
Overview

This standard is about inspecting and replacing light vehicle clutch components.

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Performance

criteria

- You must be able to:
- P1 select and use suitable personal protective equipment throughout all clutch **inspection** and replacement activities
 - P2 use suitable sources of technical information to support your **inspection** and replacement of **clutch components**
 - P3 work in a way which minimises the risk of damage to the vehicle and its systems
 - P4 confirm that all the **tools and equipment** required are safe prior to use
 - P5 ensure your **inspection techniques** are sufficiently in depth to identify the severity of all clutch component defects
 - P6 conduct all **inspection** and replacement activities following:
 - P6.1 vehicle equipment and component manufacturers' recommendations
 - P6.2 your workplace procedures
 - P6.3 health and safety requirements
 - P7 carry out all **inspection**, repair and replacement activities using:
 - P7.1 suitable **tools and equipment**
 - P7.2 the correct **inspection techniques**
 - P7.3 the correct type of replacement component
 - P8 clearly identify and record the possible cause of any clutch component faults following your normal workplace procedures
 - P9 make clear and accurate recommendations for further action to the relevant person(s) when necessary
 - P10 ensure that replaced and refitted **clutch components** are correctly fitted and conform to requirements prior to releasing the vehicle to the customer
 - P11 dispose of removed components safely to meet current legal and your workplace requirements
 - P12 complete all activities within the agreed timescale
 - P13 promptly report any anticipated delays in completion and any additional faults identified 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, checking equipment and personal and vehicle protection
- K2 your workplace procedures for:
 - K2.1 the referral of problems
 - K2.2 reporting of delays to the completion of work
 - K2.3 personal protection
- K3 the importance of disposing of waste safely and the consequences of not doing so to others and the environment
- K4 the importance of working to agreed timescales and keeping others informed of progress
- K5 the relationship between time and costs
- K6 your workplace requirements for recording measurements taken and adjustments made
- K7 the importance of promptly reporting anticipated delays to the relevant person(s)

You need to know and understand:

Tools and equipment

- K8 the types, function and use of clutch removal, alignment and replacement **tools and equipment**
- K9 the importance of checking the safety and operation of **equipment** prior to use
- K10 the correct use of diagnostic **tools**

You need to know and understand:

Inspection and replacement of clutches

- K11 the different types of clutches and operating systems and how they and their associated components operate
- K12 the different types of **inspection techniques** and how to carry them out
- K13 the common faults associated with clutch systems (e.g. slip, drag, judder and noise), their possible cause and how to identify and rectify them
- K14 the purpose, function and layout of different types of manual transmission
- K15 the removal and replacement procedures associated with clutch systems, including the effective sequence of working

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- K16 how to make checks and adjustments to clutch operating systems
 - K17 the importance of taking accurate measurements
 - K18 how to find and use data relating to clutch working tolerances
 - K19 the importance of ensuring any adjustments and set up are within acceptable tolerances for the vehicle
 - K20 how to work safely avoiding injury to yourself, others and damage to the vehicle when inspecting and replacing clutches

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Scope/range

- 1. Clutch components** include:
 - 1.1. clutch assembly
 - 1.2. spigot bearing
 - 1.3. flywheel (including dual mass)
 - 1.4. operating cable
 - 1.5. hydraulic clutch components (including master and slave cylinders, pipework and damper as required)
 - 1.6. automatic and manual adjusters
 - 1.7. clutch fork
 - 1.8. oil seals
 - 1.9. input shaft
 - 1.10. inspection cover
 - 1.11. clutch pedal
 - 1.12. fly-wheel housing (removal, for inspection purposes)
 - 1.13. gearbox (removal, for inspection purposes)
 - 1.14. driveshaft (removal, for inspection purposes)
 - 1.15. propshaft (removal, for inspection purposes)

- 2. Tools and equipment** include:
 - 2.1. hand tools
 - 2.2. special purpose tools
 - 2.3. lifting and supporting equipment
 - 2.4. general workshop equipment
 - 2.5. electronic equipment
 - 2.6. oil drainer

- 3. Inspection** includes:
 - 3.1. clutch operating systems
 - 3.2. clutch assembly
 - 3.3. flywheel
 - 3.4. oil leaks

4. Inspection techniques include:

- 4.1. sensory
- 4.2. measurement
- 4.3. functional tests
- 4.4. electronic

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Additional information

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

Glossary

Agreed timescales

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

Clutch assembly

This consists of the drive plate, pressure plate, release bearing and dual mass fly wheel (DMF)

Drive plate

This is also known as the friction plate

Pressure plate

This is also known as the clutch cover

Types of clutches and operating systems

Examples include: single/multi-plate, centrifugal, spring and diaphragm types, cable, hydraulic and electronic

IMIVF08

Inspect and replace light vehicle clutches

Developed by	IMI
Version number	3
Date approved	December 2021
Indicative review date	December 2024
Validity	Current
Status	Original
Originating organisation	IMI Ltd
Original URN	VF08
Relevant occupations	Vehicle Fitters; Vehicle Fitting Operations (Automotive)
Suite	Vehicle Fitting
Key words	Inspect; replace; light; vehicle; clutches;