



INSTITUTE
OF THE MOTOR
INDUSTRY

IMI QUALIFICATION



VCQ Assessment Record for

IMI Level 2 Diploma in Body Building Competence

I.D: 600/0286/4

*To be used in conjunction with learner guidance and practical and
written assessments (optional)*

For assessor only: Assessor and Verifier Guidance

CENTRE INFORMATION

Please be aware that any **legislation** referred to in this qualification may be subject to amendment/s during the life of this qualification. Therefore IMI Approved Centres must ensure they are aware of and comply with any amendments, e.g. to health and safety legislation and employment practices.

Please be aware that **vehicle technologies** referred to in this qualification reflect current practice, but may be subject to amendment/s, updates and replacements during the life of this qualification. Therefore IMI Approved Centres must ensure they are aware of the latest developments and emerging technologies to ensure the currency of this qualification.

Please note: the relevance of the information contained in the **unit content** will vary depending upon the vehicle types being worked upon. The unit content is for guidance only and is not meant to be prescriptive.

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Requests should be made in writing and addressed to:
Institute of the Motor Industry (IMI)
Fanshaws, Brickendon, Hertford SG13 8PQ



CONTACT SHEET

Learner Name:	
Learner Registration No:	
Learner Address:	
Learner Tel No:	
Learner Email:	
Employer Contact:	
Employer Name & Address:	
Employer Tel No:	

Please complete as appropriate:	
Witness Name:	Witness Name:
Witness Job Title:	Witness Job Title:
Witness Signature:	Witness Signature:
Witness Name:	Witness Name:
Witness Job Title:	Witness Job Title:
Witness Signature:	Witness Signature:
Assessor Name:	Assessor Name:
Assessor Signature:	Assessor Signature:
Assessor Name:	
Assessor Signature:	
Internal Verifier Name:	Internal Verifier Name:
Internal Verifier Signature:	Internal Verifier Signature:



IMI Level 2 Diploma in Body Building Competence

This qualification consists of 4 Mandatory Units, 9 Mandatory Specialist Units and 8 Optional Units.

All units are either Competency (C), Skills (S) or Knowledge (K) Units. The C, K or S units are combined to form a topic 'set'

Total TQT = 580

In order to pass the qualification, learners must achieve a minimum of 58 credits from the following groups:

Group A: 18 credits from the Mandatory Units.

Group B: 35 credits from the Mandatory Specialist Units

Group C: 5 credits from the Optional Units

Please note that every knowledge unit has an online test and the test number is the same as the 'set ref'.

Group A: Mandatory Units

Set Ref:	Unit Ref, Unit Title & I.D. Number	GLH	Unit Level	Credit Value
G0102	G0102C – Competency in Health, Safety and Good Housekeeping in the Automotive Environment (A/601/6338)	60	2	7
	G0102K – Knowledge of Health, Safety and Good Housekeeping in the Automotive Environment (D/601/6171)	30	2	3
G3	G3C – Competency in Supporting Job Roles in the Automotive Environment (K/601/6366)	40	3	5
	G3K – Knowledge of Support for Job Roles in the Automotive Environment (T/601/6175)	20	3	3



Group B: Mandatory Specialist Units

Set Ref:	Unit Ref, Unit Title & I.D. Number	GLH	Unit Level	Credit Value
BB02	BB02C - Competency in Removing and Fitting Non-permanently Fixed Commercial Vehicle Body Panels, Chassis and Cab Components. (F/502/6598)	30	2	3
	BB02K - Knowledge of Removing and Fitting Non-Permanently Fixed Commercial Vehicle Body Panels, Chassis and Cab Components (T/502/6615)	20	2	2
BB03	BB03C - Competency in Assembling Commercial Vehicle Body Components or Parts (J/502/6599)	70	2	10
	BB03K - Knowledge of Assembling Commercial Vehicle Body Components or Parts (Y/502/6610)	45	2	6
BB08	BB08K - Knowledge in Commercial Vehicle Body Building Construction and Materials (D/502/6818)	30	2	3
BP24	BP24C - Competency in Motor Vehicle Body Mechanical Fastening Operations (R/601/5406)	40	3	4
	BP24K - Knowledge of Motor Vehicle Body Mechanical Fastening Operations (T/601/5446)	20	3	2
AE03BB	AE03BBC - Competency in Removing and Replacing Electrical Units and Components On Commercial Vehicles (T/502/6629)	30	2	3
	AE03BBK - Knowledge of Removing and Replacing Electrical Units and Components on Commercial Vehicles (K/502/6627)	17	2	2

GROUP C: Optional Units

Set Ref:	Unit Ref, Unit Title & I.D. Number	GLH	Unit Level	Credit Value
BB01	BB01C - Competency in Removing and Fitting Commercial Vehicle Mechanical, Electrical and Trim MET Components. (A/502/6597)	28	2	3
	BB01K - Knowledge of Removing and Fitting Commercial Vehicle Mechanical, Electrical and Trim MET Components (Y/502/6607)	19	2	2
BB06	BB06C - Competency in Fabricating of Commercial Vehicle Body Panels and Components (R/502/6606)	80	3	10
	BB06K - Knowledge of Fabricating of Commercial Vehicle Body Panels and Components (A/502/6602)	55	3	6
BP19	BP19C - Competency in Motor Vehicle Body Metal Active Gas MAG Welding Techniques (D/601/5392)	90	2	9
	BP19K - Knowledge of Motor Vehicle Body Metal Active Gas MAG Welding Techniques (T/601/5432)	45	2	5
BP25	BP25C - Competency in a motor Vehicle Body Adhesive Bonding Operations (Y/601/5407)	40	3	4
	BP25K - Knowledge of Motor Vehicle Body Adhesive Bonding Operations (J/601/5449)	20	3	2



Learner Name:

UNIT REF: G0102C	UNIT TITLE: COMPETENCY IN HEALTH, SAFETY AND GOOD HOUSEKEEPING IN THE AUTOMOTIVE ENVIRONMENT
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Level: 2	Route: Competence	Credit Value: 7	GLH: 60
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Mapping: This unit is mapped to the IMI NOS G1 and G2

Rationale: This unit will enable the learner to develop competency in order to carry out day to day work area cleaning, clearing away, dealing with spillages and disposal of waste, used materials and debris. Identify hazards and risks in the automotive environment and complying with relevant legislation and good practice and work safely at all times within the automotive environment, both as an individual and with others.

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to use correct personal and vehicle protection within the automotive environment	1.1. Select and use personal protective equipment throughout activities. To include appropriate protection of: <ul style="list-style-type: none"> a. eyes b. ears c. head d. skin e. feet f. hands g. lungs 1.2. Select and use vehicle protective equipment throughout all activities.		
2. Be able to carry out effective housekeeping practices in the automotive environment	2.1. Select and use cleaning equipment which is of the right type and suitable for the task. 2.2. Use utilities and appropriate consumables, avoiding waste 2.3. Use materials and equipment to carry out cleaning and maintenance duties in allocated work areas, following automotive work environment policies, schedules and manufacturers instructions 2.4. Perform housekeeping activities safely and in a way which minimizes inconvenience to customers and staff. 2.5. Keep the work area clean and free from debris and waste materials. 2.6. Keep tools and equipment fit for purpose by regular cleaning and keeping tidy 2.7. Dispose of used cleaning agents, waste materials and debris to comply with legal and workplace requirements.		



<p>3. Be able to recognise and deal with dangers in order to work safely within the automotive workplace</p>	<p>3.1. Name and locate the responsible persons for health and safety in their relevant workplace</p> <p>3.2. Identify and report working practices and hazards which could be harmful to themselves or others</p> <p>3.3. Carry out safe working practices whilst working with equipment, materials and products in the automotive environment</p> <p>3.4. Rectify health and safety risks encountered at work, within the scope and capability of their job role</p>		
<p>4. Be able to conduct themselves responsibly</p>	<p>4.1. Show personal conduct in the workplace which does not endanger the health and safety of themselves or others</p> <p>4.2. Display suitable personal presentation at work which ensures the health and safety of themselves and others at work</p>		



EVIDENCE REQUIREMENTS

1. You must produce evidence of use of personal and vehicle protection, cleaning the work environment and disposal of waste on 3 separate occasions .	Evidence Ref:	
2. You must be observed by your assessor on at least 1 occasion carrying out the above.	Observation Ref:	
3. You must produce evidence of identifying risks which may result from at least 2 of the items listed below:	Evidence Ref:	
the use and maintenance of machinery or equipment		
the use of materials or substances		
working practices which do not conform to laid down policies		
unsafe behaviour		
accidental breakages and spillages		
environmental factors		
4. You must be observed by your assessor on at least 1 occasion carrying out the above.	Observation Ref	
5. You must produce evidence of following at least 4 of the workplace policies listed below:	Evidence Ref	
the use of safe working methods and equipment		
the safe use of hazardous substances		
smoking, eating, drinking and drugs		
what to do in the event of an emergency		
personal presentation		
6. You must be observed by your assessor following workplace policies on at least 1 occasion	Observation Ref	

ASSESSOR SIGNATURE:	PIN NO:	DATE:
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UNIT REF: G0102K	UNIT TITLE: KNOWLEDGE OF HEALTH, SAFETY AND GOOD HOUSEKEEPING IN THE AUTOMOTIVE ENVIRONMENT
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Level: 2	Route: Knowledge	Credit Value: 3	GLH: 60
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Mapping: This unit is mapped to the IMI NOS G1 and G2

Rationale: This unit enables the learner to develop an understanding of routine maintenance and cleaning of the automotive environment and using resources economically and health and safety legislation and duties of everyone in the motor vehicle environment. It will provide an appreciation of significant risks in the automotive environment and how to identify and deal with them. Once completed the learner will be able to identify hazards and evaluate and reduce risk.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
1. Understand the correct personal and vehicle protective equipment to be used within the automotive environment	1.1. Explain the importance of wearing the types of PPE required for a range automotive repair activities 1.2. Identify vehicle protective equipment for a range of repair activities 1.3. Describe vehicle and personal safety considerations when working at the roadside
2. Understand effective housekeeping practices in the automotive environment	2.1. Describe why the automotive environment should be properly cleaned and maintained. 2.2. Describe requirements and systems which may be put in place to ensure a clean automotive environment. 2.3. Describe how to minimise waste when using utilities and consumables 2.4. State the procedures and precautions necessary when cleaning and maintaining an automotive environment. 2.5. Describe the selection and use of cleaning equipment when dealing with general cleaning, spillages and leaks in the automotive environment 2.6. Describe procedures for correct disposal of waste materials from an automotive environment 2.7. Describe procedures for starting and ending the working day which ensure effective housekeeping practices are followed



<p>3. Understand key health and safety requirements relevant to the automotive environment</p>	<p>3.1. List the main legislation relating to automotive environment health and safety.</p> <p>3.2. Describe the general legal duties of employers and employees required by current health and safety legislation</p> <p>3.3. Describe key, current health and safety requirements relating to the automotive environment.</p> <p>3.4. Describe why workplace policies and procedures relating to health and safety are important</p>
<p>4. Understand about hazards and potential risks relevant to the automotive environment</p>	<p>4.1. Identify key hazards and risks in an automotive environment</p> <p>4.2. Describe policies and procedures for reporting hazards, risks, health and safety matters in the automotive environment.</p> <p>4.3. State precautions and procedures which need to be taken when working with vehicles, associated materials, tools and equipment.</p> <p>4.4. Identify fire extinguishers in common use and which types of fire they should be used on</p> <p>4.5. Identify key warning signs and their characteristics that are found in the vehicle repair environment.</p> <p>4.6. State the meaning of common product warning labels used in an automotive environment.</p>
<p>5. Understand personal responsibilities</p>	<p>5.1. Explain the importance of personal conduct in maintaining the health and safety of the individual and others</p> <p>5.2. Explain the importance of personal presentation in maintaining health safety and welfare</p>



Content:

Economic use of Resources

- a. Consumable materials e.g. grease, oils, split pins, locking and fastening devices etc.

Requirement to maintain work area effectively

- a. Cleaning tools and equipment to maximise workplace efficiency.
- b. Requirement to carry out the housekeeping activities safely and in a way that minimises inconvenience to customers and staff.
- c. Risks involved when using solvents and detergents.
- d. Advantages of good housekeeping.

Spillages, leaks and waste materials

- a. Relevance of safe systems of work to the storage and disposal of waste materials.
- b. Requirement to store and dispose of waste, used materials and debris correctly.
- c. Safe disposal of special / hazardous waste materials.
- d. Advantages of recycling waste materials.
- e. Dealing with spillages and leaks

Basic legislative requirements

- a. Provision and Use of Work Equipment Regulations 1992.
- b. Power Presses Regulations 1992.
- c. Pressure Systems and Transportable Gas Containers Regulations 1989.
- d. Electricity at Work Regulations 1989.
- e. Noise at Work Regulations 1989.
- f. Manual Handling Operations Regulations 1992.
- g. Health and Safety (Display Screen Equipment) Regulations 1992.
- h. Abrasive Wheel Regulations.
- i. Safe Working Loads.
- j. Working at Height Regulations (2005)

Routine maintenance of the workplace

- a. Trainees personal responsibilities and limits of their authority with regard to work equipment.
- b. Risk assessment of the workplace activities and work equipment.
- c. Workplace person responsible for training and maintenance of workplace equipment.
- d. When and why safety equipment must be used.
- e. Location of safety equipment.
- f. Particular hazards associated with their work area and equipment.
- g. Prohibited areas.
- h. Plant and machinery that trainees must not use or operate.
- i. Why and how faults on unsafe equipment should be reported.
- j. Storing tools, equipment and products safely and appropriately.
- k. Using the correct PPE.
- l. Following manufacturers recommendations.
- m. Location of routine maintenance information e.g. electrical safety check log.

Legislation relevant to Health and Safety

- a. HASAWA
- b. COSHH
- c. EPA
- d. Manual Handling Operations Regulations 1992
- e. PPE Regulations 1992



Content: Contd

General regulations to include an awareness of:

- a Health and Safety (Display Screen Equipment) Regulations 1992
- b Health and Safety (First Aid) Regulations 1981
- c Health and Safety (Safety Signs and Signals) Regulations 1996
- d Health and Safety (Consultation with Employees) Regulations 1996
- e Employers Liability (Compulsory Insurance) Act 1969 and Regulations 1998
- f Confined Spaces Regulations 1997
- g Noise at Work Regulations 1989
- h Electricity at Work Regulations 1989
- i Electricity (Safety) Regulations 1994
- j Fire Precautions Act 1971
- k Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1985
- l Pressure Systems Safety Regulations 2000
- m Waste Management 1991
- n Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) 2002
- o Control of Asbestos at Work Regulations 2002

Legislative duties

- a. The purpose of a Health and Safety Policy.
- b. The relevance of the Health and Safety Executive.
- c. The relevance of an initial induction to Health and Safety requirements at your workplace.
- d. General employee responsibilities under the HASAWA and the consequences of non-compliance.
- e. General employer responsibilities under the HASAWA and the consequences of non-compliance.
- f. The limits of authority with regard to Health and Safety within a personal job role.
- g. Workplace procedure to be followed to report Health and Safety matters.

Precautions to be taken when working with vehicles, workshop materials, tools and equipment including electrical safety, pneumatics and hydraulics

- a. Accessing and interpreting safety information
- b. Seeking advice when needed
- c. Seeking assistance when required
- d. Reporting of unsafe equipment
- e. Storing tools, equipment and products safely and appropriately
- f. Using the correct PPE
- g. Following manufacturers recommendations
- h. Following application procedures e.g. hazardous substances
- i. The correct selection and use of extraction equipment

Content: Contd

PPE to include:

- a. Typical maintenance procedures for PPE equipment to include:
 - i. typical maintenance log
 - ii. cleaning procedures
 - iii. filter maintenance
 - iv. variation in glove types
 - v. air quality checks
- b. Choice and fitting procedures for masks and air breathing equipment.
- c. Typical workplace processes which would require the use of PPE to include:
 - i. welding
 - ii. sanding and grinding
 - iii. filling
 - iv. panel removal and replacement
 - v. drilling
 - vi. cutting
 - vii. chiselling
 - viii. removal of broken glass
 - ix. removal of rubber seals from fire damaged vehicles
 - x. removal of hypodermic needles
 - xi. servicing activities
 - xii. roadside recovery
- d. Unserviceable PPE.
- e. PPE required for a range automotive repair activities. To include appropriate protection of:
 - i. eyes
 - ii. ears
 - iii. head
 - iv. skin
 - v. feet
 - vi. hands
 - vii. lungs

Fire and extinguishers

- a. Classification of fire types
- b. Using a fire extinguisher effectively.
- c. Types of extinguishers
 - i. foam
 - ii. dry powder
 - iii. CO2
 - iv. water
 - v. fire blanket

Action to be taken in the event of a fire to include:

- a. The procedure as:
 - i. raise the alarm
 - ii. fight fire only if appropriate
 - iii. evacuate building
 - iv. call for assistance

Content: Contd

Product warning labels to include:

- a. Reasons for placing warning labels on containers.
- b. Warning labels in common use, to include:
 - i. toxic
 - ii. corrosive
 - iii. poisonous
 - iv. harmful
 - v. irritant
 - vi. flammable
 - vii. explosive

Warning signs and notices

- a. Colours used for warning signs:
 - i. red
 - ii. blue
 - iii. green
- b. Shapes and meaning of warning signs:
 - i. round
 - ii. triangular
 - iii. square
- c. The meaning of prohibitive warning signs in common use.
- d. The meaning of mandatory warning signs in common use.
- e. The meaning of warning notices in common use.
- f. General design of safe place warning signs.

Hazards and risks to include:

- a. The difference between a risk and a hazard.
- b. Potential risks resulting from:
 - i. the use and maintenance of machinery or equipment
 - ii. the use of materials or substances
 - iii. accidental breakages and spillages
 - iv. unsafe behaviour
 - v. working practices that do not conform to laid down policies
 - vi. environmental factors
 - vii. personal presentation
 - viii. unauthorised personal, customers, contractors etc entering your work premises
 - ix. working by the roadside
 - x. vehicle recovery
- c. The employee's responsibilities in identifying and reporting risks within their working environment.
- d. The method of reporting risks that are outside your limits of authority.
- e. Potential causes of:
 - i. fire
 - ii. explosion
 - iii. noise
 - iv. harmful fumes
 - v. slips
 - vi. trips
 - vii. falling objects
 - viii. accidents whilst dealing with broken down vehicles

Personal responsibilities

- a. The purpose of workplace policies and procedures on:
 - i. the use of safe working methods and equipment
 - ii. the safe use of hazardous substances
 - iii. smoking, eating, drinking and drugs
 - iv. emergency procedures
 - v. personal appearance
- b. The importance of personal appearance in the control of health and safety



Content: Contd

Action to be taken in the event of colleagues suffering accidents

- a. The typical sequence of events following the discovery of an accident such as:
 - i. make the area safe
 - ii. remove hazards if appropriate i.e. switch off power
 - iii. administer minor first aid
 - iv. take appropriate action to re-assure the injured party
 - v. raise the alarm
 - vi. get help
 - vii. report on the accident

- b. Typical examples of first aid which can be administered by persons at the scene of an accident:
 - i. check for consciousness
 - ii. stem bleeding
 - iii. keep the injured person's airways free
 - iv. place in the recovery position if injured person is unconscious
 - v. issue plasters for minor cuts
 - vi. action to prevent shock i.e. keep the injured party warm
 - vii. administer water for minor burns or chemical injuries
 - viii. wash eyes with water to remove dust or ingress of chemicals (battery acid)
 - ix. need to seek professional help for serious injuries

- c. Examples of bad practice which may result in further injury such as:
 - i. moving the injured party
 - ii. removing foreign objects from wounds or eyes
 - iii. inducing vomiting
 - iv. straightening deformed limbs



Learner Name:

UNIT REF: G3C	UNIT TITLE: COMPETENCY IN SUPPORTING JOB ROLES IN THE AUTOMOTIVE WORK ENVIRONMENT
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Level: 3	Route: Competence	Credit Value: 5	GLH: 40
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Mapping: This unit is mapped to the IMI NOS G3

Rationale: This unit will help the learner develop competency in order to keep good working relationships with all colleagues and customers in the automotive work environment by using effective communication and support.

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to work effectively within the organisational structure of the automotive work environment	1.1. Respond promptly and willingly to requests for assistance from customers and colleagues 1.2. Refer customers and colleagues to the correct person should requests fall outside their responsibility and capability		
2. Be able to obtain and use information in order to support their job role within the automotive work environment	2.1. Select and use legal and manufacturers information, in an automotive work environment.		
3. Be able to communicate with and support colleagues and customers effectively within the automotive work environment	3.1. Use methods of communication with customers and colleagues which meet their needs 3.2. Give customers and colleagues accurate information 3.3. Make requests for assistance from or to customers and colleagues clearly and courteously 3.4. Report any anticipated delays in completion to the relevant persons promptly.		
4. Be able to develop and keep good working relationships in the automotive work environment	4.1. Contribute to team work by initiating ideas and co-operating with customers and colleagues 4.2. Treat customers and colleagues in a way which shows respect for their views and opinions 4.3. Make and keep achievable commitments to customers and colleagues 4.4. Inform colleagues promptly of anything likely to affect their own work		



EVIDENCE REQUIREMENTS

1. You must be observed by your assessor on at least 3 occasions carrying out the above whilst performing your normal work duties.	Observation Ref:		

ASSESSOR SIGNATURE:	PIN NO:	DATE:
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UNIT REF: G3K	UNIT TITLE: KNOWLEDGE OF SUPPORT FOR JOB ROLES IN THE AUTOMOTIVE WORK ENVIRONMENT
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Level: 3	Route: Knowledge	Credit Value: 3	GLH: 20
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Mapping: This unit is mapped to the IMI NOS G3

Rationale: This unit enables the learner to develop an understanding of how to keep good working relationships with all colleagues in the automotive work environment by using effective communication and support skills.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
1. Understand key organisational structures, functions and roles within the automotive work environment	1.1. Identify the purpose of different sections of a typical automotive work environment 1.2. Explain organisational structures and lines of communication within the automotive work environment 1.3. Explain levels of responsibility within specific job roles in automotive workplace. To include: a. trainee b. skilled technician c. supervisor d. manager
2. Understand the importance of obtaining, interpreting and using information in order to support their job role within the automotive work environment	2.1. Explain the importance of different sources of information in a automotive work environment. 2.2. Explain how to find, interpret and use relevant sources of information 2.3. Describe the main legal requirements relating to the vehicle, including road safety requirements 2.4. Explain the importance of working to recognised procedures and processes 2.5. Explain when replacement units and components must meet the manufacturers' original equipment specification. 2.6. Explain the purpose of how to use identification codes
3. Understand the importance of different types of communication within the automotive work environment	3.1. Explain where different methods of communication would be used within the automotive environment 3.2. Explain the factors which can determine your choice of communication. 3.3. Explain how the communication of information can change with the target audience to include uninformed and informed people



4. Understand communication requirements when carrying out vehicle repairs in the automotive work environment	4.1. Explain how to report using written and verbal communication. 4.2. Explain the importance of documenting information relating to work carried out in the automotive environment 4.3. Explain the importance of working to agreed timescales
5. Understand how to develop good working relationships with colleagues and customers in the automotive workplace	5.1. Describe how to develop positive working relationships with colleagues and customers 5.2. Explain the importance of developing positive working relationships 5.3. Explain the importance of accepting other peoples' views and opinions. 5.4. Explain the importance of making and honouring realistic commitments to colleagues and customers.

Content:

The structure of a typical vehicle repair business

- a. How these areas relate to each other within the business
 - i. body shop
 - ii. vehicle repair workshop
 - iii. paint shop
 - iv. valeting
 - v. vehicle parts store
 - vi. main office
 - vii. vehicle sales
 - viii. reception
- b. Sources of information
 - i. other staff
 - ii. manuals
 - iii. parts lists
 - iv. computer software and the internet
 - v. manufacturer
 - vi. diagnostic equipment

Communication requirements when carrying out vehicle repairs

- a. Locating and using correct documentation and information for:
 - i. recording vehicle maintenance and repairs
 - ii. vehicle specifications
 - iii. component specifications
 - iv. oil and fluid specifications
 - v. equipment and tools
 - vi. identification codes
- b. Procedures for:
 - i. referral of problems
 - ii. reporting delays
 - iii. additional work identified during repair or maintenance
 - iv. keeping others informed of progress



Content: Contd

Methods of Communication

- a. Verbal
- b. Signs and notices
- c. Memos
- d. Telephone
- e. Electronic mail
- f. Vehicle job card
- g. Notice boards
- h. SMS text messaging
- i. Letters

Organisational & Customer requirements:

- a Importance of time scales to customer and organisation
- b Relationship between time and costs
- c Meaning of profit

Choice of Communication

- a. Distance
- b. Location
- c. Job responsibility

Importance of maintaining positive working relationships:

- a Morale
- b Productivity
- c Company image
- d Customer relationships
- e Colleagues



Learner Name:

UNIT REF: BBO2C	UNIT TITLE: COMPETENCY IN REMOVING AND FITTING NON-PERMANENTLY FIXED COMMERCIAL VEHICLE BODY PANELS, CHASSIS AND CAB COMPONENTS
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Level: 2	Route: Competence	Credit Value: 3	GLH: 30
Mapping: This unit is mapped to the IMI NOS BB02			
Rationale: This unit will enable the learner to demonstrate competency in removing and fitting non-permanently fixed commercial vehicle body panels, chassis and cab components			

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to work safely when removing and fitting non-permanently fixed body and chassis cab panels and components.	1.1 Use suitable personal protective equipment and vehicle coverings when carrying out removal and fitting operations 1.2 Work in a way which minimises the risk of damage or injury to the vehicle, people and the environment		
2. Be able to use relevant information to carry out the task	2.1. Select suitable sources of technical information to support the removal and fitting of non-permanently fixed body panels, chassis and cab and components. 2.2. Use technical information to support the removal and fitting of non-permanently fixed body panels, chassis and cab and components.		
3. Be able to use appropriate tools and equipment	3.1. Select the appropriate tools and equipment necessary to carry out the removal and fitting of non-permanently fixed body panels, chassis and cab and components 3.2. Ensure tools and equipment are calibrated where appropriate and are in a safe working condition 3.3. Use correct tools and equipment in the way specified by manufacturers when removing and fitting non-permanently fixed body panels, chassis and cab and components.		
4. Be able to remove and fit non-permanently fixed body and chassis cab panels and components.	4.1. Ensure that the specified panels or components are available and are fit for purpose 4.2. Use the appropriate methods and techniques to remove and fit non-permanently fixed body panels, chassis and cab components 4.3. Secure the panels or components using the correct fastening and securing devices 4.4. Check refitted panels or components at critical stages 4.5 Ensure that the refitted panels or components comply with specification 4.6. Deal promptly and effectively with problems within their control 4.7. Report problems that cannot be solved		



<p>5. Be able to record information and make suitable recommendations</p>	<p>5.1. Produce work records that are accurate, complete and passed to the relevant person(s) promptly in the format required</p> <p>5.2. Make suitable and justifiable recommendations for cost effective repairs</p> <p>5.3. Identify and report any expected delays in completion to the relevant person(s) promptly in the format required</p> <p>5.4. Record and report any additional faults promptly in the format required</p>		
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EVIDENCE REQUIREMENTS

<p>1. You must produce evidence from your normal workplace of removing and replacing 6 of the 10 units or components from the list below on at least 2 occasions. Alternatively, produce at least 12 pieces of evidence of which no more than 2 are of the same type of component</p>	<p>Evidence Ref:</p>	
<ul style="list-style-type: none"> • body panel 		
<ul style="list-style-type: none"> • cab front panel 		
<ul style="list-style-type: none"> • bumper 		
<ul style="list-style-type: none"> • door 		
<ul style="list-style-type: none"> • step 		
<ul style="list-style-type: none"> • under run bumper 		
<ul style="list-style-type: none"> • side guard 		
<ul style="list-style-type: none"> • body mounting 		
<ul style="list-style-type: none"> • body hardware 		
<ul style="list-style-type: none"> • body furniture 		
<p>2. You must be observed by your assessor on at least 2 occasions, each observation covering the removal and replacement of different units</p>	<p>Observation Ref</p>	

<p>ASSESSOR SIGNATURE:</p>	<p>PIN NO:</p>	<p>DATE:</p>
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UNIT REF: BBO2K	UNIT TITLE: KNOWLEDGE OF REMOVING AND FITTING NON-PERMANENTLY FIXED COMMERCIAL VEHICLE BODY PANELS, CHASSIS AND CAB COMPONENTS
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Level: 2	Route: Knowledge	Credit Value: 2	GLH: 20
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Mapping: This unit is mapped to the IMI NOS BB02

Rationale: This unit will help the learner to develop the knowledge and understanding required to remove and fit commercial vehicle body panels, chassis and cab components

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
1. Understand how to remove and fit commercial vehicle body panels, chassis and cab components	1.1 Describe how to remove and fit commercial vehicle body panels, chassis and cab components. 1.2 Describe how to prepare the vehicle prior to removal and fitting of body panels, chassis and cab components. 1.3 Describe the methods and procedures for storing removed body panels, chassis and cab components. 1.4. Identify the different types of fastenings and fixings used when securing and fitting body panels, chassis and cab components. 1.5. Explain the reasons for the use of different types of fastenings and fixings used when securing body panels, chassis and cab components. 1.6. Describe the procedures, methods and reasons for ensuring alignment of body panels, chassis and cab components.
2. Understand how to check fitted commercial vehicle body panels and chassis cab components for compliance	2.1. Identify the quality checks that can be used to ensure alignment and operation of body panels, chassis and cab components. 2.2. Describe the methods used to check compliance with specification.



Content:

Sources of information

- a. Company procedures
- b. Assembly and detail drawings
- c. Data sheets
- d. Specifications
- e. Inspection sheets
- f. Vehicle records
- g. Workshop manuals
- h. Manufacturer's manuals and bulletins
- i. Wiring circuits and diagrams
- j. Repair schedules and insurance assessor' reports

Commercial vehicle body panels and chassis cab components

- a. Body panels
- b. Cab front panels
- c. Bumper assemblies
- d. Door assemblies
- e. Step assemblies
- f. Under run bumpers
- g. Side guards
- h. Body mountings
- i. Body hardware
- j. Body furniture

Tools and equipment

- a. Removal and assembly tools
- b. Calibrated tools
- c. Cutting, shaping and forming tools
- d. Lifting, holding and securing equipment
- e. Measuring tools

Types of fastener

- a. Threaded male and female fasteners
- b. Self tapping/cutting/drilling screws
- c. Rivets
- d. Trim clips and fasteners
- e. Quick release fasteners
- f. Cable wraps and ties
- g. Worm/hose drive straps
- h. Proprietary fasteners

safe working procedures

- a. HASWA
- b. COSHH regulations
- c. PPE regulations
- d. Tools and equipment instructions and safety guidance for their use, maintenance and storage.

methods used to check compliance with specification

- a. Correct operation
- b. Accuracy
- c. Alignment
- d. Security of components or parts



Learner Name:

UNIT REF: BB03C	UNIT TITLE: COMPETENCY IN ASSEMBLING COMMERCIAL VEHICLE BODY COMPONENTS OR PARTS
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Level: 2	Route: Competence	Credit Value: 10	GLH: 70
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Mapping: This unit is mapped to the IMI NOS BB03

Rationale: This unit will enable the learner to demonstrate competency in assembling commercial vehicle body parts and components where the component or part is quickly assembled, positioned and installed

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to work safely when carrying out commercial vehicle body assembly	1.1. Use suitable personal protective equipment and vehicle coverings when carrying out assembly operations.. 1.2. Work in a way which minimises the risk of damage or injury to the vehicle, people and the environment		
2. Be able to use relevant information to carry out the task	2.1. Select suitable sources of technical information to support the completion of assembly operations. 2.2. Use technical information to support the completion of assembly operations.		
3. Be able to use appropriate tools and equipment	3.1. Select the appropriate tools and equipment necessary to complete assembly operations 3.2. Ensure tools and equipment are calibrated where appropriate and are in a safe working condition 3.3 Use the correct tools and equipment in the way specified by manufacturers when completing assembly operations		
4. Be able to carry out vehicle body assembly operations	4.1. Ensure that the specified components are available and are fit for purpose 4.2. Use the appropriate methods and techniques to assemble the components in their correct positions 4.3. Secure the components using appropriate fastening and securing devices 4.4. Ensure that the assembly is checked at all critical stages 4.5 Ensure the completed assembly meets the required specification 4.6. Deal promptly and effectively with problems within their control 4.7. Report problems that cannot be solved		



5. Be able to record information and make suitable recommendations	5.1. Produce work records that are accurate, complete and passed to the relevant person(s) promptly, in the format required 5.2. Make suitable and justifiable recommendations for cost effective repairs 5.3. Identify and report any expected delays in completion to the relevant person(s) promptly in the format required 5.4. Record and report any additional faults noticed promptly, in the format required		
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EVIDENCE REQUIREMENTS

1. You must produce evidence from your normal workplace of assembling 3 of the 6 listed below. One of which must be an underframe	Evidence Ref:
underframe	
sideframe	
bulk head (front frame)	
rear frame	
roof frame	
interior trim and fittings	
Guidance for assessors: Assembly of an underframe is a mandatory evidence requirement for this unit. Learners will be able to produce evidence from other main assemblies, sub assemblies and or components if these are indicative of their normal working practices. Assessors are expected to use their professional judgement to determine the suitability of such evidence and plan and agree its use in advance.	
2. You must be observed by your assessor on at least 1 occasion	Observation Ref:

Evidence from simulated activities is **not** acceptable for this unit.

ASSESSOR SIGNATURE:	PIN NO:	DATE:
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UNIT REF: BB03K	UNIT TITLE: KNOWLEDGE OF ASSEMBLING COMMERCIAL VEHICLE BODY COMPONENTS OR PARTS
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Level: 2	Route: Knowledge	Credit Value: 6	GLH: 45
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Mapping: This unit is mapped to the IMI NOS BB03

Rationale: This unit will help the learner to develop the knowledge for assembly of commercial vehicle body parts and components where the component or part is quickly assembled, positioned and installed

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
1. Understand commercial vehicle body components or parts assembly methods and techniques	1.1 Identify the sequences used to assemble commercial vehicle body parts and components. 1.2 Describe how to prepare a vehicle prior to assembly 1.3 Describe the need for adherence to the assembly sequence to ensure the work activity can be completed without hindrance 1.4 Illustrate the need for assembling components temporarily, including; checking alignment, profile, dimensions, correct operation and to allow other work to be carried out without hindrance 1.5 Describe the methods used to support large, heavy and fragile materials during the assembly process, including working at heights
2. Understand how to check commercial vehicle body components or parts assembly for compliance	2.1. Describe the methods used to check compliance with specification.

Content

Sources of technical information to include

- a. Assembly and detail drawings
- b. Data sheets
- c. Specifications
- d. Inspection sheets
- e. Workshop manuals
- f. Chassis manufacturer's instructions
- g. Wiring circuits and diagrams
- h. Legislative requirements

Tools and equipment

- a. Striping and assembly tools
- b. Calibrated tools
- c. Cutting, shaping and forming tools
- d. Lifting, holding and securing equipment
- e. Measurement and marking out tools
- f. Powered and manual riveting and proprietary fastener guns.

Relevant safe working procedures

- a. HASWA
- b. COSHH regulations
- c. PPE regulations
- d. Tools and equipment instructions and safety guidance for their use, maintenance and storage.

Assembly sequences

- a. Underframe
- b. Sideframes
- c. Bulk head (front frame)
- d. Rear frame
- e. Roof frame

Methods used to check compliance with specification

- a. Correct operation
- b. Accuracy
- c. Alignment
- d. Security of components or parts



UNIT REF: BB08K	UNIT TITLE: KNOWLEDGE OF COMMERCIAL VEHICLE BODY BUILDING CONSTRUCTION AND MATERIALS
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Level: 2	Route: Knowledge	Credit Value: 3	GLH: 30
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Mapping: This unit is mapped to the IMI NOS BB08

Rationale: This unit will help the learner to develop a knowledge and understanding of the suitability of the materials used for building commercial vehicle bodies

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
1. Understand how material specification influences commercial vehicle body construction	1.1 Identify the different types and forms of material used in the construction of commercial vehicle bodies 1.2 State typical applications for the different types and forms of materials 1.3 Describe how to dispose of and re-cycle waste materials 1.4 Compare different joining materials used in body construction
2. Understand the properties of the materials used in the construction of commercial vehicle bodies	2.1 State the properties of materials used in the construction of commercial vehicle bodies 2.2 State the methods used to improve the properties of materials to include alloying, heat treatment and the use of composites
3. Understand the different construction methods, materials and techniques used in vehicle construction	3.1 Identify the main types of structure to include; separate, integral and semi integral. 3.2 Identify the main sub assemblies to include; underframe, sideframes, bulkhead (front frame), rear frame, roof frame 3.3 Identify the construction types used to build commercial vehicle bodies 3.4 Identify suitable joining methods for commercial vehicle body construction. 3.5 Identify the main types of body mounting bracket used



Content:

Relevant information sources

- a. Assembly and detail drawings
- b. Data sheets
- c. Specifications
- d. Inspection sheets
- e. Vehicle records
- f. Workshop manuals
- g. Manufacturer's manuals and bulletins
- h. Wiring circuits and diagrams

Types of material

- a. Metallic - plain carbon steels, alloy steels, high strength low alloy steels, aluminium, aluminium alloys, copper, brass, zinc
- b. Non-metallic - thermoplastic, thermosetting plastic, elastomers, composites, hardwoods, softwoods, particle boards, laminated boards, laminated glass, toughened glass, synthetic and natural rubber

Forms of material

- a. Sheet, plate, hot and cold rolled steel, extruded, cast, forged, resin, liquid, paste.

Properties of materials

Toughness, hardness, ductility, malleability, density, impact resistance, strength; tensile, compressive and torsional, elasticity, plasticity, resistance; oxidation and electrical, conductivity, insulation; thermal and acoustic, adhesion, cohesion, viscosity, transparency, translucency

Types of construction

- a. Composite (traditional and modern/kit),
- b. Rolled steel,
- c. Aluminium alloy extrusion
- d. Pressed steel

Joining methods

- a. Welding
- b. Riveting/proprietary fasteners
- c. Bolted



Learner Name:

UNIT REF: BP24C	UNIT TITLE: COMPETENCY IN MOTOR VEHICLE BODY MECHANICAL FASTENING OPERATIONS
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Level: 3	Route: Competence	Credit Value: 4	GLH: 44
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Mapping: This unit is mapped to the IMI NOS BP24

Rationale: This unit will enable the learner to demonstrate competency in joining materials using mechanical fastening techniques and procedures. It also covers the evaluation of the completed mechanical joint.

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to work safely when carrying out motor vehicle body mechanical fastening operations	1.1. Use suitable personal protective equipment and vehicle coverings throughout all motor vehicle body mechanical fastening operations 1.2. Work in a way which minimises the risk of damage or injury to the vehicle, people and the environment		
2. Be able to use relevant information to carry out the task	2.1. Select suitable sources of technical information to support motor vehicle body mechanical fastening operations activities including: a vehicle technical data b joining procedures c legal requirements 2.2. Use technical information to support motor vehicle body mechanical fastening operations activities		
3. Be able to use relevant information to carry out the task	3.1. Select the appropriate tools and equipment necessary for carrying out motor vehicle body mechanical fastening operations 3.2. Ensure all tools and equipment that are required are in a safe working condition 3.3. Set up and use the correct tools and equipment in the way specified by manufacturers when carrying motor vehicle body mechanical fastening operations 3.4. Clean and store PPE and equipment in the appropriate manner		



Learner Name:

<p>4. Be able to use appropriate tools and equipment</p>	<p>4.1. Prepare surface n to ensure a good mechanical fastening is achieved</p> <p>4.2. Ensure alignment and mating and treatment of flanges to enable a suitable joint to be achieved</p> <p>4.3. Carry out a range of mechanical fastening</p> <p>4.4. Carry out mechanical fastening operations following: a manufacturers processes, methods and procedures b recognised researched repair methods</p> <p>4.5. Dress and protect the joint area to inhibit corrosion where applicable</p> <p>4.6. Recognise when the joint is not forming correctly and what action needs to be taken</p> <p>4.7. Ensure integrity of the joint and record the type of joint achieved on the appropriate paperwork.</p> <p>4.8. Avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area. Any damage caused should be correctly reinstated</p> <p>4.9. Work to the specified timescale for the activity</p>		
<p>5. Be able to carry out motor vehicle body mechanical fastening operations</p>	<p>5.1. Produce work records that are accurate, complete and passed to the relevant person(s) promptly in the format required</p> <p>5.2. Make suitable and justifiable recommendations for cost effective repairs</p> <p>5.3. Identify and report any expected delays in completion to the relevant person(s) promptly in the format required.</p> <p>5.4. Record and report any additional faults noticed during the course of their work promptly in the format required</p>		

**EVIDENCE REQUIREMENTS**

1. You must produce evidence from your normal workplace of carrying out 4 of the 5* different types of joints listed below on at least 2 occasions .	Evidence Ref:	
• riveting		
• clinching		
• bolts and fasteners		
• screwing		
• hybrid joining (combinations of techniques listed that may also include adhesives)		
2. You must be observed by your assessor on at least 2 occasions , each observation covering a different mechanical fastening joint. Both of the observations must be carried out in your normal workplace .	Observation Ref:	

*However, you must prove to your assessor that you have the necessary knowledge and understanding to be able to perform competently in respect of all of the mechanical fastening techniques.

ASSESSOR SIGNATURE:	PIN NO:	DATE:
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UNIT REF: BP24K	UNIT TITLE: KNOWLEDGE OF MOTOR VEHICLE BODY MECHANICAL FASTENING OPERATIONS
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Level: 3	Route: Knowledge	Credit Value: 2	GLH: 20
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Mapping: This unit is mapped to the IMI NOS BP24

Rationale: This unit enables the learner to develop an understanding of joining materials using mechanical fastening techniques and procedures

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
<p>1 Understand how to select, check, use and maintain appropriate tools and equipment used in motor vehicle body mechanical fastening operations</p>	<p>1.1. Explain the use of all tools and equipment required to join materials using mechanical fastening operations</p> <p>1.2. Explain, within the scope of their responsibilities, how to select, prepare and maintain tools and equipment required to join materials using mechanical fastening operations</p>
<p>2 Understand how to carry out motor vehicle body mechanical fastening operations</p>	<p>2.1. Describe the importance of correct surface preparation methods to ensure a good mechanical fastening is achieved</p> <p>2.2. Identify the correct need for alignment and mating of materials and the best methods used to achieve this in mechanical fastening operations</p> <p>2.3. Explain the mechanical fastening processes, techniques and joints used for the joining of materials, joints include:</p> <ul style="list-style-type: none"> a. riveting (single sided, double sided and self piercing) b. clinching c. bolts and fasteners d. screwing (self threading and self piercing) e. hybrid joining (combinations of techniques listed that may also include adhesives) <p>2.4. Explain how different materials used in the construction of motor vehicles react with each other</p> <p>2.5. Identify the faults and defects that can occur when carrying out mechanical fastening operations</p> <p>2.6. Identify common causes which produce the faults and defects in mechanical fastening operations</p> <p>2.7. Explain the types of quality control checks that can be used to ensure correct joining of materials</p> <p>2.8. Explain how to use adhesives with riveting techniques</p> <p>2.9. Explain the advantages and disadvantages of mechanical fastening operations over other joining methods</p>



Content:

- a. The hazards associated with the joining operations (such as handling sheet/fabricated components, using hot metal riveting techniques, handling and using sealants and cleaning agents, dangerous or badly maintained tools
- b. and equipment), and how they can be minimised
- c. How to obtain the necessary drawings and joining procedure specifications
- d. How to extract information from engineering drawings and related specifications (to include symbols and conventions to appropriate BS or ISO standards in relation to work undertaken)
- e. The use of manufacturers' specifications for the types of fasteners used
- f. The various joining processes that are used, and the tools and equipment required
- g. The preparations to be carried out on the materials/components prior to joining them (such as materials to be degreased, dry and clean, with holes and flanges de-burred)
- h. How to set up and align the joints prior to fixing, and the tools and methods that can be used (such as clamps, rivet gripping tools, temporary fixings, jacking and supporting devices)
- i. How to produce a secure joint using blind rivets, and the type of riveting tools that are available
- j. The range of bolts and screwed fasteners that are to be used; why it is important to use the correct type of washer; sequence of tightening bolts on flanged joints; and the tools and equipment used to ensure they are tightened to the required torque
- k. Checks to be carried out on the tools and equipment prior to use to ensure that they are in a safe and usable condition (such as condition of plugs and leads on power tools, condition of striking faces on hammers, condition of riveting tools)
- l. Equipment setting, operating and care procedures; why equipment and tools need to be correctly set up and in good condition
- m. The importance of using the tools only for the purpose intended; the care that is required when using the equipment and tools; the proper way of preserving and storing tools and equipment between operations
- n. The things that can go wrong with the joining operations, and how these can be avoided
- o. The extent of your own authority and whom you should report to if you have problems that you cannot resolve
- p. Reporting lines and procedures, line supervision and technical experts



Learner Name:

UNIT REF: AE03BBC	UNIT TITLE: COMPETENCY IN REMOVING AND REPLACING ELECTRICAL UNITS AND COMPONENTS ON COMMERCIAL VEHICLES
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Level: 2	Route: Competence	Credit Value: 3	GLH: 30
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Mapping: This unit is mapped to the IMI NOS AE03

Rationale: This unit will help the learner to demonstrate the competencies required to **remove and replace** defective electrical units used in the process of commercial vehicle body building and modification.

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to work safely when removing and replacing commercial vehicle electrical units and components	1.1 Use suitable personal protective equipment when carrying out removal and replacement activities 1.2 Work in a way which minimises the risk of damage or injury to the vehicle, people and the environment		
2. Be able to select and use relevant information to remove and replace commercial vehicle units and components	2.1 Select suitable sources of technical information to support the fabrication/forming of body panels and components 2.2. Use technical information to support the removal and replacement of units and components		
3. Be able to select and use appropriate tools and equipment	3.1. Select the appropriate tools and equipment necessary to carry out the fabrication/forming of body panels and components 3.2. Ensure that tools and equipment are fit for purpose, calibrated where appropriate and are in a safe working condition. 3.3. Use tools and equipment in a safe and correct manner when carrying out the fabrication/forming of body panels and components		
4. Be able to carry out removal and replacement of commercial vehicle electrical units and components	4.1. Ensure that the specified unit/component is available and undamaged 4.2. Ensure the vehicle has been correctly prepared and the electrical systems protected or isolated 4.3. Remove and replace the motor vehicle's electrical systems and components, adhering to the specifications and tolerances for the vehicle and following: a. the manufacturer's approved removal and replacement methods b. recognised researched repair methods c. health and safety requirements. 4.4. Prepare, reassemble, position and secure replacement unit 4.5. Ensure that replaced motor vehicle electrical units and components conform to the vehicle 4.6. Deal promptly and effectively with problems within your control 4.7. Report problems that cannot be solved		



	<p>4.8. Complete the work activity in the agreed timescale</p> <p>4.9. Operating specification and any legal requirements</p> <p>4.10. Use suitable testing methods to evaluate the performance of the reassembled system</p> <p>4.11. Ensure that the reassembled electrical systems perform to the vehicle operating specification and meets any legal requirements</p>		
5. Be able to record information and make suitable recommendations	<p>5.1. Produce work records that are accurate, complete and passed to the relevant person(s) promptly in the format required</p> <p>5.2. Make suitable and justifiable recommendations for cost effective repairs</p> <p>5.3. Identify and report any expected delays in completion to the relevant person(s) promptly in the format required.</p> <p>5.4. Record and report any additional faults noticed promptly, in the format required</p>		

EVIDENCE REQUIREMENTS

<p>1. You must produce evidence from your normal workplace of removing and replacing 4 of the 7 motor vehicle electrical units or components from the list below, on at least 2 occasions. Alternatively, produce at least 8 pieces of evidence of which no more than 2 are the same type of unit or component</p>	Evidence Ref:	
front, side and rear marker light		
rear light assembly		
reversing bleeper		
interior light		
number plate light		
temperature monitoring unit		
instrumentation system		
<p>2. You must be observed by your assessor on at least 2 occasions, each observation covering the removal and replacement of different units</p>	Observation Ref:	

Evidence from simulated activities is **not** acceptable for this unit.

ASSESSOR SIGNATURE:	PIN NO:	DATE:
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UNIT REF: AE03BBK	UNIT TITLE: KNOWLEDGE OF REMOVING AND REPLACING ELECTRICAL UNITS AND COMPONENTS ON COMMERCIAL VEHICLES
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Level: 2	Route: Knowledge	Credit Value: 2	GLH: 17
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Mapping: This unit is mapped to the IMI NOS AE03BB

Rationale: This unit will help the learner to develop the skills required to remove and replace defective electrical units used in the process of commercial vehicle body building and modification.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
1. Understand vehicle electrical and electronic principles	1.1. Identify electrical symbols and units found in heavy vehicle circuits 1.2. Describe how to interpret heavy vehicle wiring diagrams 1.3. Describe the operation of key heavy vehicle circuit protection devices and why these are necessary 1.4. Describe earthing principles and earthing methods 1.5. Identify the use of different cables and connectors used in heavy vehicle circuits 1.6. Describe the operation of electrical and electronic sensors and actuators and their application 1.7. Describe the key electrical and electronic control principles that are related to heavy vehicle electrical circuits 1.8. State common terms used in heavy vehicle electrical circuit
2. Understand removal and replacement methods and techniques	2.1. Explain the checks that are required prior to commencing removal of electrical units and components and the documentation required 2.2. Describe how to prepare a vehicle prior to commencing removal of electrical components following safe electrical procedures 2.3. Describe how to remove and replace heavy vehicle electrical system units and components 2.4. Describe common types of testing methods used to check the operation of heavy vehicle electrical systems and components and their purpose 2.5. Explain how to test and evaluate the performance of replacement units against specifications 2.6. Explain common faults found in heavy vehicle electrical systems and components 2.7. State the need for adherence to the installation instructions to ensure the work activity can be completed without hindrance 2.8. Describe the process for positioning, securing and connecting the replacement electrical unit and components

Content:

This unit is about removing and replacing 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

Sources of information to include

- a. Manufactures instructions or specifications
- b. Wiring codes and diagrams
- c. Removal and replacement procedures
- d. Legal requirements

Tools and equipment

- a. Hand and power
- b. Removing and replacing
- c. General assembly
- d. Joining
- e. Electrical test

Electrical units and components

- a. Front, side and rear marker lights
- b. Rear light assemblies
- c. Reversing beepers
- d. Interior lights
- e. Number plate lights
- f. Temperature monitoring
- g. Instrumentation systems

Factors influencing the removal and replacement

- a. Electrical testing prior to starting work
- b. Vehicle preparation
- c. Circuit protection
- d. Manufactures specification
- e. Storing, handling, positioning and securing
- f. Connecting to supply

Electrical principles

- a. Electrical safety
- b. Vehicle earthing principles and earthing methods
- c. Electrical principles
- d. Circuit protection
- e. Vehicle electrical circuits
- f. Electrical symbols
- g. Electrical control systems

Calculations

- a. Ohms law
- b. Cable capacity



Learner Name:

UNIT REF: BBO1C	UNIT TITLE: COMPETENCY IN REMOVING AND FITTING COMMERCIAL VEHICLE MECHANICAL, ELECTRICAL AND TRIM (MET) COMPONENTS
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Level: 2	Route: Competence	Credit Value: 3	GLH: 28
Mapping: This unit is mapped to the IMI NOS BB01			
Rationale: This unit will enable the learner to demonstrate competency in removing and fitting commercial vehicle MET components			

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to work safely when removing and fitting commercial vehicle MET components.	1.1. Use suitable personal protective equipment and vehicle coverings when carrying out removal and fitting operations 1.2. Work in a way which minimises the risk of damage or injury to the vehicle, people and the environment		
2. Be able to use relevant information to carry out the task	2.1. Select suitable sources of technical information to support the removal and fitting of commercial vehicle MET components. 2.2. Use technical information to support the removal and fitting of commercial vehicle MET components		
3. Be able to use appropriate tools and equipment	3.1. Select the appropriate tools and equipment necessary to remove and fit commercial vehicle MET components 3.2. Ensure tools and equipment are calibrated where appropriate and are in a safe working condition 3.3. Use correct tools and equipment in the way specified by manufacturers when removing and fitting commercial vehicle MET components.		
4. Be able to remove and fit commercial vehicle MET components	4.1. Ensure components are available and are fit for purpose 4.2. Use appropriate methods and techniques to remove components 4.3. Use appropriate methods and techniques to fit components 4.4. Secure components using the specified fastening and securing devices 4.5. Check components at all critical stages 4.6. Ensure that fitted components comply with specification 4.7. Deal promptly and effectively with problems within their control 4.8. Report problems that cannot be solved		



<p>5. Be able to record information and make suitable recommendations</p>	<p>5.1. Produce work records that are accurate, complete and passed to the relevant person(s) promptly in the format required</p> <p>5.2. Make suitable and justifiable recommendations for cost effective repairs</p> <p>5.3. Identify and report any expected delays in completion to the relevant person(s) promptly in the format required</p> <p>5.4. Record and report any additional faults promptly in the format required</p>		
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EVIDENCE REQUIREMENTS

<p>1. You must produce evidence from your normal workplace of removing and replacing 6 of the 8 units or components from the list below on at least 2 occasions. Alternatively, produce at least 12 pieces of evidence of which no more than 2 are of the same type of unit or component</p>	<p>Evidence Ref:</p>	
<p>bumper</p>		
<p>lamp or light unit</p>		
<p>road wheel</p>		
<p>battery</p>		
<p>interior trim</p>		
<p>exterior trim</p>		
<p>wheel arch and spray suppression system</p>		
<p>air management system</p>		
<p>2. You must be observed by your assessor on at least 2 occasions, each observation covering the removal and replacement of different units</p>	<p>Observation Ref</p>	

Evidence from simulated activities is **not** acceptable for this unit

<p>ASSESSOR SIGNATURE:</p>	<p>PIN NO:</p>	<p>DATE:</p>
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UNIT REF: BB01K	UNIT TITLE: KNOWLEDGE OF REMOVING AND FITTING COMMERCIAL VEHICLE MECHANICAL, ELECTRICAL AND TRIM (MET) COMPONENTS
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Level: 2	Route: Knowledge	Credit Value: 2	GLH: 19
Mapping: This unit is mapped to the IMI NOS BB01			
Rationale: This unit will help the learner to develop the knowledge and understanding required to remove and fit commercial vehicle MET components			

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
1. Understand how to remove and fit commercial vehicle MET components	1.1 Describe how to remove and fit MET components to the standard required 1.2 Describe how to prepare the vehicle prior to removing and fitting MET components 1.3. Describe the methods and procedures for storing removed vehicle MET components 1.4. Identify the different types of fastenings and fixings used when removing and fitting vehicle MET components 1.5. Explain the reasons for the use of different types of fastenings and fixings used in vehicle MET components 1.6. Describe the procedures, methods and reasons for ensuring correct alignment of vehicle MET components
2. Understand how to check fitted commercial vehicle MET components for compliance	2.1. Identify the quality checks that can be used to ensure correct alignment and operation of vehicle MET components 2.1. Describe the methods used to check compliance with specification.



Content:

Sources of information

- a. Assembly and detail drawings
- b. Data sheets
- c. Specifications
- d. Inspection sheets
- e. Vehicle records
- f. Workshop manuals
- g. Manufacturer's manuals and bulletins
- h. Wiring circuits and diagrams

MET components

- a. Bumpers
- b. Lamp/light units
- c. Road wheels
- d. Batteries
- e. Interior trim components
- f. Exterior trim components
- g. Wheel arches and spray suppression systems
- h. Air management systems

Tools and equipment

- a. Removal and assembly tools
- b. Calibrated tools
- c. Cutting, shaping and forming tools
- d. Lifting, holding and securing equipment
- e. Measuring tools including meters

Types of fastener

- a. Threaded male and female fasteners
- b. Self tapping/cutting/drilling screws
- c. Rivets
- d. Trim clips and fasteners
- e. Quick release fasteners
- f. Cable wraps and ties
- g. Worm/hose drive straps
- h. Proprietary fasteners

Safe Working Procedures

- a. HASWA
- b. COSHH regulations
- c. PPE regulations
- d. Tools and equipment instructions and safety guidance for their use, maintenance and storage.

Methods used to check compliance with specification

- a. Correct operation
- b. Accuracy
- c. Alignment
- d. Security of components or parts



Learner Name:

UNIT REF: BB06C	UNIT TITLE: COMPETENCY IN FABRICATING OF COMMERCIAL VEHICLE BODY PANELS AND COMPONENTS
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Level: 3	Route: Competence	Credit Value: 10	GLH: 80
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Mapping: This unit is mapped to the IMI NOS BB06

Rationale: This unit will help the learner to demonstrate the competency required to complete the **fabricating** of commercial vehicle **body panels and components**

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to work safely when fabricating commercial vehicle body panels and components	1.1. Use suitable personal protective equipment when carrying out all fabricating operations 1.2. Work in a way which minimises the risk of damage or injury to the vehicle, people and the environment		
2. Be able to select and use relevant information to form commercial vehicle body panels and components	2.1. Select suitable sources of technical information to support the fabricating of body panels and component 2.2. Use technical information to support the fabricating of body panels and component		
3. Be able to select and use appropriate tools and equipment	3.1. Use technical information to support the fabricating of body panels and components 3.2. Select the appropriate tools and equipment necessary to carry out the fabricating of body panels and components 3.3. Ensure that tools and equipment are fit for purpose, calibrated where appropriate and are in a safe working condition. 3.4. Use tools and equipment in a safe and correct manner when carrying out the fabricating of body panels and components		
4. Be able to form commercial vehicle body panels and components	4.1. Ensure that the specified materials are available and fit for purpose 4.2. Use efficient and effective techniques to form body panels and components 4.3. Check the body panels and components for compliance at regular intervals 4.4. Check that the completed body panels and components meets the required specification 4.5. Deal promptly and effectively with problems within your control 4.6. Report problems that cannot be solved 4.7. Complete manufacture of commercial vehicle panels and components within the agreed timescale.		



<p>5. Be able to record information and make suitable recommendations</p>	<p>5.1. Produce work records that are accurate, complete and passed to the relevant person(s) promptly in the format required</p> <p>5.2. Make suitable and justifiable recommendations for cost effective repairs</p> <p>5.1. Identify and report any expected delays in completion to the relevant person(s) promptly in the format required.</p> <p>5.3. Record and report any additional faults noticed promptly, in the format required</p>		
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EVIDENCE REQUIREMENTS

<p>1. You must produce evidence from your normal workplace of fabricating 3 different commercial vehicle body panels or components, using 2 different materials, to the specification and from materials listed below, on at least 2 occasions.</p>	<p>Evidence Ref:</p>	
<p>Specification must include at least three of the following:</p>		
<p>component parts that have at least three related critical dimensions</p>		
<p>use at least two different processes from: folding, rolling, cutting, bending</p>		
<p>components should be made with at least two different planes or angles</p>		
<p>require three stage calculations when marking out components</p>		
<p>require the use of geometry when marking out components</p>		
<p>require tolerances that are less than industry standards due to the nature of or high cost of the materials being used or level of finish required</p>		
<p>Materials</p>		
<p>aluminium</p>		
<p>carbon steel</p>		
<p>stainless steel</p>		
<p>GRP (Glass reinforced plastic)</p>		
<p>timber and composites</p>		
<p>trimming materials</p>		
<p>2. You must be observed by your assessor on at least 2 occasions, each observation covering the fabrication of commercial vehicle body panels and components</p>	<p>Observation Ref:</p>	

Evidence from simulated activities is **not** acceptable for this unit

<p>ASSESSOR SIGNATURE:</p>	<p>PIN NO:</p>	<p>DATE:</p>
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UNIT REF: BB06K	UNIT TITLE: KNOWLEDGE OF FABRICATING OF COMMERCIAL VEHICLE BODY PANELS AND COMPONENTS
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Level: 3	Route: Knowledge	Credit Value: 6	GLH: 55
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Mapping: This unit is mapped to the IMI NOS BB06

Rationale: This unit will help the learner to develop the knowledge required to complete the **fabricating** of commercial vehicle **body panels and components**.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
<p>The Learner will:</p> <p>1. Understand fabricating methods and techniques used to produce commercial vehicle body panels and components.</p>	<p>The Learner can:</p> <p>1.1. Explain how to set out the fabricating sequence for efficient and effective work</p> <p>1.2. Explain the factors which influence the fabricating sequence</p> <p>1.3. Explain the consequences of not adhering to the fabricating sequence</p> <p>1.4. Evaluate by appropriate methods the number, dimension and material specification of fasteners used in the fabricating process</p> <p>1.5. Evaluate appropriate methods to support and protect, large, heavy and fragile materials during the fabricating process</p> <p>1.6. Produce developments for material blanks</p>
<p>2. Understand how to check formed components for compliance</p>	<p>2.1. Explain the methods used to check compliance with specification</p> <p>2.2. Explain how to check the panels and components for dimensional accuracy</p> <p>2.3. Explain appropriate points in the fabricating process to check the body panels and components for dimensional accuracy</p> <p>2.4. Explain measurements and associated calculations to confirm accuracy and or discrepancies when formed body panels and components</p>

Content:

Fabricating/forming commercial vehicle body panels and components must include at least three of the following

- a. Component parts that have at least three related critical dimensions
- b. Use at least two different processes (folding, rolling, cutting, bending)
- c. Components should be made with at least two different planes or angles
- d. Require three stage calculations when marking out components
- e. Require the use of geometry when marking out components
- f. Require tolerances that are less than industry standards due to the nature of or high cost of the materials being used or level of finish required

Sources of information to include

- a. Manufactures specification
- b. Drawings and diagrams and sketches
- c. Legal requirements
- d. Workshop manuals
- e. Company procedures
- f. Material properties

Tools and equipment

- a. Measuring and marking out
- b. Production aids: jigs, fixtures, formers, stops, fences, guides, templates and patterns
- c. Cutting, bending, folding and rolling
- d. Holding and securing
- e. General assembly
- f. Moving and storing

Material

- a. Aluminium
- b. Carbon steel
- c. Stainless steel
- d. GRP
- e. Timber and composites
- f. Trimming materials

Factors influencing the fabricating

- a. Material properties
- b. Material costs
- c. Complexity of formed component
- d. Equipment capability, capacity and availability
- e. Fabricating sequence
- f. Critical dimensions and checking stages
- g. Operation and performance
- h. Quality of finish

Calculations

- a. Materials required
- b. Development size
- c. Bending allowance
- d. Cutter size, speeds and feed rate



Learner Name:

UNIT REF: BP19C	UNIT TITLE: COMPETENCY IN MOTOR VEHICLE BODY METAL ACTIVE GAS (MAG) WELDING TECHNIQUES
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Level: 2	Route: Competence	Credit Value: 9	GLH: 94
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Mapping: This unit is mapped to the IMI NOS BP19

Rationale: This unit will enable the learner to demonstrate competency in joining materials using Metal Inert Gas (MIG) Metal Active Gas (MAG) welding techniques. It also covers the evaluation of the completed welded component.

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to work safely when carrying out motor vehicle body MIG MAG welding operations	1.1. Use suitable personal protective equipment and vehicle coverings throughout all motor vehicle body MIG MAG welding operations 1.2. Work in a way which minimises the risk of damage or injury to the vehicle, people and the environment		
2. Be able to use relevant information to carry out the task	2.1. Select suitable sources of technical information to support motor vehicle body MIG MAG welding operation activities including: <ul style="list-style-type: none"> a. vehicle technical data b. welding procedures c. legal requirements 2.2. Use technical information to support motor vehicle body MIG MAG welding operation activities		
3. Be able to use appropriate tools and equipment	3.1. Select the appropriate tools and equipment necessary for carrying out motor vehicle body MIG MAG welding operations 3.2. Ensure all tools and equipment that are required are in a safe working condition 3.3. Set up and use the appropriate tools and equipment in the way specified by manufacturers when carrying motor vehicle body MIG MAG welding operations 3.4. Clean and store PPE and equipment in the appropriate manner		



Learner Name:

<p>4. Be able to carry out motor vehicle body MIG MAG welding operations</p>	<p>4.1. Prepare surface to ensure a good MIG MAG weld is achieved</p> <p>4.2. Ensure alignment, mating and treatment of flanges to enable a suitable join to be achieved</p> <p>4.3. Conduct MIG MAG weld operations including:</p> <ul style="list-style-type: none"> a. lap plug b. lap seam c. butt joint d. fillet joint <p>4.4. Conduct MIG MAG weld operations following:</p> <ul style="list-style-type: none"> a. manufacturers processes, methods and procedures b. test procedures to provide test coupons on equivalent material in accordance with Industry Standards c. recognised researched repair methods <p>4.5. Dress the weld area without reducing material thickness and protect the area to inhibit corrosion where applicable</p> <p>4.6. Recognise when the weld is not forming correctly and what action needs to be taken</p> <p>4.7. Inspect and assess quality of welds in accordance with Industry Standards and manufacturers specification</p> <p>4.8. Avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area. Any damage caused should be correctly reinstated</p> <p>4.9. Ensure no damage is incurred to other vehicle systems when MIG MAG welding</p> <p>4.10 Work to the specified timescale for the activity</p>		
<p>5. Be able to record information and make suitable recommendations</p>	<p>5.1. Produce work records that are accurate, complete and passed to the relevant person(s) promptly in the format required</p> <p>5.2. Make suitable and justifiable recommendations for cost effective repairs</p> <p>5.3. Identify and report any expected delays in completion to the relevant person(s) promptly in the format required.</p> <p>5.4. Record and report any additional faults noticed during the course of their work promptly in the format required</p>		



EVIDENCE REQUIREMENTS

1. You must produce evidence from your normal workplace of carrying out all of the different types of joints listed below on at least 2 occasions to join materials using MAGS welding.	Evidence Ref:	
<ul style="list-style-type: none"> • lap plug 		
<ul style="list-style-type: none"> • lap seam 		
<ul style="list-style-type: none"> • butt joint 		
<ul style="list-style-type: none"> • fillet joint 		
2. You must be observed by your assessor on completing all of the above welds, 2 of which can be simulated , All of the observations must be carried out in your normal workplace .	Observation Ref:	

Evidence from simulated activities is acceptable for this unit.

ASSESSOR SIGNATURE:	PIN NO:	DATE:
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UNIT REF: BP19K	UNIT TITLE: KNOWLEDGE OF MOTOR VEHICLE BODY METAL ACTIVE GAS (MAG) WELDING TECHNIQUES
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Level: 2	Route: Knowledge	Credit Value: 5	GLH: 45
Mapping: This unit is mapped to the IMI NOS BP19			
Rationale: This unit enables the learner to develop an understanding of joining carbon steels using Metal Active Gas Shielding (MAGS) welding techniques			

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
1. Understand how to work safely when carrying out motor vehicle body MAGS welding operations	1.1. Describe the health, safety and legal requirements relating to the joining of carbon steels using MAGS welding techniques 1.2. Describe the importance of selecting, using and maintaining the appropriate personal protective equipment when joining carbon steels using MAGS welding techniques 1.3. Describe the requirements for protecting the vehicle and contents from damage before, during and after the joining of carbon steels by MAG welding techniques
2. Understand how to select, check, use and maintain appropriate tools and equipment used in motor vehicle body MAG welding operations	2.1. Explain the use of all tools and equipment required to join carbon steels using MAG welding techniques 2.2. Describe, within the scope of their responsibilities, how to select, prepare and maintain the tools and equipment required to join carbon steels using MAG welding techniques
3. Understand how to carry out motor vehicle body MAGS welding operations	3.1. Explain the importance of correct surface preparation methods to ensure a good MAGS weld is achieved 3.2. Identify the need for correct alignment and mating of carbon steels and the methods used to achieve this in MAGS welding 3.3. Describe the welding techniques used in MAGS welding to include: <ul style="list-style-type: none"> a. plug b. lap c. butt d. fillet 3.4. Identify the faults and defects that can occur when MAGS welding 3.5. Identify common causes which result in faults and defects 3.6. Describe the quality control measures that can be used to help ensure correct joining of carbon steels before, during and after the welding process 3.7. Describe how to inspect and assess MAGS welding in accordance to Industry Standards 3.8. Compare the advantages and disadvantages of MAGS welding over other welding methods



	3.9. Explain the importance and implications of checking and carrying out weld test pieces prior to carrying out the welding process
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Content:

- a The safe working practices and procedures to be observed when working with , MAGS or cored wire arc welding equipment (general workshop and site safety; appropriate personal protective equipment; fire prevention; protecting other workers from the effects of the welding arc; safety in enclosed/confined
- b Spaces; fume control; accident procedure; statutory requirements, risk assessment procedures and relevant requirements of HASAWA, COSHH and Work Equipment Regulations; safe disposal of waste materials)
- c The correct handling and storage of gas cylinders (manual handling and use of cylinder trolley, leak detection procedures, relevant BCGA codes of practice, cylinder identification, gas pressures, cylinder and equipment safety features, emergency shutdown procedures)
- d The hazards associated with arc welding (live electrical components; current return (earth return); the electric arc; fumes and gases; gas supply leaks; spatter, hot slag and metal; elevated working; enclosed spaces; slips, trips and falls), and how they can be minimised
- e The manual , MAGS or cored wire arc welding process (principles of fusion welding, AC and DC power sources, ancillary equipment, power ranges, care of equipment)
- f The consumables associated with , MAGS or cored wire arc welding (types of wire and their application (solid and cored), types of shielding gas and their application, gas supply and control)
- g The types of welded joints to be produced (fillet and butt welds, single and multi-run welds, sheet and sections; welding positions)
- h Setting up and restraining the joint (the use of jigs and fixtures, manipulators and positioners, restraining devices, tack welding size and spacing in relationship to material thickness)
- i Preparing the welding equipment and checks that need to be made to ensure that it is safe and ready to use (electrical connections, power return and current return (earth return); wire feed mechanisms, gas supply, setting welding parameters, correct joint set-up, cleanliness of materials used; calibration before use; routine care and maintenance of equipment)
- j The techniques of operating the welding equipment to produce a range of joints in the various joint positions (fine tuning parameters, correct manipulation of the welding gun, safe closing down of the welding equipment)
- k The importance of complying with job instructions and the welding procedure specification
- l Problems that can occur with the welding activities and how these can be overcome (causes of distortion and methods of control, effects of welding on materials and sources of weld defects; methods of prevention)
- m The importance and usage of organisational quality systems used and weld standards to be achieved; weld inspection and test procedures used (including visual and non-destructive tests)
- n Personal approval tests, and their applicability to your work
- o The extent of your own authority and whom you should report to if you have problems that you cannot resolve
- p Reporting lines and procedures, line supervision and technical experts



Learner Name:

UNIT REF: BP25C	UNIT TITLE: COMPETENCY IN A MOTOR VEHICLE BODY ADHESIVE BONDING OPERATION
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Level: 3	Route: Competence	Credit Value: 4	GLH: 44
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Mapping: This unit is mapped to the IMI NOS BP25

Rationale: This unit will enable the learner to demonstrate competency in joining materials using adhesive bonding techniques and procedures. It also covers the evaluation of the completed joint.

LEARNING OUTCOMES	ASSESSMENT CRITERIA	Ref No	Date
The Learner will:	The Learner can:		
1. Be able to work safely when carrying out motor vehicle body adhesive bonding operations.	1.1 Use suitable personal protective equipment and vehicle coverings throughout all motor vehicle body adhesive bonding operations 1.2. Work in a way which minimises the risk of damage or injury to the vehicle, people and the environment		
2. Be able to use relevant information to carry out the task	2.1. Select suitable sources of technical information to support motor vehicle body adhesive bonding operation activities including: <ul style="list-style-type: none"> a vehicle technical data b joining procedures c legal requirements 2.2. Use technical information to support motor vehicle body adhesive bonding operation activities		
3. Be able to use appropriate tools and equipment	3.1. Select the appropriate tools and equipment necessary for carrying out motor vehicle body adhesive bonding operations 3.2. Ensure tools and equipment that are required are in a safe working condition 3.3. Set up and use the correct tools and equipment in the way specified by manufacturers when carrying motor vehicle body adhesive bonding operations 3.4. Clean and store PPE and equipment in the appropriate manner		



Learner Name:

<p>4. Be able to carry out motor vehicle body adhesive bonding operations</p>	<p>4.1. Prepare surface to ensure a good adhesive bond is achieved</p> <p>4.2. Ensure alignment and mating and treatment of flanges to enable a suitable joint to be achieved</p> <p>4.3. Carry out adhesive bonding operations following:</p> <ul style="list-style-type: none"> a manufacturers processes, methods and procedures b test procedures and providing test coupons on equivalent material c recognised researched repair methods <p>4.4. Dress and protect the area to inhibit corrosion where applicable</p> <p>4.5. Identify when the joint is not forming correctly and what action needs to be taken</p> <p>4.6. Avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area. Any damage caused should be correctly reinstated</p> <p>4.7. Work to the specified timescale for the activity</p>		
<p>5. Be able to record information and make suitable recommendations</p>	<p>5.1. Produce work records that are accurate, complete and passed to the relevant person(s) promptly in the format required</p> <p>5.2. Make suitable and justifiable recommendations for cost effective repairs</p> <p>5.3. Identify and report any expected delays in completion to the relevant person(s) promptly in the format required.</p> <p>5.4. Record and report any additional faults noticed during the course of their work promptly in the format required</p>		

EVIDENCE REQUIREMENTS

<p>1. You must produce evidence from your normal workplace of carrying out adhesive bonding operations in joining a vehicle body panel to a vehicle on at least 3 separate occasions.</p>	Evidence Ref:		
<p>2. You must be observed by your assessor on at least 2 occasions in your normal workplace</p>	Observation Ref:		

ASSESSOR SIGNATURE:	PIN NO:	DATE:
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UNIT REF: BP25K	UNIT TITLE: KNOWLEDGE OF MOTOR VEHICLE BODY ADHESIVE BONDING OPERATIONS
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Level: 3	Route: Knowledge	Credit Value: 2	GLH: 20
Mapping: This unit is mapped to the IMI NOS BP25			
Rationale: This unit enables the learner to develop an understanding of joining materials using adhesive bonding techniques and procedures			

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The Learner will:	The Learner can:
1. Understand how to work safely when carrying out motor vehicle body adhesive bonding operations	1.1. Explain the health, safety and legal requirements relating to the joining of materials using adhesive bonding techniques 1.2. Explain the importance of selecting, using and maintaining the appropriate personal protective equipment when joining materials using adhesive bonding techniques 1.3. Explain the requirements for protecting the vehicle and contents from damage before, during and after the joining of materials by adhesive bonding techniques
2. Understand how to select, check, use and maintain appropriate tools and equipment used in motor vehicle body adhesive bonding operations	2.1. Explain the use of all tools and equipment required to join materials using adhesive bonding techniques 2.2. Explain, within the scope of their responsibilities, how to select, prepare and maintain tools and equipment required to join materials using adhesive bonding techniques
3. Understand how to carry out motor vehicle body adhesive bonding operations.	3.1. Explain the importance of correct surface preparation methods to ensure a good adhesive bonding joint is achieved 3.2. Identify the need for alignment/mating of materials and the best methods used to achieve this in adhesive bonding 3.3. Explain the joining processes, techniques and joints used for the joining of materials using adhesive bonding 3.4. Identify the faults and defects that can occur when carrying out adhesive bonding 3.5. Identify common causes which produce the faults and defects in adhesive bonding 3.6. Explain the types of quality control checks that can be used to ensure correct joining of materials 3.7. Explain the advantages and disadvantages of adhesive bonding over other joining methods 3.8. Explain the importance and implications of checking and carrying out test pieces prior to carrying out the joining process

Content: contd

- a. The specific safety precautions to be taken when bonding engineering materials using adhesives in a fabrication environment (general workshop and site safety, appropriate personal protective equipment, accident procedure; statutory regulations, risk assessment procedures and COSHH regulations)
- b. The personal protective clothing and equipment to be worn when carrying out bonding as part of the fabrication activities (gloves, eye protection, respiratory protection, etc)
- c. The importance of good workshop practice and house keeping, ventilation and fume control equipment, first aid procedures and actions, hazardous substances and relevant sections of COSHH
- d. The hazards associated with bonding fabricated components, and how they can be minimised
- e. How to obtain the necessary drawings and joining specifications

How to extract information from research repair methodology in relation to the work undertaken

- a. Types of adhesives
 - i. compact
 - ii. two parts
 - iii. cyanoacrylate
 - iv. anaerobic
 - v. sealants
 - vi. toughened
- b. Knowledge of Curing Mechanisms including:
 - i. moisture/solvent evaporation
 - ii. chemical/thermal reaction
 - iii. exposure/exclusion to oxygen
- c. Understanding the importance of recording shelf life, pot life, setting and curing times
- d. Knowledge of adhesion and cohesion.
- e. Understanding
- f. The material preparations that are required, and the equipment and consumables that are used
- g. The importance of working to organisational and bonding agent manufacturers' instructions whilst carrying out the bonding activities
- h. The methods and techniques used for bonding the materials (such as gluing, impact, chemical and thermal reaction techniques)
- i. The characteristics of the adhesives that are to be used
- j. The application of, and precautions to be taken when using, adhesives and solvents
- k. Maintenance and care of tools and equipment
- l. Methods of degreasing components and producing a keying surface
- m. Type and suitability of adhesives, setting or curing requirements and time, strength and appearance
- n. Common causes of defects associated with the bonding processes, and how to avoid them
- o. The effects of the environment on the bonding process (such as temperature humidity, cleanliness)
- p. How to identify, select, use, and clean, the appropriate bonding agent holding vessels, brushes, stirrers and spatulas, scrapers, knives, clamps and weights
- q. The importance of cleaning up after use, to ensure everything can be used again and to minimise the need for replacement of equipment
- r. Reasons for checking that components are assembled in the correct sequence, are positioned dimensionally accurately and to the correct orientation, in accordance with the specifications, prior to bonding
- s. How to check that completed joints are firm, sound and fit for purpose
- t. Procedures for cleaning off surplus adhesive and tidying up the appearance of joints
- u. The extent of your own authority and whom you should report to if you have problems that you cannot resolve
- v. Reporting lines and procedures, line supervision and technical experts



ASSESSOR COMMENTS AND FEEDBACK

Assessor's should comment and give feedback each time they observe a learner or meet with a learner to review evidence. Therefore each time an observation or review of evidence takes place the assessor should enter the date and the evidence number, and make appropriate comments and feedback.
Please see the guide below for the type of comments that can be included.

The following provides guidance as to the type of comments that can be included below.

1. A description of the various activities being carried out by the learner for each unit.
2. How the learner has met the Learning Outcomes for each unit.
3. Questions that you have asked, particularly to cover Evidence Requirements, not demonstrated through performance.
4. Questions you have asked to ascertain Essential Knowledge.
5. Issues arising from assessment.
6. Identification of good or poor performance.
7. Any action required to further develop the learners knowledge and skills.
8. Constructive feedback to the learner.

Date	Evidence Ref No.	Assessor Comments: Please ensure your comments are concise.



ASSESSOR COMMENTS AND FEEDBACK

CONTINUATION SHEET

Date	Evidence Ref No.	Assessor Comments: Please ensure your comments are concise.

Please photocopy as necessary.