

# IMIARC07

## Repair basic automotive body panels



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### Overview

This unit is about repairing exterior, cosmetic non-structural body panels and panel sections using a variety of techniques.

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### Performance criteria

*You must be able to:*

- P1 use the appropriate personal protective equipment (where applicable) when carrying out **repairs** to non-structural body panels
- P2 use the appropriate vehicle protective equipment (where applicable) when carrying out **repairs** to non-structural body panels
- P3 protect the vehicle contents and the work area effectively when carrying out **repairs** to non-structural body panels
- P4 support the preparation and repair of non-structural body panels by reviewing:
  - P4.1 technical data
  - P4.2 repair procedures
- P5 prepare and test all the **tools** required, following manufacturers' instructions, prior to use
- P6 carry out **repairs** to non-structural body panels following:
  - P6.1 the correct technique and process
  - P6.2 manufacturer's instructions
  - P6.3 your workplace procedures
  - P6.4 health, safety and legal requirements
- P7 use specialist dent removal **tools** effectively to relieve all damaged panels
- P8 complete **repairs** to non-structural body panels so they are restored to their original contour using hand **tools** and filling materials effectively
- P9 avoid damaging other components, units and panels on the vehicle
- P10 replace correctly any sealer, anti-corrosion and sound deadening materials which were removed prior to or during the repair
- P11 ensure all plastic **repairs** regain the strength of the original part
- P12 pass on the completed **repairs** in a suitable condition for painting
- P13 complete all repair activities within the agreed timescale
- P14 report any anticipated delays in completion to the relevant person(s) promptly

### Knowledge and understanding

*You need to know and understand:*

#### **Legislative and organisation requirements and procedures**

- K1 the health and safety legislation, environmental requirements and workplace procedures relevant to workshop practices and personal and vehicle protection when repairing body panels
- K2 the vehicle work specification agreed
- K3 the importance of working to agreed timescales and keeping others informed of progress
- K4 the relationship between time, cost and profitability
- K5 your workplace procedures for the referral of problems
- K6 the importance of reporting anticipated delays to the relevant person(s) promptly
- K7 the requirements for protecting the vehicle and contents from damage before, during and after minor repair activities

#### **Tools**

- K8 the principles governing the selection and use of hand **tools** for metal finishing and plastic filling **repairs**
- K9 how to select the correct **tools** to carry out reshaping work, including specialist dent removal **tools**
- K10 how to prepare, test, use and maintain the hand and power **tools** required to prepare, reshape and repair damaged areas

#### **Materials**

- K11 how to mix and apply filler material
- K12 the properties and use of metals used to manufacture body panels (including ultra high strength steels)
- K13 the properties and safe use of types of filling materials used to repair panels
- K14 the different types and grades of abrasive and their use
- K15 the implications of not following the correct abrasive process and its effect on the overall quality process
- K16 the implications of static when working with plastic components
- K17 the techniques for identifying the type of plastics used for manufactured components

#### **Repairing non-structural body panels**

- K18 how to interpret and use sources of information relevant to the removal of body components
- K19 how to prepare the vehicle to avoid contamination
- K20 how to prepare damaged areas to facilitate **repairs**
- K21 how to repair plastic components using thermal and adhesive techniques
- K22 how to rough out and metal finish body panels

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- K23 how to reshape filling materials to match the original panel contour
- K24 how to finish **repairs** to a suitable condition ready for handing on to the painting stage
- K25 how to work safely avoiding damage to the vehicle and its systems
- K26 the techniques for reshaping damaged body panels using hand and specialist **tools**
- K27 the procedures for reinstating anti-corrosion, sealant and sound deadening materials
- K28 the procedures for repairing damage to plastic components
- K29 the **techniques and processes** for:
  - K29.1 plastic **repairs**
  - K29.2 hot shrinking
  - K29.3 panel pulling
  - K29.4 metal finishing
  - K29.5 application of filler material
  - K29.6 indirect hammering
  - K29.7 direct hammering
  - K29.8 spring hammering
  - K29.9 body filing
- K30 the techniques used to regain the contours of repaired plastic components
- K31 methods of checking reshaped panel contours for accuracy
- K32 standards of finish required to enable the next stage of **repairs** to proceed
- K33 the manufacturer's approved methods of working for the preparation and repair of non-structural body panels

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### Additional Information

#### Scope/range related to performance criteria

1. **Repairs** include:
  - 1.1. body filling and finishing of flat areas of a panel
  - 1.2. repairs to dents that are over 7 cm in diameter in non-structural body panels, including double curvature panels and swage lines
  - 1.3. repairs to splits and scuffs on plastic exterior trim components
2. **Techniques and processes** include:
  - 2.1. plastic repairs
  - 2.2. panel pulling
  - 2.3. metal finishing
  - 2.4. application of filler material
  - 2.5. panel beating
  - 2.6. indirect hammering
  - 2.7. direct hammering
  - 2.8. spring hammering
  - 2.9. body filing
3. **Tools** include:
  - 3.1. panel hammers
  - 3.2. dollies
  - 3.3. body spoons
  - 3.4. body file
  - 3.5. dual action sander
  - 3.6. rubbing down hand blocks
  - 3.7. beating file
  - 3.8. abrasives
  - 3.9. mixing and sanding tools
  - 3.10. specialist dent removal tools

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## Repair basic automotive body panels

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