

Overview

This standard is about maintaining and repairing cycle hydraulic brake systems and faults. It is also about carrying out a quality check on the completed work before returning the cycle to the customer.

In this standard the term 'cycle' includes pedal-propelled vehicles with two, three or four wheels. It may also include pedal-assisted e-bikes:

- Road legal up to 15.5 mph with a motor with an output of up to 250w
- E-cycles used for other purposes

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Performance criteria

- You must be able to:
- P1 use suitable personal protective equipment throughout all cycle hydraulic brake system maintenance and repair activities
 - P2 ensure the cycle and the work area is safe prior to work commencing
 - P3 support your maintenance and repair activities by reviewing:
 - P3.1 cycle technical data
 - P3.2 maintenance and repair procedures
 - P3.3 legal requirements
 - P4 identify components relevant to a cycle hydraulic brake system
 - P5 prepare, check and use all the equipment required following manufacturer's instructions
 - P6 carry out all cycle hydraulic brake system maintenance, repair and adjustment activities following:
 - P6.1 manufacturer's instructions
 - P6.2 industry recognised repair methods
 - P6.3 your workplace procedures
 - P6.4 health, safety and environmental requirements
 - P7 work in a way which minimises the risk of:
 - P7.1 damage to the cycle, its systems and components
 - P7.2 damage to your working environment
 - P7.3 injury to self and others
 - P8 use suitable testing methods to accurately evaluate the performance of the reassembled system
 - P9 ensure the reassembled system performs to the cycle operating specification and meets any legal requirements prior to return to the customer
 - P10 promptly report any problems or issues relating to the cycle's condition or conformity to the relevant person(s)
 - P11 ensure your records are accurate, complete and promptly passed to the relevant person(s) in the format required
 - P12 complete all cycle hydraulic brake maintenance and repair activities within the agreed timescale
 - P13 promptly report any anticipated delays in completion to the relevant persons(s)

Knowledge and understanding

You need to know and understand:

Legislative and organisational requirements and procedures

- K1 the legal requirements relating to the cycle (including road safety requirements)
- K2 the health and safety legislation, environmental requirements, British Standards and workplace procedures relevant to cycle hydraulic brake system maintenance and repair activities and personal and cycle protection
- K3 your workplace procedures for:
 - K3.1 recording maintenance and repair information
 - K3.2 the referral of problems
 - K3.3 reporting delays to the completion of work
- K4 how to work safely avoiding damage to other cycle systems, components and units and injury to self and others
- K5 the importance of documenting cycle hydraulic brake system maintenance and repair information
- K6 the importance of working to agreed timescales and keeping others informed of progress
- K7 the relationship between time and cost
- K8 the importance of promptly reporting anticipated delays to the relevant person(s)

Use of technical information

- K9 how to find, interpret and use sources of current technical information applicable to cycle hydraulic brake systems
- K10 the importance of using the appropriate sources of technical information

Tools and equipment

- K11 how to select, prepare, check and use all the maintenance and repair equipment required

Cycle hydraulic brake system maintenance and repair

- K12 how to identify the components in a cycle hydraulic brake assembly
- K13 the purpose and operation of each component of a cycle hydraulic brake system

- K14 the advantages and disadvantages of various cycle hydraulic brake designs
- K15 the effect of air in a cycle hydraulic brake system
- K16 how to inspect a cycle hydraulic braking system
- K17 how to remove and assess the serviceability of cycle hydraulic brake system components
- K18 the quality check process and how to report any faults highlighted during the quality check
- K19 how to identify and rectify faults presented on cycle hydraulic brake systems
- K20 how to refit or replace cycle hydraulic brake system components
- K21 how to adjust hydraulic brake system components
- K22 how to carry out a cycle hydraulic brake system function test prior to and following work
- K23 how to assess the condition of the cycle hydraulic brake system following maintenance and repair activity, ensuring the cycle is returned to the customer in a roadworthy condition prior to returning the cycle to the customer.

Scope/range

1. Tools and equipment include:

- 1.1 hand tools
- 1.2 electrical tools
- 1.3 measuring equipment
- 1.4 bench mounted equipment
- 1.5 power tools
- 1.6 brake bleeding equipment
- 1.7 cleaning and degreasing equipment

2. 3. Components are:

- 2.1 brake master cylinder
- 2.2 hydraulic brake fluid lines
- 2.3 hydraulic oil reservoir
- 2.4 hydraulic brake calipers
- 2.5 brake pads
- 2.6 brake discs
- 2.7 brake cables

3. Adjustments include:

- 3.1 brake operating lever
- 3.2 brake hose
- 3.3 cable brackets
- 3.4 fluid level
- 3.5 calliper alignment
- 3.6 brake pad balancing

4. Faults include:

- 4.1 fluid leaks
- 4.2 excessive travel
- 4.3 noises
- 4.4 poor braking efficiency
- 4.5 seizure
- 4.6 runout

5. Condition assessments include:

- 5.1 cleanliness
- 5.2 security
- 5.3 adjustment
- 5.4 fluid leaks
- 5.5 function test

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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.

Agreed timescales

Examples include industry recommended work times, job times set by your company or a job time agreed with a specific customer

Conformity

Examples include conformity to approvals and specifications, UK and European legal requirements where applicable

Cycles

In this standard the term 'cycle' includes pedal-propelled vehicles with two, three or four wheels on which the rider sits. It may also include pedal-assisted e-bikes:

- Road legal up to 15.5 mph with a motor with an output of up to 250w
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Quality check

What does this look like for this unit?

Developed by	IMI
Version number	1
Date approved	March 2022
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Original URN	BCxx
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