

## Overview

This standard is about the removal of complex dents and creases from motor vehicle body panels using Paintless Dent Removal (PDR) techniques where the damage is through a swage line. It is also about checking the integrity of the panel prior to repair and the condition of the panel after the repair has been completed.

**Note:** For the purpose of this standard, drilling to gain access to effect a repair is not acceptable.

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## Performance criteria

- You must be able to:
- P1 use the appropriate personal protective equipment when carrying out PDR operations
  - P2 protect the vehicle and its contents effectively when carrying out PDR operations
  - P3 refer to appropriate sources of information when carrying out vehicle damage assessment and PDR operations
  - P4 identify where ADAS systems are present and may be affected by the damage and/or repair
  - P5 assess the area for repair to ensure that a repair can be effected to a safe and acceptable standard using PDR techniques, without compromising the integrity of the vehicle
  - P6 identify additional distortion on a panel caused by a primary impact
  - P7 identify damage on a panel where the initial impacted area is damaged by a further or subsequent impact for example a dent within a dent
  - P8 assess the potential access routes in order to carry out a PDR in a safe and appropriate manner without interference with ADAS system or sensors or high voltage components
  - P9 select and use the appropriate tools and equipment for the panel area to be repaired
  - P10 ensure that your tools and equipment are in a safe working condition
  - P11 carry out a complex PDR repair on motor vehicle panels through a swage line, selecting the technique(s) most appropriate to the type, size and location of the damage and the material being worked on
  - P12 identify how a panel is responding whilst carrying out a complex PDR repair and react accordingly
  - P13 avoid damaging other components and units on the vehicle whilst carrying out the repair
  - P14 store all removed components safely in an appropriate location
  - P15 check that all relevant components and vehicle systems operate correctly following the manufacturer's specification after you have completed your repairs

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- P16 promptly report any potential or additional faults you find during or prior to the course of your work to the relevant person(s)
  - P17 promptly report any delays in completing your work to the relevant person(s)
  - P18 carry out your repair within the agreed timescale
  - P19 promptly complete work records accurately, in the format required and pass them to the relevant person(s)
  - P20 ensure that all areas used to gain access are treated for corrosion inhibition where appropriate

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## Knowledge and understanding

You need to know and understand:

- K1 the health, safety and legal requirements relating to the removal of **cosmetic vehicle** damage using PDR techniques
- K2 **your workplace procedures for:**
  - K2.1 the referral of problems
  - K2.2 reporting of delays to the completion of work
  - K2.3 completion of work records
  - K2.4 the use of personal protection
- K3 **the hazards associated with working on or near high energy electrical vehicle components**
- K4 how to assess the size, depth and plane of damage and recognise any additional damage
- K5 how to identify the best course of action to carry out a repair to the standard required
- K6 how the panel material affects the complexity of the repair
- K7 **the action you need to take if the repair cannot be carried out to the required standard by using PDR techniques**
- K8 the requirements for protecting the vehicle and contents from damage before, during and after repairing panels using PDR techniques
- K9 the requirements for protecting the vehicle being repaired from cross contamination including metallurgy and electrolysis
- K10 the importance of selecting, using and maintaining the appropriate personal protective equipment when repairing panels using PDR techniques
- K11 the importance of maintaining your tools in a safe working condition
- K12 how to find, interpret and use sources of information applicable to **the safe repair** of panels using PDR techniques
- K13 **how to select, check and use all the tools and equipment required to assess and repair panels effectively using PDR techniques**
- K14 the need for correct choice of tools to carry out a suitable repair and the methods used to achieve this
- K15 the different types of PDR techniques and methods used for repairing **multiple dents through swage lines in panels**

- K16 how to scope out a complex repair and identify the most appropriate techniques to use and the order in which to use them to complete the whole repair
- K17 metal manipulation and movement
- K18 how the initial stage of a complex repair might affect subsequent repair steps and choice of technique(s)
- K19 how to use glue type pulling/repair systems
- K20 why drilling is not acceptable when carrying out a PDR repair
- K21 the faults that can occur when removing dents and creases from motor vehicle body panels where access is difficult or restricted and the causes of these faults
- K22 the implications of affecting or damaging vehicle safety systems during the repair process and how this can be avoided
- K23 the types of quality control checks that can be used to ensure a correct repair has been achieved
- K24 the need for correct alignment of components and the methods used to achieve this
- K25 the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose
- K26 the importance of a robust handover procedure where ADAS systems are present

Do we need to add something about 'push to paint' or is that just in Cosmetic Repair?

**Scope/range**

- 1. PDR tools and equipment include:**
  - 1.1. specialist PDR tooling and accessories
  - 1.2. heating equipment
  - 1.3. reflection or line board
  
- 2. PDR techniques include:**
  - 2.1. tensioning/de-tensioning
  - 2.2. pulling
  - 2.3. pushing
  - 2.4. striking

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**Additional  
Information****Glossary**

*This section contains examples and explanations of some of the terms used but does not form part of the standard.*

**Acceptable Repair**

The panel is returned to original condition without any visible sign that a repair has been carried out, as would meet the expectations of a customer.

**Cosmetic vehicle damage**

Non-structural damage to the bodywork of a vehicle that does not affect the car's safety or functionality but detracts from its appearance and can reduce its resale value.

**Damage**

A single area of damage - a dent within a dent for example - or multiple points of contact within a swage line area.

**Faults that can occur include...****Paintless Dent Removal**

PDR is a fast, cost-effective dent repair technique that retains the original paint finish. To achieve this, the paint surface of the damaged vehicle panel needs to be unbroken so the resulting repair will not need to be painted. However, PDR techniques may also be used to repair a panel in readiness for refinishing, rather than the panel being prepared using filler.

**Swage line**

This is a contour line pressed into a panel at the manufacturing process, to include hard and soft body lines.

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