



# Automotive Body Repair Technician

QP Code: ASC/Q1405

Version: 2.0

NSQF Level: 4

Automotive Skills Development Council || 153, Gr Floor, Okhla Industrial Area, Phase - III, Leela Building  
New Delhi - 110020

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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. [ASC/N9802: Interact effectively with colleagues, customers and others](#)
3. [ASC/N1412: Carry out repairs and replacement on non-structural body panels or components](#)
4. [ASC/N1413: 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	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7213.0301
Minimum Educational Qualification & Experience	8th Class + 1 year ITI with 2 years of experience in Automotive Sector OR 8th Class + 2 years ITI with 1 year of experience in Automotive Sector OR

	10th Class with 1 Year of experience OR Certificate-NSQF (Automotive Body Repair Assistant Level 3) with 2 Years of experience
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	LMV Driving License
Minimum Job Entry Age	18 Years
Last Reviewed On	29/07/2021
Next Review Date	29/07/2026
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Version	2.0

## 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

- 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
<i>Maintain safe and secure working environment</i>	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
<i>Perform work as per quality standards</i>	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
<i>Health and hygiene</i>	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	-	-	-
<i>Material/energy conservation practices</i>	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	-	-	-
<i>Effective waste management practices</i>	<b>8</b>	<b>6</b>	-	<b>3</b>
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
<b>NOS Total</b>	<b>50</b>	<b>30</b>	-	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ASC/N9801
<b>NOS Name</b>	Organize work and resources (Service)
<b>Sector</b>	Automotive
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	29/07/2021
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<b>NSQC Clearance Date</b>	29/07/2021

## ASC/N9802: Interact effectively with colleagues, customers and others

### Description

This NOS unit is about communicating with customers and colleagues/superiors, either in own work group or in other work groups within organisation.

### Scope

The scope covers the following :

- Communicate effectively with colleagues, customers and others
- Interact with supervisor or superior

### Elements and Performance Criteria

#### *Communicate effectively with colleagues, customers and others*

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

- PC1. maintain clear communication with colleagues, customers and others, wherever needed, through all means i.e. face-to-face, telephonic or written
- PC2. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity
- PC3. work in a way that shows respect for colleagues and others
- PC4. follow the organisation's policies and procedures while working in a team
- PC5. respect personal space of colleagues and customers

#### *Interact with supervisor or superior*

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

- PC6. identify work requirements by receiving instructions from reporting supervisor
- PC7. escalate problems to supervisors that cannot be handled including repairs and maintenance of machine
- PC8. report the completed work
- PC9. rectify errors as per feedback

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. the importance of effective communication and establishing good working relationships with colleagues and supervisor
- KU2. different methods of communication as per the circumstances
- KU3. gender based concepts, issues and legislation

### Generic Skills (GS)

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

GS1. read instructions/guidelines/procedures

- GS2. listen effectively and orally communicate information
- GS3. ask for clarification and advice from the concerned person
- GS4. maintain positive and effective relationships with colleagues and customers
- GS5. evaluate the possible solution(s) to the problem
- GS6. deliver consistent and reliable service to customers
- GS7. complete written work with attention to detail
- GS8. check that the work meets customer requirements

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate effectively with colleagues, customers and others</i>	36	11	-	14
PC1. maintain clear communication with colleagues, customers and others, wherever needed, through all means i.e. face-to-face, telephonic or written	8	-	-	4
PC2. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity	8	-	-	-
PC3. work in a way that shows respect for colleagues and others	7	4	-	3
PC4. follow the organisation's policies and procedures while working in a team	7	4	-	3
PC5. respect personal space of colleagues and customers	6	3	-	4
<i>Interact with supervisor or superior</i>	14	19	-	6
PC6. identify work requirements by receiving instructions from reporting supervisor	7	4	-	-
PC7. escalate problems to supervisors that cannot be handled including repairs and maintenance of machine	-	5	-	3
PC8. report the completed work	7	5	-	-
PC9. rectify errors as per feedback	-	5	-	3
<b>NOS Total</b>	<b>50</b>	<b>30</b>	<b>-</b>	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ASC/N9802
<b>NOS Name</b>	Interact effectively with colleagues, customers and others
<b>Sector</b>	Automotive
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	29/07/2021
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<b>NSQC Clearance Date</b>	29/07/2021

## 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 re-fitting/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

- 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
<i>Assist in damage assessment and repair estimate preparation</i>	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
<i>Prepare to perform repair/replace on non-structural panels or components</i>	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

<i>Perform repair/replace on non-structural body panels or components</i>	15	20	-	6
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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 re-fitting/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
<i>perform post repair activities</i>	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
<b>NOS Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>

## National Occupational Standards (NOS) Parameters

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

- 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
<i>Prepare to perform cutting and welding on vehicle body panels</i>	10	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
<i>Perform cutting and welding on vehicle body/frame</i>	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	-	-
<i>Perform post repair activities</i>	<b>5</b>	<b>10</b>	-	<b>5</b>
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
<b>NOS Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>

## 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
ASC/N9802.Interact effectively with colleagues, customers and others	50	30	-	20	100	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
<b>Total</b>	<b>160</b>	<b>160</b>	<b>-</b>	<b>80</b>	<b>400</b>	<b>100</b>

## 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

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	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.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.
<b>Knowledge and Understanding (KU)</b>	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.

<p><b>Organisational Context</b></p>	<p>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.</p>
<p><b>Technical Knowledge</b></p>	<p>Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.</p>
<p><b>Core Skills/ Generic Skills (GS)</b></p>	<p>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.</p>
<p><b>Electives</b></p>	<p>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.</p>
<p><b>Options</b></p>	<p>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.</p>