

National Occupational Standards: Accident Repair – Body

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 G4 – Use of hand tools and equipment in Motor Vehicle Engineering

NOS OVERVIEW

This NOS is about the basic use of tools, materials and fabrications relevant to the Automotive Sector.

This NOS is about:

- interpreting information
- adopting safe and healthy working practices
- selecting materials and equipment

This NOS is those working in technical support roles. It is also appropriate for workshop planners.

ESSENTIAL KNOWLEDGE

You must know and understand:

- a. The organisational procedures developed to report and rectify inappropriate information and unsuitable resources, and how they are implemented.
- b. The types of information, their source and how they are interpreted.
- c. The organisational procedures to solve problems with the information and why it is important they are followed.
- d. The level of understanding operatives must have of information for relevant, current legislation and official guidance and how it is applied.
- e. What the accident reporting procedures are and who is responsible for making the reports.
- f. Why and when personal protective equipment (PPE) should be used.
- g. Why disposal of waste should be carried out safely and how it is achieved
- h. Demonstrate an understanding of material properties
- i. Investigate the use of materials and fabrication
- j. how to file, fit, tap, thread, cut and drill plastics and metals
how to select and use gaskets, sealants, seals, fittings and fasteners

PERFORMANCE OBJECTIVES

You must be able to:

1. Interpret the given information relating to the work and resources to confirm its relevance
2. Carry out pre-start preparation inspections on power tools and equipment in accordance with approved procedures
3. Carry out operations using power tools and equipment in accordance with safe working practices to achieve the work outcome
4. Identify problems associated with power tools and equipment which need to be referred to authorised personnel
5. Demonstrate work skills to:
 - measure, mark out, file, fit, tap, thread, cut, drill, finish, position and secure.
6. Use and maintain:

- hand tools
 - ancillary equipment
 - safety aids
7. Disposal of waste in accordance with legislation to maintain a clean work space
 8. Checks carried out in accordance with manufacturer's/operator's guidance, legislation and official guidance and organisational requirements
 9. Demonstrate work skills to select correct materials and fabrication for project

NOS G6 – Enable Learning Through Demonstration and Instruction

(Imported ENTO unit L11)

NOS OVERVIEW

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

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

ESSENTIAL KNOWLEDGE

You need to understand:

The nature and role of demonstrations and instruction

1. the separate areas of demonstrations which encourage learning.
2. which types of learning are best achieved and supported through demonstrations.
3. how to identify and use different learning opportunities.
4. how to structure demonstrations and instruction sessions.
5. how to choose from a range of demonstration techniques.

Principles and concepts

6. how to put learners at their ease and encourage them to take part.
7. how to choose between demonstration and instruction as learning methods.
8. how to identify individual learning needs.
9. which factors are likely to prevent learning and how to overcome them
10. how to check learners' understanding and progress.
11. how to put information in order and decide whether the language you will be using is appropriate.
12. how to choose and prepare appropriate materials, including technology based materials.
13. the separate areas of instructional techniques which encourage learning
14. which types of learning are best achieved and supported through instruction.

External factors influencing human resource development

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

PERFORMANCE OBJECTIVES

Demonstrate skills and methods to learners

To be competent you must:

- a. base the demonstration on an analysis of the skills needed and the order they must be learned in.
- b. ensure that the demonstration is accurate and realistic.
- c. structure the demonstration so the learner can get the most out of it.
- d. encourage learners to ask questions and get explanation at appropriate stages in the demonstration.
- e. give learners the opportunities to practise the skill being demonstrated and give them positive feedback.
- f. give extra demonstrations of the skills being taught to reinforce learning.
- g. ensure that demonstrations take place in a safe environment and allow learners to see the demonstration clearly.
- h. respond to the needs of learners during the demonstration.
- i. reduce distractions and disruptions as much as possible.

Instruct learners

To be competent you must:

- a. match instruction to the needs of the learners.
- b. identify which learning outcomes will be achieved through instruction.
- c. ensure that the manner, level and speed of the instruction encourages learners to take part.
- d. regularly check that learners understand and adapt instruction as appropriate.
- e. give learners positive feedback on the learning experience and the outcomes achieved.
- f. identify anything that prevents learning and review this with the learners.

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 - Supervisory Skills (Imported MSC Unit D6)

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.

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. 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.
16. The type of problems and unforeseen events that may occur and how to support individuals and/or teams in dealing with them.
17. 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.
18. 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 .
19. How to log information on the ongoing performance of individuals and/or teams and use this information for formal performance appraisal purposes

Industry/sector specific knowledge and understanding

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

PERFORMANCE OBJECTIVES

You must be able to do the following:

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

2. 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.
3. 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.
4. 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.
5. 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.
6. Encourage individuals and/or team members to ask questions, make suggestions and seek clarification in relation to allocated work.
7. 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.
8. Support individuals and/or teams in identifying and dealing with problems and unforeseen events.
9. 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.
10. Monitor your area for conflict, identifying the cause(s) when it occurs and dealing with it promptly and effectively.
11. Identify unacceptable or poor performance, discuss the cause(s) and agree ways of improving performance with individuals and/or teams.
12. Recognise successful completion of significant pieces of work or work activities by individuals and/or teams.
13. Use information collected on the performance of individuals and/or teams in any formal appraisals of performance.
14. Review and update plans of work for your area, clearly communicating any changes to those affected.

NOS G12 – Developing Staff (Imported MSC unit D8)

NOS OVERVIEW

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

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

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

Skills

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

- Acting assertively
- Communicating
- Consulting
- Decision-making
- Empathising
- Information management
- Managing conflict
- Monitoring
- Problem solving
- Providing feedback
- Reviewing
- Setting objectives
- Team building
- Valuing and supporting others.

ESSENTIAL KNOWLEDGE

You need to know and understand the following:

- a. The importance in giving team members opportunities to approach you with problems affecting their performance.
- b. How to encourage team members to approach you with problems affecting their performance.
- c. The importance of identifying performance issues and bringing these promptly to the attention of the team members concerned.
- d. The importance of discussing problems with team members at a time and place appropriate to the type, seriousness and complexity of the problem.
- e. How to gather and check the information you need to identify the problem and its cause.
- f. The importance of identifying the problem accurately.
- g. The range of alternative courses of action to deal with the problem.
- h. The importance of discussing and agreeing with the team member a timely and effective way of dealing with the problem.
- i. When to refer the team member to support services or specialists.
- j. The importance of keeping a confidential record of your discussions with team members about problems affecting their performance, and how to do so.
- k. The importance of ensuring your actions are in line with your organisation's policies for managing people and their performance.

Industry/sector specific knowledge and understanding

- l. Industry/sector requirements for helping team members address problems affecting their performance.

Context specific knowledge and understanding

- m. The types of problems that your team members may encounter which can affect their performance.
- n. Your role, responsibilities and limits of authority when dealing with team members' problems.
- o. The range of support services or specialists that exist inside and outside your organisation.
- p. Your organisation's policies for managing people and their performance.

PERFORMANCE OBJECTIVES

You must be able to do the following:

1. Give team members opportunities to approach you with problems affecting their performance.
2. Identify performance issues and bring these promptly to the attention of the team members concerned.
3. Discuss problems with team members at a time and place appropriate to the type, seriousness and complexity of the problem.
4. Gather and check information to accurately identify the problem and its cause.
5. Discuss the range of alternative courses of action and agree with the team member a timely and effective way of dealing with the problem.
6. Refer the team member to support services or specialists, where necessary.
7. Keep a confidential record of your discussions with team members about problems affecting their performance.
8. Ensure your actions are in line with your organisation's policies for managing people.

NOS G13 – Business Management (Imported MSC unit F3)

NOS Overview

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

The NOS is recommended for middle managers.

Skills

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

- Communicating
- Information management
- Analysing
- Assessing
- Presenting information
- Influencing
- Persuading
- Negotiating
- Problem solving
- Prioritising
- Thinking systematically
- Thinking creatively
- Reviewing

ESSENTIAL KNOWLEDGE

You need to know and understand the following:

1. Principles and models of effective process management.
2. How to define business processes.
3. Types of business process measures and how to assess their suitability.
4. How to ensure processes and resources are sustainable and effective in their use, and the importance of doing so.
5. The difference between process outputs and outcomes.
 1. How to assess process changes for risk and reward against their potential investment cost.
6. How to carry out cost and benefit analysis.
7. Types of analytical and problem-solving tools that you can use when developing business processes.
8. How to measure the effect of changes in the business process.

Industry/sector specific knowledge and understanding

1. The sector and market in which your organisation works.
2. Relevant sector trends, developments and competitor performance that affect your business processes.

Context specific knowledge and understanding

1. Your organisation's aims and goals.
2. Your organisation's structure, values and culture.
3. How your organisation adds value through delivering its products, services and processes
4. The needs of your actual and potential customers and other key stakeholders.
5. Your organisation's products, services and processes and the interdependencies between them.
6. Measures of process performance that are relevant to your organisation.

PERFORMANCE OBJECTIVES

You must be able to do the following:

1. Design processes that deliver outcomes based on organisational goals and aims.
2. Ensure processes and resources are sustainable and effective in their use.
3. Identify and provide the resources you need.
4. Take account of influences that may affect and shape how processes work.
5. Link processes so that they interact across the organisation to form a complete system.
6. Provide information and support for staff and other stakeholders involved.
7. Define process responsibilities.
8. Develop process measures that are affordable and provide enough information for people to decide how to manage the process.
9. Establish and use effective methods to review and improve the process.

NOS 21 - Deliver Reliable Customer Service (Imported ICS Unit - 21)

NOS Overview

This unit sits within the Customer Service Theme of Delivery. This Theme covers Customer Service behaviours and processes that have most effect on the customer experience during Customer Service delivery

This Unit is all about how you deliver consistent and reliable service to customers. As well as being good with people, you need to work with your organisation's service systems to meet and, wherever possible, exceed customer expectations.

In your job there will be many examples of how you combine your approach and behaviour with your organisation's systems. You need to prepare for each transaction with a customer, deal with different types of customers in different circumstances and check that what you have done has met customer expectations.

To meet this standard you have to deliver excellent customer service over and over again.

KNOWLEDGE AND UNDERSTANDING

To be competent at delivering reliable customer service you must know and understand:

- a. your organisation's procedures and systems for delivering customer service
- b. methods or systems for measuring an organisation's effectiveness in delivering customer service
- c. your organisation's procedures and systems for checking service delivery
- d. your organisation's requirements for health and safety in your area of work

PERFORMANCE OBJECTIVES

You must be able to do the following:

Prepare to deal with your customers

1. keep your knowledge of your organisation's services or products up-to-date.
2. ensure that the area you work in is tidy, safe and organised efficiently.
3. prepare and arrange everything you need to deal with your customers before your shift or period of work commences.

Give consistent service to customers

4. make realistic promises to your customers about the delivery of services or products
5. ensure that your promises balance the needs of your customer and your organisation
6. keep your promises to your customers
7. inform your customers if you cannot keep your promises due to unforeseen circumstances
8. recognise when your customer's needs or expectations have changed and adapt your
9. service to meet their new requirements

10. keep your customer informed if delivery of the service needs to involve passing them on to another person or organisation
11. check that the service you have given meets your customer's needs and expectations
12. identify when you could have given better service to your customer and how your service could have been improved
13. share information with colleagues and service partners to maintain and improve your standards of service delivery.

NOS 37 Support Customer Service Improvements (Imported ICS Unit – 37)

NOS OVERVIEW

This unit sits within the Customer Service Theme of Development and Improvement. This Theme covers activities and approaches that play a vital part in customer service by seeking and implementing improvements and developments

Organisations change the way they deliver service to their customers because customer expectations rise and because other organisations improve the services they offer. Often the most important ideas about how to improve customer service come from people dealing directly with customers.

Your job involves delivering customer service. If your organisation has decided to make changes, it is your job to support them and to present them positively to your customers. Also, by listening to customer comments you may have your own ideas about how the service you deliver could be improved.

This unit is all about how you provide support for changes that your organisation has introduced. In addition, it covers how you present your own ideas for improvements to someone in your organisation who can authorise trying out the change.

KNOWLEDGE AND UNDERSTANDING

To be competent at supporting customer service improvements you need to know and understand:

- a. how customer experience is influenced by the way service is delivered
- b. how customer feedback is obtained
- c. how to work with others to identify and support change in the way service is delivered
- d. why it is important to give a positive impression to your customer about the changes made by your organisation even if you disagree with them

PERFORMANCE OBJECTIVES

To support customer service improvements you must consistently:

Use feedback to identify potential customer service improvements

1. gather informal feedback from your customers
2. use customer feedback procedures to collect information from your customers
3. use the information from your customers to develop a better understanding of their customer service experience
4. identify ways the service you give could be improved based on information you have gathered
5. share your ideas for improving customer service with colleagues

Implement changes in customer service

6. identify a possible change that could be made to improve customer service

7. present your idea for improving customer service to a colleague with the appropriate authority to approve the change
8. Carry out changes to customer service procedures based on your own idea or proposed by your organization.
9. keep your customers informed of changes to customer service
10. give customers a positive impression of changes that have been made
11. work positively with others to support customer service changes

Assist with the evaluation of changes in customer service

12. discuss with others how changes to customer service are working

Work with others to identify any negative effects of changes and how these can be avoided

NOS BP01 - Remove and Fit Basic Motor Mechanical, Electrical and Trim (MET) Components to Vehicles

UNIT OVERVIEW

This unit is about the straightforward removal and fitting of basic mechanical, electrical and trim (MET) components to vehicles. It is also about checking the operation of the components fitted.

SCOPE OF THIS UNIT:

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

1. **Basic MET components** are:
 - a. bumpers
 - b. headlamp units
 - c. road wheels
 - d. batteries
 - e. bonnet and boot lid trim
 - f. interior trim components
 - g. exterior trim components

2. **Tools and equipment** are:
 - a. spanners
 - b. socket set
 - c. screwdrivers
 - d. manufacturer's specified specialist tools
 - e. pliers and self locking grips
 - f. power drill and drill bits
 - g. trolley jack
 - h. axle stands
 - i. vehicle lifts
 - j. torque wrench

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 **basic MET 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 **basic MET components**

Removing and fitting basic MET components

6. find, interpret and use sources of information applicable to the removal and fitting of **basic MET components**
7. how to select, check and use all the **tools and equipment** required to remove and fit **basic MET components**
8. the procedures for removing and fitting **basic MET components**
9. the methods of storing removed parts and the importance of storing them correctly
10. the different types of fastenings and the reasons for their use
11. the need for correct alignment of components and the methods used to achieve this
12. 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 **basic MET components**
- b. protect the vehicle and its contents effectively when removing and fitting **basic MET components**
- 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 **basic MET components** following:
 - removal and fitting procedures
 - manufacturers' instructions
 - your workplace procedures
 - health, safety and legal requirements
- f. avoid damaging other components and units on the vehicle
- g. store all removed components safely in the correct location
- h. check that the components you have fitted operate correctly following the manufacturer's specification
- i. report any additional faults you find during the course of your work to the relevant person(s) promptly
- j. report any delays in completing your work to the relevant person(s) promptly
- k. remove and fit **basic MET components** within the agreed timescale
- l. 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

UNIT 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 UNIT:

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

1. Examples of panels covered in this unit 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 BP05 – Remove and Replace Exterior Motor Vehicle Body Panels Including Permanently Fixed Components

UNIT OVERVIEW

This unit is about removing and refitting exterior panels using mechanical fastening, adhesive bonding, welding and joining techniques.

SCOPE OF THIS UNIT:

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

1. **Exterior body panels include:**
 - a. combinations of 3 or more adjacent panels, one of which should be permanently fixed. (Examples include: two doors and a wing; two wings and a bonnet; bonnet, wing and door on the same side; bumper, wing and bonnet).
 - b. welded panel. (These are front panels, including headlamp panel, bonnet landing panel, lower crossmember) and rear panels
2. **Materials include:**
 - a. all component materials in the repair area
3. **Fitting methods include:**
 - a. mechanical fastening
 - b. adhesive bonding
 - c. spot welding
 - d. MIG/MAG welding
 - e. MIG braze

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection.
2. the agreed vehicle work specification
3. the importance of working to agreed timescales and keeping others informed of progress.
4. the relationship between time, cost and profitability.
5. the requirements for protecting the vehicle and contents from damage before, during and after removing and fitting activities
6. your workplace procedures for:
 - the referral of problems
 - reporting delays to the completion of work
7. the importance of reporting anticipated delays to the relevant person(s) promptly.

Equipment

8. how to prepare, test and use the tools and equipment required for the removal and replacement of body panels and ancillary fittings.

Materials

9. the properties of component materials involved in the construction of the vehicle in the areas that will be worked on during repair.
10. the properties and safe use of body component sealants, adhesives and anti-corrosion materials.
11. the type of sealants and anti-corrosion materials to use and the manufacturer's recommended methods for their application and thickness.
12. how to apply sealants and anti-corrosion materials

Removal and replacement of exterior body panels

13. principles of joining techniques e.g. spot welding, MIG/MAG, bonding etc.
14. how to replace panels using recognized joining techniques
15. how to remove vehicle manufacturers original joining technique (e.g. resistance spot, MIG/MAG, Mig braze, adhesives, laser, laser stitch).
16. how to interpret and use sources of information relevant to the removal and refitting of **exterior body panels**
17. the need for correct alignment of panels and the methods used to achieve this
18. 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
19. how to work safely avoiding damage to the vehicle and its systems
20. the methods of storing removed components and the importance of storing them correctly and in accordance with legal requirements
21. the removal and replacement procedures for **exterior body panels** using mechanical fastening, adhesive bonding and welding techniques
22. how panel removal and refitting affects the overall body structure of the vehicle.
23. the manufacturer's approved methods of working for the removal and replacement of exterior body panels

PERFORMANCE OBJECTIVES

To be competent you must:

- a. prior to working on the vehicle identify component materials involved in the construction of the vehicle in the areas that will be worked on during repair.
- b. use the appropriate personal protective equipment when removing and replacing **exterior body panels**
- c. protect the vehicle, its contents and systems effectively when removing and replacing **exterior body panels**
- d. inspect, prepare and use all the tools and equipment required following manufacturers' instructions
- e. remove, replace and/or refit all necessary body panels and components following:
 - the manufacturer's methods/instructions
 - recognised researched repair methods
 - your workplace procedures
 - the vehicle work specification
 - health, safety and legal requirements.

- f. where there is the potential for your work to disturb other vehicle systems, seek assistance from the relevant person(s) promptly
- g. store all removed components safely in the correct location and in accordance with relevant legislation
- h. use replacement body panels and components which conform to the vehicle specifications for dimensions, materials and functional capability
- i. use and apply sealants and anti corrosion materials conforming to the manufacturer's specification.
- j. ensure permanently fixed panels are removed and replaced minimising damage to mating surfaces. Any damage caused should be correctly reinstated.
- k. ensure permanently fixed panels are replaced without incurring damage to the vehicle systems.
- l. ensure all refitted body panels and components are aligned correctly with adjacent panels and fittings.
- m. complete all activities within the agreed timescale.
- n. report any anticipated delays in completion to the relevant person(s) promptly

NOS BP06 – Repair Motor Vehicle Exterior Body Panels

UNIT OVERVIEW

This unit is about repairing exterior, cosmetic body panels using a variety of techniques.

SCOPE OF THIS UNIT:

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

1. **Repairs** are:
 - a. body filling and finishing of flat areas of a panel
 - b. repairs to dents that are over 70 mm in diameter in exterior body panels, including curvature panels and swage lines
 - c. repairs to splits and scuffs on plastic components

2. **Techniques and processes** are:
 - a. plastic repairs
 - b. shrinking
 - c. panel pulling
 - d. metal finishing
 - e. plastic filling
 - f. panel beating
 - g. indirect hammering
 - h. direct hammering
 - i. spring hammering
 - j. body filing
 - k. application of body filling/stopper

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisation requirements and procedures

1. the health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection when repairing body panels.
2. the vehicle work specification agreed.
3. the importance of working to agreed timescales and keeping others informed of progress.
4. the relationship between time, cost and profitability.
5. your workplace procedures for the referral of problems.
6. the importance of reporting anticipated delays to the relevant person(s) promptly.
7. the requirements for protecting the vehicle and contents from damage before, during and after **repair** activities.

Tools

1. the principles of the selection and use of hand tools for metal finishing and plastic filling repairs.
2. how to select the correct **tools** to carry out reshaping work, including specialist dent removal tools.
3. how to prepare, test, use and maintain the hand and power tools required to prepare damage and reshape damaged areas.

Materials

11. the properties of component materials involved in the construction of the vehicle in the areas that will be worked on during repair.
12. how to mix and apply plastic fillers.
13. the properties and use of metals used to manufacture body panels.
14. the properties and safe use of types of filling materials used to **repair** panels.
15. the different types and grades of abrasive and their use.
16. the techniques for identifying the type of plastics used for manufactured components

Repairing exterior cosmetic body panels

17. how to interpret and use sources of information relevant to the removal of body components.
18. how to prepare the vehicle to avoid contamination.
19. how to prepare damaged areas to facilitate **repairs**.
20. how to repair plastic components using thermal and adhesive techniques.
21. how to rough out and metal finish body panels.
22. how to reshape filling materials to match the original panel contour.
23. how to finish **repairs** to a suitable agreed condition for refinishing.
24. how to work safely avoiding damage to the vehicle and its systems.
25. the techniques for reshaping damaged body panels using hand and specialist tools.
26. the procedures for reinstating anti-corrosion, sealant and sound deadening materials.
27. the procedures for repairing damage to plastic components.
28. the techniques and processes for
 - plastic repairs
 - hot shrinking
 - panel pulling
 - metal finishing
 - plastic filling
 - indirect hammering
 - direct hammering
 - spring hammering
 - body filing
 - application of body filler/stopper
29. the techniques used to regain the contours of repaired plastic components.
30. methods of checking reshaped panel contours for accuracy.
31. standards of finish required to enable the next stage of **repairs** to proceed.
32. the manufacturer's approved methods of working for the preparation and **repair** of exterior (non-structural) body panels.
33. the pedestrian safety aspects of repairability of vehicles.

PERFORMANCE OBJECTIVES

To be competent you must:

- a. prior to working on the vehicle identify component materials involved in the construction of the vehicle in the areas that will be worked on during repair.
- b. use the appropriate personal protective equipment when carrying out **repairs** to exterior body panels
- c. protect the vehicle and its contents effectively when carrying out **repairs** to exterior body panels
- d. inspect, prepare and use all the tools and equipment required following manufacturers' instructions
- e. carry out **repairs** to non-structural body panels following:
 - manufacturers' methods/instructions
 - recognised researched repair methods
 - your workplace procedures
 - health, safety and legal requirements
- f. use specialist dent removal **tools** effectively to reform all damaged panels.
- g. complete **repairs** to exterior body panels so they are restored to their original contour using hand **tools** and filling materials effectively
- h. avoid damaging other components, units and panels on the vehicle
- i. replace correctly any sealer, anti-corrosion and sound deadening materials which were removed prior to the **repair**.
- j. ensure all plastic **repairs** regain the strength of the original part.
- k. complete **repaired components** to an agreed condition ready for refinishing processes.
- l. complete all activities within the agreed timescale.
- m. report any anticipated delays in completion to the relevant person(s) promptly.

NOS BP13 – Remove and Replace Motor Vehicle Body Panels

UNIT OVERVIEW

This unit is about removing a variety of exterior and sub-structure body panels and panel sections where these are damaged and refitting with new or repaired replacements. The ability to weld vehicle panels is required.

SCOPE OF THIS UNIT:

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

1. **Body panels** are
 - a. non-permanently fixed body panels
 - b. welded exterior
 - c. welded sub-structure panels (e.g. rear quarter panel, rear panel, roof, chassis legs, inner wheel housing, boot floors, complete sill, A post, B post, C post, D post and cross members)
 - d. bonded panels (e.g. any panel that is fixed by adhesive bonding as part of the original manufacturer's process)
2. **Fitting methods** are
 - a. welding
 - b. mechanical fastening
 - c. adhesive bonding

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to workshop practices, personal and vehicle protection when removing and replacing **vehicle body panels**.
2. the requirements of manufacturer's warranty agreements.
3. the vehicle work specification agreed.
4. your workplace procedures for
 - the referral of problems
 - reporting of delays to the completion of work
 - personal protection
5. the requirements for protecting the vehicle and contents from damage before, during and after removing and replacing **vehicle body panels**
6. the importance of working to agreed timescales and keeping others informed of progress.
7. the relationship between time, cost and profitability.
8. the importance of reporting anticipated delays to the relevant person(s) promptly.

Tools and equipment

9. how to prepare, test and use the tools and equipment required for the removal and replacement of **vehicle body panels** and ancillary fittings.
10. how to operate resistance spot welding and MIG/MAG welding equipment to achieve welds to the current British Standard.

Materials

11. the properties of component materials involved in the construction of the vehicle in the areas that will be worked on during repair.
12. the properties of sealants, adhesives and anti corrosion materials and the requirements for their safe use.
13. the type of sealants and anti-corrosion materials to use and the manufacturer's recommended methods for their application and thickness.
14. how to use adhesive bonding materials.
15. how to select and apply sealants and anti-corrosion materials.

Removing and replacing vehicle body panels

16. the principles of chassis frame and monocoque vehicle construction.
17. how to remove vehicle manufacturers original joining techniques.
18. how to identify manufacturer's joining techniques and how they may differ to the repair method.
19. principles of joining techniques ie Spot welding, MIG/MAG, Bonding etc.
20. the different types of mechanical fixings for **vehicle body panels** and when and why they should be used.
21. the repair and welding implications of working with galvanised coatings, mild steels, HSS, UHSS and aluminium alloys.
22. how panel removal and refitting affects the overall body structure of the vehicle
23. the causes and rectification of distortion resulting from welding.
24. how to find, interpret and use sources of information relevant to the removal and replacement of **vehicle body panels** and assemblies.
25. how to remove and replace **vehicle body panels** and assemblies.
26. how to remove and replace door skins
27. how to establish cut lines for partial panel replacement.
28. how to prepare all edges to be joined.
29. how to select the correct joints and joining processes to match the repair area.
30. the importance and implications of panel clamping and alignment to match existing contours and gaps.
31. how to test resistance spot weld strength.
32. how to load a vehicle onto a jig system to ensure correct alignment and positioning of new panels.
33. how to work safely avoiding damage to the vehicle and its systems.
34. the importance and implications of checking the accuracy of repair work.
35. the types of quality control checks that can be used to ensure correct alignment and contour of panels and the operation of components to manufacturer's specification
36. 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. prior to working on the vehicle identify component materials involved in the construction of the vehicle in the areas that will be worked on during repair
- b. wear suitable personal protective equipment throughout all **vehicle body panel** removal and replacement activities.
- c. inspect, prepare and use all the **tools and equipment** required, following manufacturers' instructions, prior to use.
- d. remove replace and/or refit all necessary **vehicle body panels** and assemblies following:
 - the manufacturer's methods/instructions
 - recognised researched repair methods
 - your workplace procedures
 - health, safety and legal requirements.
- e. seek guidance from the relevant person(s) promptly where there is the potential for your work to disturb other vehicle systems
- f. use replacement body panels and assemblies which conform to the vehicle specifications for dimensions, materials and functional capability.
- g. use and apply sealants and weld primers and anti-corrosion treatments conforming to the material or vehicle manufacturer's specification.
- h. ensure all test weld pieces conform to the current British Standard for appearance and penetration.
- i. ensure permanently fixed panels are replaced without incurring damage to the vehicle systems
- j. ensure all refitted body panels are aligned correctly with adjacent panels and fittings to manufacturers tolerances (panel gaps).
- k. complete all removal and replacement activities within the agreed timescale.
- l. report any anticipated delays in completion to the relevant person(s) promptly.

NOS BP14 – Repair Motor Vehicle Body Panels

UNIT OVERVIEW

This unit is about repairing complex and difficult to access damage to a range of body panel types using a variety of preparation and reinstatement techniques, including hydraulic reforming and panel beating to regain panel contour.

SCOPE OF THIS UNIT:

1. **Repair activities** are:
 - a. correction of severely distorted panels
 - b. to difficult to access panel damage
 - c. to splits on metal panels, using relevant joining technique
 - d. to fractures on plastic panels

2. **Vehicle body panels** are:
 - a. non-permanently fixed exterior panels
 - b. permanently fixed exterior component
 - c. sub-structure component
 - d. bonded panels

3. **Reinstatement methods** are:
 - a. panel beating
 - b. panel shrinking
 - c. hydraulic reforming
 - d. Resistance spot welding (dent pulling kits)
 - e. MIG/MAG welding
 - f. MIG brazing
 - g. body filling operations
 - h. metal finishing
 - i. plastic repair
 - j. specialist dent removal methods

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection when repairing **vehicle body panels**.
2. the requirements of manufacturer's warranty agreements
3. the vehicle work specification agreed
4. your workplace procedures for
 - the referral of problems
 - reporting of delays to the completion of work
 - personal protection

5. the requirements for protecting the vehicle and contents from damage before, during and after repairing **vehicle body panels**
6. the importance of working to agreed timescales and keeping others informed of progress.
7. the relationship between time, cost and profitability.
8. your workplace procedures for the referral of problems.
9. the importance of reporting anticipated delays to the relevant persons(s) promptly.

Tools and equipment

10. the principles governing the selection and use of hand tools for metal finishing and plastic filling repairs.
11. the selection and use of panel beating and hydraulic reforming equipment, including specialist pulling systems.
12. how to prepare, test, use and maintain the **tools and equipment** required to repair **vehicle body panels**.
13. how to adapt hydraulic push equipment to perform pulling operations.

Materials

14. the properties of component materials involved in the construction of the vehicle in the areas that will be worked on during repair
15. the types and selection of filling materials, their preparation and application
16. the properties, types, grades and use of abrasives used in the **vehicle body panel** repair process
17. the properties and safe use of types of filling materials used to repair panels.
18. how to mix and apply fillers and stoppers used in repair.

Repairing vehicle body panels

19. how to prepare the vehicle to avoid contamination
20. how to assess the extent of damage, including corrosion damage.
21. the principles of chassis frame and monocoque vehicle construction
22. the principles of joining techniques (e.g. resistance spot welding, MIG/MAG welding, bonding etc.).
23. how body panel and component damage can affect other panels and the operation of vehicle systems.
24. the factors determining the use of specific preparation and repair methods.
25. the repair and joining technique implications of working with mild, high and ultra high strength steels, aluminium alloys, galvanised coatings..
26. the consequences of using inappropriate repair methods.
27. the principles associated with hot and cold shrinking.
28. how heat can be used to assist reforming.
29. how heating can affect the properties of steels.
30. the techniques for identifying the type of plastics used for manufactured components
31. the procedures for reinstating anti-corrosion, sealant and sound deadening materials
32. the causes and rectification of distortion resulting from welding
33. the manufacturer's approved methods of working for the preparation and repair of **vehicle body panels** and components.
34. the specification for panel shapes, dimensions and tolerances for the vehicles worked upon.
35. the type of quality control checks that can be used to ensure the correct contour and standard of finish
36. how to interpret and use sources of information relevant to the repair of **vehicle body panels** and components.

37. how to prepare damaged areas to facilitate **repairs**
38. how to prepare the panel surface prior to filling
39. how to repair corrosion damage.
40. how to remove protective materials.
41. how to repair and reinstate **vehicle body panel** contours and components using body filling operations, metal finishing, plastic filling, panel beating, panel shrinking, hydraulic reforming, specialist dent removal tools and resistance spot, gas shielded welding and gas shielded brazing methods.
42. the techniques for reshaping damaged **vehicle body panels** using hand and specialist tools
43. how to check the accuracy of reinstated **vehicle body panel** shape.
44. how to complete **repair** to an agreed condition ready for refinishing process.
45. how to work safely avoiding damage to the vehicle and its systems.
46. how pedestrian safety aspects affect the repairability of vehicles.

PERFORMANCE OBJECTIVES

To be competent you must:

- a. prior to working on the vehicle, identify component materials involved in the construction of the vehicle in the areas that will be worked on during repair
- b. wear suitable personal protective equipment and use vehicle coverings throughout all **vehicle body panel repair activities**.
- c. inspect, prepare and use the **tools and equipment** required following manufacturers' instructions prior to use.
- d. ensure your methods of preparation leave sub-structure body panels:
 - clean
 - free from materials likely to hinder repair
 - free of surface finishes when required.
- e. prepare and reinstate **vehicle body panels** using the equipment recommended and following:
 - the manufacturer's methods/instructions
 - recognised researched repair methods
 - your workplace procedures
 - health, safety and legal requirements.
- f. seek guidance from the relevant person(s) promptly where there is the potential for your work to disturb other vehicle systems.
- g. ensure all test weld pieces conform to the current British Standard for appearance and penetration.
- h. ensure all repaired body panels are reinstated to their original specified shape and dimensions.
- i. complete repaired components to an agreed condition ready for refinishing processes.
- j. complete all repair activities within the agreed timescale.
- k. report any anticipated delays in completion to the relevant person(s) promptly.

NOS BP17 – Identify and Rectify Motor Vehicle Body Misalignment

UNIT OVERVIEW

This unit is about the identification and realignment of vehicle distortion using body alignment jigs.

SCOPE OF THIS UNIT:

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

1. **Rectification activities** are:
 - a. visual examination
 - b. setting up
 - c. measurement in conjunction with alignment measuring equipment
 - d. realignment using pulling equipment

2. **Tools and equipment** are:
 - a. hand and powered tools
 - b. measuring systems
 - c. hydraulic push and pull
 - d. body alignment jigs
 - e. safety chains/wire/straps (safety measures)

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational procedures and requirements

1. the safety requirements specific to vehicle misalignment rectification.
2. the health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection.
3. the vehicle work specification agreed.
4. the requirements of manufacturers' warranty agreements.
5. your workplace procedures for
 - the referral of problems
 - reporting of delays to the completion of the work
 - personal protection
6. the importance of working to agreed timescales and keeping others informed of progress.
7. the relationship between time, cost and profitability.
8. your workplace procedures for the referral of problems.
9. your workplace requirements for keeping records.
10. the importance of reporting anticipated delays to the relevant person(s) promptly.

Tools and equipment

11. the constraints the type of vehicle construction places on the choice of repair equipment.
12. how to prepare, test and adjust all equipment required for misalignment rectification.
13. how to install vehicles on misalignment rectification equipment, including the use of lifting equipment.

14. how to use rectification equipment including hand and powered tools, safety chains (safety measure), hydraulic push and pull, and body alignment jigs (bracket system and/or measuring system).
15. the correct use of clamps, restraints and supports to minimise additional damage during repair

Realignment of vehicles

16. the principles of chassis frame and monocoque vehicle construction.
17. the principles of damage assessment and identification of direct and indirect damage.
18. the function of the pulling system and the criteria for selection – vector, pull arm, and tower systems, both floor mounted and bench mounted.
19. how to use geometric principles of alignment in the absence of a data sheet.
20. the properties of vehicle body construction materials.
21. how to find, interpret and use sources of information relevant to the rectification of vehicle misalignment.
22. how to establish the extent of misalignment using measuring equipment and/or measuring system.
23. how to realign vehicles to the manufacturer's original specification.
24. how to work safely avoiding damage to vehicles, personal injury and injury to colleagues.
25. the importance of following manufacturers' and/or approved research repair methods (including use of materials and equipment)
26. the consequences of failing to follow manufacturers' and/or research repair methods or instructions and data sheets

PERFORMANCE OBJECTIVES

To be competent you must:

- a. use the appropriate personal protective equipment when carrying out all **rectification activities**.
- b. protect the vehicle, its contents and systems effectively when carrying out all **rectification activities**.
- c. support vehicle misalignment **rectification activities** by reviewing:
 - vehicle data from manufacturers
 - equipment data specific to the vehicle.
- d. prepare, test and adjust all the **tools and equipment** required, following manufacturers' instructions, prior to use.
- e. load and secure the vehicle to the body jig correctly following:
 - the manufacturer's instructions
 - health and safety requirements.
- f. establish the extent of the vehicle misalignment accurately and completely.
- g. align and anchor areas adjacent to the damage correctly, in a way that prevents further damage to the vehicle.
- h. attach the pulling system securely to the damaged components and operate it correctly to achieve the realignment required.
- h. operate the pulling system in a way that minimises the risk of injury to yourself and others.
- i. ensure your **rectification activities** restore the vehicle to the correct specification and tolerances.
- j. complete all **rectification activities** within the agreed timescale.
- k. report any anticipated delays in completion to the relevant person(s) promptly.

NOS BP19 – Motor Vehicle Body MIG/MAG Welding Operations

UNIT OVERVIEW

This unit is about joining materials correctly and effectively using Mig/Mag welding techniques and procedures.

SCOPE OF THIS UNIT:

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

1. **Examples of PPE for MIG/MAG welding operations includes**
 - a. Face mask with appropriate eye protection
 - b. Protective / Flame retardant coveralls
 - c. Protective / Flame retardant gauntlets
 - d. Steel toe cap boots
 - e. Appropriate vehicle protection
 - f. Appropriate protection for others in the workshop
 - g. Fume mask

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 MIG/MAG welding techniques
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 MIG/MAG welding techniques.
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when the joining of materials using MIG/MAG welding techniques.
6. how to find, interpret and use sources of information applicable to the joining of materials using MIG/MAG welding techniques
7. how to select, check, maintain and set up all of the tools and equipment required to correctly join materials using MIG/MAG welding techniques
8. the different types of welding processes, techniques and joints used for the joining of materials when using MIG/MAG welding techniques
9. the correct surface preparation methods to ensure a good MIG/MAG weld is achieved and the reasons why surface preparation is important

10. the faults and defects that can occur when carrying out MIG/MAG welding and the common 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 inspect and assess MIG/MAG welding in accordance to British Standards
14. when MIG/MAG welding should be used to join materials
15. the advantages of MIG/MAG welding techniques over other welding methods
16. the different types of joint that can be used to join materials using MIG/MAG welding, including
 - Lap Plug
 - Lap Seam
 - Butt Joint
 - Brace Joint
 - Fillet Joint

PERFORMANCE OBJECTIVES

To be competent you must:

- a. use the appropriate personal protective equipment when carrying out MIG/MAG welding operations
- b. protect the vehicle and its contents effectively when carrying out MIG/MAG welding operations
- c. prepare material and align to enable suitable joint to be achieved (mating flanges must be treated following manufacturers procedures before joining).
- d. Select, set up and use the correct **tools and equipment** for carrying out MIG/MAG welding 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 MIG/MAG welding operations.
 - Check suitability of gas / filler wire and size for material to be joined
 - Check parameters are set correctly
 - Check consumables are correct
 - Feed rollers and welding tip
- g. Carry out MIG/MAG welding operations following:
 - Recognised researched repair methods(see guidance document)
 - test procedures and provide test coupons on equivalent material in accordance with British Standards
 - Manufacturers processes, methods and procedures
 - your workplace procedures
 - health, safety and legal requirements
- h. avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area
- i. recognise when your weld is not forming correctly and what action needs to be taken
- j. inspect and assess MIG/MAG weld quality in accordance with British Standards and manufacturers specification
- k. check integrity of weld and record the type of weld achieved on the appropriate paper work. Test pieces must be recorded and stored.
- l. dress the joint area without reducing material thickness and protect the repaired area to inhibit corrosion where applicable
- m. clean and store PPE and equipment in appropriate manner



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- n. report any additional faults you notice during the course of your work to the relevant person(s) promptly
- o. report any delays in completing your work to the relevant person(s) promptly
- p. carry out MIG/MAG welding operations within the agreed timescale
- q. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP 20 – Motor Vehicle Body Resistance Spot Welding Operations

UNIT OVERVIEW

This unit is about joining materials correctly and effectively using Resistance Spot welding techniques.

SCOPE OF THIS UNIT:

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

1. **Examples of PPE for Resistance Spot welding operations includes**
 - a. Face mask with appropriate eye protection
 - b. Protective / Flame retardant coveralls
 - c. Protective / Flame retardant gauntlets
 - d. Steel toe cap boots
 - e. Appropriate vehicle protection
 - f. Appropriate protection for others in the workshop
 - g. Fume mask

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 Resistance Spot welding techniques
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 Resistance Spot welding techniques.
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when the joining of materials using Resistance Spot welding techniques.
6. how to find, interpret and use sources of information applicable to the joining of materials using Resistance Spot welding techniques
7. how to select, check, maintain and set up all of the tools and equipment required to correctly join materials using Resistance Spot welding techniques
8. the different types of welding processes, techniques and joints used for the joining of materials when using Resistance Spot welding techniques
9. the correct surface preparation methods to ensure a good Resistance spot weld is achieved and the reasons why surface preparation is important

10. the faults and defects that can occur when carrying out Resistance Spot welding and the common 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 inspect and assess resistance weld quality in accordance to British Standards including

- weld pitch
- indentation
- heat zone
- nugget size
- peel and shear test

14. the advantages of Resistance Spot welding over other joining / welding techniques
15. the correct use of adhesives with Resistance Spot welding techniques

PERFORMANCE OBJECTIVES

To be competent you must:

- a. use the appropriate personal protective equipment when carrying out Resistance Spot welding operations
- b. protect the vehicle and its contents effectively when carrying out Resistance Spot welding operations
- c. prepare material and align to enable suitable join to be achieved
(mating flanges must be treated following manufacturers procedures before joining).
- d. Select, set up and use the correct **tools and equipment** in order to correctly carry out Resistance Spot welding operations
- e. ensure that the **tools, equipment and PPE** you require are in a safe working condition and are correct for the joining operation that you are to be completing
- f. Set up your equipment to carry out Spot welding operations.
 - Check suitability air supply and pressure
 - Check suitability of current supply
 - Check consumables are correct
 - Check suitability / serviceability of electrodes and tips
- g. Carry out Spot welding operations following:
 - Recognised researched repair methods(see glossary document)
 - test procedures in accordance to British Standards (peel/sheer/nugget size)
 - Manufacturer's processes, methods and procedures
 - your workplace processes, methods and procedures
 - health, safety and legal requirements
- h. avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area
- i. recognise when your weld is not forming correctly and what action needs to be taken
- j. inspect and assess Resistance Spot weld quality in accordance to British Standards, including:
 - weld pitch
 - indentation
 - heat zone
 - nugget size
 - peel and shear test

- k. check integrity of weld and record the type of weld achieved on the appropriate paper work. Test pieces must be recorded and stored.
- l. Dress and protect the repaired area to inhibit corrosion where applicable
- m. clean and store PPE and equipment in appropriate manner
- n. report any additional faults you notice during the course of your work to the relevant person(s) promptly
- o. report any delays in completing your work to the relevant person(s) promptly
- p. carry out Resistance Spot welding operations within the agreed timescale
- q. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP 21 – Motor Vehicle Body MIG Brazing Operations

UNIT OVERVIEW

This unit is about joining materials correctly and effectively using Mig Brazing techniques and procedures.

SCOPE OF THIS UNIT:

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

1. Examples of PPE for MIG Brazing operations includes

- a. Face mask with appropriate eye protection
- b. Protective / Flame retardant coveralls
- c. Protective / Flame retardant gauntlets
- d. Steel toe cap boots
- e. Appropriate vehicle protection
- f. Appropriate protection for others in the workshop
- g. Fume mask

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 MIG Brazing techniques
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 MIG Brazing techniques.
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when the joining of materials using MIG Brazing techniques.
6. how to find, interpret and use sources of information applicable to the joining of materials using MIG Brazing techniques.
7. how to select, check, maintain and set up all of the tools and equipment required to correctly join materials using MIG Brazing techniques.
8. the different types of processes, techniques and joints used for the joining of materials when using MIG Brazing techniques.
9. the correct surface preparation methods to ensure a good MIG Braze joint is achieved.
10. the faults and defects that can occur when carrying out MIG Brazing and the common 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 inspect and assess MIG Brazing in accordance with recognised standards
14. when MIG brazing should be used to join materials

15. the advantages of MIG Brazing over other joining methods
16. the different types of joint that can be used to join materials using MIG Brazing, including
 - Lap Plug
 - Lap Seam
 - Butt Joint

PERFORMANCE OBJECTIVES

To be competent you must:

- a. use the appropriate personal protective equipment when carrying out Mig Brazing operations
- b. protect the vehicle and its contents effectively when carrying out MIG Brazing operations
- c. prepare material and align to enable suitable joint to be achieved. Mating flanges must be treated following manufacturers procedures before joining.
- d. Select, set up and use the correct **tools and equipment** for carrying out MIG Brazing 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 MIG Brazing operations.
 - Check suitability of gas / filler wire and size for material to be joined
 - Check parameters are set correctly
 - Check consumables are correct
 - Feed rollers and welding tip
- g. Carry out MIG Brazing operations following:
 - Recognised researched repair methods(see guidance document)
 - test procedures and provide test coupons on equivalent material in accordance with recognised standards
 - Manufacturers processes, methods and procedures
 - your workplace procedures
 - health, safety and legal requirements
- h. avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area
- i. recognise when your braze is not forming correctly and what action needs to be taken
- j. inspect and assess MIG Braze weld quality in accordance to British Standards
- k. check integrity of braze and record the type of joint achieved on the appropriate paper work. Test pieces must be recorded and stored.
- l. dress the joint area without reducing material thickness and protect the repaired area to inhibit corrosion where applicable
- m. clean and store PPE and equipment in appropriate manner
- n. report any additional faults you notice during the course of your work to the relevant person(s) promptly
- o. report any delays in completing your work to the relevant person(s) promptly
- p. carry out MIG Brazing operations within the agreed timescale
- q. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP22 – Motor Vehicle Body Aluminium Welding Operations

UNIT OVERVIEW

This unit is about joining materials correctly and effectively using aluminium welding techniques and procedures

SCOPE OF THIS UNIT:

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

1. Examples of PPE for aluminium welding operations includes

- a. Face mask with appropriate eye protection
- b. Protective / Flame retardant coveralls
- c. Protective / Flame retardant gauntlets
- d. Steel toe cap boots
- e. Appropriate vehicle protection
- f. Appropriate protection for others in the workshop
- g. Fume mask

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 aluminium welding operations
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 aluminium welding operations
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when the joining of materials using aluminium welding operations
6. how to find, interpret and use sources of information applicable to the joining of materials using aluminium welding operations
7. how to select, check, maintain and set up all of the tools and equipment required to correctly join materials using aluminium welding operations
8. the different types of welding processes, techniques and joints used for the joining of materials when using aluminium welding operations
9. the correct surface preparation methods to ensure a good aluminum weld is achieved and the reasons why surface preparation is important

10. the faults and defects that can occur when carrying out aluminium welding and the common 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 including
 - dye penetrate
 - crack tests
13. how to inspect and assess aluminium weld quality in accordance with recognised standards.
14. the different types of joint that can be used to join materials using Aluminium welding, including
 - Lap Plug
 - Lap Seam
 - Butt Joint
 - Brace Joint
 - Fillet Joint
15. when aluminium welding operations should be used
16. how to ensure cross contamination does not occur and the effect of cross contamination on aluminium

PERFORMANCE OBJECTIVES

To be competent you must:

- a. use the appropriate personal protective equipment when carrying out aluminium welding operations
- b. protect the vehicle and its contents effectively when carrying out aluminium welding operations
- c. prepare material surfaces and align to enable suitable join to be achieved (mating flanges must be treated following manufacturers procedures before joining).
- d. Select, set up and use the correct **tools and equipment** in order to correctly carry out aluminium welding operations
- e. ensure that the **tools, equipment and PPE** you require are in a safe working condition and are correct for the joining operation that you are to be completing
- f. Set up your equipment to carry out aluminium welding operations.
- g.
 - Check suitability of gas / filler wire and size for material to be joined
 - Check parameters are set correctly
 - Check consumables are correct
 - Feed rollers and welding tip
 - Test kit
- h. Carry out aluminium welding operations following:
 - i.
 - Recognised researched repair methods(see guidance document)
 - test procedures and provide test coupons on equivalent material in accordance with recognised standards
 - Manufacturers processes, methods and procedures
 - your workplace procedures

- health, safety and legal requirements
- j. avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area
 - k. recognise when your weld is not forming correctly and what action needs to be taken
 - l. inspect and assess aluminium weld quality in accordance to recognised standards including
 - dye penetrate
 - crack testing
 - m. check integrity of the weld and record the type of weld achieved on the appropriate paper work. Test pieces must be recorded and stored.
 - n. dress the joint area without reducing material thickness and protect the repaired area to inhibit corrosion where applicable
 - o. clean and store PPE and equipment in appropriate manner
 - p. report any additional faults you notice during the course of your work to the relevant person(s) promptly
 - q. report any delays in completing your work to the relevant person(s) promptly
 - r. carry out aluminium welding operations within the agreed timescale
 - s. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP 23 – Motor Vehicle Body TIG Welding Operations

UNIT OVERVIEW

This unit is about joining materials correctly and effectively using TIG welding techniques and procedures

SCOPE OF THIS UNIT:

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

1. **Examples of PPE for TIG welding operations includes**
 - a. Face mask with appropriate eye protection
 - b. Protective / Flame retardant coveralls
 - c. Protective / Flame retardant gauntlets
 - d. Steel toe cap boots
 - e. Appropriate vehicle protection
 - f. Appropriate protection for others in the workshop
 - g. Fume mask

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 TIG welding operations
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 TIG welding operations
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when the joining of materials using TIG welding operations
6. how to find, interpret and use sources of information applicable to the joining of materials using TIG welding operations
7. how to select, check, maintain and set up all of the tools and equipment required to correctly join materials using TIG welding operations
8. the different types of welding processes, techniques and joints used for the joining of materials when using TIG welding operations
9. the correct surface preparation methods to ensure a good TIG weld is achieved
10. the faults and defects that can occur when carrying out TIG welding and the common 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 inspect and assess TIG welding in accordance to recognised standards
14. when TIG welding should be used to join materials
15. the advantages of TIG welding techniques over other welding methods
16. the different types of joint that can be used to join materials using TIG welding

PERFORMANCE OBJECTIVES

To be competent you must:

- a. use the appropriate personal protective equipment when carrying out TIG welding operations
- b. protect the vehicle and its contents effectively when carrying out T welding operations
- c. prepare material and align to enable suitable joint to be achieved (Mating flanges must be treated following manufacturers procedures before joining).
- d. Select, set up and use the correct **tools and equipment** in order to correctly carry out TIG welding 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 TIG welding operations.
 - Check suitability of gas / filler wire and size for material to be joined
 - Check parameters are set correctly
 - Check consumables are correct
- g. Carry out TIG welding operations following:
 - Recognised researched repair methods
 - test procedures and provide test coupons on equivalent material in accordance with recognised standards
 - Manufacturers processes, methods and procedures
 - your workplace procedures
 - health, safety and legal requirements
- h. avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area
- i. recognise when your weld is not forming correctly and what action needs to be taken
- j. inspect and assess TIG weld quality in accordance with British Standards and Manufacturers Specification
- k. check integrity of the weld and record the type of weld achieved on the appropriate paper work. Test pieces must be recorded and stored.
- l. dress the joint area without reducing material thickness and protect the repaired area to inhibit corrosion where applicable
- m. Clean and store PPE and equipment in appropriate manner
- n. report any additional faults you notice during the course of your work to the relevant person(s) promptly
- o. report any delays in completing your work to the relevant person(s) promptly
- p. carry out TIG welding operations within the agreed timescale
- q. 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

UNIT OVERVIEW

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

SCOPE OF THIS UNIT:

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

UNIT OVERVIEW

This unit is about joining materials effectively using adhesive bonding processes

SCOPE OF THIS UNIT:

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 joint 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