



Performing Engineering Operations

Qualification Structure

Candidates are required to complete Mandatory Units and then have a choice of Optional Units.

Document detail:

Performing Engineering Operations	Level 1	NVQ
Performing Engineering Operations	Level 2	Engineering Practices NVQ
Performing Engineering Operations	Level 2	Technical Support NVQ

Who is the Qualification for:

The qualification **Performing Engineering Operations** provides recognition of the skills, knowledge and responsibilities of operatives within an engineering environment in a variety of contexts.

The above qualifications may be suitable for you if you have one of the following job roles:

- Electrical Engineer
- Electrical / Electronic Engineering Technician
- Electrician
- Electronics Engineer
- Engineering Maintenance Fitter / Technician
- Engineering Operative
- Mechanical Engineer
- Mechanical Engineering Technician
- Production Engineer
- Welder

Total Number of Units Required: 5

Mandatory Units

- 1 Working Safely in an Engineering Environment
 - 2 Working Efficiently and Effectively in Engineering
 - 3 Using and Communicating Technical Information
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Optional Units

2 units to be taken

- 4 Making Components using Hand Tools and Fitting Techniques
- 5 Assembling Mechanical Components
- 6 Carrying Out Pipe Fitting Activities
- 7 Using Lathes for Turning Operations
- 8 Using Milling Machines
- 9 Using Grinding Machines
- 10 Carrying Out Routine Servicing of Mechanical Equipment
- 11 Assembling Fluid Power Equipment
- 12 Carrying Out Sheet Metal Cutting, Forming and Assembly Activities
- 13 Cutting and Shaping Platework Components
- 14 Using Oxy-Fuel Gas Cutting Equipment
- 15 Using Manual Metal Arc Welding Equipment
- 16 Using Manual TIG Welding Equipment
- 17 Using Manual MIG or MAG Welding Equipment
- 18 Using Manual Oxy-Fuel Gas Welding Equipment
- 19 Using Manual Flame Brazing and Soldering Equipment
- 20 Wiring Electrical Equipment and Circuits
- 21 Assembling Electrical Wiring Support Systems
- 22 Assembling and Wiring Electrical Panels
- 23 Assembling Electronic Circuits
- 24 Carrying Out Routine Servicing on Electrical/Electronic Equipment
- 25 Making Components from Wood-Based Materials
- 26 Assembling Engineering Woodwork Components
- 27 Carrying Out Composite Moulding Activities
- 28 Assembling Composite Components
- 29 Preparing Sand for Moulding and Coremaking
- 30 Making Sand Moulds and Cores for Casting
- 31 Manually Casting Components
- 32 Fettling Cast Components
- 33 Applying Coatings or Coverings to Finish Surfaces
- 34 Applying Surface Treatments
- 35 Applying Heat Treatment to Engineering Materials
- 36 Hand Forging Engineering Materials

Performing Engineering Operations	Level 2
(Engineering Practices Pathway)	500/2953/8
Last Registration Date	31 st December 2010
Last Certification Date	31 st December 2012

Total Number of Units Required: 6

Mandatory Units

- 1 Working Safely in an Engineering Environment
 - 2 Working Efficiently and Effectively in Engineering
 - 3 Using and Communicating Technical Information
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Optional Units

3 units to be taken:

NB Candidates may only choose one unit from 4, 32 and 61.

- 4 Producing Mechanical Engineering Drawings using a CAD System
- 5 Producing Components using Hand Fitting Techniques
- 6 Producing Mechanical Assemblies
- 7 Forming and Assembling Pipework Systems
- 8 Carrying Out Aircraft Detail Fitting Activities
- 9 Installing Aircraft Mechanical Fasteners
- 10 Producing Aircraft Detail Assemblies
- 11 Preparing and Using Lathes for Turning Operations
- 12 Preparing and Using Milling Machines
- 13 Preparing and Using Grinding Machines
- 14 Preparing and Proving CNC Machine Tool Programs
- 15 Preparing and Using CNC Turning Machines
- 16 Preparing and Using CNC Milling Machines
- 17 Preparing and Using CNC Machining Centres
- 18 Preparing and Using Industrial Robots
- 19 Maintaining Mechanical Devices and Equipment
- 20 Assembling and Testing Fluid Power Systems
- 21 Maintaining Fluid Power Equipment
- 22 Producing Sheet Metal Components and Assemblies
- 23 Producing Platework Components and Assemblies
- 24 Cutting and Shaping Materials using Thermal Cutting Equipment
- 25 Preparing and Proving CNC Fabrication Machine Tool Programs
- 26 Preparing and Using CNC Fabrication Machinery
- 27 Preparing and Using Manual Metal Arc Welding Equipment
- 28 Preparing and Using Manual TIG or Plasma-arc Welding Equipment
- 29 Preparing and Using Manual MIG, MAG and Other Continuous Wire Welding Equipment
- 30 Preparing and Using Manual Gas Welding Equipment
- 31 Preparing and Using Manual Flame Brazing and Bronze Welding Equipment
- 32 Producing Electrical or Electronic Engineering Drawings using a CAD System
- 33 Wiring and Testing Electrical Equipment and Circuits

34	Forming and Assembling Electrical Cable Enclosure and Support Systems
35	Assembling, Wiring and Testing Electrical Panels/Components Mounted in Enclosures
36	Assembling and Testing Electronic Circuits
37	Maintaining Electrical Equipment/Systems
38	Maintaining Electronic Equipment/Systems
39	Maintaining and Testing Process Instrumentation and Control Devices
40	Wiring and Testing Programmable Controller Based Systems
41	Using Wood for Pattern, Modelmaking and Other Engineering Applications
42	Assembling Pattern, Model and Engineering Woodwork Components
43	Producing Composite Mouldings using Wet Lay-up Techniques
44	Producing Composite Mouldings using Pre-Preg Laminating Techniques
45	Producing Composite Mouldings using Resin Infusion Techniques
46	Producing Composite Assemblies
47	Producing Components by Rapid Prototyping Techniques
48	Producing and Preparing Sand Moulds and Cores for Casting
49	Producing and Preparing Molten Materials for Casting
50	Producing Cast Components by Manual Means
51	Fettling, Finishing and Checking Cast Components
52	Finishing Surfaces by Applying Coatings or Coverings
53	Finishing Surfaces by Applying Treatments
54	Carrying Out Heat Treatment of Engineering Materials
55	Carrying Out Hand Forging of Engineering Materials
56	Stripping and Rebuilding Motorsport Vehicles (Pre-Competition)
57	Inspecting a Motorsport Vehicle During a Competition
58	Diagnosing and Rectifying Faults on Motorsport Vehicle Systems (During Competition)
59	Carrying out Maintenance Activities on Motorsport Vehicle Electrical Equipment
60	Stripping and Rebuilding Motorsport Engines (Pre-Competition)
61	Producing CAD Models (Drawings) using a CAD System

Performing Engineering Operations	Level 2
(Technical Support Pathway)	500/2953/8
Last Registration Date	31 st December 2010
Last Certification Date	31 st December 2012

Total Number of Units Required: 8

Mandatory Units

- 1 Working Safely in an Engineering Environment
 - 2 Working Efficiently and Effectively in Engineering
 - 3 Using and Communicating Technical Information
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Optional Units

5 units to be taken - 1 unit must be from Group A, 2 units must be from Group B and 2 units must be from Group C

Group A

- 4 Producing Mechanical Engineering Drawings using a CAD System
- 32 Producing Electrical or Electronic Engineering Drawings using a CAD System
- 61 Producing CAD Models (Drawings) using a CAD System

Group B

- 62 Producing Engineering Project Plans
- 63 Using Computer Software Packages to Assist with Engineering Activities
- 64 Conducting Business Improvement Activities

Group C

- 65 General Machining, Fitting and Assembly Applications
- 66 General Fabrication and Welding Applications
- 67 General Electrical and Electronic Engineering Applications
- 68 General Maintenance Engineering Applications