







Automotive Body Repair Technician

QP Code: ASC/Q1405

Version: 3.0

NSQF Level: 3

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ASC/Q1405: Automotive Body Repair Technician

Brief Job Description

An Automotive Body Repair Technician is responsible for carrying out repairs on damaged body and frame components of a vehicle following a collision or corrosion.

Personal Attributes

The person should be patient, organised, team-oriented and have the ability to work for long hours in adverse conditions. They should be keen observers and have an eye for detail and quality.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

- 1. ASC/N9801: Organize work and resources (Service)
- 2. DGT/VSQ/N0102: Employability Skills (60 Hours)
- 3. ASC/N1412: Carry out repairs and replacement on non-structural body panels or components
- 4. <u>ASC/N1413</u>: Carry out repair/replacement by cutting and welding on structural or non-structural body panels

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Automotive Vehicle Service
Occupation	Technical Service and Repair
Country	India
NSQF Level	3
Credits	14
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7213.0301





Minimum Educational Qualification & Experience	8th Class (+ ITI) with 2 Years of experience OF relevant experience OR 10th Class (+ 1 year ITI (Mechanic Auto Body Repair)) with 1 Year of experience OF relevant experience OR 10th Class with 3 Years of experience of relevant experience OR 12th Class with 1 Year of experience of relevant experience OR Certificate-NSQF (Automotive Body Repair Assistant Level 2.5) with 2 Years of experience
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	LMV Driving Licence
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	NA
NSQC Approval Date	
Version	3.0

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ASC/N9801: Organize work and resources (Service)

Description

This NOS unit is about implementing safety, planning work, adopting sustainable practices for optimising use of resources

Scope

The scope covers the following:

- Maintain safe and secure working environment
- Perform work as per quality standards
- Health and hygiene
- Material/energy conservation practices
- Effective waste management practices

Elements and Performance Criteria

Maintain safe and secure working environment

To be competent, the user/individual on the job must be able to:

- **PC1.** organise work as per organisation's current health, safety and security policies and procedures
- **PC2.** report any identified breaches in health, safety, and security policies and procedures to the designated person
- **PC3.** identify the risks and hazards associated with work activities, their causes and prevention

Perform work as per quality standards

To be competent, the user/individual on the job must be able to:

- **PC4.** ensure work area is clean and tidy
- **PC5.** ensure that work is accomplished as per the requirements within the specified timeline
- **PC6.** ensure team goals are given preference over individual goals

Health and hygiene

To be competent, the user/individual on the job must be able to:

- **PC7.** sanitize workstation and equipment regularly
- **PC8.** clean hands with soap, alcohol-based sanitizer regularly
- **PC9.** avoid contact with ill people and self-isolate in a similar situation
- **PC10.** wear and dispose PPEs regularly and appropriately
- **PC11.** report advanced hygiene and sanitation issues to appropriate authority
- PC12. follow stress and anxiety management techniques

Material/energy conservation practices

To be competent, the user/individual on the job must be able to:

- **PC13.** identify ways to optimise usage of material in various tasks/activities/processes
- **PC14.** use resources, including water, in a responsible manner
- **PC15.** check for spills/leakages in various tasks/activities/processes

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- **PC16.** plug spills/leakages and escalate to appropriate authority if unable to rectify
- **PC17.** carry out routine cleaning of tools, machines and equipment
- **PC18.** check if the equipment/machine is functioning normally before commencing work and rectify wherever required
- **PC19.** report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment
- **PC20.** ensure electrical equipment and appliances are properly connected and turned off when not in use

Effective waste management practices

To be competent, the user/individual on the job must be able to:

- PC21. identify recyclable and non-recyclable, and hazardous waste generated
- PC22. segregate waste into different categories
- **PC23.** dispose non-recyclable waste appropriately
- **PC24.** deposit recyclable and reusable material at identified location
- PC25. follow processes specified for disposal of hazardous waste

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- **KU1.** organisation procedures for health, safety and security, and individual role and responsibilities in this context
- **KU2.** the organisations emergency procedures for different emergency situations and the importance of following the same
- **KU3.** evacuation procedures for workers and visitors
- **KU4.** how and when to report hazards as well as the limits of responsibility for dealing with hazards
- **KU5.** potential hazards, risks and threats based on the nature of work
- **KU6.** the implications of own work on the schedule and work of others
- **KU7.** efficient utilisation of material and water
- **KU8.** basics of electricity and prevalent energy efficient devices
- **KU9.** ways to recognise common electrical problems
- **KU10.** common practices of conserving electricity
- **KU11.** common sources of pollution and ways to minimize it
- **KU12.** categorisation of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics
- **KU13.** usage of different colours of dustbins
- **KU14.** waste management and methods of waste disposal
- **KU15.** significance of greening
- **KU16.** organisation's policies to maintain personal health and hygiene at workplace

Generic Skills (GS)

User/individual on the job needs to know how to:





- **GS1.** read instructions/guidelines/standard operating procedures
- **GS2.** complete statutory documents relevant to safety and hygiene
- **GS3.** modify work practices to improve them
- **GS4.** ask for clarifications from superior about the job requirement
- **GS5.** work with supervisors/team members to carry out work related tasks
- **GS6.** complete tasks efficiently and accurately within stipulated time
- **GS7.** inform/report to concerned person in case of any problem
- **GS8.** make timely decisions for efficient utilization of resources
- **GS9.** write in at least one language and complete written work with attention to detail
- **GS10.** record data on waste disposal at workplace
- **GS11.** be punctual, utilize time and manage workload efficiently
- **GS12.** evaluate strategies to maintain, enhance or reduce the intensity of heightened emotional response





Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Maintain safe and secure working environment	8	4	-	3
PC1. organise work as per organisation's current health, safety and security policies and procedures	-	2	-	1
PC2. report any identified breaches in health, safety, and security policies and procedures to the designated person	3	1	-	-
PC3. identify the risks and hazards associated with work activities, their causes and prevention	5	1	-	2
Perform work as per quality standards	12	8	-	6
PC4. ensure work area is clean and tidy	4	2	-	-
PC5. ensure that work is accomplished as per the requirements within the specified timeline	6	4	-	2
PC6. ensure team goals are given preference over individual goals	2	2	-	4
Health and hygiene	12	8	-	5
PC7. sanitize workstation and equipment regularly	2	2	-	2
PC8. clean hands with soap, alcohol-based sanitizer regularly	2	1	-	-
PC9. avoid contact with ill people and self-isolate in a similar situation	2	1	-	-
PC10. wear and dispose PPEs regularly and appropriately	2	2	-	1
PC11. report advanced hygiene and sanitation issues to appropriate authority	2	2	-	2
PC12. follow stress and anxiety management techniques	2	-	-	-
Material/energy conservation practices	10	4	-	3
PC13. identify ways to optimise usage of material in various tasks/activities/processes	2	-	-	1





Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. use resources, including water, in a responsible manner	2	-	-	-
PC15. check for spills/leakages in various tasks/activities/processes	-	1	-	-
PC16. plug spills/leakages and escalate to appropriate authority if unable to rectify	-	1	-	1
PC17. carry out routine cleaning of tools, machines and equipment	2	-	-	-
PC18. check if the equipment/machine is functioning normally before commencing work and rectify wherever required	-	1	-	1
PC19. report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment	2	1	-	-
PC20. ensure electrical equipment and appliances are properly connected and turned off when not in use	2	-	-	-
Effective waste management practices	8	6	-	3
PC21. identify recyclable and non-recyclable, and hazardous waste generated	2	-	-	1
PC22. segregate waste into different categories	-	2	-	-
PC23. dispose non-recyclable waste appropriately	2	2	-	1
PC24. deposit recyclable and reusable material at identified location	2	1	-	-
PC25. follow processes specified for disposal of hazardous waste	2	1	-	1
NOS Total	50	30	-	20





National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9801
NOS Name	Organize work and resources (Service)
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	30/12/2021
Next Review Date	28/04/2025
NSQC Clearance Date	28/04/2022

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DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following:

- Introduction to Employability Skills
- Constitutional values Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

- **PC1.** identify employability skills required for jobs in various industries
- **PC2.** identify and explore learning and employability portals

Constitutional values - Citizenship

To be competent, the user/individual on the job must be able to:

- **PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- **PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

- **PC5.** recognize the significance of 21st Century Skills for employment
- **PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

To be competent, the user/individual on the job must be able to:

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- **PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- **PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- **PC9.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

To be competent, the user/individual on the job must be able to:

- PC10. understand the difference between job and career
- **PC11.** prepare a career development plan with short- and long-term goals, based on aptitude *Communication Skills*

To be competent, the user/individual on the job must be able to:

- **PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- **PC13.** work collaboratively with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

- PC14. communicate and behave appropriately with all genders and PwD
- PC15. escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

- **PC16.** select financial institutions, products and services as per requirement
- **PC17.** carry out offline and online financial transactions, safely and securely
- **PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- **PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation *Essential Digital Skills*

To be competent, the user/individual on the job must be able to:

- **PC20.** operate digital devices and carry out basic internet operations securely and safely
- **PC21.** use e- mail and social media platforms and virtual collaboration tools to work effectively
- PC22. use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

To be competent, the user/individual on the job must be able to:

- **PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- **PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- **PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

To be competent, the user/individual on the job must be able to:

- **PC26.** identify different types of customers
- PC27. identify and respond to customer requests and needs in a professional manner.
- **PC28.** follow appropriate hygiene and grooming standards

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Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

- PC29. create a professional Curriculum vitae (Résumé)
- **PC30.** search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively
- **PC31.** apply to identified job openings using offline /online methods as per requirement
- **PC32.** answer questions politely, with clarity and confidence, during recruitment and selection
- PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- **KU1.** need for employability skills and different learning and employability related portals
- **KU2.** various constitutional and personal values
- **KU3.** different environmentally sustainable practices and their importance
- **KU4.** Twenty first (21st) century skills and their importance
- **KU5.** how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up
- **KU6.** importance of career development and setting long- and short-term goals
- **KU7.** about effective communication
- KU8. POSH Act
- **KU9.** Gender sensitivity and inclusivity
- **KU10.** different types of financial institutes, products, and services
- **KU11.** how to compute income and expenditure
- **KU12.** importance of maintaining safety and security in offline and online financial transactions
- **KU13.** different legal rights and laws
- **KU14.** different types of digital devices and the procedure to operate them safely and securely
- **KU15.** how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.
- **KU16.** how to identify business opportunities
- **KU17.** types and needs of customers
- **KU18.** how to apply for a job and prepare for an interview
- **KU19.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

- **GS1.** read and write different types of documents/instructions/correspondence
- **GS2.** communicate effectively using appropriate language in formal and informal settings
- **GS3.** behave politely and appropriately with all
- **GS4.** how to work in a virtual mode





GS5. perform calculations efficiently

GS6. solve problems effectively

GS7. pay attention to details

GS8. manage time efficiently

GS9. maintain hygiene and sanitization to avoid infection





Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
Constitutional values - Citizenship	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	<u>-</u>
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
Basic English Skills	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	1	2	-	-





Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
Communication Skills	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-
Entrepreneurship	2	3	-	-





Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-





National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023





ASC/N1412: Carry out repairs and replacement on non-structural body panels or components

Description

This NOS unit is about the Automotive Body Repair Technician in assessing the damage to the vehicle body and then repairing or replacing the identified non structural body panels including plastic and glass components.

Scope

The scope covers the following:

- Assist in damage assessment and repair estimate preparation
- Prepare to perform repair/replace on non-structural panels or components
- Perform repair/replace on non-structural panels or components
- Perform post repair activities

Elements and Performance Criteria

Assist in damage assessment and repair estimate preparation

To be competent, the user/individual on the job must be able to:

- PC1. review the job card and obtain required information to determine the repair requirements
- **PC2.** determine direction of impact, extent of damage and whether all the damages are the result of the same collision
- **PC3.** assist supervisor or service advisor in visual inspection of the entire vehicle to identify and collect evidence of direct or indirect damages on body panels/assemblies/subassemblies/component that is found bent, broken, crushed, leak, rusted or missing
- **PC4.** report the malfunctions/repairs in the vehicle beyond own scope to the concerned person
- **PC5.** assist supervisor or service advisor in initial repair estimate preparation, by listing required consumables, fasteners, parts to be replace or repair (denting/cutting/welding) using manufacturer's part catalogue and vehicle repair manuals

Prepare to perform repair/replace on non-structural panels or components

To be competent, the user/individual on the job must be able to:

- **PC6.** place the vehicle on suitable platform according to nature of job to be performed
- **PC7.** collect appropriate workshop tools/equipment (hand tools, power tools, measuring devices, workshop equipment etc.) new panel, spare parts, consumables required for repair/replacement job on non-structural components and check their condition/calibration
- **PC8.** report the malfunctions if any, in the tools/equipment/new parts to the person concerned for rectification
- **PC9.** prepare self by wearing appropriate PPE and the work area by cleaning, placing tools/equipment in an organised manner

Perform repair/replace on non-structural body panels or components

To be competent, the user/individual on the job must be able to:





- **PC10.** take precautions to avoid damage to the vehicle and its components while working on various vehicle body panels
- **PC11.** use workshop tools/equipment/consumable (hand tools, power tools, measuring devices, sealer gun, suction cups etc.) required for the job as per OEM Standard Operating Procedure (SOP)
- **PC12.** use suitable method/technique to remove detachable parts such as upholstery, trims, accessories, windscreen, window glass, electrical window/seat operating mechanism, etc. and, tag removed items for repair, reuse and replacement as per manufacturers' guidelines and report additional repair requirement if noticed any hidden damages
- **PC13.** place removed parts securely as per manufacturers' guidelines
- **PC14.** use OEM or product supplier repair method excluding welding such as riveting, bonding, screwing, bolting etc. to carry out required repairs on various body parts including plastic and glass components/panels and reinstate original vehicle dimensions
- **PC15.** apply appropriate sealers, foams, anti-corrosion coatings and sound dampening pads where ever applicable
- **PC16.** reinstall non-structural removed/repaired/new panels/parts (pre or post paint job completion as per requirement) and correct the alignment of the panels and components
- **PC17.** inspect grooves, angles, or gap allowances, of various body panels/components post refitting/replacement using micrometer, caliper, feeler gauge, etc. as per manufacturer's specifications
- **PC18.** carry out water leak test to ensure proper sealing or adhesion of replaced rubber seal/weather strip or glass work activity, as per OEM recommended guidelines
- **PC19.** maintain the documentation related to body repair/replacement job done on the vehicle perform post repair activities

To be competent, the user/individual on the job must be able to:

- **PC20.** ensure completeness of tasks assigned before releasing the vehicle for the next procedure
- **PC21.** dispose off materials such as empty boxes, empty cans/tube etc, scrap of damage parts/panels as per organization's policies
- **PC22.** return leftover consumable/parts, tools/equipment to the person concerned and report if any malfunction observed
- **PC23.** inspect repaired vehicles for proper functioning and test drive vehicles to ensure proper alignment and handling

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- **KU1.** about the Automotive Industry in India, workshop structure and role and responsibilities of different people in the workshop
- **KU2.** SOPs regarding receiving vehicles, opening job card, allocation of work, invoicing, vehicle delivery, handling complaints etc.
- **KU3.** identification, nomenclature, manufacturer's specifications of various consumable/material (seam sealers, abrasives, masking tape, adhesion promoter, cleaning agents, primer, applicator, sealants etc.) hand tools, manual and electric dent pullers, welding equipment etc. and vehicle parts and body panels.
- **KU4.** about overall functioning of various types of collision repair equipment and material

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- **KU5.** about workshop tools, equipment, materials, their usage, storage and maintenance
- **KU6.** various tools used to carry out remove and replace operations and their safe/correct usage
- **KU7.** range of methods for removing and replacing various exterior and interior body panel or parts such as trims, lining, bumpers, windscreens, window glass, seats, window regulator, sunroof etc.
- **KU8.** various methods used to align replaced parts and panels to reinstate manufacturers original settings
- **KU9.** safety requirements while working on the vehicle for collision repair work including glass and aluminum repairs
- **KU10.** characteristics of various commonly used glass parts in the vehicle such as Tempered/Toughened glass & Laminated glass
- **KU11.** characteristics of various commonly used plastic parts in the vehicle such as Polypropylene (PP), Poly Carbonate (PC), Acrylonitrile Butadiene Styrene (ABS), Polyvinyl Chloride (PVC), etc.
- **KU12.** various personal protective equipment required for collision repair job and their usage
- **KU13.** type of vehicle body and chassis damage/defects their cause, prevention and rectification
- **KU14.** features of body construction relating to strength and collision protection
- **KU15.** features and purpose of structural and non-structural panels
- **KU16.** characteristics of common metals such as mild steel, aluminum, aluminum alloy, high strength steels (HSS), ultra-high strength steels (UHSS)
- **KU17.** direction and weight of damage force as well as the impact at the point of collision
- **KU18.** processes and procedures for preparing replacement panel work and panel fixing positions
- **KU19.** the importance of realigning structural parts and assemblies to reinstate vehicle integrity and driving characteristics
- **KU20.** reinstating suitable corrosion protection to replaced parts
- **KU21.** Manufacturers removal, replacement, repair, and testing procedures related to vehicle body and frame
- **KU22.** documentation required on the job (including job cards, work sheets, etc. regarding the basic details of repair and service performed
- **KU23.** organisational and professional code of ethics and standards of practice
- **KU24.** safety, health and environmental policies and regulations for the work place as well as for automotive trade in general

Generic Skills (GS)

User/individual on the job needs to know how to:

- **GS1.** read and interpret workplace related documentation
- **GS2.** communicate using terms, names, grades and other nomenclature pertaining to the automotive trade
- **GS3.** analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently
- **GS4.** identify potential workplace problem and take suitable action
- GS5. write in English/regional language





Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assist in damage assessment and repair estimate preparation	5	10	-	5
PC1. review the job card and obtain required information to determine the repair requirements	1	2	-	-
PC2. determine direction of impact, extent of damage and whether all the damages are the result of the same collision	1	2	-	2
PC3. assist supervisor or service advisor in visual inspection of the entire vehicle to identify and collect evidence of direct or indirect damages on body panels/assemblies/subassemblies/component that is found bent, broken, crushed, leak, rusted or missing	2	2	-	1
PC4. report the malfunctions/repairs in the vehicle beyond own scope to the concerned person	1	1	-	1
PC5. assist supervisor or service advisor in initial repair estimate preparation, by listing required consumables, fasteners, parts to be replace or repair (denting/cutting/welding) using manufacturer's part catalogue and vehicle repair manuals	-	3	-	1
Prepare to perform repair/replace on non-structural panels or components	5	10	-	4
PC6. place the vehicle on suitable platform according to nature of job to be performed	_	2	-	-
PC7. collect appropriate workshop tools/equipment (hand tools, power tools, measuring devices, workshop equipment etc.) new panel, spare parts, consumables required for repair/replacement job on non-structural components and check their condition/calibration	2	3	-	1
PC8. report the malfunctions if any, in the tools/equipment/new parts to the person concerned for rectification	1	2	-	1
PC9. prepare self by wearing appropriate PPE and the work area by cleaning, placing tools/equipment in an organised manner	2	3	-	2
Perform repair/replace on non-structural body panels or components	15	20	-	6





Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. take precautions to avoid damage to the vehicle and its components while working on various vehicle body panels	1	1	-	1
PC11. use workshop tools/equipment/consumable (hand tools, power tools, measuring devices, sealer gun, suction cups etc.) required for the job as per OEM Standard Operating Procedure (SOP)	2	2	-	-
PC12. use suitable method/technique to remove detachable parts such as upholstery, trims, accessories, windscreen, window glass, electrical window/seat operating mechanism, etc. and, tag removed items for repair, reuse and replacement as per manufacturers' guidelines and report additional repair requirement if noticed any hidden damages	2	2	-	1
PC13. place removed parts securely as per manufacturers' guidelines	1	2	-	-
PC14. use OEM or product supplier repair method excluding welding such as riveting, bonding, screwing, bolting etc. to carry out required repairs on various body parts including plastic and glass components/panels and reinstate original vehicle dimensions	2	2	-	1
PC15. apply appropriate sealers, foams, anti-corrosion coatings and sound dampening pads where ever applicable	2	2	-	1
PC16. reinstall non-structural removed/repaired/new panels/parts (pre or post paint job completion as per requirement) and correct the alignment of the panels and components	-	3	-	-
PC17. inspect grooves, angles, or gap allowances, of various body panels/components post refitting/replacement using micrometer, caliper, feeler gauge, etc. as per manufacturer's specifications	2	2	-	1
PC18. carry out water leak test to ensure proper sealing or adhesion of replaced rubber seal/weather strip or glass work activity, as per OEM recommended guidelines	1	2	-	1
PC19. maintain the documentation related to body repair/replacement job done on the vehicle	2	2	_	-





Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
perform post repair activities	5	10	-	5
PC20. ensure completeness of tasks assigned before releasing the vehicle for the next procedure	1	2	-	-
PC21. dispose off materials such as empty boxes, empty cans/tube etc, scrap of damage parts/panels as per organization's policies	2	3	-	2
PC22. return leftover consumable/parts, tools/equipment to the person concerned and report if any malfunction observed	1	2	-	1
PC23. inspect repaired vehicles for proper functioning and test drive vehicles to ensure proper alignment and handling	1	3	-	2
NOS Total	30	50	-	20





National Occupational Standards (NOS) Parameters

NOS Code	ASC/N1412
NOS Name	Carry out repairs and replacement on non-structural body panels or components
Sector	Automotive
Sub-Sector	Automotive Vehicle Service
Occupation	Technical Service & Repair
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	29/07/2021
Next Review Date	29/07/2026
NSQC Clearance Date	29/07/2021





ASC/N1413: Carry out repair/replacement by cutting and welding on structural or non-structural body panels

Description

This NOS unit is about the Automotive Body Repair Technician repairing or replacing by cutting and welding on various sheet metal (structural and non-structural) including aluminum and assisting senior to carry out vehicle body and frame measurements

Scope

The scope covers the following:

- Prepare to perform cutting and welding on vehicle body panels
- Perform cutting and welding on vehicle body panels
- Perform post repair activities

Elements and Performance Criteria

Prepare to perform cutting and welding on vehicle body panels

To be competent, the user/individual on the job must be able to:

- **PC1.** review the job card and obtain required information to determine the repair requirements
- **PC2.** determine direction of impact, extent of damage and whether all the damages are the result of the same collision
- **PC3.** place the vehicle on suitable platform according to nature of job to be performed
- **PC4.** collect appropriate workshop tools/equipment (hand tools, power tools, measuring devices, cutting and welding equipment- for steel and aluminum, etc.) new body panel, spare parts, consumables required for collision repair and check their condition/calibration
- **PC5.** report the malfunctions/repairs in the vehicle, tools/equipment/new parts which is beyond own scope to the concerned person
- **PC6.** prepare self by wearing appropriate PPE and the work area by cleaning, placing tools/equipment in an organised manner
- **PC7.** take precautions to avoid damage to the vehicle and its components

Perform cutting and welding on vehicle body/frame

To be competent, the user/individual on the job must be able to:

- **PC8.** apply suitable technique to use workshop tools/equipment (hand tools, power tools, measuring devices, cutting and welding equipment, etc.) required for the job as per OEM Standard Operating Procedure (SOP)
- **PC9.** use suitable method to remove detachable parts such as upholstery, trims, accessories, window glass, electrical window/seat operating mechanism, etc. to gain access to damaged body panels/body structure/reinforcement, tag removed items for replacement and report additional repair requirement if noticed any hidden damages
- **PC10.** seek assistance from senior to carryout rough pulling for body alignment process
- **PC11.** cut and remove damaged welded or structural panels (steel or aluminum) with minimal disturbance to surrounding panels and prepare surface of damaged area and new panel appropriately for installation

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- **PC12.** apply suitable technique while installing/replacing new panel in secured manner for correct alignment with the vehicle body (structural and non-structural panels such as running board, quarter panel, side members, pillar, etc.)
- **PC13.** use various welding technique to weld new panels or panel assemblies(steel and aluminum) as per manufacturers' recommended specifications
- **PC14.** assist senior in the measurement of vehicle body dimension to ensure correct alignment or final correction
- **PC15.** dress weld seams using sanding/grinding operations
- **PC16.** use various techniques to apply body seam sealers and for rust prevention treatment as specified by OEM
- **PC17.** reinstall removed or new parts such as upholstery, trims, accessories, window glass, electrical window/seat operating mechanism, etc. pre or post paint job completion as per requirement

Perform post repair activities

To be competent, the user/individual on the job must be able to:

- PC18. maintain the documentation related to body repair/replacement job done on the vehicle
- **PC19.** ensure completeness of tasks assigned before releasing the vehicle for the next procedure
- **PC20.** dispose off materials such as empty boxes, empty cans/tube etc, scrap of damage parts/panels as per organization's policies
- **PC21.** return leftover consumable/parts, tools/equipment to the person concerned and report if any malfunction observed
- **PC22.** inspect repaired vehicles for proper functioning and test drive vehicles to ensure proper alignment and handling

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- **KU1.** about the Automotive Industry in India, workshop structure and role and responsibilities of different people in the workshop
- **KU2.** SOPs regarding receiving vehicles, opening job card, allocation of work, invoicing, vehicle delivery, handling complaints etc.
- **KU3.** identification, nomenclature, manufacturer's specifications of various consumable/material (seam sealers, abrasives, hand tools, manual and electric dent pullers, welding equipment etc.) and vehicle parts and body panels
- KU4. about overall functioning of various types of collision repair equipment and material
- **KU5.** about workshop tools, equipment, materials, their usage, storage and maintenance
- **KU6.** various tools used to carry out remove and replace operations and their safe/correct usage
- **KU7.** range of methods for removing and replacing various exterior and interior body panel or parts such as trims, lining, bumpers, windscreens, window glass, seats, window regulator, sunroof etc.
- **KU8.** various methods used to align replaced parts and panels to reinstate manufacturers original settings
- **KU9.** safety requirements while working on the vehicle for collision repair work including glass and aluminum related repairs
- **KU10.** various personal protective equipment required for collision repair job and their usage





- **KU11.** type of vehicle body and chassis damage/defects their cause, prevention and rectification
- **KU12.** features of body construction relating to strength and collision protection
- **KU13.** features and purpose of structural and non-structural panels
- **KU14.** characteristics of common metals such as mild steel, aluminum, aluminum alloy, high strength steels (HSS), ultra-high strength steels (UHSS)
- **KU15.** direction and weight of damage force as well as the impact at the point of collision
- **KU16.** principles of pulling systems including fixed post, swinging arm and vector systems
- **KU17.** principles of operation and adjustment of welding systems used for panel replacement including MAGS, Resistance spot and MIG brazing
- **KU18.** processes and procedures for preparing replacement panel work and panel fixing positions
- **KU19.** the importance of realigning structural parts and assemblies to reinstate vehicle integrity and driving characteristics
- **KU20.** reinstating suitable corrosion protection to replaced parts
- **KU21.** Manufacturers removal, replacement, repair, and testing procedures related to vehicle body and frame
- **KU22.** documentation required on the job (including job cards, work sheets, etc. regarding the basic details of repair and service performed
- **KU23.** organisational and professional code of ethics and standards of practice
- **KU24.** safety, health and environmental policies and regulations for the work place as well as for automotive trade in general

Generic Skills (GS)

User/individual on the job needs to know how to:

- **GS1.** read and interpret workplace related documentation
- **GS2.** communicate using terms, names, grades and other nomenclature pertaining to the automotive trade
- **GS3.** analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently
- **GS4.** identify potential workplace problem and take suitable action
- **GS5.** write in English/regional language





Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare to perform cutting and welding on vehicle body panels		20	-	8
PC1. review the job card and obtain required information to determine the repair requirements	1	2	-	-
PC2. determine direction of impact, extent of damage and whether all the damages are the result of the same collision	1	3	-	2
PC3. place the vehicle on suitable platform according to nature of job to be performed	1	3	-	-
PC4. collect appropriate workshop tools/equipment (hand tools, power tools, measuring devices, cutting and welding equipment- for steel and aluminum, etc.) new body panel, spare parts, consumables required for collision repair and check their condition/calibration	2	3	-	2
PC5. report the malfunctions/repairs in the vehicle, tools/equipment/new parts which is beyond own scope to the concerned person	2	3	-	1
PC6. prepare self by wearing appropriate PPE and the work area by cleaning, placing tools/equipment in an organised manner	2	3	-	2
PC7. take precautions to avoid damage to the vehicle and its components	1	3	-	1
Perform cutting and welding on vehicle body/frame	15	20	-	7
PC8. apply suitable technique to use workshop tools/equipment (hand tools, power tools, measuring devices, cutting and welding equipment, etc.) required for the job as per OEM Standard Operating Procedure (SOP)	1	2	-	2
PC9. use suitable method to remove detachable parts such as upholstery, trims, accessories, window glass, electrical window/seat operating mechanism, etc. to gain access to damaged body panels/body structure/reinforcement, tag removed items for replacement and report additional repair requirement if noticed any hidden damages	2	2	-	-





Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. seek assistance from senior to carryout rough pulling for body alignment process	2	2	-	-
PC11. cut and remove damaged welded or structural panels (steel or aluminum) with minimal disturbance to surrounding panels and prepare surface of damaged area and new panel appropriately for installation	2	3	-	-
PC12. apply suitable technique while installing/replacing new panel in secured manner for correct alignment with the vehicle body (structural and non-structural panels such as running board, quarter panel, side members, pillar, etc.)	1	2	-	1
PC13. use various welding technique to weld new panels or panel assemblies(steel and aluminum) as per manufacturers' recommended specifications	2	2	-	1
PC14. assist senior in the measurement of vehicle body dimension to ensure correct alignment or final correction	2	3	-	1
PC15. dress weld seams using sanding/grinding operations	1	1	-	1
PC16. use various techniques to apply body seam sealers and for rust prevention treatment as specified by OEM	1	1	-	1
PC17. reinstall removed or new parts such as upholstery, trims, accessories, window glass, electrical window/seat operating mechanism, etc. pre or post paint job completion as per requirement	1	2	-	-
Perform post repair activities	5	10	-	5
PC18. maintain the documentation related to body repair/replacement job done on the vehicle	2	2	-	-
PC19. ensure completeness of tasks assigned before releasing the vehicle for the next procedure	-	1	-	-
PC20. dispose off materials such as empty boxes, empty cans/tube etc, scrap of damage parts/panels as per organization's policies	2	2	-	2





Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. return leftover consumable/parts, tools/equipment to the person concerned and report if any malfunction observed	1	2	-	1
PC22. inspect repaired vehicles for proper functioning and test drive vehicles to ensure proper alignment and handling	-	3	-	2
NOS Total	30	50	-	20





National Occupational Standards (NOS) Parameters

NOS Code	ASC/N1413
NOS Name	Carry out repair/replacement by cutting and welding on structural or non-structural body panels
Sector	Automotive
Sub-Sector	Automotive Vehicle Service
Occupation	Technical Service & Repair
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	29/07/2021
Next Review Date	29/07/2026
NSQC Clearance Date	29/07/2021

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

- 1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each Element/ PC.
- 2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
- 3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
- 4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
- 5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
- 6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.
- 7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.





Minimum Aggregate Passing % at QP Level: 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ASC/N9801.Organize work and resources (Service)	50	30	-	20	100	15
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	0	0	50	10
ASC/N1412.Carry out repairs and replacement on non- structural body panels or components	30	50	-	20	100	35
ASC/N1413.Carry out repair/replacement by cutting and welding on structural or non-structural body panels	30	50	-	20	100	40
Total	130	160	-	60	350	100





Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
PwD	Persons with Disability





Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.





Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.