

LANLEO26 - SQA Unit Code F9GW 04

Service and repair powershift, hydrostatic, CVT transmissions on land based-equipment



Overview

This standard covers the undertaking of removal, dismantling, repairing, reassembly and reinstating of transmissions and their component parts, the testing, diagnosis and repair practices required for both simple and complex transmissions (e.g. powershift, CVT including belt drive or hydrostatic). The standard for setting bearings, the relationship of gears and pinions to one another and method of lubrication is covered in LEO4 Core land-based engineering principles – Mechanical principles.

This standard is appropriate to people working under supervision

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Performance criteria

You must be able to:

- P1 remove and replace transmissions and their components from, e.g. powershift, hydrostatic, CVT systems (note: from any two of the above)
- P2 dismantle, repair and reinstate powershift, hydrostatic, CVT transmissions to manufacturers' specification and standards where applicable
- P3 identify the components controlling the sequencing of speed, direction and range changes
- P4 identify and categorise faults in powershift, hydrostatic, CVT transmissions in the following three areas:
 - P4.1 mechanical
 - P4.2 hydraulic
 - P4.3 electrical/electronic

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Knowledge and understanding

You need to know and understand:

- K1 how to remove and replace powershift, hydrostatic, CVT transmissions and their components
- K2 how to dismantle, repair and reinstate powershift, hydrostatic, CVT transmissions and their components to manufacturers' specification and standards
- K3 the types, layout, construction and operating principles of the following transmissions:- e.g.
 - K3.1 powershift
 - K3.2 CVT including belt drive
 - K3.3 hydrostatic
- K4 the methods used to achieve different speed ranges and speeds in powershift, hydrostatic, CVT transmissions
- K5 the necessity of timing epicyclic components correctly
- K6 the types of safety and protection devices used to protect the integrity of powershift, hydrostatic, CVT transmissions
- K7 How to identify faults in powershift, hydrostatic, CVT transmissions from the following three areas
 - K7.1 mechanical
 - K7.2 hydraulic
 - K7.3 electric/electronic

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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 Core Engineering Principles unit for setting bearings and the relationship of gears and pinions to one another and method of lubrication.

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