National Occupation Standards: Accident Repair – Mechanical, Electrical and Trim (MET)

NOS G1 – Contribute to Housekeeping in Motor Vehicle Environments

NOS OVERVIEW

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

SCOPE OF THIS NOS:

1. **Equipment maintenance** covers
   a. routine checks on work tools and equipment
   b. cleaning work tools and equipment
   c. replacing minor parts
   d. visual inspection of electrical equipment

2. **Housekeeping activities** cover
   a. day to day work area cleaning
   b. clearing away
   c. dealing with spillages
   d. disposal of waste, used materials and debris

3. **Work tools and equipment** are
   a. hand
   b. electrical
   c. mechanical
   d. pneumatic
   e. hydraulic

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the scope of your job responsibilities for the use and maintenance of hand tools, equipment and your work area.
2. workplace policies and schedules for **housekeeping activities** and **equipment maintenance**.

3. the manufacturer's requirements for the cleaning and general, non-specialist maintenance of the tools and equipment for which you are responsible.
4. the regulations and information sources applicable to workshop cleaning and maintenance activities for which you are responsible.
5. the importance of reporting faults quickly to the relevant person.
6. the importance of reporting anticipated delays to the relevant person(s) promptly.

Equipment maintenance

7. how to select and use equipment used for basic hand tool maintenance activities.
8. how to store hand tools safely and accessibly.
9. how to report faulty or damaged **work tools and equipment.**
10. how to work safely when cleaning and maintaining **work tools and equipment**.

General work area housekeeping

11. how to select and use cleaning equipment
12. how to use resources economically.
13. how to use work area cleaning materials and agents.
14. how to clean and maintain the **work tools and equipment** and work areas for which you are responsible.
15. how to dispose of unused cleaning agents, materials and debris.
16. the properties and hazards associated with the use of cleaning agents and materials.
17. the importance of wearing personal protective equipment.
18. the importance of using resources economically and for their intended purpose only.

PERFORMANCE OBJECTIVES

To be competent you must:

a. wear suitable personal protective equipment throughout all **housekeeping** and **equipment maintenance activities**.
b. select and use cleaning equipment which is:
    - of the right type
    - suitable for the task.
c. use resources economically and for their intended purpose only, following manufacturers' instructions and workplace procedures.
d. follow workplace policies, schedules and manufacturers' instructions when cleaning and maintaining hand tools and equipment.
e. clean the work area(s), for which you are responsible, at the specified time and frequency.
f. carry out **housekeeping activities** safely and in a way which minimises inconvenience to customers and staff.
g. follow the manufacturer's instructions when using cleaning and sanitising agents.

h. ensure your **housekeeping activities** keep your work area clean and free from debris and waste materials.
i. ensure your **equipment maintenance** activities keep your **work tools and equipment** fit for purpose.
j. dispose of used cleaning agents, materials and debris to comply with legal and workplace requirements.
k. store your **work tools and equipment** in a safe manner which permits ease of access and identification for use.
l. report any faulty or damaged tools and equipment to the relevant person(s) clearly and promptly.
m. report any anticipated delays in completion to the relevant person(s) promptly.

NOS G2 – Reduce Risks to Health and Safety in the Motor Vehicle Environment

NOS OVERVIEW

This NOS covers the basic, legally required health and safety duties of everyone in the workplace. It describes the competence required to ensure that:

- our own actions do not create any health and safety risks
- you do not ignore significant risks in your workplace, and
- you take sensible action to put things right, including reporting situations which pose a danger to people in the workplace, and seeking advice from others

This NOS does **not** require you to undertake a full Risk Assessment. It is about having an appreciation of significant risks in the workplace and knowing how to identify them and deal with them.

When you have completed this NOS, you will have proved you can:

1. Identify hazards and evaluate risks in your workplace
2. Reduce the risks to health and safety in your workplace

SCOPE OF THIS NOS:

1. Risks resulting from

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

2. Workplace policies covering

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

ESSENTIAL KNOWLEDGE

You need to understand:

Health and Safety Legislation and Workplace Policies

1. your legal duties for health and safety in the workplace as required by the Health and Safety at Work Act 1974, and any other policies or procedures that govern your working practices.
2. your duties for health and safety as defined by any specific legislation covering your job role.
3. **agreed workplace policies relating to controlling risks to health and safety.**
4. responsibilities for health and safety in your job description.
5. the responsible persons to whom you report health and safety matters.

Risks to Health and Safety

6. what hazards may exist in your workplace, (eg. Slips, trips and falls).
7. health and safety risks which may be present in your own job role and the precautions you must take.
8. the importance of remaining alert to the presence of hazards in the whole workplace.
9. how to deal with and report risks.
10. the importance of dealing with or promptly reporting risks.
11. the requirements and guidance on the precautions.
12. the specific workplace policies covering your job role.
13. suppliers' and manufacturers' instructions for the safe use of equipment, materials and products.
14. safe working practices for your own job role.
15. the importance of personal presentation in maintaining health and safety in the workplace.
16. the importance of personal conduct in maintaining the health and safety of yourself and others.
17. the importance of personal protective equipment, when and where it should be used and the importance of maintaining it correctly.
18. your scope and responsibility for rectifying risks.
19. workplace procedures for handling risks which you are unable to deal with.

PERFORMANCE OBJECTIVES

To be competent you must:

a carry out your working practices in accordance with legal requirements.
b identify the correct personal and vehicle protective equipment required to correctly carry out your workplace practices.
c carry out your workplace practices using the correct personal protective equipment.
d follow the most recent **workplace policies** for your job role.
e rectify health and safety **risks** that are within your capability and scope of your job responsibilities.
f pass on any suggestions for reducing **risks** to health and safety within your job role to the responsible persons.

g ensure your personal conduct in the workplace does not endanger the health and safety of yourself or other persons.

h follow the **workplace policies** and suppliers' or manufacturers' instructions for the safe use of equipment, materials and products.

i report any differences between **workplace policies** and suppliers' or manufacturers' instructions as appropriate.

j ensure your personal presentation at work:

- ensures the health and safety of yourself and others,
- meets any legal duties, and
- is in accordance with workplace policies

NOS G3 – Maintain Working Relationships in the Motor Vehicle Environment

NOS OVERVIEW

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

SCOPE OF THIS NOS:

1. **Colleagues** are
   a. immediate work colleagues
   b. supervisors and managers

2. **Requests for assistance** covering
   a. technical assistance
   b. personal assistance

ESSENTIAL KNOWLEDGE

You need to understand:

Your responsibilities and constraints

1. your own and your colleague's job role and limits of responsibility for giving advice and support.
2. the operational constraints which may affect interaction with colleagues.
3. lines of communication within your workplace.

Communication skills and working relationships

4. how to use suitable and effective spoken communication skills when responding to and interacting with others.
5. how to adapt written and spoken communication methods to satisfy the needs of colleagues.
6. how to report problems using written and spoken methods of communication.
7. the importance of developing positive working relationships with colleagues – the effect on morale, productivity, and company image.
8. the importance of accepting other peoples' views and opinions.
9. the importance of making and honouring realistic commitments to colleagues.

PERFORMANCE OBJECTIVES

To be competent you must:

a. contribute actively to team working by initiating ideas and co-operating with colleagues.
b. respond promptly and willingly to requests for assistance from **colleagues** which fall within the limits of your own job responsibilities and capabilities.

c. where requests fall outside your responsibility and capability, refer colleagues to the relevant person(s).
d. give colleagues sufficient, accurate information and support to meet their work needs.
e. make **requests for assistance** to **colleagues** clearly and courteously.
f. use methods of communication which meet the needs of colleagues.
g. treat colleagues in a way which shows respect for their views and opinions and promotes goodwill.
h. make and keep achievable commitments to **colleagues**
i.. inform colleagues promptly of any problems or information likely to affect their own work.

NOS G6 – Facilitate Individual learning and Development (Imported LLUK NOS Standard 7)

This standard is imported from LLUK Learning and Development (March 2010) suite of NOS.

What this standard is about
This standard is about using a range of methods to enable individuals to acquire or improve skills and knowledge and practise their application in context. It also covers providing feedback to learners and encouraging them to reflect on and improve what they do. This standard could be achieved as part of a coaching and/or mentoring relationship.

Key Words and Phrases
Within this standard the following explanations and examples apply.

Application The process applying new or improved skills and knowledge in a real or realistic context, for example a work situation

Goals This refers to interim targets or steps towards learners meeting overall outcomes and objectives Health and safety This includes physical health and safety as well as emotional well-being

Learner objectives These will usually be performance objectives – for example doing something or doing something better.

Methods Any method that supports individual learning and development, for example, instructions,
demonstrations, opportunities to apply knowledge and practise skills, experiential learning, individual projects and research

Other people This refers to others who may be involved in, or affected by, the learning activities, for example, staff members, volunteers, assistants or people in the same area.

Reflection/reflective practice The process of thinking critically about what we do, identifying opportunities for improvement and, where appropriate, further learning needs

Resources This covers any physical or human resource that supports the learning and development process and could include technical equipment, Information Technology-based learning, handouts, workbooks, people – for example outside speakers – and visits to places of interest

Risk This relates to any risk to the facilitation of learning and development. This includes health and safety but could also cover, for example, the risk of setting unrealistic goals or selecting inappropriate learning methods.

ESSENTIAL KNOWLEDGE

Learning and development practitioners know and understand:

1. The principles, uses and value of learning and development on an individual basis
2. The characteristics of a relationship that supports individual learning, application and reflection
3. Aspects of equality and diversity that need to be addressed when facilitating individual learning and development
4. The importance of reflective practice in individual learning and development
5. Key factors to consider when setting and agreeing goals with individual learners
6. The range of delivery methods appropriate to individual learning
7. The range of resources, including support from others, that are available to support individual learning
8. How technology can enhance resources and delivery methods for individuals
9. The range of techniques that can be used to encourage reflective practice by the learner
10. How to support different types of learners in applying new or enhanced learning in context
11. The types of barriers that learners encounter and how to develop strategies to overcome these
12. How to adapt learning plans in response to learner progress and reflection whilst still focusing on learner needs and desired outcomes
13. How to assess and manage risk in own area of work whilst facilitating learning and development for individuals

PERFORMANCE OBJECTIVES

Learning and development practitioners:

a. Establish and maintain a professional relationship with the learner that supports individual learning and reflection
b. Explore and agree the learner's objectives, learning needs and goals
c. Agree a plan of learning, application and reflection
d. Use a range of methods and resources to help the learner acquire/develop the skills and knowledge they need
e. Support the learner in applying their learning in context
f. Provide constructive and motivational feedback to improve the learner's application of learning
g. Assist the learner to reflect on their practice and experience
h. Adapt learning, application and reflection to meet further needs
i. Maintain the health and safety of the learner, self and other people

NOS G8 – Identify and Agree the Motor Vehicle Customer Needs

NOS OVERVIEW

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

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the fundamental legal requirements of current consumer legislation and the consequences of your own actions in respect of this legislation.
2. the content and limitations of company and product warranties for the vehicles dealt with by your company.
3. the limits of your own authority for accepting vehicles.
4. the importance of keeping customers informed of progress.
5. your workplace requirements for the completion of records.
6. how to complete and process all the necessary documentation.

Customer communication and care

7. how to communicate effectively with, and listen to, customers.
8. how to adapt your language when explaining technical matters to non-technical customers.
9. how to use effective questioning techniques.
10. how to care for customers and achieve customer satisfaction.

Company products and services

11. the range of options available to resolve vehicle problems.
12. the range and type of services offered by your company.
13. the effect of resource availability upon the receipt of customer vehicles and the completion work.
14. how to access costing and work completion time information.

PERFORMANCE OBJECTIVES

To be competent you must:

a. obtain sufficient, relevant information from the customer to make an assessment of their own and perceived vehicle needs.
b. provide customers with accurate, current and relevant advice and information on:
    - suitable vehicle inspection, repair and/or service procedures
    - potential courses of action

- the implications of courses of action
- the estimated costs.

c. provide advice and information clearly and in a form and manner which the customer will understand.

d. actively encourage customers to ask questions and seek clarification during your conversation.

e. support the accurate identification and clarification of customer and vehicle needs, by referring to:
   - vehicle data
   - operating procedures.

f. before accepting the vehicle, agree with the customer and record:
   - the extent and nature of the work to be undertaken
   - the terms and conditions of acceptance
   - the cost
   - the timescale.

g. confirm your customer's understanding of the agreement you have made.

h. ensure your recording systems are complete, accurate, in the format required and signed by the customer where necessary.

i. pass all completed records to the next person in the process promptly.

j. gain further customer approval where the contracted agreement is likely to be exceeded.

NOS G11 – Allocate and Monitor the Progress and Quality of Work in Your Area of Responsibility
(Imported CfA NOS D6)

This standard is imported from the Management and Leadership (2008) suite of NOS, overseen by the Council for Administration (CfA).

NOS OVERVIEW

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

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

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

Links to other units
This NOS is linked to all other units in the overall suite of National Occupational Standards for Management and Leadership where work must be allocated and progress
and quality must be monitored. If your organisation is a small firm, you should look at unit
K1 Make sure your staff can do their work, which has been developed by the Small Firms Enterprise and Development Initiative (SFEDI) specifically for small firms and which may
be more suitable to your needs. You can obtain information on the unit from SFEDI on tel. 0114 241 2155 or at the SFEDI website (www.sfedi.co.uk).

Skills

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

- Communicating
- Consulting
- Decision making
- Delegating
- Information management
- Leadership
- Managing conflict
- Monitoring
- Motivating
- Planning
- Problem solving
- Providing feedback
- Prioritising

- Reviewing
- Setting objectives
- Stress management
- Valuing and supporting others.

ESSENTIAL KNOWLEDGE

You need to know and understand the following:

1. How to select and successfully apply different methods for communicating with people across an area of responsibility.
2. The importance of confirming/clarifying the work required in your area of responsibility with your manager and how to do this effectively.
3. How to identify and take due account of health and safety issues in the planning, allocation and monitoring of work.
4. How to produce a plan of work for your area of responsibility, including how to identify any priorities or critical activities and the available resources.
5. How to identify sustainable resources and ensure their effective use when planning the work for your area of responsibility.
6. The importance of seeking views from people working in your area and how to take account of their views in producing the plan of work.
7. The values, ethics, beliefs, faith, cultural conventions, perceptions and expectations of any team members from a different country or culture and how your own values, ethics, beliefs, faith, cultural conventions, perceptions, expectations, use of language, tone of voice and body language may appear to them.
8. Why it is important to allocate work to individuals and/or teams on a fair basis and how to do so effectively.
9. Why it is important that individuals and/or teams are briefed on allocated work and the standard or level of expected performance and how to do so effectively.
10. The importance of showing individuals and/or teams how their work fits with the vision and objectives of the area and those of the organisation.
11. Ways of encouraging individuals and/or teams to ask questions and/or seek clarification in relation to the work which they have been allocated.
12. Effective ways of regularly and fairly monitoring the progress and quality of work of individuals and/or teams against the standards or level of expected performance.
13. How to provide prompt and constructive feedback to individuals and/or teams.
14. Why it is important to monitor your area for conflict and how to identify the cause(s) of conflict when it occurs and deal with it promptly and effectively
    How to take account of diversity and inclusion issues when supporting and encouraging individuals and/or teams to complete the work they have been allocated.
15. How to take account of diversity and inclusion issues when supporting and encouraging individuals and/or teams to complete the work they have been allocated.
16. Why it is important to identify unacceptable or poor performance by individuals and/or teams and how to discuss the cause(s) and agree ways of improving performance with them.
17. The type of problems and unforeseen events that may occur and how to support individuals and/or teams in dealing with them.

18. The additional support and/or resources which individuals and/or teams might require to help them complete their work and how to assist in providing this.
19. How to select and successfully apply different methods for encouraging, motivating and supporting individuals and/or teams to complete the work they have been allocated, improve their performance and for recognising their achievements .
20. How to log information on the ongoing performance of individuals and/or teams and use this information for formal performance appraisal purposes
21. The importance of reviewing and updating plans work for your area in the light of developments, to reallocate work and resources and how to clearly communicate the changes to those affected.

Industry/sector specific knowledge and understanding

1. Industry/sector requirements for the development or maintenance of knowledge, understanding and skills.
2. Industry/sector specific legislation, regulations, guidelines, codes of practice relating to carrying out work.

PERFORMANCE OBJECTIVES

You must be able to do the following:

a. Confirm the work required in your area of responsibility with your manager and seek clarification, where necessary, on any outstanding points and issues.
b. Plan how the work will be undertaken, seeking views from people in your area of responsibility, identifying any priorities or critical activities and making best use of the available resources.
c. Ensure that work is allocated to individuals and/or teams on a fair basis taking account of skills, knowledge and understanding, experience and workloads and the opportunities for development.
d. Ensure that individuals and/or teams are briefed on allocated work, showing how it fits with the vision and objectives for the area and the overall organisation, and the standard or level of expected performance.
e. Recognise and seek to find out about differences in expectations and working methods of any team members from a different country or culture and promote ways of working that take account of their expectations and maximise productivity.
f. Encourage individuals and/or team members to ask questions, make suggestions and seek clarification in relation to allocated work.
g. Monitor the progress and quality of the work of individuals and/or teams on a regular and fair basis against the standard or level of expected performance and provide prompt and constructive feedback.
h. Support individuals and/or teams in identifying and dealing with problems and unforeseen events.
i. Motivate individual and/or teams to complete the work they have been allocated and provide, where requested and where possible, any additional support and/or resources to help completion.
j. Monitor your area for conflict, identifying the cause(s) when it occurs and dealing with it promptly and effectively.

k. Identify unacceptable or poor performance, discuss the cause(s) and agree ways of improving performance with individuals and/or teams.
l. Recognise successful completion of significant pieces of work or work activities by individuals and/or teams.
m. Use information collected on the performance of individuals and/or teams in any formal appraisals of performance.
n. Review and update plans of work for your area, clearly communicating any changes to those affected.

Behaviours which underpin effective performance

1. You recognise changes in circumstances promptly and adjust plans and activities accordingly.
2. You prioritise objectives and plan work to make best use of time and resources.
3. You make time available to support others.
4. You take personal responsibility for making things happen.
5. You show an awareness of your own values, motivations and emotions.
6. You show integrity, fairness and consistency indecision-making.
7. You clearly agree what is expected of others and hold them to account.
8. You seek to understand people's needs and motivations.
9. You take pride in delivering high quality work.
10. You are vigilant for possible risks and hazards.
11. You encourage and support others to make the best use of their abilities.
12. You use a range of leadership styles appropriate to different people and situations.

NOS MET01 – Remove, Renew and Refit Mechanical Components Following Accident Damage

NOS OVERVIEW

This NOS is about the removal, renewal and refitting of mechanical components within vehicle mechanical systems where the procedure is straightforward and where items are not directly linked to vehicle safety systems. Disconnection or removal of vehicle safety systems is not expected in this NOS.

KEY WORDS AND PHRASES

Agreed Timescales

Examples include manufacturer's recommended work times, job time set by your company or a job time agreed with the specific customer.

Electro-mechanical Locking Components

Examples are door lock, boot lock, tailgate and steering lock components.

Vehicles

These can be light vehicles or commercial vehicles.

Vehicle Safety Systems

This is a generic term which includes, for example, safety and restraint systems (SRS), engine management systems, assisted braking systems (ABS), fuel cut off systems and any equipment related to safety.

SCOPE OF THIS NOS:

All of the items listed below form part of this National Occupational Standard.

1. Mechanical Components are:

a. road wheels
b. engine cooling system components
c. exhaust components
d. fuel components
e. electro-mechanical locking components

2. Tools and equipment are:

a. torque wrench
b. wheel removal and balancing
c. fuel retrieval unit
d. electrical multimeter
f. hand tools

g. power tools for removal only
h. general workshop equipment
i. special tools

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisation requirements and procedures

1. the health, safety and legal requirements relating to the removal and fitting of **mechanical components.**

2. your workplace procedures for:

   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records.

3. the work that needs to be done and the standard required.

4. the requirements for protecting the vehicle and contents from damage before, during and after removing and fitting activities.

5. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and fitting **mechanical components.**

Equipment

6. how to select, check and use all the **tools and equipment** required to remove and fit **mechanical components.**

Removal, renewal and refitting of mechanical components

7. the types of common vehicle mechanical systems components.

8. the construction and operation of common vehicle mechanical systems.

9. how mechanical systems and their components work and their function.

10. where to find and how to interpret and use sources of information applicable to the removal and fitting of **mechanical components.**

11. the procedures for removing and fitting **mechanical components.**

12. the methods of storing removed parts and the importance of storing them correctly.

13. the different types of fastenings and the reasons for their use.

14. the need for correct alignment of components and the methods used to achieve this.

15. the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose.

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when removing and fitting **mechanical components.**

b. protect the vehicle and its contents effectively when removing and fitting **mechanical components.**

c. support your removal and replacement activities by referring to:
   - vehicle technical data
   - removal and replacement procedures
   - legal requirements.

d. select and use the correct **tools and equipment** for the components you are going to remove or fit.

e. ensure that the **tools and equipment** you require are calibrated and in a safe working condition to meet manufacturer's and legal requirements.

f. remove and fit **mechanical components** following:

   - recognised research methods
   - removal and fitting procedures
   - manufacturers' instructions
   - your workplace procedures
   - health, safety and legal requirements.

g. work in a way which reduces the risk of damaging other components and units on the vehicle.

h. safely adapt the way you work and your work techniques to suit the needs of the job when necessary.

i. store all removed components safely in the correct location.

j. check that the components you have fitted operate correctly following the manufacturer's specification.

k. report any additional faults or defects you find during the course of your work to the relevant person(s) promptly.

l. report any delays in completing your work to the relevant person(s) promptly in the format required.

m.

n. remove and fit **mechanical components** within the agreed timescale.

o. complete work records accurately, in the format required and pass them to the relevant person(s) promptly.

NOS MET02 – Remove, Renew and Refit Electrical Components Following Accident Damage

NOS OVERVIEW

This NOS is about the removal, renewal and refitting of electrical components where the procedure is straightforward and where items are not directly linked to vehicle safety systems.

KEY WORDS AND PHRASES

Agreed Timescales

Examples include manufacturer's recommended work times, job time set by your company or a job time agreed with the specific customer.

Vehicles

These can be light vehicles or commercial vehicles.

Vehicle Safety Systems

This is a generic term which includes, for example, safety and restraint systems (SRS), engine management systems, assisted braking systems (ABS), fuel cut off systems and any equipment related to safety.

SCOPE OF THIS NOS:

All of the items listed below form part of this National Occupational Standard.

1. Electrical Components are:

a. batteries within non-hybrid vehicles
b. low voltage lighting
c. wipers and washers without sensors
d. electric window systems without vehicle safety components
e. horn
f. audio in vehicle equipment

2. Tools and equipment are:

a. hand tools
b. torque wrench
c. electrical multimeter
d. general workshop equipment
e. manufacturer's specialist equipment

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisation requirements and procedures

6. the health, safety and legal requirements relating to the removal and fitting of **electrical components.**

7. your workplace procedures for:

   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records.

8. the work that needs to be done and the standard required.

9. the requirements for protecting the vehicle and contents from damage before, during and after removing and fitting activities.

10. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and fitting **electrical components.**

Equipment

6. how to select, check and use all the **tools and equipment** required to remove and fit **electrical components.**

Removal, renewal and refitting of electrical components

7. the types of common vehicle electrical systems components.

8. the construction and operation of common vehicle electrical systems.

9. how electrical systems and their components work and their function.

10. where to find and how to interpret and use sources of information applicable to the removal and fitting of **electrical components.**

11. the procedures for removing and fitting **electrical components.**

12. the methods of storing removed parts and the importance of storing them correctly.

13. the different types of fastenings and the reasons for their use.

14. the need for correct alignment of components and the methods used to achieve this.

15. the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose.

PERFORMANCE OBJECTIVES

To be competent you must:

p. use the appropriate personal protective equipment when removing and fitting **electrical components.**

q. protect the vehicle and its contents effectively when removing and fitting **electrical components.**

r. support your removal and replacement activities by referring to:
- vehicle technical data
- removal and replacement procedures
- legal requirements.

s. select and use the correct **tools and equipment** for the components you are going to remove or fit.

t. ensure that the **tools and equipment** you require are calibrated and in a safe working condition to meet manufacturer's and legal requirements.

u. remove and fit **electrical components** following:

- recognised research methods
- removal and fitting procedures
- manufacturers' instructions
- your workplace procedures
- health, safety and legal requirements.

v. work in a way which reduces the risk of damaging other components and units on the vehicle.

w. safely adapt the way you work and your work techniques to suit the needs of the job when necessary.

x. store all removed components safely in the correct location.

y. check that the components you have fitted operate correctly following the manufacturer's specification.

z. report any additional faults or defects you find during the course of your work to the relevant person(s) promptly.

aa. report any delays in completing your work to the relevant person(s) promptly in the format required.

bb. remove and fit **electrical components** within the agreed timescale.

cc. complete work records accurately, in the format required and pass them to the relevant person(s) promptly.

NOS MET03 – Remove, Renew and Refit Trim Components Following Accident Damage

NOS OVERVIEW

This NOS is about the removal, renewal and refitting of trim components where the procedure is straightforward and where items are not directly linked to vehicle safety systems.

KEY WORDS AND PHRASES

Agreed Timescales

Examples include manufacturer's recommended work times, job time set by your company or a job time agreed with the specific customer.

Vehicles

These can be light vehicles or commercial vehicles.

Vehicle Safety Systems

This is a generic term which includes, for example, safety and restraint systems (SRS), engine management systems, assisted braking systems (ABS), fuel cut off systems and any equipment related to safety.

SCOPE OF THIS NOS:

All of the items listed below form part of this National Occupational Standard.

1. Trim Components are:

a. bumpers without sensors
b. headlamp units excluding high discharge and directional
c. tail lamps
d. wing repeater lamps
e. door trim
f. window and waist mouldings
g. bonnet and boot lid trim excluding those on pedestrian friendly bonnets
h. spoilers
i. boot carpet and trim
j. wheel arch liners
k. mud flaps
l. under-vehicle shields

2. Tools and equipment are:

a. hand tools
b. general workshop equipment

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisation requirements and procedures

11. the health, safety and legal requirements relating to the removal and fitting of **trim components.**

12. your workplace procedures for:

    - the referral of problems
    - reporting of delays to the completion of work
    - completion of work records.

13. the work that needs to be done and the standard required.

14. the requirements for protecting the vehicle and contents from damage before, during and after removing and fitting activities.

15. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and fitting **trim components.**

Equipment

6. how to select, check and use all the **tools and equipment** required to remove and fit **trim components.**

Removal, renewal and refitting of trim components

7. the types of common vehicle **trim components** and their purpose.

8. the construction of, and fastening methods for, common vehicle **trim components.**

9. where to find and how to interpret and use sources of information applicable to the removal and fitting of **trim components.**

10. the procedures for the systematic removal and fitting of **trim components.**

11. the methods of storing removed parts and the importance of storing them correctly.

12. the different types of fastenings and the reasons for their use.

13. the need for correct alignment of components and the methods used to achieve this.

14. the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose.

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when removing and fitting **trim components.**

b. protect the vehicle and its contents effectively when removing and fitting **trim components.**

c. support your removal and replacement activities by referring to:
   - vehicle technical data
   - removal and replacement procedures
   - legal requirements.

d. select and use the correct **tools and equipment** for the components you are going to remove or fit.

e. ensure that the **tools and equipment** you require are calibrated and in a safe working condition to meet manufacturer's and legal requirements.

f. remove and fit **trim components** following:

   - recognised research methods
   - removal and fitting procedures
   - manufacturers' instructions
   - your workplace procedures
   - health, safety and legal requirements.

g. work in a way which reduces the risk of damaging other components and units on the vehicle.

h. safely adapt the way you work and your work techniques to suit the needs of the job when necessary.

i. store all removed components safely in the correct location.

j. check that the components you have fitted operate correctly following the manufacturer's specification.

k. report any additional faults or defects you find during the course of your work to the relevant person(s) promptly.

l. report any delays in completing your work to the relevant person(s) promptly in the format required.

m. remove and fit **trim components** within the agreed timescale.

n. complete work records accurately, in the format required and pass them to the relevant person(s) promptly.

NOS MET04 – Remove, Renew and Refit Electro Mechanical and Electronic Components

NOS OVERVIEW

This NOS is about the removal, renewal and refitting of electro mechanical and electronic components within advanced vehicle systems following accident damage.

KEY WORDS AND PHRASES

Agreed Timescales

Examples include: manufacturer's recommended work times, job time set by your company or a job time agreed with the specific customer.

Contaminants

Examples include: high voltage; glass; gases; fuel; hyrdro-carbons.

Full geometry check

This includes toe in, toe out, caster, camber and King Pin Inclination (KPI).

Special Purpose Equipment

Examples are brake bleeding equipment, fuel retriever.

Vehicles

These can be light vehicles or commercial vehicles.

SCOPE OF THIS NOS:

All the items listed below form part of the National Occupational Standard.

1. Electro-mechanical components are within:

a. active suspension systems
b. climate control and air conditioning systems
c. interactive braking systems
d. transmission system
e. steering system

2. Electronic components are within:

a. audio and visual infotainment systems

b. high voltage electronic and electric directional control lighting systems
c. security systems

d. facia panel and auxiliary fittings
e. safety systems

3. Tools and equipment are:

a. hand tools
b. special purpose equipment
c. air conditioning recovery plant
d. refrigerant identifier
e. steering geometry equipment for 4 point wheel alignment
f. electronic testing equipment
g. general workshop equipment

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the removal and fitting of **electro-mechanical and electronic components.**

2. your workplace procedures for:

   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records.

3. the work that needs to be done and the standard required.

4. the requirements for protecting the vehicle and contents from damage before, during and after removing and fitting activities.

5. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and fitting **electro-mechanical and electronic components.**

Equipment

6. how to select, check and use all the **tools and equipment** required to remove and fit **electro-mechanical and electronic components.**

Removal, renewal and refitting of electro-mechanical and electronic components

7. the types of components found in advanced electro-mechanical and electronic systems.

8. the construction and operation of advanced **electro-mechanical and electronic components** and systems.

9. how **electro-mechanical and electronic components** and systems interact with other vehicle systems via multiplexing (e.g. Controller Area Network – Databus (CAN-DATABUS); Local Interconnect Network (LIN); Body Electronics Area Network (BEAN); Audio Visual Communication – Local Area Network (AVC-LAN); Media Orientated System Transport (MOST).

10. where to find and how to interpret and use sources of information applicable to the removal and fitting of **electro-mechanical and electronic components.**

11. the procedures necessary prior to carrying out removal and fitting of **electro-mechanical and electronic components.**

12. types of contaminants associated with accident damaged vehicles and the dangers associated with them.

13. the procedures for the systematic removal and fitting **electro-mechanical and electronic components.**

14. the methods of storing removed parts and the importance of storing them correctly.

15. how to handle and store refrigerants, gases, vehicle safety systems and pyrotechnic devices.

16. the different types of fastenings and the reasons for their use.

17. the need for correct alignment of components and the methods used to achieve this.

18. the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose.

19. how to test and evaluate the performance of renewed and refitted **electro-mechanical and electronic** components against vehicle operating specifications and any legal requirements.

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when removing and fitting **electro-mechanical and electronic components.**

b. protect the vehicle and its contents effectively when removing and fitting **electro-mechanical and electronic components.**

c. support your removal and replacement activities by referring to:
- vehicle technical data
- removal and replacement procedures
- legal requirements.

d. select and use the correct **tools and equipment** for the components you are going to remove or fit.

e. ensure that the **tools and equipment** you require are calibrated and in a safe working condition.

f. remove and fit **electro-mechanical and electronic components** following:

- recognised research methods
- removal and fitting procedures
- manufacturers' instructions
- your workplace procedures
- health, safety and legal requirements.

g. work in a way which reduces the risk of damaging other components and units on the vehicle.

h. safely adapt your working practices and techniques to suit the needs of the job and vehicle.

i. store all removed components, refrigerants, gases and vehicle safety system pyrotechnic devices safely in the correct location.

j. prepare, connect and test all available electronic system testing equipment following manufacturer's instructions prior to use.

k. check that the components you have fitted operate correctly following the manufacturer's specification prior to release to the customer.

l. correct any component and system operational faults within the limits of your authority.

m. report any additional vehicle unit and component faults you find during the course of your work to the relevant person(s) promptly.

n. make suitable and justifiable recommendations for further cost effective repairs, if required.

o. report any delays in completing your work to the relevant person(s) promptly.

p. remove and fit **electro-mechanical and electronic components** within the agreed timescale.

q. complete work records accurately, in the format required and pass them to the relevant person(s) promptly.

NOS MET05 – Remove and Reinstate Complete Vehicle Electro-Mechanical and Electronic Systems and Assemblies Following Accident Damage

NOS OVERVIEW

This NOS is about removing and reinstating complete vehicle electro-mechanical and electronic systems and assemblies following accident damage. The removal process may be complicated as the units and assemblies involved could be damaged and within damaged areas of a vehicle. The reinstatement process may involve working within any restrictions caused by the repaired vehicle. Ensuring that renewed and refitted units, assemblies and components operate to manufacturers' and legal requirements is included.

KEY WORDS AND PHRASES

Agreed Timescales

Examples include: manufacturer's recommended work times, job time set by your company or a job time agreed with the specific customer.

Comfort and convenience systems

Examples are heated seats, electrically adjusted seats, heated screens, electric mirrors, heating

Contaminants

Examples include: high voltage; glass; gases; fuel; hydro-carbons

Full geometry check

This includes toe in, toe out, caster, camber and King Pin Inclination (KPI).

Vehicles

These can be light vehicles or commercial vehicles.

SCOPE OF THIS NOS:
All of the items listed below form part of this National Occupational Standard.

1. Tools and equipment
- a. hand tools
- b. special purpose tools
- c. general workshop equipment
- d. electrical multimeter
- e. steering geometry equipment for 4 point wheel alignment
- f. air conditioning recovery plant
- g. refrigerant identifier
- h. electronic testing equipment
- i. fuel retriever

2. Testing methods are
- a. visual
- b. aural
- c. use of diagnostic testing and measuring equipment

3. Electro-mechanical systems are
- a. engines
- b. cooling
- c. exhaust
- d. fuel
- e. drivelines and hubs
- f. final drive assemblies
- g. steering
- h. suspension
- i. braking
- j. air conditioning and climate control systems
- k. tow bars

4. Electronic systems are
- a. all types of lighting systems
- b. wiper and wash systems, including sensor controlled
- c. security systems
- d. comfort and convenience systems
- e. safety systems
- f. all types of electric window systems
- g. sun and retractable roof systems
- h. complete audio and visual infotainment systems
- i. complete facia panel systems and auxiliary fittings

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the legal requirements relating to the vehicle (including road safety and refrigerant handling requirements).

2. the health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection when removing and reinstating vehicle **electro-mechanical and electronic** systems and assemblies.

3. requirements of manufacturer's warranty agreements.

4. the vehicle work specification.

5. your workplace procedures for

    - the referral of problems
    - reporting of delays to the completion of work
    - completion of work records.

6. the health and safety risks associated with vehicle safety systems and the implications for work practices.

7. the legal requirements for the storage of vehicle safety systems.

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

9. the relationship between time, cost and profitability.

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

Equipment

11. how to select, prepare, check and use all the **equipment** required to remove and reinstate **electro-mechanical and electronic** systems and assemblies.

Removal and reinstatement of electro-mechanical and electronic components systems and assemblies

12. how vehicle damage can affect the removal and replacement of units and components.

13. how to find, interpret and use sources of information applicable to **electro-mechanical and electronic components** unit and component removal, renewal and refitting.

14. the construction and operation of electro-**mechanical, electrical** and electronic vehicle systems and assemblies.

15. how **electro-mechanical and electronic systems** and components interact with other vehicle systems via multiplexing (e.g. Controller Area Network – Databus (CAN-DATABUS); Local Interconnect Network (LIN); Body Electronics Area Network (BEAN); Audio Visual Communication – Local Area Network (AVC- LAN); Media Orientated System Transport (MOST).

16. how to remove and rebuild **electro-mechanical and electronic components systems** and assemblies to meet the manufacturer's original specification.

17. the procedures necessary prior to carrying out removal and reinstatement of **electro-mechanical and electronic systems.**

18. types of contaminants associated with accident damaged vehicles and the dangers associated with them.

19. how to work in a logical sequence to remove damaged units and components within the **electro-mechanical and electronic components systems.**

20. the logical sequence of work for complete body changes.

21. the implications of an incorrect vehicle body structure on steering geometry.

22. how to refit **electro-mechanical and electronic components systems** to a repaired vehicle.

23. how to select, reinstate and check fluids.

24. how to work safely avoiding damage to other vehicle systems, components and units and contact with hazardous substances.

25. how and where to store removed items safely, including handling refrigerants, gases and vehicle safety system pyrotechnic devices

26. how to test and evaluate the performance of renewed and refitted **electro-mechanical and electronic** systems and assemblies against vehicle operating specifications and any legal requirements.

27. the manufacturer's specification for the type and quality of units and components to be used within the vehicle's systems.

28. the relationship between **test methods** and the unit(s) renewed – the use of appropriate **testing methods.**

PERFORMANCE OBJECTIVES

To be competent you must:

o. use the appropriate personal protective equipment when removing, renewing and fitting **electro-mechanical and electronic components** systems and assemblies.

p. protect the vehicle and its contents effectively when removing, renewing and fitting **electro-mechanical and electronic components** systems and assemblies.

q. support your removal and replacement activities by referring to:

- vehicle technical data
- removal and replacement procedures
- legal requirements.

r. prepare, test and use all the **equipment** required following manufacturers' instructions and to meet any legal requirements.

s. carry out all removal, renewal and refitting activities following:

- recognised research methods
- manufacturers' instructions
- your workplace procedures
- health and safety requirements.

t. work in a way which minimises the risk of:

- damage to other vehicle systems
- damage to other components and units
- leakage
- contact with hazardous substances.

g. safely adapt your working practices and techniques to suit the needs of the job and vehicle.

h. store all removed **electro-mechanical and electronic** units and components safely in the correct location.

i. ensure all renewed **electro-mechanical and electronic** units and components conform to the vehicle operating specification and any legal requirements.

j. use suitable **testing methods** to evaluate the performance of the reinstated system accurately.

k. correct any component and system operational faults within the limits of your authority.

l. ensure the reinstated **electro-mechanical and electronic** systems perform to the vehicle operating specification and meet any legal requirements prior to return to the customer.

m. report any additional faults you find during the course of your work to the relevant person(s) promptly.

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

o. complete all removal and reinstatement activities within the agreed timescale.

p. report any expected delays in completing your work the relevant person(s) promptly.

NOS MET06 – Strip Vehicles to Assess the Extent and Type of Damage

NOS OVERVIEW

This NOS is about performing what is commonly known as an 'estimate strip' done to support the work of Vehicle Damage Assessors in order to gain detailed and exact information on the extent and type of damage present within all vehicle systems, units and components and trim fitments. The NOS also covers the ability to describe and document damage with reference to manufacturer's guidance and make recommendations in order to maintain the integrity of the repair.

KEY WORDS AND PHRASES

Agreed Timescales

Examples include: manufacturer's recommended work times, job time set by your company or a job time agreed with the specific customer.

Comfort and convenience systems

Examples are heated seats, electrically adjusted seats, heated screens, electric mirrors, heating

Contaminants

Examples include: high voltage; glass; gases; fuel; hydro-carbons.

Vehicles

These can be light vehicles or commercial vehicles.

SCOPE OF THIS NOS:

All of the items listed below form part of this National Occupational Standard.

3. Tools and Equipment

j. hand tools
k. special purpose tools
l. general workshop equipment
m. measuring equipment
n. air conditioning recovery plant
o. refrigerant identifier
p. electrical multimeters
q. steering geometry equipment for 4 wheel alignment
r. electronic testing equipment

4. Examination and testing methods are

d. visual
e. aural
f. functional
g. measurement
h. use of diagnostic testing equipment

3. Vehicle stripping covers:

a. any type of mechanical and electro-mechanical systems, units and components
b. any type of electrical and electronic systems, units and components
c. any type of external and internal trim fitments

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

12. the legal requirements relating to vehicles and conducting vehicle stripping activities (including road safety and refrigerant handling requirements).

13. the health and safety legislation and workplace procedures relevant to stripping and examining vehicles and personal and vehicle protection.

14. the manufacturer's specification and guidance for assessing and repairing damage to maintain the integrity of repairs.

15. your workplace procedures for
    - recording the results specific to damage and fault examinations
    - the referral of problems
    - reporting of delays to the completion of work
    - completion of general work records.

16. the importance of making accurate records of the results of your examinations and tests and interpreting them correctly.

17. the implications of failing to carry out examination activities correctly.

18. the implications of signing workplace documentation and vehicle records.

19. the health and safety risks associated with vehicle safety systems and the implications for work practices.

20. the legal requirements for the storage of vehicle safety systems.

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

22. the relationship between time, cost and profitability.

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

Equipment

24. how to select, prepare, check and use all the **equipment** required for **vehicle stripping** and damage assessment activities.

Vehicle Stripping and the Conduct of Damage Examinations/Assessments

14. how electro-mechanical and electronic components and systems interact with other vehicle systems via multiplexing (e.g. Controller Area Network – Databus (CAN-DATABUS); Local Interconnect Network (LIN); Body Electronics Area Network (BEAN); Audio Visual Communication – Local Area Network (AVC-LAN); Media Orientated System Transport (MOST).

15. how to find, interpret and use sources of information applicable to **vehicle stripping** activities, including initial Vehicle Damage Assessment reports and information relating to operational tolerances.

16. the importance of using technical information to inform your examination and testing of damaged vehicles.

17. how the type of vehicle damage can affect the **vehicle stripping** process.

18. types of contaminants associated with accident damaged vehicles and the dangers associated with them.

19. the procedures for the systematic stripping of vehicles in order to accurately identify damage to systems, assemblies, units and components.

20. the **examination and testing methods** suitable for use on damaged vehicles and how to carry out the systematic examination and testing of vehicle systems, assemblies, units and components.

21. the types of safety critical items with vehicles.

22. the types of 'one use', single fit items (e.g. stretch bolts).

23. how to differentiate between accident and non-accident related damage.

24. the types of items which should be retained for accident investigation evidence purposes.

25. the types of manufacturer's exchange units (e.g. catalytic converters, steering racks) and the manufacturer's exchange criteria.

26. how to confirm the correct operation of vehicle systems and vehicle condition.

27. how to compare test and examination results against vehicle specifications, manufacturer's guidance and legal requirements.

28. how to communicate recommendations based upon the results of your examinations and tests.

29. how to work safely avoiding further damage to other vehicle systems, components and units and contact with hazardous substances.

30. how and where to store removed items safely, including handling refrigerants, gases and vehicle safety system pyrotechnic devices.

PERFORMANCE OBJECTIVES

To be competent you must:

u. use the appropriate personal protective equipment when carrying out **vehicle stripping and examination and testing methods.**

v. protect the vehicle and its contents effectively when carrying out **vehicle stripping and examination and testing methods.**

w. support your **vehicle stripping** and **examination and testing** activities by referring to:

- vehicle technical data
- manufacturer's guidance
- initial Vehicle Damage Assessor's Report
- removal and replacement procedures
- legal requirements.

x. select and use the correct **tools and equipment** for the vehicle stripping and examination activities you are going to carry out.

y. ensure the **tools and equipment** you require are calibrated and in a safe working condition.

z. carry out all **vehicle stripping** and **examination and testing** activities following:

- recognised research methods
- manufacturers' instructions
- your workplace procedures
- health and safety requirements.

aa. work in a way which minimises the risk of:

- damage to other vehicle systems
- damage to other components and units
- leakage
- contact with hazardous substances.

h. work in a way that is suitable to the nature of the damage to the vehicle.

i. ensure the amount of vehicle stripping is suitable to determine the level and extent of damage.

j. store all removed systems, units and components safely in the correct location and to meet any legal requirements.

k. use suitable **examination and testing methods** to evaluate the type and extent of damage accurately.

l. ensure your **examination and testing** of the vehicle against specification identifies:
    - the type and extent of damage to systems, units and components
    - differences from the vehicle specification
    - vehicle appearance and condition faults
    - accident related and any non-accident related damage or faults
    - safety critical items.

m. make suitable recommendations for further work that will maintain the integrity of the repair and meets manufacturer's requirements.

n. ensure your records describe damage with reference to manufacturer's specifications for system, unit and component condition.

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

p. complete all **vehicle stripping and examination and testing** activities within the agreed timescale.

q. report any expected delays in completing your work to relevant person(s) promptly.

NOS MET07 – Remove, Renew and Refit Trim Fitments Directly Linked to Safety Systems

NOS OVERVIEW

This NOS is about the removal, renewal and refitting of trim fitments following accident damage where the work is complicated by the presence of safety systems.

KEY WORDS AND PHRASES

Agreed Timescales

Examples include: manufacturer's recommended work times, job time set by your company or a job time agreed with the specific customer.

Contaminants

Examples include: high voltage; glass; gases; fuel; hyrdro-carbons.

Limits of Authority

This could apply to conditions set by the manufacturer, the insurance company, the Vehicle Damage Assessor, the individual's job role or job instruction.

Vehicles

These can be light vehicles or commercial vehicles.

SCOPE OF THIS NOS:

All the items listed below form part of the National Occupational Standard.

1. Trim fitments are:

a. seating - rebuild
b. convertible roofs
c. electro-mechanical roofs
d. headlinings
e. carpets
f. door fitments with safety related equipment
g. bumpers with sensors
h. tailgate fitments with safety related systems
i. bonnets with passive safety systems

2. Tools and equipment are:

a. hand tools

b. special purpose equipment
c. general workshop equipment
d. electronic testing equipment
e. measuring

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

20. the health, safety and legal requirements relating to the removal and fitting of **trim fitments.**

21. your workplace procedures for:

- the referral of problems
- reporting of delays to the completion of work
- completion of work records.

22. the requirements of manufacturer's warranty agreements.

23. the work that needs to be done and the standard required.

24. the requirements for protecting the vehicle and contents from damage before, during and after removing and fitting activities.

25. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and fitting **trim fitments.**

Equipment

26. how to select, check and use all the **tools and equipment** required to remove and fit **trim fitments.**

Removal, renewal and refitting of trim fitments

27. types of trim fitments commonly linked to safety systems.

28. the construction and operation of advanced **trim fitments** and systems.

29. how **trim fitments** and systems linked to them interact with other vehicle systems via multiplexing (e.g. Controller Area Network – Databus (CAN-DATABUS); Local Interconnect Network (LIN); Body Electronics Area Network (BEAN); Audio Visual Communication – Local Area Network (AVC-LAN); Media Orientated System Transport (MOST).

30. where to find and how to interpret and use sources of information applicable to the removal and fitting of **trim fitments.**

31. the procedures necessary prior to carrying out removal and fitting of **trim fitments.**

32. types of contaminants associated with accident damaged vehicles and the dangers associated with them.

33. the procedures for the systematic removal and fitting of **trim fitments.**

34. the methods of storing removed parts and the importance of storing them safely and correctly.

35. the different types of fastenings used for trim fitments and the reasons for their use.

36. the need for correct alignment of components and the methods used to achieve this.

37. the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose.

PERFORMANCE OBJECTIVES

To be competent you must:

r. use the appropriate personal protective equipment when removing and fitting **trim fitments.**

s. protect the vehicle and its contents effectively when removing and fitting **trim fitments.**

t. support your removal and replacement activities by referring to:
- vehicle technical data
- manufacturer's guidance
- removal and replacement procedures
- legal requirements.

u. select and use the correct **tools and equipment** for the components you are going to remove or fit.

v. ensure that the **tools and equipment** you require are calibrated and in a safe working condition to meet manufacturer's and legal requirements.

w. remove and fit **trim fitments** following:

- recognised research methods
- removal and fitting procedures
- manufacturers' instructions
- your workplace procedures
- health, safety and legal requirements.

x. work in a way which reduces the risk of damaging other components and units on the vehicle.

y. safely adapt your working practices and techniques to suit the needs of the job and vehicle.

z. store all removed components safely in the correct location.

aa. prepare, connect and test all available electronic system testing equipment following manufacturer's instructions prior to use.

bb. check that the **trim fitments** you have fitted operate correctly following the manufacturer's specification prior to release to the customer.

cc. correct any component and system operational faults within the limits of your authority.

dd. report any additional vehicle unit and component faults you find during the course of your work to the relevant person(s) promptly.

ee. make suitable and justifiable recommendations for further cost effective repairs, if required.

ff. report any delays in completing your work to the relevant person(s) promptly.

gg. remove and fit **trim fitments** within the agreed timescale.

hh. complete work records accurately, in the format required and pass them to the relevant person(s) promptly.

NOS MET08 – Handle Automotive Refrigerants

NOS OVERVIEW

This NOSs covers the recovery, flushing and recharging of F gas refrigerants associated with automotive mobile air conditioning (MAC) and climate control systems. This NOS also includes leak detection and rectification of any leaks.

Note: In order to achieve this NOS, it will also be necessary to hold a valid certificate for the purposes of the EC F gas Regulation and Commission Regulation 307/2008.

KEY WORDS AND PHRASES

Vehicles

These can be light vehicles or commercial vehicles.

SCOPE OF THIS NOS:

All the items listed below form part of the National Occupational Standard.

1. Tools and equipment are:

a. hand tools
b. special purpose equipment
c. general workshop equipment
d. air conditioning recovery plant
e. refrigerant identifier
f. sealing equipment

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

38. the health, safety and environmental regulations relating to the handling of F gas refrigerants in automotive mobile air conditioning (MAC) NOSs.

39. the legal requirement to maintain and process appropriate F gas records.

40. your workplace procedures for:

    - the referral of problems related to refrigerant handling
    - completion of work records

41. the importance of selecting, using and maintaining the appropriate personal protective equipment when handling F gas refrigerants**.**

Equipment

42. how to select, check and use all the **tools and equipment** required to recover, flush and recharge F gases within automotive mobile air conditioning and climate control systems.

43. how to use equipment to identify the type of gas removed.

Automotive Mobile Air Conditioning (MAC) Systems

44. the operating principles and function of automotive mobile air conditioning (MAC) and climate control units containing F gas refrigerants.

45. the types of refrigerants used in automotive systems and their properties and characteristics.

46. the impact of F gas emissions on the environment in relation to their global warming potential and climate change.

47. the procedures for the safe handling of F gas refrigerants when recovering, flushing and recharging from automotive mobile air conditioning units.

48. how to work in a way that minimises the risk of any refrigerant emissions.

49. how to check air conditioning systems for F gas leaks and rectify leakage.

50. how to handle refrigerant cylinders.

51. the methods of storing removed mobile air conditioning (MAC) parts and the importance of storing them correctly.

PERFORMANCE OBJECTIVES

To be competent you must:

ii. use the appropriate personal protective equipment when handling F gas refrigerants.

jj. support your removal and replacement activities by referring to:
- vehicle and gas related technical data
- manufacturer's guidance
- removal and replacement procedures
- health, safety and legal requirements.

d. ensure that the **tools and equipment** you require are calibrated and in a safe working condition to meet manufacturer's and legal requirements.

e. select and use the correct **tools and equipment** to identify refrigerant type and capacities.

f. select and use the correct **tools and equipment** for recovery, flushing and recharging of refrigerants.

g. carry out all refrigerant recovery, flushing and recharging activities following:

- recognised safe working methods
- manufacturers' instructions
- your workplace procedures
- health, safety and legal requirements.

h. work in a way which reduces the risk of any refrigerant emissions.

i. carry out suitable checks and any necessary rectification activities to ensure the recharged system is free from leaks.

i. collect and transfer any waste materials to comply with current legislation and workplace policies.

j. complete work records accurately, in the format required and pass them to the relevant person(s) promptly.

NOS MET09 – Remove, Renew and Refit Automotive Bonded Direct Glass

NOS OVERVIEW

This NOS is about the removal, renewal and refitting of bonded, direct or fixed glass components within vehicles, including those with any mechanisms or electrical/electronic devices linked to them.

KEY WORDS AND PHRASES

Agreed Timescales

Examples include: manufacturer's recommended work times, job time set by your company or a job time agreed with the specific customer.

Contaminants

Examples include: high voltage; glass; gases; fuel; hyrdro-carbons.

Vehicles

These can be light vehicles or commercial vehicles.

SCOPE OF THIS NOS:

All the items listed below form part of the National Occupational Standard.

1. Bonded direct glass components are:

a. windscreens
b. side glass
c. rear screen
d. roof glass

2. Tools and equipment are:

a. hand tools
b. special purpose equipment
c. electrical testing equipment

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the removal and fitting of **bonded direct glass components.**

2. your workplace procedures for:

   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records.

3. the requirements of manufacturer's warranty agreements.

4. the work that needs to be done and the standard required.

5. the requirements for protecting the vehicle and contents from damage before, during and after **bonded direct glass component** removal and fitting activities.

6. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and fitting **bonded direct glass components.**

Equipment

7. how to select, check and use all the **tools and equipment** required to remove and fit **bonded direct glass components.**

Removal, renewal and refitting of bonded direct glass components

8. the types of **bonded direct glass components** and the electrical and safety systems to which they are commonly linked.

9. the construction and function of **bonded direct glass components.**

10. properties of materials used for securing and waterproofing operations.

11. how **bonded direct glass components** and systems linked to them interact with other vehicle systems via via multiplexing (e.g. Controller Area Network – Databus (CAN-DATABUS); Local Interconnect Network (LIN); Body Electronics Area Network (BEAN); Audio Visual Communication – Local Area Network (AVC-LAN); Media Orientated System Transport (MOST).

12. where to find and how to interpret and use sources of information applicable to the removal and fitting of **bonded direct glass components.**

13. types of contaminants associated with accident damaged vehicles and the dangers associated with them.

14. the types of damage and faults commonly associated with **bonded direct glass components** and how to identify them.

15. the procedures necessary prior to carrying out removal and fitting of **bonded direct glass components.**

16. the problems and damage that could occur during preparation and fitting activities.

17. the type of materials, waste and debris that must be removed from the vehicle and how it should be disposed of safely.

18. the handling and fitting procedures for the systematic and safe removal and fitting of **bonded direct glass components,** including how to minimise the risk of damage and corrosion to the vehicle, structures and fittings.

19. the methods of storing removed parts and the importance of storing them safely and correctly.

20. the need for correct alignment of components and the methods used to achieve this.

21. the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose.

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when removing and fitting **bonded direct glass components.**

b. protect the vehicle and its contents effectively when removing and fitting **bonded direct glass components.**

c. support your removal and replacement activities by referring to:
   - vehicle technical data
   - manufacturer's guidance
   - removal and replacement procedures
   - legal requirements.

d. select and use the correct **tools and equipment** for the components you are going to remove or fit.

e. ensure that the **tools and equipment** you require are calibrated and in a safe working condition to meet manufacturer's and legal requirements.

f. make suitable recommendations for replacement based on your assessment of damage and or faults and current legal requirements.

g. select and use **bonded direct glass components** that conform to manufacturer's specification.

h. remove and fit **bonded direct glass components** following:

- recognised research methods
- removal and fitting procedures
- manufacturers' instructions
- your workplace procedures
- health, safety and legal requirements.

i. work in a way which reduces the risk of damaging other components and units on the vehicle.

j. safely adapt your working practices and techniques to suit the needs of the job and vehicle.

k. store all removed components safely in the correct location.

l. check that the **bonded direct glass components** and any directly linked systems operate correctly following the manufacturer's specification prior to release to the customer.

m. correct any **bonded direct glass component** and linked system operational faults within the limits of your authority.

n. report any additional vehicle unit and component faults you find during the course of your work to the relevant person(s) promptly.

o. make suitable and justifiable recommendations for further cost effective repairs, if required.

p. dispose of all waste and debris safely in the required place.

q. report any delays in completing your work to the relevant person(s) promptly.

r. remove and fit **bonded direct glass components** within the agreed timescale.

s. complete work records accurately, in the format required and pass them to the relevant person(s) promptly.

NOS BP02 Remove and Fit Non Permanently Fixed Motor Vehicle Body Panels

NOS OVERVIEW

This unit is about removing and fitting non permanently fixed panels such as wings,

doors, bonnets, boot lids and tailgates on vehicles.

Note: Those units may contain safety related components

SCOPE OF THIS NOS:

All of the items listed below form part of this National Occupational Standard.

1. Examples of panels covered in this NOS are
   a. wings
   b. doors
   c. bonnets
   d. boot lids and tailgates

2. **Tools and equipment** are
   a. spanners
   b. socket set
   c. screwdrivers
   d. manufacturer's specified specialist tools

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the removal and fitting of **non permanently fixed body panels**
2. your workplace procedures for:

   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records

3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after removing and fitting activities

5. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and fitting **non permanently fixed body panels**

Removing and fitting non permanently fixed body panels

6. how to find, interpret and use sources of information applicable to the removal and fitting of basic **non permanently fixed body panels**

7. how to select, check and use all the tools and equipment required to remove and fit basic **non permanently fixed body panels**
8. the different types of mechanical fixings for **non permanently fixed body panels** and when and why they should be used
9. the correct procedures and processes for removing and fitting **non permanently fixed body panels**
10. the need for correct alignment of panels and the methods used to achieve this
11. the types of quality control checks that can be used to ensure correct alignment and contour of panels and operation of components to manufacturer's specification
12. the methods of storing removed components and the importance of storing them correctly and in accordance with legal requirements

PERFORMANCE OBJECTIVES

To be competent you must:

a use the appropriate personal protective equipment when removing and fitting **non permanently fixed body panels**

b protect the vehicle, its contents and systems effectively when removing and fitting **non permanently fixed body panels**

c select and use the correct **tools and equipment** for the components you are going to remove or fit

d ensure that the **tools and equipment** you require are in a safe working condition

e remove and fit **non permanently fixed body panels** following:

- manufacturers' methods/instructions
- recognised researched repair methods
- your workplace procedures
- health, safety and legal requirements

f avoid damaging other components, units and panels on the vehicle

g store all removed components safely in the correct location and in accordance with relevant legislation.

h realign the components you have fitted correctly in a way which regains their original manufactured tolerance.

i check that the components you have fitted operate correctly following the manufacturer's specification

j report any faults you notice during the course of your work to the relevant person(s) promptly

k report any delays in completing your work to the relevant person(s) promptly
l complete all activities within the agreed timescale
m complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP 24 – Motor Vehicle Body Mechanical Fastening Operations

NOS OVERVIEW

This unit is about joining materials effectively using mechanical joining techniques.

SCOPE OF THIS NOS:

All of the items listed below form part of this National Occupational Standard.

1. PPE for Vehicle Body Mechanical Fastening Operations, including:

a. face mask with appropriate eye shield
b. flame retardant coveralls
c. flame retardant gauntlets
d. steel toe cap boots
e. appropriate vehicle protection
f. appropriate protection for others in the workshop

2. Mechanical Joining Operations, **including:**

a. riveting, (single sided, double sided, self piercing)
b. clinching
c. bolts and fasteners
d. screwing, (self threading, self piercing)
e. hybrid joining, (combinations of techniques listed that may also include adhesives)

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the joining of materials using mechanical joining techniques and processes.

2. your workplace procedures for:

    - the referral of problems
    - reporting of delays to the completion of work
    - completion of work records

3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after the joining of materials using mechanical joining techniques.
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when joining of materials using mechanical joining techniques.
6. how to find, interpret and use sources of information applicable to the joining of materials using mechanical joining techniques

7. how to select, check and use all the tools and equipment required to join materials using mechanical joining techniques
8. the different types of techniques and joints used for the joining of different types of materials when using mechanical joining techniques
9. the correct use of adhesives with riveting techniques.
10. the faults that can occur when mechanical joining and the causes of these faults
11. the need for correct alignment of materials and the methods used to achieve this
12. the types of quality control checks that can be used to ensure correct joining of materials
13. how to carry out and assess mechanical joining

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when carrying out mechanical joining operations
b. protect the vehicle and its contents effectively when carrying out mechanical joining operations
c. prepare material and align to enable suitable join to be achieved (Mating flanges must be treated before joining).
d. select and use the correct **tools and equipment** for carrying out mechanical joining operations
e. ensure that the **tools, equipment and PPE** you require are in a safe working condition
f. Set up your equipment to carry out mechanical joining operations.

    - Check suitability of joining technique
    - Check suitability of tooling
    - Check consumables are correct

g. Carry out mechanical joining operations following:

- Recognised researched repair methods
- Manufacturers processes, methods and procedures
- your workplace procedures
- health, safety and legal requirements

h. avoid damaging other components, units and panels on the vehicle
i. recognise when your joint is not forming correctly and what action needs to be taken
j. check integrity of the join and record the type of join achieved on the appropriate paper work. Test pieces must be recorded and stored.
k. Dress and protect the repaired area to inhibit corrosion where applicable
l. Clean and store PPE and equipment in appropriate manner
m. report any additional faults you notice during the course of your work to the relevant person(s) promptly
n. report any delays in completing your work to the relevant person(s) promptly
o. carry out mechanical joining operations within the agreed timescale
p. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP25 – Motor Vehicle Body Adhesive Bonding Operations

NOS OVERVIEW

This unit is about joining materials effectively using adhesive bonding processes

SCOPE OF THIS NOS:

All of the items listed below form part of this National Occupational Standard.

1. Examples of PPE for adhesive bonding processes includes

a. Dust mask with appropriate eye shield
b. Flame retardant coveralls
c. Flame retardant gauntlets
d. Steel toe cap boots
e. Appropriate vehicle protection
f. Appropriate protection for others in the workshop
g. Appropriate extraction/well ventilated area

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the joining of materials using adhesive processes
2. your workplace procedures for:

    - the referral of problems
    - reporting of delays to the completion of work
    - completion of work records

3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after the joining of materials using adhesive processes
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when the joining of materials using adhesive processes
6. how to find, interpret and use sources of information applicable to the joining of materials using adhesive processes

7. how to select, check and use all the tools and equipment required to join materials using adhesive processes
8. the different types of techniques and joints used for the joining of materials when using adhesive processes
9. the faults that can occur when using adhesives and the causes of these faults
10. the need for correct alignment of materials and the methods used to achieve this
11. the types of quality control checks that can be used to ensure correct joining of materials
12. how to carry out and assess test coupons

PERFORMANCE OBJECTIVES

To be competent you must:

a use the appropriate personal protective equipment when carrying out adhesive processes

b protect the vehicle and its contents effectively when carrying out adhesive processes

c prepare material and align to enable suitable join to be achieved. Mating flanges must be treated before joining.

d select and use the correct **tools and equipment** for carrying out adhesive processes

e ensure that the **tools, equipment and PPE** you require are in a safe working condition

f Set up your equipment to carry out adhesive processes.

g Carry out adhesive processes following:

- recognised researched repair methods
- carry out test coupon on equivalent material
- your workplace procedures
- health, safety and legal requirements

h avoid damaging other components, units and panels on the vehicle

i recognise when your joint is not forming correctly and what action needs to be taken.

j check integrity of the joint and record the type of joint achieved on the appropriate paper work. Test pieces must be recorded and stored.

k dress and protect the repaired area to inhibit corrosion where applicable.

l clean and store PPE and equipment in appropriate manner.

m report any additional faults you notice during the course of your work to the relevant person(s) promptly

n report any delays in completing your work to the relevant person(s) promptly

o carry out adhesive processes within the agreed timescale

p complete work records accurately, in the format required and pass them to the relevant person(s) promptly