 damage to other components and units
11.3 injury to yourself or others
11.4 contact with hazardous substances
12. ensure all repaired and replaced components and units conform to the lift truck operating specification and any legal requirements
13. adjust components and units correctly to ensure that they operate to meet system requirements, when necessary
14. record and report any additional faults you notice during the course of work promptly
15. use testing methods which are suitable for assessing the performance of the system rectified
16. ensure the power plant system rectified performs to the lift truck operating specification and any legal requirements prior to return to the customer
17. ensure your records are accurate, complete and passed to the relevant

person(s) promptly in the format required

18. complete all system diagnostic activities within the agreed timescale
19. report any anticipated delays in completion to the relevant person(s)

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to workshop practices and personal and lift truck protection when diagnosing and rectifying engine faults
2. the legal requirements relating to the lift truck
3. your workplace procedures for:
3.1 recording fault location and correction activities
3.2 reporting the results of tests
3.3 the referral of problems
3.4 reporting delays to the completion of work
4. the importance of working to recognised diagnostic and rectification procedures and processes and obtaining the correct information for diagnostic and rectification activities to proceed
5. the importance and purpose of recording diagnostic and rectification activities
6. the importance of working to agreed timescales and keeping others informed of progress
7. the relationship between time, costs and profitability
8. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Electrical and electronic principles

9. electrical and electronic principles associated with engine systems, including types of sensors and actuators, their application and operation
10. how electrical and electronic systems operate, including electrical components, electrical inputs, outputs, voltages, digital and fibre optics principles
11. the interaction between electrical, electronic and mechanical components within lift truck power plant systems
12. how power plant electrical systems interlink and interact, including multiplexing
13. electrical units, terms and schematics
14. electrical safety procedures

Use of diagnostic and rectification equipment

15. how to prepare and test the accuracy of diagnostic testing equipment
16. how to use diagnostic and rectification equipment for mechanical, electrical, electronic, hydraulic and fluid systems; specialist repair tools and general workshop equipment

Engine electrical faults, their diagnosis and correction

17. how power plant mechanical, electrical, electronic, hydraulic and fluid and fuel systems are constructed, operate, dismantled and reassembled
18. the types and causes of power plant mechanical, electrical, electronic and hydraulic and fluid system, component and unit faults and failures
19. power plant mechanical, electrical, electronic and hydraulic and fluid component and unit replacement procedures, the circumstances which will necessitate replacement and other possible courses of action
20. how to find, interpret and use sources of information on power plant electrical and electronic operating specifications, diagnostic test procedures, repair procedures and legal requirements
21. lift truck operating specifications for limits, fits and tolerances relating to lift truck power plant mechanical, electrical, electronic and hydraulic and fluid systems for the type/class of lift truck on which you work
22. how to select the most appropriate diagnostic testing method for the symptoms presented
23. how to carry out systematic diagnostic testing of power plant mechanical, electrical and electronic, hydraulic and fluid systems using prescribed processes or formats
24. how to assess the condition of mechanical, electrical, electronic, hydraulic and fluid components and units
25. how to interpret test results and lift truck data in order to identify the location and cause of power plant system faults
26. how to carry out the rectification activities in order to correct faults in the power plant mechanical, electrical, electronic and hydraulic and fluid systems
27. the relationship between test methodology and the faults repaired – the use of appropriate testing methods
28. how to make cost effective recommendations for rectification

Scope/range

Scope of this standard

1. Faults can occur within:
a. the Power Plant mechanical system
b. the Power Plant electrical and electronic systems
c. the Power Plant hydraulic and fluid systems
d. the Power Plant fuel systems

2. Diagnostic methods include:
a. measurement
b. functional testing
c. electrical and electronic systems testing

3. Equipment includes:
a. diagnostic and rectification equipment for mechanical systems
b. diagnostic and rectification equipment for electrical systems
c. diagnostic and rectification equipment for hydraulic and fluid systems
d. specialist repair tools
e. general workshop equipment

Glossary

1. **Diagnostic Testing** is defined as:

a. verify the fault

b. collect further information

c. evaluate the evidence

d. carry out further tests in a logical sequence

e. rectify the problem

f. check all systems

2. **Rectification activities** are defined as: A suitable repair, replacement, re-coding or re-programming that rectifies the fault(s) identified from the diagnostic activities carried out

IMILT07

Diagnose and rectify lift truck power plant units and component faults

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Suite	Maintenance and Repair - Lift Truck
Keywords	Diagnose rectify lift truck power plant units component faults

IMILT08

Diagnose and rectify lift truck mechanical handling and chassis system faults

Overview

This standard is about diagnosing and rectifying faults occurring within lift truck mechanical handling, steering and braking systems.

Performance criteria

You must be able to:

1. use suitable personal protective equipment throughout all lift truck diagnostic and repair activities
2. support the identification of faults, by reviewing lift truck:
2.1 technical data
2.2 diagnostic test procedures
3. prepare, connect and test all the required equipment following manufacturers' instructions prior to use
4. use diagnostic methods which are relevant to the symptoms presented
5. collect diagnostic information in a systematic way relevant to the diagnostic methods used
6. collect sufficient diagnostic information to enable an accurate diagnosis of chassis system faults
7. identify and record any system deviation from acceptable limits accurately
8. ensure your assessment of dismantled sub-assemblies, components and units identifies their condition and suitability for repair or replacement, accurately
9. inform the relevant person(s) promptly where repairs are uneconomic or unsatisfactory to perform
10. use the equipment required, correctly and safely throughout all rectification activities
11. carry out all rectification activities following:
11.1 manufacturers' instructions
11.2 your workplace procedures
11.3 health and safety requirements
12. work in a way which minimises the risk of :
12.1 damage to other lift truck systems
12.2 damage to other components and units
12.3 injury to yourself and others
12.4 contact with hazardous substances.
12.5 instability when working on a lift truck
13. ensure all repaired and replaced components and units conform to the lift truck operating specification and any legal requirements
14. adjust components and units correctly to ensure that they operate to meet system requirements, when necessary
15. record and report any additional faults you notice during the course of work promptly
16. use testing methods which are suitable for assessing the performance of the system rectified
17. ensure the mechanical handling and chassis system rectified performs to

the lift truck operating specification and any legal requirements prior to return to the customer

18. ensure your records are accurate, complete and passed to the relevant person(s) promptly in the format required

19. complete all system diagnostic activities within the agreed timescale

20. report any anticipated delays in completion to the relevant person(s)in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to lift truck diagnostic and repair activities including PPE
2. legal requirements relating to the lift truck
3. your workplace procedures for:
3.1 recording fault location and correction activities
3.2 reporting the results of tests
3.3 the referral of problems
3.4 reporting delays to the completion of work
4. the importance of working to recognised diagnostic and rectification procedures and processes and obtaining the correct information for diagnostic and rectification activities to proceed
5. the importance and purpose of recording diagnostic and rectification activities
6. the importance of working to agreed timescales and keeping others informed of progress
7. the relationship between time, costs and profitability
8. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Electrical and electronic principles

9. electrical and electronic principles associated with mechanical handling and lift truck chassis systems, including types of sensors and actuators, their application and operation
10. how electrical and electronic mechanical handling and lift truck chassis systems operate, including electrical component function, motor controls, electrical inputs, outputs, voltages digital and fibre optics principles
11. the interaction between electrical, electronic and mechanical components within mechanical handling and lift truck chassis systems
12. how mechanical handling and lift truck chassis systems interlink and interact, including multiplexing
13. electrical units, terms and schematics
14. electrical safety procedures

Hydraulics and Hydraulic Principles

15. how hydraulic lift truck systems operate including rams, pumps, motors and valve blocks
16. how to inspect and test hydraulic systems and components
17. how to remove, strip and re-seal hydraulic system components

Use of diagnostic and rectification equipment

18. how to prepare and test the accuracy of diagnostic testing equipment
19. how to use diagnostic and rectification equipment for mechanical handling and chassis mechanical, electrical, hydraulic and fluid systems, specialist repair tools and general workshop equipment

Mechanical handling and chassis faults, their diagnosis and correction

20. how mechanical handling and chassis mechanical, electrical, electronic and hydraulic and fluid systems are constructed, dismantled, reassembled and operate
21. the types and causes of mechanical handling and chassis mechanical, electrical, electronic and hydraulic and fluid system, component and unit faults and failures
22. mechanical handling and chassis mechanical, electrical and hydraulic and fluid component and unit replacement procedures, the circumstances which will necessitate replacement and other possible courses of action
23. how to find, interpret and use sources of information on chassis electrical operating specifications, diagnostic test procedures, repair procedures and legal requirements
24. lift truck operating specifications for limits, fits, pressures and tolerances relating the mechanical handling and chassis mechanical, electrical, electronic and hydraulic and fluid systems for the lift truck(s) on which you work
25. how to select the most appropriate diagnostic testing method for the symptoms presented
26. how to carry out systematic diagnostic testing of mechanical handling and chassis
27. mechanical, electrical and electronic, hydraulic and fluid systems using a prescribed process or format
28. how to assess the condition evident within mechanical handling and chassis mechanical, electrical, electronic, hydraulic and fluid components and units
29. how to interpret test results and lift truck data in order to identify the location and cause of lift truck system faults

30. how to carry out the rectification activities listed in the Scope for this standard in order to correct faults in the mechanical handling and chassis mechanical, electrical, electronic and hydraulic and fluid systems
31. the relationship between test methodology and the faults repaired – the use of appropriate testing methods
32. how to make cost effective recommendations for rectification

Scope/range

Scope of this standard

1. Mechanical handling and chassis systems include:
a. mast and carriage assemblies
b. steering
c. braking
d. axle stability systems
e. hydraulic systems

2. Diagnostic methods include:
a. measurement
b. functional testing
c. electrical and electronic systems testing

3. Equipment includes:
a. diagnostic and rectification equipment for mechanical handling and chassis
b. mechanical systems
c. diagnostic and rectification equipment for mechanical handling and chassis electrical systems
d. diagnostic and rectification equipment for mechanical handling and chassis hydraulic and fluid systems
e. specialist repair tools
f. general workshop equipment

4. Faults can be:
a. mechanical
b. electrical and electronic
c. hydraulic and fluid

IMILT08

Diagnose and rectify lift truck mechanical handling and chassis system faults

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Suite	Maintenance and Repair - Lift Truck
Keywords	Diagnose and rectify lift truck mechanical handling chassis system faults

IMILT012

Remove and replace lift truck driveline units and components

Overview

This standard is about removing and replacing units and components where dismantling and re-assembly of transmission and driveline systems is required. It is also about evaluating the performance of replaced units and components. The units and components concerned are those outside those replaced as part of normal routine, lift truck maintenance (servicing) activities.

Performance criteria

You must be able to:

1. wear suitable personal protective equipment throughout all removal and replacement activities
2. support your removal and replacement activities by reviewing:
2.1 lift truck technical data
2.2 removal and replacement procedures
2.3 legal requirements
3. prepare, set up, test and use all the equipment required following manufacturers' instructions
4. carry out all removal and replacement activities following;
4.1 manufacturers' instructions
4.2 recognised repair methods
4.3 health and safety requirements
5. work in a way which minimises the risk of:
5.1 damage to other lift truck systems
5.2 damage to other lift truck components and units
5.3 injury to yourself and others
5.4 contact with hazardous substances
5.5 damage to your working environment
5.6 instability when working on the lift truck
6. ensure replaced driveline units and components conform to the lift truck operating specification and any legal requirements
7. record and report any additional faults you notice during the course of your work promptly
8. use suitable testing methods to evaluate the performance of the reassembled system
9. ensure the reassembled driveline system performs to the lift truck operating specification and meets any legal requirements prior to return to the customer
10. ensure the reassembled transmission system performs to the lift truck operating specification and meets any legal requirements prior to return to the customer
11. ensure your records are accurate, complete and passed to the relevant person(s) in authority promptly in the format required
12. complete all removal and replacement activities within the agreed timescale
13. report any expected delays in completion to the relevant person(s) in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the legal requirements relating to the lift truck (including road safety requirements)
2. the health and safety legislation and workplace procedures relevant to lift truck maintenance activities and personal and lift truck protection
3. your workplace procedures for:
3.1 recording removal and replacement information
3.2 the referral of problems
3.3 reporting delays to the completion of work
4. the importance and purpose of recording removal and replacement activities
5. the importance of working to agreed timescales and keeping others informed of progress
6. the relationship between time and costs
7. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Use of technical information

8. how to find, interpret and use sources of information applicable to unit and component removal and replacement within transmission and driveline systems
9. the importance of using the correct sources of technical information
10. the purpose of and how to use identification codes

Electrical and electronic principles

11. lift truck earthing methods
12. electrical and electronic principles associated with transmission and driveline systems, including types of sensors and actuators, their application and operation
13. types of circuit protection and why these are necessary
14. electrical safety procedures
15. electrical units, terms and schematics
16. electronic control system principles

Transmission and driveline system operation and construction

17. how transmission and driveline systems and their related units and components are constructed, removed and replaced for the classification of lift truck worked upon
18. how transmission and driveline systems and their related units and components operate for the classification of lift truck worked upon
19. transmission schematic symbols and diagrams

Equipment

20. how to prepare, inspect and use all the removal and replacement equipment required

Transmission and driveline system unit and component removal and replacement

21. how to remove and replace transmission and driveline system mechanical, electrical and hydraulic units and components for the classification of lift truck worked upon
22. how to file, fit, tap, thread, cut and drill plastics and metals
23. how to select and use gaskets, sealants, seals, fittings and fasteners
24. how to test and evaluate the performance of replacement transmission and driveline system units and components and the reassembled system against the lift truck operating specifications and any legal requirements
25. the relationship between testing methods and the transmission system units and components replaced and – the use of appropriate test methods
26. the relationship between testing methods and the driveline system units and components replaced
27. when replacement units and components must meet the original equipment specification (OES) for warranty or other requirements
28. how to work safely avoiding damage to other lift truck systems, components and units and contact with leakage and hazardous substances relating to yourself and the environment

Scope/range

Scope of this standard

1. Equipment includes:
a. hand tools
b. special workshop tools
c. general workshop equipment
d. electrical testing equipment

2. Testing methods include:
a. visual
b. aural
c. functional
d. measurement

3. Units and components include:
a. mechanical
b. electrical
c. hydraulic

4. Transmission and driveline systems include:
a. powershift units
b. hubs and bearings
c. driveline shafts
d. torque converters
e. control valves
f. final drive units
g. motor control units
h. hydrostatic
i. generator

IMILT012

Remove and replace lift truck driveline units and components

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Relevant Occupations	Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller
Suite	Maintenance and Repair - Lift Truck
Keywords	Remove replace lift truck driveline units components

IMILT013

Diagnose and rectify lift truck transmission and driveline system faults

Overview

This standard is about diagnosing and rectifying faults occurring within lift truck gearboxes (hydrostatic, automatic or powershift types), hubs and bearings, driveline shafts, differentials and final drive units.

Performance criteria

You must be able to:

1. wear suitable personal protective equipment throughout all diagnostic methods and rectification activities
2. support the identification of faults, by reviewing lift truck:
2.1 technical data
2.2 diagnostic test procedures
3. prepare, connect and test all the required equipment following manufacturers' instructions prior to use
4. use diagnostic methods which are relevant to the symptoms presented
5. collect diagnostic information in a systematic way relevant to the diagnostic methods used
6. collect sufficient diagnostic information to enable an accurate diagnosis of transmission and driveline system faults
7. identify and record any system deviation from acceptable limits accurately
8. ensure your assessment of dismantled sub-assemblies, components and units identifies their condition and suitability for repair or replacement, accurately
9. inform the relevant person(s) promptly where repairs are uneconomic or unsatisfactory to perform
10. use the equipment required correctly and safely throughout all rectification activities
11. carry out all rectification activities following:
11.1 manufacturers' instructions
11.2 your workplace procedures
11.3 health and safety requirements.
12. work in a way which minimises the risk of :
12.1 damage to other lift truck systems
12.2 damage to other components and units
12.3 injury to yourself and others
12.4 contact with hazardous substances
12.5 instability when working on the lift truck
13. ensure all repaired and replaced components and units conform to the lift truck operations specification and any legal requirements
14. adjust components and units correctly to ensure that they operate to meet system requirements, when necessary
15. record and report any additional faults you notice during the course of work promptly
16. use testing methods which are suitable for assessing the performance of the system rectified
17. ensure the transmission and driveline system rectified performs to the lift

truck operating specification and any legal requirements prior to return to the customer

18. ensure your records are accurate, complete and passed to the relevant person(s) promptly in the format required

19. complete all system diagnostic activities within the agreed timescale

20. report any anticipated delays in completion to the relevant person(s) in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to diagnosing and rectifying driveline faults including PPE
2. legal requirements relating to the lift truck
3. your workplace procedures for:
3.1 recording fault location and correction activities
3.2 reporting the results of tests
3.3 the referral of problems
3.4 reporting delays to the completion of work
4. the importance of working to recognised diagnostic procedures and processes and obtaining the correct information for diagnostic activities to proceed
5. the importance and purpose of recording diagnostic and rectification activities
6. the importance of working to agreed timescales and keeping others informed of progress
7. the relationship between time, costs and profitability
8. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Electrical and electronic principles

9. electrical and electronic principles associated with transmission and driveline systems, including types of sensors and actuators, their application and operation
10. how electrical and electronic transmission and driveline systems operate, including electrical component function, electrical inputs, outputs, voltages and oscilloscope patterns, digital and fibre optics principles
11. the interaction between electrical, electronic and mechanical components within lift truck transmission and driveline systems
12. how transmission and driveline electrical systems interlink and interact, including multiplexing
13. electric, units, terms and schematics
14. electrical safety procedures

Use of diagnostic and rectification equipment

15. how to prepare and test the accuracy of diagnostic testing equipment
16. how to use diagnostic and rectification equipment for transmission and driveline mechanical, electrical, hydraulic and fluid systems, specialist repair tools and general workshop equipment

Transmission and driveline faults, their diagnosis and correction

17. how transmission and driveline mechanical, electrical, electronic and hydraulic and fluid systems are constructed, dismantled, reassembled and operate
18. the types and causes of transmission and driveline mechanical, electrical, electronic and hydraulic and fluid system, component and unit faults and failures
19. transmission and driveline mechanical, electrical and hydraulic and fluid component and unit replacement procedures, the circumstances which will necessitate replacement and other possible courses of action
20. how to find, interpret and use sources of information on transmission and driveline electrical operating specifications, diagnostic test procedures, repair procedures and legal requirements
21. lift truck operating specifications for limits, fits and tolerances relating to transmission and driveline mechanical, electrical, electronic and hydraulic and fluid systems for the lift truck(s) on which you work
22. how to select the most appropriate diagnostic testing method for the symptoms presented
23. how to carry out systematic diagnostic testing of transmission and driveline mechanical, electrical and electronic, hydraulic and fluid systems using a prescribed process or format
24. how to assess the condition evident within transmission and driveline mechanical, electrical, electronic, hydraulic and fluid components and units
25. how to interpret test results and lift truck data in order to identify the location and cause of lift truck system faults
26. how to carry out the rectification activities listed in the Scope for this standard in order to correct faults in the transmission and driveline mechanical, electrical, electronic and hydraulic and fluid systems
27. the relationship between test methodology and the faults repaired – the use of appropriate testing methods
28. how to make cost effective recommendations for rectification

Scope/range

Scope of this standard

1. Transmission and driveline systems include:
a. gearbox
b. hubs and bearings
c. driveline shafts
d. torque converter
e. final drive assembly

2. Diagnostic methods include:
a. measurements
b. functional testing
c. pressure testing
d. electrical and electronic systems testing

3. Equipment includes:
a. diagnostic and rectification equipment for transmission mechanical
b. systems
c. diagnostic and rectification equipment for transmission electrical systems
d. diagnostic and rectification equipment for transmission hydraulic and fluid systems
e. specialist repair tools
f. general workshop equipment

5. Faults can be:
a. mechanical
b. electrical and electronic
c. hydraulic and fluid

Glossary

1. **Diagnostic Testing** is defined as:

a. verify the fault
b. collect further information
c. evaluate the evidence
d. carry out further tests in a logical sequence
e. rectify the problem
f. check all systems

2. **Rectification activities** are defined as:

A suitable repair or replacement that rectifies the fault(s) identified from the diagnostic activities carried out.

IMILT013

Diagnose and rectify lift truck transmission and driveline system faults

Developed by	IMI
Version Number	2
Date Approved	December 2014
Indicative Review Date	December 2017
Validity	Current
Status	Original
Originating Organisation	IMI
Original URN	IMILT013
Relevant Occupations	Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller
Suite	Maintenance and Repair - Lift Truck
Keywords	Diagnose rectify lift truck transmission driveline system faults

IMILT014

Diagnose lift truck faults where no prescribed process or format is available

Overview

This standard is about devising and implementing strategies to diagnose faults when the application of standard manufacturer diagnostic procedures has failed to reveal the source and cause of problems. You are also required to identify the best course of action to be taken to correct problems.

Diagnose lift truck faults where no prescribed process or format is available

Performance criteria

You must be able to:

1. use suitable personal protective equipment throughout all lift truck diagnostic and repair activities
2. confirm with the relevant people that all standard diagnostic procedures and techniques have been systematically and correctly applied to the lift truck prior to undertaking further work
3. analyse all previous system fault information, diagnostic test methods and results
4. verify the inconclusive results correctly prior to undertaking further work
5. liaise with the relevant manufacturer's representative to obtain up to date information, advice and guidance relevant to the identified fault, when necessary
6. use diagnostic methods which are relevant to the symptoms presented
7. collect diagnostic information in a systematic and structured way which progressively eliminates all possible causes of the fault
8. apply the checks and tests that are most likely to be effective in revealing the cause of the fault
9. carry out all diagnostic activities following:
9.1 your workplace procedures
9.2 health and safety requirements
10. work in a way which minimises the risk of :
10.1 damage to other vehicle systems
10.2 damage to other components and units
10.3 injury to yourself or others
10.4 contact with hazardous substances
10.5 instability of the lift truck
11. use any equipment required, correctly and safely throughout all diagnostic and rectification activities
12. collect sufficient diagnostic information to enable an accurate diagnosis of the fault
13. correctly identify the cause(s) of the fault
14. identify and record any system deviation from acceptable limits accurately
15. ensure your assessment of dismantled sub-assemblies, components and units accurately identifies their condition and suitability for repair or replacement
16. make clear recommendations for a suitable course of action to rectify the fault
17. inform the relevant person(s) promptly where repairs are uneconomic or unsatisfactory to perform
18. complete all system checks and tests in the most cost and time effective way for the fault presented

19. complete all system diagnostic activities within the agreed timescale
20. ensure your records are accurate, complete and passed to the relevant person(s) promptly in the format required
21. report any anticipated delays in completion to the relevant person(s) in authority promptly

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to workshop practices and relevant PPE for safe working with lift trucks
2. legal requirements relating to the lift truck
3. your workplace procedures for:
3.1 recording fault location and correction activities
3.2 reporting the results of tests
3.3 the referral of problems
3.4 reporting delays to the completion of work
4. how to formulate and construct your own diagnostic procedures and processes in order for diagnostic activities to proceed
5. the importance and purpose of reporting diagnostic and rectification activities
6. the importance of working to agreed timescales and keeping others informed of progress
7. the relationship between time, costs and profitability
8. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Electrical and electronic principles

9. electrical and electronic principles including types of sensors and actuators, their application and operation
10. how electrical and electronic vehicle systems operate, including electrical component function, electrical inputs, outputs, voltages and oscilloscope patterns, digital and fibre optics principles
11. the interaction between electrical, electronic and mechanical and hydraulic components within a vehicle
12. how mechanical, hydraulic and electrical systems interlink and interact, including multiplexing
13. electric, units terms and schematics
14. electrical safety procedures

Use of diagnostic and rectification equipment

15. how to prepare and test the accuracy of diagnostic testing equipment
16. how to use diagnostic and rectification equipment for mechanical, electrical, hydraulic and fluid systems, specialist repair tools and general workshop

equipment

Faults - diagnosis and correction

17. how lift truck mechanical, electrical, electronic and hydraulic and fluid systems are constructed, dismantled, reassembled and operate
18. the types and causes of lift truck mechanical, electrical, electronic and hydraulic and fluid system, component and unit faults and failures
19. lift truck mechanical, electrical and hydraulic and fluid component and unit replacement procedures, the circumstances which will necessitate replacement and other possible courses of action
20. how to find, interpret and use sources of information on lift truck mechanical, electrical and hydraulic and fluid system specifications, diagnostic test procedures, repair procedures and legal requirements
21. lift truck operating specifications for limits, fits and tolerances relating to vehicle mechanical, electrical and hydraulic and fluid systems for the vehicle(s) on which you work
22. how to select the most appropriate diagnostic testing method for the symptoms presented
23. how to carry out systematic diagnostic testing of lift truck mechanical, electrical and hydraulic and fluid systems
24. how to assess the condition evident within vehicle mechanical, electrical and hydraulic and fluid
25. how to interpret, evaluate and analyse test results and vehicle data in order to identify the location and cause of lift truck system faults
26. how to carry out the rectification activities in order to correct faults in the lift truck mechanical, electrical and hydraulic and fluid systems
27. your workplace policy and procedures for:
27.1 work carried out under warranty
27.2 liaising with manufacturers and outside agencies
28. the relationship between test methodology and the faults repaired – the use of appropriate testing methods
29. how to make cost effective recommendations for rectification

Diagnose lift truck faults where no prescribed process or format is available

Scope/range

Scope of this standard

1. Causes of faults can include:
a. mechanical
b. electrical
c. electronic
d. hydraulic

2. Faults can include the:
a. power plant area
b. transmission and driveline area
c. mechanical handling and chassis system area
d. electrical units and components area

3. Diagnostic methods include:
a. measurement
b. functional testing
c. electrical and electronic systems testing

4. Equipment includes:
a. diagnostic and rectification equipment for mechanical systems
b. diagnostic and rectification equipment for electrical systems
c. diagnostic and rectification equipment for hydraulic and fluid systems
d. specialist repair tools
e. general workshop equipment

Glossary

1. **Diagnostic Testing** is defined as:

a. verify the fault

b. collect further information

c. evaluate the evidence

d. carry out further tests in a logical sequence

e. rectify the problem

f. check all systems

2. **Rectification activities** are defined as:

A suitable repair, replacement, re-coding or re-programming that rectifies the fault(s) identified from the diagnostic activities carried out.

IMILT014

Diagnose lift truck faults where no prescribed process or format is available

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Originating Organisation	IMI
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Relevant Occupations	Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller
Suite	Maintenance and Repair - Lift Truck
Keywords	Diagnose lift truck faults no prescribed process format available

IMILT015
Assist automotive workshop operations by providing technical support

Overview

This unit is about providing a range of technical support to other workshop and mobile colleagues. It includes ensuring technical information is up to date and giving technical advice, instruction and briefings to colleagues.

IMILT015

Assist automotive workshop operations by providing technical support

Performance criteria

You must be able to:

P1 vehicle technical information is up to date and accessible to workshop staff

P2 you check staff have the correct technical **resources** to carry out their work

P3 you identify any additional **resources** required correctly and promptly

P4 you report any problems affecting the operation of the workshop or working environment to your manager promptly

P5 you respond to requests for technical help and advice promptly and positively

P6 you provide colleagues with clear instruction on

- P6.1 product updates
- P6.2 technical tasks
- P6.3 what the results should be
- P6.4 how they should perform tasks and
- P6.5 the standard that must be achieved

P7 you deliver technical instruction and demonstrations in a manner and at a speed that is appropriate to the individual concerned

P8 you give on-going technical support and advice to colleagues

P9 your support and advice is technically accurate and in line with manufacturers' instructions and your organisation's requirements

P10 you choose the most effective situation for giving support and advice to colleagues

P11 you give colleagues time to consider your response and give further explanation when appropriate, checking they have fully understood

P12 you identify and correct mistakes in a way that supports your colleagues' self confidence and praise them when they perform tasks correctly

P13 you check the work of colleagues at regular intervals and take prompt action to resolve problems

P14 you suggest possible methods for improving the work of colleagues to your manager, when necessary

P15 you carry out your checks in a cost effective and efficient manner that is not detrimental to the smooth running of the workshop

IMILT015

Assist automotive workshop operations by providing technical support

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

K1 the health and safety legislation and workplace procedures relevant to workshop practices and relevant PPE for safe working with lift trucks

K2 legal requirements relating to the lift truck

K3 your workplace procedures for

- K3.1 recording fault location and **correction activities**
- K3.2 reporting the results of tests
- K3.3 the referral of problems
- K3.4 reporting delays to the completion of work
- K3.5 gaining up to date technical information and repair methods

K4 the importance of working to recognised diagnostic procedures and processes and obtaining the correct information for diagnostic activities to proceed and how to formulate and construct your own diagnostic procedures and processes in order for diagnostic activities to proceed

K5 the importance of, documenting diagnostic and rectification information

K6 the importance of working to agreed timescales and keeping others informed of progress

K7 the relationship between time, costs and profitability

K8 the importance of reporting anticipated delays to the relevant person(s) promptly

Electrical and electronic principles

K9 electrical and electronic principles including types of sensors and actuators, their application and operation

K10 how electrical and electronic vehicle systems operate, including electrical component function, electrical inputs, outputs, voltages and oscilloscope patterns, digital and fibre optics principles

K11 the interaction between electrical, electronic and mechanical and hydraulic components within a vehicle

K12 how mechanical, hydraulic and electrical systems interlink and interact, including multiplexing

K13 electrical symbols, units and terms

K14 electrical safety procedures

Use of diagnostic and rectification equipment

K15 how to prepare and test the accuracy of diagnostic testing equipment

K16 how to use diagnostic and rectification equipment for mechanical, electrical, hydraulic and fluid systems, specialist repair tools and general workshop equipment

Faults - diagnosis and correction

K17 how lift truck mechanical, electrical, electronic and hydraulic and fluid systems are constructed, dismantled, reassembled and operate

K18 the types and causes of lift truck mechanical, electrical, electronic and hydraulic and fluid system, component and unit faults and failures

K19 lift truck mechanical, electrical and hydraulic and fluid component and unit replacement procedures, the circumstances which will necessitate replacement and other possible courses of action

K20 how to find, interpret and use sources of information on lift truck mechanical, electrical and hydraulic and fluid system specifications, diagnostic test procedures, repair procedures and legal requirements

K21 lift truck operating specifications for limits, fits and tolerances relating to vehicle mechanical, electrical and hydraulic and fluid systems for the vehicle(s) on which you work

K22 how to select the most appropriate diagnostic testing method for the symptoms presented

K23 how to carry out systematic diagnostic testing of lift truck mechanical, electrical and hydraulic and fluid systems

K24 how to assess the condition evident within lift truck mechanical, electrical and hydraulic and fluid

K25 how to interpret, evaluate and analyse test results and vehicle data in order to identify the location and cause of lift truck system faults

K26 how to carry out the **rectification activities** in order to correct faults in the lift truck mechanical, electrical and hydraulic and fluid systems

K27 your workplace procedure, policy and procedure for
K27.1 work carried out under warranty
K27.2 liaising with manufacturers and outside agencies

K28 the relationship between test methodology and the faults repaired – the use of appropriate testing methods

K29 how to make cost effective recommendations for rectification

Personal Skills

K30 give straightforward presentations on technical matters

K31 file and store technical information

K32 instruct colleagues and demonstrate tasks clearly and correctly

K33 conduct effective checks of your colleague’s work

K34 choose the best action to take when work is not in line with requirements

K35 discuss colleagues’ work with them in a way that will encourage them to be positive and not lead to conflict

K36 give advice and guidance in a way that is appropriate to the colleague you are supporting

K37 recognise a training need

K38 what might happen if you undermine colleagues’ self confidence when correcting mistakes

K39 the importance of liaising with your manager when evaluating others'

	work and giving feedback
K40	the importance of continuous development and learning

IMILT015

Assist automotive workshop operations by providing technical support

Additional Information

Scope/range related to performance criteria

1. Information, Advice and Guidance may be about any of the following:

1.1. mechanical fault finding
1.2. electrical fault finding
1.3. electronic fault finding
1.4. hydraulic fault finding
1.5. customer handling
1.6. load testing
1.7. time
1.8. tools
1.9. equipment
1.10. materials
1.11. technical information

IMILT015

Assist automotive workshop operations by providing technical support

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Indicative review date	February 2012
Validity	Current
Status	Original
Originating organisation	IMI Ltd
Original URN	5
Relevant occupations	Engineering; Vehicle Trades
Suite	Maintenance and Repair - Lift Truck
Key words	Assist Automotive Workshop Operations Providing Technical Support

IMILT016

Liaise with lift truck and product manufacturers on technical matters

Overview

This standard covers obtaining and providing information to and from manufacturers and suppliers for diagnostic activities, warranty activities, repairs and to support product development.

Performance criteria

You must be able to:

1. maintain knowledge of current technical developments and information for the lift trucks you handle
2. seek assistance from manufacturers only when the prescribed diagnostic processes have failed
3. provide information at the level of detail necessary and in a form and manner which the recipient will understand and accept
4. report technical problems and quality issues promptly in line with manufacturer's requirements
5. collect sufficient, detailed information on the lift truck, the problem and action taken prior to contacting the manufacturer
6. ensure that requests for information to manufacturers are made clearly and promptly
7. respond to requests for information from manufacturers within the specified timescale
8. ensure that all information received from manufacturers is passed on to the relevant person(s) promptly
9. report any anticipated delays in obtaining or providing information to the relevant person(s) promptly
10. ensure your reports and technical information are complete, accurate and in the format required
11. suggest possible methods for improving the reporting process to your manager, when required
12. carry out reporting in an effective and efficient manner that is not detrimental to the smooth running of the workshop

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. how and where to access information regarding current technical development and information for the lift trucks handled
2. the health and safety legislation and workplace procedures relevant to workshop practices and relevant PPE for safe working with lift trucks
3. legal requirements relating to the lift truck
4. your workplace procedures for:
4.1 recording fault location and correction activities
4.2 reporting the results of tests
4.3 the referral of problems
4.4 reporting delays to the completion of work
4.5 gaining up to date technical information and repair methods
4.6 recording contact with suppliers, manufacturers and suppliers
4.7 reporting technical problems and quality issues promptly in line with manufacturers' requirements
5. the importance of working to recognised diagnostic procedures and processes and obtaining the correct information for diagnostic activities to proceed and how to formulate and construct your own diagnostic procedures and processes in order for diagnostic activities to proceed
6. the importance of and how to collect sufficient, detailed information on the lift truck, the problem and action taken prior to contacting the manufacturer
7. the importance and purpose of reporting diagnostic and rectification activities
8. the importance of working to agreed timescales and keeping others informed of progress
9. the relationship between time, costs and profitability
10. the importance of reporting anticipated delays to the relevant person(s) in authority promptly

Electrical and electronic principles

11. electrical and electronic principles including types of sensors and actuators, their application and operation
12. how electrical and electronic vehicle systems operate, including electrical component function, electrical inputs, outputs, voltages and oscilloscope patterns, digital and fibre optics principles
13. the interaction between electrical, electronic and mechanical and hydraulic components within a vehicle

14. how mechanical, hydraulic and electrical systems interlink and interact, including multiplexing
15. electric units, terms and schematics
16. electrical safety procedures

Use of diagnostic and rectification equipment

17. how to prepare and test the accuracy of diagnostic testing equipment
18. how to use diagnostic and rectification equipment for mechanical, electrical, hydraulic and fluid systems, specialist repair tools and general workshop equipment

Faults - diagnosis and correction

19. how lift truck mechanical, electrical, electronic and hydraulic and fluid systems are constructed, dismantled, reassembled and operate
20. the types and causes of lift truck mechanical, electrical, electronic and hydraulic and fluid system, component and unit faults and failures
21. lift truck mechanical, electrical and hydraulic and fluid component and unit replacement procedures, the circumstances which will necessitate replacement and other possible courses of action
22. how to find, interpret and use sources of information on lift truck mechanical, electrical and hydraulic and fluid system specifications, diagnostic test procedures, repair procedures and legal requirements
23. lift truck operating specifications for limits, fits and tolerances relating to vehicle mechanical, electrical and hydraulic and fluid systems for the vehicle(s) on which you work
24. how to select the most appropriate diagnostic testing method for the symptoms presented
25. how to carry out systematic diagnostic testing of lift truck mechanical, electrical and hydraulic and fluid systems
26. how to assess the condition evident within lift truck mechanical, electrical and hydraulic and fluid systems
27. how to interpret, evaluate and analyse test results and lift truck data in order to identify the location and cause of vehicle system faults
28. how to carry out the **rectification activities** in order to correct faults in the lift truck mechanical, electrical and hydraulic and fluid systems
29. your workplace policy and procedures for:
29.1 work carried out under warranty
29.2 liaising with manufacturers and outside agencies
30. the relationship between test methodology and the faults repaired – the use

of appropriate testing methods
31. how to make cost effective recommendations for rectification

Personal Skills

32. how to communicate effectively with manufacturers, managers, colleagues and customers access the reporting system
33. how to process information and compile reports accurately and efficiently
34. when it is appropriate to contact the manufacturer and or supplier
35. the limits of your authority and that of the designated personnel when liaising with the manufacturer or supplier
36. the importance of the reporting process and how to suggest possible methods for improvement

Scope/range

Scope of this standard:

1. Information, Advice and Guidance includes:
a. mechanical fault finding
b. electrical fault finding
c. electronic fault finding
d. hydraulic fault finding
e. customer handling
f. load testing
g. time
h. tools
i. equipment
j. materials
k. technical information

Glossary

3. **Rectification activities** are defined as:
A suitable repair, replacement, re-coding or re-programming that rectifies the fault(s) identified

IMILT016

Liaise with lift truck and product manufacturers on technical matters

Developed by	IMI
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Originating Organisation	IMI
Original URN	IMILT016
Relevant Occupations	Lift Truck Service Technician (Automotive); Lift Truck Trailer Diagnostic Technician (Automotive); Lift Truck Trailer Master Technician (Automotive); Lift Truck Workshop Controller
Suite	Maintenance and Repair - Lift Truck
Keywords	Liaise lift truck product manufacturers technical matters

IMILT017

Provide lift truck diagnostic equipment and technical information system support

Overview

This standard covers the skills and knowledge involved in updating technical information systems and diagnostic equipment. It also includes testing for, and rectifying, equipment and system problems.

Performance criteria

You must be able to:

1. use safe working practices when dealing with diagnostic equipment and technical information systems
2. carry out installation of updates promptly following delivery
3. load software correctly following the manufacturers' instructions
4. set the configuration options according to:
4.1 manufacturers' specification
4.2 your workplace procedures
4.3 your workplace preferences
5. take prompt and effective corrective actions to resolve any errors occurring during the loading of the software within the limits of your workplace responsibilities
6. complete any specified product registration procedures promptly and accurately, when necessary
7. inform all relevant persons of the completion of the software installation promptly
8. advise the relevant people of any new features and changes to existing functionality promptly
9. test the diagnostic equipment and technical information system effectively using the specified self test function(s) to identify the cause and solution, in the event of a fault
10. take prompt and effective actions to resolve any identified problems in diagnostic equipment and technical information systems using the self test instructions
11. contact external support services only when the self test function fails to identify the cause of and solution to problems
12. inform the relevant person(s) of any unresolved loading errors and equipment problems promptly and clearly
13. source alternative diagnostic equipment if equipment has to be sent away for repair
14. inform the relevant person(s) promptly if equipment has to be sent away for repair
15. inform the relevant person(s) promptly if alternative diagnostic equipment needs to be used/sourced

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to workshop practices and relevant PPE for safe working with lift trucks
2. legal requirements relating to the lift truck
3. your workplace procedures for:
3.1 obtaining diagnostic software updates
3.2 loading technical information system and diagnostic software to specified destinations
3.3 ordering and fitting diagnostic equipment and technical system equipment replacement and spare parts
3.4 informing others that a technical/software update has taken place
4. the importance of recording the version number / issue date of the software and updates used
5. how to effectively solve minor errors in the loading of technical information system and diagnostic software
6. how to accurately complete product registration procedures
7. how to set the configuration options
8. how to identify faults using the self test function(s)
9. how to resolve equipment and technical information system problems using the self test function(s) and external support services
10. how to access system support services
11. diagnostic equipment and technical information system software loading instructions
12. the types and causes of errors that can arise during loading of diagnostic equipment and technical information systems software
13. the need for correct configuration settings
14. the procedures for reporting problems
15. the legal requirements governing the use of software
16. why the prompt installation of software is important
17. when to apply self test function(s)
18. the importance of advising people of changes to diagnostic equipment functionality promptly
19. the importance of reporting equipment / software faults and failures to the relevant person(s) promptly

Provide lift truck diagnostic equipment and technical information system support

Scope/range

Scope of this standard

1. Causes of faults include:
a. mechanical
b. electrical
c. electronic

2. Faults include:
a. software
b. hardware

IMILT017

Provide lift truck diagnostic equipment and technical information system support

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Suite	Maintenance and Repair - Lift Truck
Keywords	Provide lift truck diagnostic equipment technical information system support

IMILT018

Conduct diagnostic consultations with lift truck customers

Overview

This standard is about carrying out a diagnostic consultation with customers to investigate their concerns relating to their lift truck. It also includes making recommendations to ensure that the customer's concerns are addressed and explaining the results of diagnostic activities so that customers fully understand what the problem with their lift truck is.

Performance criteria

You must be able to:

1. respond to customers' concerns in a positive and friendly manner
2. give a positive impression of yourself and your organisation when dealing with customers
3. obtain sufficient, detailed information using suitably structured questions
4. carry out a suitable functional test to obtain further detailed information on, or clarification of, customer's concerns, when appropriate
5. provide customers with accurate, current and relevant advice and information on any further investigation(s) needed
6. explain the implications of any investigation(s) that may be needed clearly
7. give technical advice and information accurately, clearly and in a form and manner that the customer will understand
8. make clear and relevant recommendations for the next course of action
9. liaise with the customer and or other relevant person(s) to agree the next course of action
10. explain to customers the action that has been taken regarding their vehicle clearly, when appropriate
11. complete records accurately and in the format required and signed by the customer, when necessary
12. suggest possible methods for improving the customer care process to your manager, when necessary

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to workshop practices and relevant PPE for safe working with lift trucks
2. legal requirements relating to the lift truck
3. your workplace procedures for:
3.1 recording fault location and correction activities
3.2 reporting the results of tests
3.3 the referral of problems
3.4 reporting delays to the completion of work
3.5 gaining up to date technical information and repair methods
4. the importance of working to recognised diagnostic procedures and processes and obtaining the correct information for diagnostic activities to proceed and how to formulate and construct your own diagnostic procedures and processes in order for diagnostic activities to proceed
5. the importance and purpose of reporting diagnostic and rectification activities
6. the relationship between time, costs and profitability
7. the importance of reporting anticipated delays to the relevant person(s) promptly

Electrical and electronic principles

8. electrical and electronic principles including types of sensors and actuators, their application and operation
9. how electrical and electronic vehicle systems operate, including electrical component
10. function, electrical inputs, outputs, voltages and oscilloscope patterns, digital and fibre optics principles
11. the interaction between electrical, electronic and mechanical and hydraulic components within a vehicle
12. how mechanical, hydraulic and electrical systems interlink and interact, including multiplexing
13. electrical units, terms and schematics
14. electrical safety procedures

Faults - diagnosis and correction

15. how lift truck mechanical, electrical, electronic and hydraulic and fluid

systems are constructed, dismantled, reassembled and operate
16. the types and causes of lift truck mechanical, electrical, electronic and hydraulic and fluid system, component and unit faults and failures
17. lift truck mechanical, electrical and hydraulic and fluid component and unit replacement procedures, the circumstances that will necessitate replacement and other possible courses of action
18. how to find, interpret and use sources of information on lift truck mechanical, electrical and hydraulic and fluid system specifications, diagnostic test procedures, repair procedures and legal requirements
19. lift truck operating specifications for limits, fits and tolerances relating to vehicle mechanical, electrical and hydraulic and fluid systems for the vehicle(s) on which you work
20. how to carry out systematic diagnostic testing of lift truck mechanical, electrical and hydraulic and fluid systems
21. how to interpret, evaluate and analyse test results and vehicle data in order to identify the location and cause of lift truck system faults
22. how to carry out the rectification activities in order to correct faults in the lift truck mechanical, electrical and hydraulic and fluid systems
23. your workplace procedure, policy and procedure for:
23.1 work carried out under warranty
23.2 liaising with manufacturers and outside agencies
24. the relationship between test methodology and the faults repaired – the use of appropriate testing methods
25. how to make cost effective recommendations for rectification

Personal Skills

26. how to give straightforward presentations on technical matters
27. how to communicate effectively with and listen to customers
28. how to present yourself in a positive and professional manner to customers
29. how to recognise and handle different customer reactions
30. how to adapt your language when explaining technical matters to customers
31. how to use effective questioning techniques
32. how to care for customers and achieve customer satisfaction
33. your organisation's requirements for personal appearance and conduct when dealing with customers
34. how successful resolution of customer concerns and problems contributes to customer loyalty and improves relationships
35. the importance of the customer care process and how to suggest possible methods for improvement

IMILT018

Conduct diagnostic consultations with lift truck customers

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Suite	Maintenance and Repair - Lift Truck
Keywords	Conduct diagnostic consultations with lift truck customers

IMIAEMEI06

Diagnose and rectify motor vehicle electrical unit and component faults

Overview

This standard is about identifying and rectifying electrical faults occurring within a variety of electrical systems

Performance criteria

You must be able to:

1. select and wear appropriate personal protective equipment and use vehicle coverings when using electrical testing techniques and carrying out **rectification activities**
2. support the identification of electrical faults, by reviewing vehicle:
2.1 technical data
2.2 diagnostic test procedures
3. prepare, connect and test all the required electrical and electronic testing equipment following manufacturers' instructions prior to use
4. use electrical and electronic testing techniques which are relevant to the symptoms presented
5. collect sufficient diagnostic information in a systematic way to enable an accurate diagnosis of electrical system faults
6. identify and record any system deviation from acceptable limits
7. make cost effective, accurate recommendations for rectification based upon your analysis of the diagnostic information gained
8. use all tools and equipment required for your diagnostic and rectification activities, correctly and safely throughout
9. carry out all diagnostic & rectification activities following:
9.1 manufacturers' instructions
9.2 recognised researched repair methods
9.3 health and safety requirements
10. work in a way that minimises the risk of:
10.1 damage to other vehicle systems
10.2 damage to other components and units
10.3 contact with leakages
10.4 contact with hazardous substances
10.5 injury to yourself and others
11. ensure all repaired and replaced electrical components and units conform to the vehicle operating specification and any legal requirements
12. adjust components and units correctly to ensure that they operate to meet system requirement, wehn necessary
13. ensure the rectified electrical system performs to the vehicle operating specification and
any legal requirements prior to handover to the customer
14. ensure your records are accurate, complete and passed to the relevant person(s)promptly in the format required
15. complete all diagnostic and rectification activities within the agreed timescale
16. report any anticipated delays in completion to the relevant person(s)

promptly

Knowledge and understanding

You need to know and understand:

1. the current health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection when diagnosing and rectifying complex electrical faults
2. legal requirements relating to the vehicle electrics (including road safety and refrigerant handling requirements)
3. your workplace procedures for:
3.1 recording fault location and correction activities
3.2 reporting the results of tests
3.3 the referral of problems
3.4 reporting delays to the completion of work
4. the importance of working to recognised diagnostic procedures and processes and obtaining the correct information for diagnostic activities to proceed
5. the importance of documenting diagnostic and rectification information
6. the importance of working to agreed timescales and keeping others informed of progress
7. the relationship between time, costs and profitability
8. the importance of reporting anticipated delays to the relevant person(s) promptly
9. electrical and electronic principles, including Ohms Law, voltage, power, current (AC/DC) resistance, magnetism, electromagnetism and electromagnetic induction, digital and fibre optics principles
10. electrical symbols, units and terms
11. electrical safety procedures
12. how electrical and electronic units and components are constructed, dismantled and reassembled
13. how electrical and electronic units and components operate, including electrical component function, electrical inputs, outputs, voltage/current variation and patterns
14. the interaction between electrical, electronic and mechanical components within the systems defined
15. how electrical systems interlink and interact, including multiplexing
16. the operation of the electrical and electronic systems for electric, hybrid and alternative fuel vehicles (including regenerative braking systems)
17. how to prepare and test the accuracy of diagnostic testing equipment
18. how to use electrical and electronic testing equipment to correctly and safely diagnose electrical faults
19. the types and causes of electrical system, component and unit faults and

failures
20. electrical component and unit replacement procedures, the circumstances which will necessitate replacement and other possible courses of action
21. how to find, interpret and use sources of information on electrical operating specifications, diagnostic test procedures, repair procedures and legal requirements
22. how to carry out systematic diagnostic testing of electrical and electronic systems using electrical testing techniques
23. how to select the most appropriate diagnostic testing method for the symptoms presented
24. how to interpret test results and vehicle data in order to identify the location and cause of vehicle system faults
25. how to rectify electrical and electronic faults
26. how to make suitable adjustments to components and units
27. how to make cost effective recommendations for rectification

Scope/range

1. Electrical faults can occur within the following systems:
a. Infotainment
b. Comfort and Convenience
c. Supplementary Restraint Systems (SRS)
d. Networking Systems
e. Body Electric Systems

2. Electrical and electronic testing equipment includes:
a. volt meters,
b. ammeters,
c. ohmmeters
d. multimeters
e. battery testing equipment
f. dedicated and computer based diagnostic equipment
g. oscilloscopes

3. Tools and equipment include:
a. hand tools
b. special purpose tools
c. general workshop equipment

4. Diagnostic Testing is defined as:
a. verify the fault
b. vollect further information
c. evaluate the evidence
d. carry out further tests in a logical sequence
e. rectify the problem
f. check all systems

5. Electrical and electronic testing techniques include:
a. voltage, resistance and current measuring
b. frequency measuring
c. visual
d. dedicated and computer based testing

Glossary

Rectification activities are defined as:
A suitable repair or replacement of a component(s) that rectifies the fault(s) identified from the diagnostic activities carried out

IMIAEMEI06

Diagnose and rectify motor vehicle electrical unit and component faults

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