LANLEO12

Service and repair clutches and other transmission controlling devices on land-based equipment

Overview

This standard covers the service and repair of clutches and other transmission-controlling devices on land-based equipment. It includes the removal, dismantling, repairing and reassembly of transmissions and their component parts, the testing, diagnosis and repair practices required for both simple and complex transmissions.

The standard also includes the techniques used to engage and disengage, drive and limit the torque being transmitted through drive lines.

This standard is for those who work in land-based engineering and is appropriate for persons working under supervision.

Performance criteria

You must be able to:

1. carry out suitable **tests** to assess condition of clutches
2. identify reasons for clutch failure
3. access, remove and replace clutches and other transmission-controlling **devices** on land-based equipment
4. dismantle, service/repair and reinstate clutches and other transmission-controlling devices to manufacturers' specifications and standards where applicable
5. carry out tests to confirm satisfactory completion of repair or replacement and compliance with manufacturers' specifications

Knowledge and understanding

You need to know and understand:

1. the symptoms and common causes of failure in clutches and other transmission-controlling devices
2. how to assess clutch failure, wear and condition by carrying out stall tests, slipping torque tests, pressure tests and measurements of components
3. how to remove and replace clutches and other transmission-controlling devices
4. internal and external mounted units
5. how to dismantle, repair, recondition and reinstate clutches and other transmission-controlling devices to manufacturers' specifications and standards
6. the types, construction, working principles and actuation of different clutches and other transmission-controlling **devices**
7. the methods of sequencing clutch engagement and take up
8. how to check and confirm satisfactory completion of repair or replacement and compliance with manufacturers' specifications

Scope/range related to performance criteria

work on at least three of the following **devices**:

- overrun clutches
- torque limiting or slip clutches
- dry single or dual clutches
- cone type clutches
- damper plates and vibration limiting components
- dog clutches
- wet plate clutches
- fluid flywheels
- mechanical centrifugal clutches
- torque convertors
- electromagnetic clutches

carry out three of the following **tests**:

- stall tests
- slipping point of torque limiting clutches tests
- pressure tests
- measurement of components

Scope/range related to knowledge and understanding

This standard requires that you know and understand the types, construction, working principles and actuation of the following **devices** used to engage and disengage drive:

Five mechanical devices:
- overrun clutches
- torque limiting or slip clutches
- dry single
- dual clutches
- cone type clutches
- damper plates and vibration limiting components
- dog clutches
- mechanical centrifugal clutches

Two hydraulic devices:
- wet plate clutches
- fluid flywheels and
- torque convertors

One electrically activated device:
- electromagnetic clutches

Links to other NOS

Refer to LANLEO4 Apply core land-based engineering principles: mechanical principles, for setting bearings and the relationship of gears and pinions to one another and method of lubrication.

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