IMIMCQ04

Remove and replace quad bike steering, brakes and suspension units and components

Overview

This standard is about removing and replacing units and components where dismantling and re-assembly of quad bike steering, brakes, suspension systems, including wheels and tyres, are required. It is also about evaluating the performance of replaced units and components. The units and components concerned are those not replaced as part of normal routine, quad bike maintenance (servicing) activities.
For the purposes of this standard a quad bike is a motorcycle-derived all-terrain vehicle (ATV) which you sit astride with four or more wheels.

Performance criteria

You must be able to:

P1.use suitable personal protective equipment and quad bike coverings (where applicable) throughout all removal and replacement activities
P2.ensure the quad bike and the work area is safe prior to work commencing
P3.support your removal and replacement activities by reviewing:

P3.1.quad bike technical data
P3.2.removal and replacement procedures
P3.3.legal requirements
P4.prepare, check and use all the **equipment** required following manufacturer's instructions
P5.carry out all removal and replacement activities following:

P5.1.manufacturer's instructions
P5.2.industry recognised repair methods
P5.3.your workplace procedures
P5.4.health, safety and environmental requirements
P6.work in a way which minimises the risk of:

P6.1.damage to other quad bike systems, units and components
P6.2.contact with leakage and hazardous substances
P6.3.damage to your working environment
P6.4.injury to self and others
P7.ensure replaced **steering, brakes** and **suspension units and components** conform to the quad bike operating specification and any relevant legal requirements
P8.record and report any **steering, brakes** and **suspension units and components** that do not conform to legal requirements
P9. promptly record and report any additional faults you notice during the course of your work
P10.use suitable **testingmethods** to accurately evaluate the performance of the reassembled system
P11.ensure the reassembled system performs to the quad bike operating specification and meets any legal requirements prior to return to the customer
P12.ensure your records are accurate, complete and promptly passed to the relevant person(s) in the format required
P13.complete all removal and replacement activities within the agreed timescale
P14. 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
ing methods
K1.the legal requirements relating to the quad bike (including road safety requirements)
K2.the health and safety legislation, environmental requirements and workplace procedures relevant to quad bike maintenance activities and personal and quad bike protection
K3.your workplace procedures for:

K3.1.recording removal and replacement information
K3.2.the referral of problems
K3.3.reporting delays to the completion of work
K4.the importance of documenting removal and replacement information
K5.the importance of working to agreed timescales and keeping others informed of progress
K6.the relationship between time and cost
K7.the importance of promptly reporting anticipated delays to the relevant person(s)

Use of technical information
K8.how to find, interpret and use sources of information applicable to **unit and component** removal and replacement within the **steering, brakes** and **suspension systems**
K9.the importance of using the appropriate sources of technical information
K10.the purpose of and how to use identification codes

Electrical and electronic principles
K11.electrical and electronic principles associated with quad bike electronic active braking systems, traction control and suspension systems, including types of sensors, actuators and motors
K12.types of circuit protection and why these are necessary
K13.electrical safety procedures
K14.how electrical circuits work
K15.electrical symbols, units and terms
K16.the operation of electrical and electronic control systems
K17.the hazards associated with working on or near high voltage electrical systems

Steering, brakes and suspension system operation and construction
K18.how different steering systems and their related **units and components** (including wheels) are constructed and their operation for the types of quad bike on which you work
K19.how brake systems, including mechanically and hydraulically linked brakes, and their related **units and components** are constructed and their operation for the types of quad bike on which you work
K20.how suspension systems and their related **units and components** are

constructed and their operation for the types of quad bike on which you work

Equipment
K21.how to prepare, check and use all the removal and replacement **equipment** required

Steering, brakes and suspension system unit and component removal and replacement
K22.how to remove and replace **steering**, **brakes** and **suspensionsystem** mechanical, electrical and hydraulic **units and components** (including wheels)
K23.how to select and use appropriate gaskets, sealants, seals, fittings, fasteners, locking devices, brake, steering and suspension fluids
K24.how to test and evaluate the performance of replacement **steering, brakes** and **suspension system units and components** and how to compare the reassembled system against the quad bike operating specifications and any legal requirements
K25.the relationship between **testing methods** and the **steering, brakes** and **suspension system units and components** replaced – the use of appropriate test methods
K26.when replacement **units and components** must meet the original equipment specification (OES) for warranty or other requirements
K27.the manufacturer's specification for the type and quality of **steering, brakes** and **suspension units and components** to be used
K28.how to work safely avoiding damage to other quad bike systems, units and components, contact with leakage and hazardous substances and injury to self and others
K29.how to adjust suspension **units and components** to meet rider requirements

Scope/range

1**Equipment** is:

1.1.hand tools
1.2.electrical, electronic and computer-based
1.3.special workshop tools
1.4.general workshop equipment

2**Testing methods** are:

2.1.sensory
2.2.functional
2.3.measurement

3**Steering units and components** are:

3.1.steering dampers
3.2.head bearings
3.3.steering arms/rods
3.4.steering knuckle
3.5.steering gaiters
3.6.steering yoke
3.7.lock stops

4**Brake units and components** are:

4.1.brake linings/pads/discs/drums
4.2.hydraulic brake lines/pipes
4.3.brake cables
4.4.brakes linkages/rods (this does not include operating levers)
4.5.brake master cylinder
4.6.brake fluid
4.7.electronically controlled braking systems and servo components

5**Suspension units and components** are:

5.1.'A' arms
5.2.suspension arms
5.3.trailing arms
5.4.dampers
5.5.road springs
5.6.strut assemblies
5.7.suspension bushes
5.8.ball joints
5.9.suspension fluid

Glossary