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## Overview

This standard is about inspecting light vehicle braking systems and replacing and adjusting braking system components.

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## Performance criteria

- You must be able to:*
- P1 select and use suitable personal protective equipment and vehicle coverings throughout all braking system testing and replacement activities
  - P2 work in a way which minimises the risk of damage to the vehicle and its systems
  - P3 carry out tests on braking systems relevant to the faults reported
  - P4 conduct all testing and replacement activities following:
    - P4.1 vehicle, equipment and component manufacturers' recommendations
    - P4.2 your workplace procedures
    - P4.3 health and safety requirements
  - P5 ensure your **testing techniques** clearly identify the possible cause of the braking system fault(s)
  - P6 make clear and suitable recommendations for further action based upon the results of your inspection to the relevant person(s)
  - P7 carry out removal and replacement activities using:
    - P7.1 suitable **tools and equipment**
    - P7.2 the correct techniques
    - P7.3 the correct brake **components** for the vehicle
  - P8 ensure that the replacement braking system operates correctly and safely prior to releasing the vehicle to the customer
  - P9 ensure customers are advised of the bedding in procedures for new brakes prior to leaving your premises
  - P10 dispose of removed brake **components** safely to comply with your workplace procedures
  - P11 complete all brake inspection, adjustment and replacement activities within the agreed timescale
  - P12 promptly report any anticipated delays in completion to the relevant person(s)

## Knowledge and understanding

*You need to know and understand:*

### **Legislative and organisational requirements and procedures**

K1 the current health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection

K2 the current legal requirements relating to vehicle braking systems

K3 your workplace procedures for:

K3.1 the referral of problems

K3.2 reporting of delays to the completion of work

K3.3 personal protection

K3.4 vehicle protection

K4 how to dispose of removed **components** in line with health and safety and legal requirements

K5 the importance of disposing of waste safely and the consequences of not doing so to others and the environment

K6 the importance of working to agreed timescales and keeping others informed of progress

K7 the importance of promptly reporting anticipated delays to the relevant person(s)

K8 the relationship between time and costs

### **Tools and equipment**

K9 the **tools and equipment** used for inspection, testing and replacing **braking system components** and how to select and use them

K10 how to perform safety and operational checks on **tools and equipment**

### **Inspection, adjustment and replacement of braking systems and components**

K11 the purpose, function and layout of typical braking systems

K12 the **testing techniques** and procedures associated with braking systems, including bedding in of **braking system components**

K13 the removal and replacement procedures associated with brake **components**, including health and safety requirements

K14 how to identify electronic braking systems, for example ABS, EBD, EBA, ESP

K15 how to check that replacement **components** are of the correct type and quality for the vehicle and conform to legal requirements where relevant i.e. Regulation 90

K16 how to make adjustments to braking systems

K17 how to reset the electronic/mechanical brake pad wear indicator

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- K18 how to check that **components** are functioning correctly and the importance of doing so before release to the customer
  - K19 how to work safely avoiding injury to yourself, to others and damage to vehicles
  - K20 the importance of checking and adjusting brake fluid level following repairs to **braking system**

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**Scope/range****1. Braking system components** include:

- 1.1. brake discs
- 1.2. brake pads
- 1.3. brake shoes
- 1.4. brake drums
- 1.5. hydraulic
- 1.6. parking brake
- 1.7. electronic
- 1.8. pad warning indicator (electronic/mechanical)

**2. Testing techniques** include:

- 2.1. sensory
- 2.2. measurement
- 2.3. functional
- 2.4. electronic

**3. Tools and equipment** include:

- 3.1. hand tools
- 3.2. lifting and supporting equipment
- 3.3. special purpose tools
- 3.4. brake bleeding equipment
- 3.5. measuring equipment
- 3.6. electronic equipment

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## Glossary

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

### **Adjustments**

Examples include handbrake movement, topping up brake fluid level, brake shoe adjustment, pad to disc resetting.

### **Agreed timescales**

Examples include job times set by your company or agreed with a specific customer.

### **Brake discs**

Examples include solid, vented, steel, carbon ceramic, aluminium

### **Electronic components**

Examples include ABS sensors, modulator units, fluid level sensors

### **Hydraulic components**

Examples include wheel cylinders, callipers, brake pipes, brakes hoses, master cylinder, load proportioning/load sensing valves, ABS components and fluid type

### **Measuring equipment**

Examples include micrometers, Vernier Calipers, dial test indicators and manufacturers' specialist measuring equipment

### **Parking brake**

This can be mechanical, electronic, auto-hold.

### **Special purpose tools**

Examples include piston retracting tools, wind back tools, brake shoe horn/lifter, brake shoe clip remover, brake fluid testers and electronic reset tools

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