LANLEO12 - SQA Unit Code F9EJ 04

Service and repair clutches, fluid flywheels and torque convertors on land-based equipment

Overview

This standard covers the undertaking of 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, (e.g. overrun, torque limiting, slip clutches, dry single, dual clutches, wet plate clutches single and multi disc, fluid flywheels and mechanical centrifugal clutches, cone types clutches, electromagnetic clutches, torque convertors with and without lock out, damper plates and vibration limiting components and dog clutches).

This standard is appropriate to people working under supervision.

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Performance criteria

You must be able to:

P1 access, remove and replace clutches, fluid flywheels and torque converters

P2 dismantle, repair and reinstate clutches, torque converters, fluid flywheel assemblies to manufacturers' specifications and standards

P3 carry out stall tests and test slipping point of torque limiting clutches

P4 identify reasons for clutch failure

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Knowledge and understanding

You need to know and understand:

K1 how to remove and replace clutches, fluid flywheels and torque convertors

K2 internal and external mounted units

K3 how to dismantle, repair, recondition and reinstate clutches, fluid flywheels and torque convertors to manufacturers' specifications and standards

K4 the types, construction, working principles and actuation of:

- K4.1 overrun clutches
- K4.2 torque limiting and slip clutches
- K4.3 dry single and dual clutches
- K4.4 wet plate clutches single and multi disc
- K4.5 fluid flywheels and mechanical centrifugal clutches
- K4.6 cone type clutches
- K4.7 electromagnetic clutches
- K4.8 torque convertors with and without lock out
- K4.9 damper plates and vibration limiting components
- K4.10 dog clutch

K5 the methods of sequencing clutch engagement and take up

K6 the common causes and symptoms of clutch, fluid flywheel and torque convertor failure

K7 how to assess clutch failure, wear and condition by carrying out stall tests, slipping torque tests, pressure tests, measurements of components

Glossary

Definition of transmissions
Devices between a power source and driven components on a vehicle or machine which may include but is not limited to clutches, gearboxes, reduction units, drop boxes, differentials and axles.

Links to other NOS

Refer to LEO4 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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