



Level 2 NVQ Diploma in

Mechanical Manufacturing Engineering

ENGINEERING

Qualification Specification

Overview

This level 2 NVQ is based on national occupational standards for mechanical manufacturing engineering, which are statements of performance that describe what competent people in a particular occupation or task are expected to be able to do. It involves the skills and knowledge needed for occupations in mechanical manufacturing engineering including activities such as CNC machine operating, composite manufacture and optical engineering.

Typical Job

The qualification is applicable to a variety of mechanical manufacturing occupations dependent on the pathway chosen.

Qualification code:	500/9851/2
Level:	2
Total qualification time:	540 Hours
Guided learning hours:	215
Credits:	54

Issue 1.1



Purpose of the qualification

What does this qualification cover?

The units cover the skills, knowledge and understanding in a variety of mechanical manufacturing engineering activities including:

- operating Lathes
- operating CNC machines
- assembling fluid power components
- producing composite mouldings
- operating optical prism and flat process machines.

This qualification forms part of a Semta Apprenticeship.

Who supports this qualification?

This qualification is supported by The Society of Operations Engineers (SOE) who are a professional body and one of the 36 Professional Engineering Institutions (PEI) licensed by Engineering Council for those engaged in the Engineering industry.

What could this qualification lead to?

Progress onto other mechanical manufacturing engineering based qualifications such as:

- EAL Level 3 NVQ Diploma in Business Improvement Techniques
- EAL Level 2 Diploma in Mechanical Engineering Technology (Technical Certificate)
- EAL Level 3 Diploma in Mechanical Engineering Technology (Technical Certificate)
- EAL Level 3 NVQ Diploma in Mechanical Manufacturing Engineering.

Entry Requirements

Learners must have the potential to achieve the assessment criteria set out in the units.

How is the qualification achieved?

The learner must present evidence (portfolio) which clearly shows they have met the assessment criteria and learning outcomes. The learner must achieve the mandatory and optional units relevant to their pathway (occupational role).

What will be assessed?

All evidence submitted by the learner against the assessment criteria.

How will it be assessed?

Evidence for this qualification will be assessed in accordance with the SEMTA engineering assessment strategy, which has been created from engagement with stakeholders (employers etc.) in the engineering sector.

The qualification is not graded and only a pass can be achieved – which indicates the learner's competence.

Structure

This qualification can be obtained by following one of the following pathways. The learner is required to complete the mandatory assessment routes, and may also be able to choose from a selection of optional assessment routes.

Pathway MMAA: Machine Operating

Mandatory assessment routes: All three assessment routes must be completed:

EAL code	Assessment route title	Level	Credit value	Guided learning hours	Ofqual code
QMME2/001	Complying with Statutory Regulations and Organisational Safety Requirements	2	5	35	A/601/5013
QMME2/002	Using and Interpreting Engineering Data and Documents	2	5	25	Y/601/5102
QMME2/003	Working Efficiently and Effectively in Engineering	2	5	25	Y/601/5052

Optional assessment routes: One of the following assessment routes must be taken:

QMME2/004	Operating Capstan or Turret Lathes	2	49	151	R/600/5409
QMME2/005	Operating Centre Lathes	2	49	151	A/600/5419
QMME2/006	Operating Single Spindle Automatic Turning Machines	2	39	130	R/600/5426
QMME2/007	Operating Multi-Spindle Automatic Turning Machines	2	39	130	D/600/5431
QMME2/008	Operating Milling Machines	2	49	151	T/600/5435
QMME2/009	Operating Single and Multi-Spindle Drilling Machines	2	49	151	L/600/5442
QMME2/010	Operating Grinding Machines	2	49	151	H/600/5446
QMME2/011	Operating Special-Purpose Machines	2	49	151	A/600/5453
QMME2/012	Operating Gear Cutting Machines	2	49	151	D/600/5459
QMME2/013	Operating Electro-Discharge Machines	2	49	151	K/600/5464
QMME2/014	Operating Honing and Lapping Machines	2	39	130	M/600/5479
QMME2/015	Operating Broaching Machines	2	39	130	L/600/6008
QMME2/016	Operating Shaping, Planing or Slotting Machines	2	49	151	R/600/6012

Pathway MAA: Machine Operating (Continued)

QMME2/017	Operating Gear Grinding Machines	2	49	151	D/600/6014
QMME2/018	Operating Power Presses	2	39	130	K/600/6016

Pathway MMBA: CNC Machine Operating

Mandatory assessment routes: All three assessment routes must be completed:

EAL code	Assessment route title	Level	Credit value	Guided learning hours	Ofqual code
QMME2/001	Complying with Statutory Regulations and Organisational Safety Requirements	2	5	35	A/601/5013
QMME2/002	Using and Interpreting Engineering Data and Documents	2	5	25	Y/601/5102
QMME2/003	Working Efficiently and Effectively in Engineering	2	5	25	Y/601/5052

Optional assessment routes: One of the following assessment routes must be taken:

QMME2/019	Operating CNC Turning Machines	2	39	130	M/600/6020
QMME2/020	Operating CNC Milling Machines	2	39	130	D/600/6031
QMME2/021	Operating CNC Grinding Machines	2	39	130	H/600/6032
QMME2/022	Operating CNC Punching Machines	2	39	130	K/600/6033
QMME2/023	Operating CNC Laser Profiling Machines	2	39	130	M/600/6034
QMME2/024	Operating CNC Electro-Discharge Machines	2	39	130	F/600/6037
QMME2/025	Operating CNC Gear Cutting Machines	2	39	130	J/600/6038
QMME2/026	Operating CNC Machining Centres	2	39	130	L/600/6039

Pathway MMCA: Production Assembly

Mandatory assessment routes: All three assessment routes must be completed:

EAL code	Assessment route title	Level	Credit value	Guided learning hours	Ofqual code
QMME2/001	Complying with Statutory Regulations and Organisational Safety Requirements	2	5	35	A/601/5013
QMME2/002	Using and Interpreting Engineering Data and Documents	2	5	25	Y/601/5102
QMME2/003	Working Efficiently and Effectively in Engineering	2	5	25	Y/601/5052

Optional assessment routes: One of the following assessment routes must be taken:

QMME2/027	Producing Mechanical Sub-Assemblies/Assemblies	2	49	151	F/600/6040
QMME2/028	Assembling Fluid Power Components to Mechanical Equipment	2	49	151	L/600/6042
QMME2/029	Assembling Electrical or Electronic Components to Mechanical Equipment	2	49	151	R/600/6043
QMME2/030	Assembling Pipework Components to Mechanical Equipment	2	49	151	D/600/6045

Pathway MMDA: Composite Manufacture

Mandatory assessment routes: All three assessment routes must be completed:

EAL code	Assessment route title	Level	Credit value	Guided learning hours	Ofqual code
QMME2/001	Complying with Statutory Regulations and Organisational Safety Requirements	2	5	35	A/601/5013
QMME2/002	Using and Interpreting Engineering Data and Documents	2	5	25	Y/601/5102
QMME2/003	Working Efficiently and Effectively in Engineering	2	5	25	Y/601/5052

Optional assessment routes: Two of the following assessment routes must be taken:

QMME2/031	Producing Composite Mouldings using Wet Lay-Up Techniques	2	42	151	H/600/6046
QMME2/032	Producing Composite Mouldings using Pre-Preg Laminating Techniques	2	42	151	M/600/6048
QMME2/033	Producing Components by Acrylic Moulding	2	32	130	K/600/6050
QMME2/034	Vacuum Forming Composite Materials	2	32	130	M/600/6051
QMME2/035	Trimming Composite Mouldings using Hand Tools	2	32	130	T/600/6052
QMME2/036	Identifying Defects in Composite Mouldings	2	22	95	F/600/6054
QMME2/037	Carrying Out Repairs to Composite Mouldings	2	42	151	J/600/6055
QMME2/038	Applying Surface Finishes to Composite Mouldings	2	32	130	L/600/6056
QMME2/039	Bonding Composite Mouldings	2	22	95	Y/600/6058
QMME2/040	Producing Composite Assemblies	2	42	151	D/600/6059

Pathway MMEA: Optical Engineering

Mandatory assessment routes: All three assessment routes must be completed:

EAL code	Assessment route title	Level	Credit value	Guided learning hours	Ofqual code
QMME2/001	Complying with Statutory Regulations and Organisational Safety Requirements	2	5	35	A/601/5013
QMME2/002	Using and Interpreting Engineering Data and Documents	2	5	25	Y/601/5102
QMME2/003	Working Efficiently and Effectively in Engineering	2	5	25	Y/601/5052

Optional assessment routes: The following assessment routes must be taken:

QMME2/041	Carrying Out Inspection Activities on Optical Components	2	42	151	R/600/6060
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Plus: One of the following assessment routes must be taken:

QMME2/042	Operating Infra-Red/Special Material Lens Process Machines	2	42	151	Y/600/6061
QMME2/043	Operating Optical Glass Lens Process Machines	2	42	151	D/600/6062
QMME2/044	Operating Optical Prism and Flat Process Machines	2	42	151	K/600/6064
QMME2/045	Operating CNC Aspheric Optical and Diamond Turning Machines	2	32	130	A/600/6067
QMME2/046	Operating CNC Optical Grinding and Polishing Machines	2	32	130	J/600/6069
QMME2/047	Operating Optical Cylinder and Dome Process Machines	2	42	151	F/600/6071
QMME2/048	Operating Vacuum Coating Optical Process Machines	2	32	130	R/600/6074
QMME2/049	Operating Optical Plastic Process Machines	2	42	151	Y/600/6075