

# LANLEO25 - SQA Unit Code F9GY 04

## Service and repair pneumatic systems and components on land-based equipment



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### Overview

This standard covers the diagnoses, removal, repair and reinstatement of pneumatic circuits, systems and components to the manufacturers' specifications, (e.g. air braking or air activated mechanisms).

Basic testing and diagnostics is covered in **LEO30** Inspect and test land-based equipment.

This standard is appropriate to those who work under the direct supervision of a more competent person.

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### Performance criteria

*You must be able to:*

- P1 identify, remove and replace pneumatic system components
- P2 dismantle, repair and reinstate pneumatic systems and components to manufacturers' specifications and factory settings
- P3 assemble or repair pipes and hoses used within pneumatic systems
- P4 release stored air pressure and condensation in systems and circuits
- P5 build and test a basic air pressure circuit (to include compressor, control valve, relief valve, pneumatic consumer)
- P6 use pneumatic system diagnostic tools, e.g. high and low pressure gauges, pressure
- P7 detect air leaks and seal components used in a pneumatic systems
- P8 prepare the system to be tested and carry out tests

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### Knowledge and understanding

*You need to know and understand:*

- K1 the symbols used in pneumatic circuit diagrams
- K2 how to read and interpret pneumatic circuit diagrams
- K3 how to remove and replace pneumatic components
- K4 how to dismantle, repair and reinstate pneumatic components and systems to manufacturers' specifications
- K5 the different types of pneumatic circuit, e.g. single line and twin line
- K6 the construction, types and function of pneumatic system components, e.g.
  - K6.1 air compressors
  - K6.2 air pressure regulating valves, relief valves, dump valves
  - K6.3 air pressure control valves, handbrake valve, footbrake valves, diaphragm operated valves
  - K6.4 air activated cylinders, air cushions, failsafe/emergency system components
  - K6.5 air receivers and driers
- K7 the methods of leak detection in air systems
- K8 how to identify pneumatic pipe types and their appropriate fittings
- K9 how to assemble and repair and manufacture pneumatic pipes
- K10 how to carry out diagnostic tests and adjust pneumatic components and systems to manufacturers' specifications and factory settings, e.g. pressure tests, adjust pressure limiting and relief valves, set air brake actuation valves
- K11 the primary cause of pneumatic failures and their symptoms, (e.g. water, fatigue, contamination, leaks)

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**Relevant occupations** Agriculture, Horticulture and Animal Care; Science and Engineering Technicians

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**Suite** Land-based Engineering Operations

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