

Service and repair land-based soil preparation, cultivation and plant establishment equipment

Overview

This standard covers the service and repair of land-based soil preparation, cultivation and plant establishment equipment. It includes the underpinning knowledge of the construction and operating principles of implements and machinery

It also includes the recognition of faults, methods of repair, calibration and verification of performance. Equipment covered can be found in one or more of the following associated sectors of land-based engineering, e.g. agriculture, horticulture, amenities, ground care, arboriculture and forestry.

This standard covers the soil preparation, cultivation and plant establishment equipment which involves soil engaging machinery and implements which are used to work the soil either through being pushed or pulled. The machinery and implements could include ploughs, cultivators, graders, slitters, drainage and pipe laying, or rollers and pressers.

Equipment also covered in this standard is machinery powered by a Power Take Off (PTO) shaft or direct from a motor providing rotary or reciprocating movements. Such machinery could include powered harrows, de-stoners or soil aeration machinery and equipment.

Machinery and equipment used for drilling, planting and the distribution of materials for the purpose of crop establishment (planting) are also covered in this standard. The machinery used could be seed placement/drilling equipment.

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. remove and replace components from land-based **soil preparation, cultivation and plant establishment equipment**
2. dismantle, service/repair and reinstate soil preparation, cultivation and plant establishment equipment and their components to manufacturers' specifications
3. **set** trailed and mounted equipment to interface with the prime mover
4. calibrate application rates and spacing of plants on plant establishment equipment
5. implement field settings to manufacturers' specifications on soil preparation, cultivation and plant establishment equipment

Knowledge and understanding

You need to know and understand:

1. the types, construction and function of soil engaging, preparation and cultivation equipment used to lift, move, drain, invert, separate, profile and prepare land
2. the types, construction and function of plant establishment equipment used to plant and sow
3. how to remove and replace components from soil preparation, cultivation and plant establishment equipment
4. how to dismantle, service/repair and reinstate soil preparation, cultivation and plant establishment machinery and equipment to the manufacturer's specification
5. the methods and mechanisms used to meter application rates of seeds and plants and their calibration
6. the causes of excessive wear to soil engaging parts
7. how to set and verify the performance of soil preparation, cultivation and plant establishment equipment to manufacturers' specifications
8. the impact of soil, seed, crops, weather conditions and their influence on equipment performance settings

Glossary

soil preparation, cultivation and plant establishment equipment -

e.g. ploughs, graders, cultivators, power harrows, Rotavators, separators, seed drills, planters, subsoil implements, drainage and pipe laying, rollers and pressers

set trailed and mounted equipment - e.g. set track widths, furrow widths, maximum lift heights, stabilisation

Links to other NOS

Refer to LANLEO1 Recognise and reduce hazards in the land-based engineering work area, for guidance on safe working practices.

Refer to LANLEO4 Apply core land-based engineering principles: mechanical principles, for guidance related to fundamental engineering principles and practices.

Refer to LANLEO29 Monitor the handover and installation of land-based equipment, for guidance related to operational requirements.

Refer to LANLEO2 Implement organisational procedures in land-based engineering, for guidance related to procedural or administrative recording and reporting practices.

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