

## National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 4) with strands in Automotive Heating, Ventilation, and Air Conditioning; Automotive Machining; Diesel Fuel Injection; and Motorsport

**Level** 4

**Credits** 67-134

This qualification has been **reviewed**. The last date to meet the requirements is 31 December 2020.

### Transition Arrangements

This qualification has been reviewed and replaced by New Zealand Certificate in Automotive Diesel Fuel Technology (Level 4) [Ref: 3454].

The Automotive Machining strand has been reviewed and replaced by New Zealand Certificate in Automotive Machining (Level 4) [Ref: 3522].

The last date for entry into training programmes or courses leading to replaced qualifications is 31 December 2018. The last date to meet the requirements of the replaced qualification is 31 December 2020, when the qualification will be discontinued. From that date no results can be reported against the qualification.

People currently working towards the replaced qualification must complete its requirements or transfer to a programme of study or training leading to a replacement qualification by 31 December 2020.

It is anticipated that no existing candidates will be disadvantaged by these transition arrangements. However, anyone who feels that they have been disadvantaged may appeal to MITO at the address below. Appeals will be considered on a case by case basis.

For detailed information see [Review Summaries](#) on the NZQA website.

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### NQF Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	August 2008	December 2019
Review	2	April 2016	December 2019
Revision	3	October 2016	December 2020

## Standard Setting Body

NZ Motor Industry Training Organisation (Incorporated)  
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Reviewed

## National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 4) with strands in Automotive Heating, Ventilation, and Air Conditioning; Automotive Machining; Diesel Fuel Injection; and Motorsport

<b>Level</b>	<b>4</b>
<b>Credits</b>	<b>61-128</b>

### Purpose

The National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 4) with strands in Automotive Heating, Ventilation, and Air Conditioning; Automotive Machining; Diesel Fuel Injection; and Motorsport [Ref: 1416] recognises the skills and knowledge required for people in roles, within the automotive specialist sector of the motor industry, that involve diagnostic and complex vehicle and vehicle component repair work at an intermediate to advanced level.

The qualification includes a Core Compulsory and Core Elective section. This core covers knowledge and skills primarily in areas of customer interaction such as booking in work, selling goods and services, completing quotations and estimates for jobs, warranties and guarantees, and participating in quality improvement objectives. The standards in the Compulsory section of each strand ensure that the candidate develops and applies knowledge and skills for use in more complex and unfamiliar jobs within their industry sector. The elective section of each strand allows candidates to add further skills that are relevant to their position and/or specific workplace requirements.

In order to recognise a minimum and consistent set of fundamental competencies across all roles in all qualifications at each level, a common set of standards appear consistently across the core sections in all of the Level 4 qualifications in the *Motor Industry* subfield. This structure has been modelled on the *Qualifications Roadmap* (the motor industry career pathway document), which allows a candidate to move more easily between strands of qualifications in similar areas and to transfer skills from this qualification to other motor industry qualifications.

The qualification strands recognise the competencies required to work in a range of automotive specialist workplaces in:

- automotive heating, ventilation, and air conditioning (HVAC) roles involved in the overall repair and servicing of HVAC and climate control units and their components in a manner that ensures compliance with legislative and environmental requirements
- automotive machining roles involved in the machining and reconditioning of engine and related automotive components
- diesel fuel injection roles involved in the reconditioning and servicing of diesel fuel pumps and governors
- motorsport roles requiring all aspects of competition vehicle preparation and maintenance before, during, and after race events, and vehicle and personal compliance with race event requirements.

This qualification is one of a suite of qualifications developed at the intermediate to advanced level for the motor industry. The qualifications in this suite are grouped to reflect the industry recognised sector subsets of: automotive body, automotive electrical and mechanical engineering, automotive heavy engineering, automotive specialist engineering, and vehicle servicing. In most cases these subsets are also divided into two levels to provide clearer entry points to and exit points from training.

People wishing to obtain information on career pathways, should contact the NZ Motor Industry Training Organisation Incorporated (see contact details below).

This qualification builds on the skills and knowledge developed in the National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 3) with strands in Automotive Heating, Ventilation, and Air Conditioning; Automotive Machining; Diesel Fuel Injection; and Motorsport [Ref: 1415], which is a prerequisite for the award of this qualification. Candidates may choose to progress to the National Certificate in Motor Industry (Advanced Technical) (Level 5) with strands in Automotive Electrical and Mechanical, and Collision Repair [Ref: 1143], the National Certificate in Business (First Line Management) (Level 4) [Ref: 0649], or the National Diploma in Business (Level 5) [Ref: 0783].

## Replacement Information

This qualification and the National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 3) with strands in Automotive Heating, Ventilation, and Air Conditioning; Automotive Machining; Diesel Fuel Injection; and Motorsport [Ref: 1415] replaced the National Certificate in Motor Industry (Automotive Air Conditioning) [Ref: 0002], the National Certificate in Motor Industry (Automotive Machining) [Ref: 0371], and the National Certificate in Motor Industry (Diesel Fuel Injection Engineering) [Ref: 0139].

## Special Notes

The award of this qualification is dependent on the award, in the appropriate strand, of the National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 3) with strands in Automotive Heating, Ventilation, and Air Conditioning; Automotive Machining; Diesel Fuel Injection; and Motorsport [Ref: 1415]. NZQA will check this requirement before award of the qualification.

Application for the recognition of current competency should be made to the NZ Motor Industry Training Organisation or an accredited training provider. Credits are not automatic and an assessment of ability is required.

## Credit Range

	Core Compulsory	Core Elective
Level 2 credits	-	0-4
Level 3 credits	2	0-4
Level 4 credits	2	0-4
Minimum totals	4	4

	Automotive Heating, Ventilation, and Air Conditioning Strand		Automotive Machining Strand	
	Compulsory	Elective	Compulsory	Elective
Level 2 credits	-	0-5	-	0-26
Level 3 credits	12	0-7	-	0-20
Level 4 credits	34	0-7	69	0-45
Level 5 credits	-	-	6	0-7
Minimum totals	46	7	75	45
Qualification total	61		128	

	Diesel Fuel Injection Strand		Motorsport Strand	
	Compulsory	Elective	Compulsory	Elective
Level 2 credits	-	-	-	0-17
Level 3 credits	-	0-4	4	0-20
Level 4 credits	98	12-16	36	1-63
Level 5 credits	-	-	16	0-25
Minimum totals	98	16	56	63
Qualification total	122		127	

## Requirements for Award of Qualification

### Award of NQF Qualifications

Credit gained for a standard may be used only once to meet the requirements of this qualification.

Unit standards and achievement standards that are equivalent in outcome are mutually exclusive for the purpose of award. The table of mutually exclusive standards is provided in the Qualifications Authority *Rules and Procedures* publications available at [www.nzqa.govt.nz/ncea/](http://www.nzqa.govt.nz/ncea/).

Reviewed standards that continue to recognise the same overall outcome are registered as new versions and retain their identification number (Id). Any version of a standard with the same Id may be used to meet qualification requirements that list the Id and/or that specify the past or current classification of the standard.

### Summary of Requirements

- A minimum of 40 credits at Level 4 or above
- Core Compulsory standards
- Core Elective – A minimum of 4 credits as specified

One of the following strands is required

- Automotive Heating, Ventilation, and Air Conditioning Strand
- Automotive Machining Strand
- Diesel Fuel Injection Strand
- Motorsport Strand

## Detailed Requirements

### Core Compulsory

The following standards are required

Engineering and Technology > Motor Industry > Automotive Administration

ID	Title	Level	Credit
5777	Demonstrate knowledge of estimate and quotation procedures in the motor and related industries	4	2
22789	Demonstrate knowledge of warranties and guarantees that apply to the motor or related industries	3	2

### Core Elective

A minimum of 4 credits

Business > Business Operations and Development > Quality Management

ID	Title	Level	Credit
8077	Participate in a team to achieve specified quality improvement objectives	3	4

Engineering and Technology > Motor Industry > Automotive Administration

ID	Title	Level	Credit
946	Book in and receive work for an automotive or related business	3	4
968	Estimate or quote the cost of a repair or service in the motor and related industries	4	4

### Automotive Heating, Ventilation, and Air Conditioning Strand

Prior award of National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 3) [Ref: 1415]

Meet the requirements of all of the following sets

- Automotive Heating, Ventilation, and Air Conditioning Compulsory
- Automotive Heating, Ventilation, and Air Conditioning Elective

### Automotive Heating, Ventilation, and Air Conditioning Compulsory

The following standards are required

Engineering and Technology > Motor Industry > Automotive Administration

ID	Title	Level	Credit
934	Cost a job for the supply of a product, repair, or service in the motor and related industries	3	3

Engineering and Technology > Motor Industry > Automotive Electrical and Electronics

ID	Title	Level	Credit
975	Design a wiring harness for a particular automotive application	4	4

ID	Title	Level	Credit
24090	Demonstrate knowledge of diagnosing faults in engine management systems	3	1
24148	Demonstrate knowledge of engine management systems	3	3

Engineering and Technology > Motor Industry > Automotive Heating, Ventilation, and Air Conditioning

ID	Title	Level	Credit
906	Test for and rectify vehicle climate control system faults	4	4
24443	Prepare to test, test and diagnose faults in an automotive air conditioning system	4	5
24444	Service and rectify faults in an automotive air conditioning system	4	7
24446	Demonstrate knowledge of preparing to test, and testing for faults in an automotive air conditioning system	4	4
24450	Demonstrate knowledge of vehicle climate control systems, and locating and rectifying faults	4	4

Engineering and Technology > Motor Industry > Vehicle Bodywork

ID	Title	Level	Credit
5775	Remove and replace motor vehicle supplementary restraint systems	4	6
24000	Demonstrate knowledge of motor vehicle restraint systems	3	5

**Automotive Heating, Ventilation, and Air Conditioning Elective**

A minimum of 7 credits

Engineering and Technology > Mechanical Engineering > Welding

ID	Title	Level	Credit
2677	Weld aluminium with the gas tungsten arc welding process in the downhand positions	3	6
21907	Demonstrate and apply knowledge of safe welding procedures under supervision	2	3

Engineering and Technology > Motor Industry > Automotive Heating, Ventilation, and Air Conditioning

ID	Title	Level	Credit
24452	Service an automotive air conditioning compressor	4	3



## Engineering and Technology &gt; Motor Industry &gt; Automotive Workshop Engineering

ID	Title	Level	Credit
21683	Demonstrate knowledge of MIG welding in the motor industry	2	2
23992	Use and maintain a gas metal arc welding (GMAW) plant in the motor and related industries	3	5

## Engineering and Technology &gt; Motor Industry &gt; Engines

ID	Title	Level	Credit
24270	Diagnose and rectify faults in vehicle or machine engine cooling systems	4	5
24271	Demonstrate knowledge of diagnosing vehicle or machine cooling system faults and their causes	4	3

**Automotive Machining Strand**

Prior award of National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 3) [Ref: 1415]

Meet the requirements of all of the following sets

- Automotive Machining Compulsory
- Automotive Machining Elective

**Automotive Machining Compulsory**

The following standards are required

## Engineering and Technology &gt; Motor Industry &gt; Engine Repairs

ID	Title	Level	Credit
11731	Analyse engine and components for mechanical failure and/or potential failure	5	6

## Engineering and Technology &gt; Motor Industry &gt; Engines

ID	Title	Level	Credit
11726	Demonstrate knowledge of engine design factors and machining practices	4	20
11727	Prepare to and machine engine cylinder heads	4	20
11728	Prepare to and machine engine short block assemblies	4	25
24299	Demonstrate knowledge of engine crankshaft and camshaft machining procedures	4	4

**Automotive Machining Elective**

A minimum of 45 credits

## Computing and Information Technology &gt; Computing &gt; Generic Computing

ID	Title	Level	Credit
2780	Demonstrate and apply knowledge of a personal computer system	2	9



## Engineering and Technology &gt; Mechanical Engineering &gt; Engineering Drawing and Design

ID	Title	Level	Credit
2431	Draw and interpret engineering drawings under supervision	2	8
2432	Construct engineering plane geometric shapes under supervision	2	3
2433	Create simple engineering drawings using computer aided design (CAD) software	2	6

## Engineering and Technology &gt; Mechanical Engineering &gt; Engineering Machining and Toolmaking

ID	Title	Level	Credit
2702	Set and operate a CNC machining centre	4	15
2715	Produce components by performing engineering milling operations	3	15
2717	Produce components by performing advanced engineering milling operations	4	15

## Engineering and Technology &gt; Motor Industry &gt; Automotive Administration

ID	Title	Level	Credit
934	Cost a job for the supply of a product, repair, or service in the motor and related industries	3	3

## Engineering and Technology &gt; Motor Industry &gt; Automotive Workshop Engineering

ID	Title	Level	Credit
11722	Inspect and repair driveshaft (propeller shaft) assemblies	4	15
11724	Inspect and balance automotive components	4	10

## Engineering and Technology &gt; Motor Industry &gt; Engines

ID	Title	Level	Credit
879	Test, diagnose, and rectify faults in a two stroke petrol engine	4	6
893	Diagnose and rectify vehicle emission control system faults	4	3
943	Remove and install an engine assembly from and to a light vehicle	3	2
2350	Repower light vehicles	4	3
11723	Inspect and machine engine camshafts	4	15
11725	Inspect and machine engine crankshafts	4	25

ID	Title	Level	Credit
23812	Demonstrate knowledge of competition race vehicle engine performance modification requirements and practices	5	7
24270	Diagnose and rectify faults in vehicle or machine engine cooling systems	4	5
24271	Demonstrate knowledge of diagnosing vehicle or machine cooling system faults and their causes	4	3
24278	Demonstrate knowledge of engine performance testing using a dynamometer	4	2
24279	Tune and test a four stroke diesel engine	4	6
24280	Test engine performance using a dynamometer and determine engine condition	4	1
24283	Demonstrate knowledge of diesel engine braking systems and exhaust braking systems, and diagnosing and rectifying faults	4	2
24298	Align bore and hone bearing tunnels	4	3

### Diesel Fuel Injection Strand

Prior award of National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 3) [Ref: 1415]

Meet the requirements of all of the following sets

- Diesel Fuel Injection Compulsory
- Diesel Fuel Injection Elective

### Diesel Fuel Injection Compulsory

The following standards are required

Engineering and Technology > Motor Industry > Automotive Fuel Systems and Exhaust

ID	Title	Level	Credit
15384	Demonstrate knowledge of electronic diesel management	4	4
19305	Test electronic diesel management systems and replace components	4	4
24200	Demonstrate knowledge of Simms Minimec diesel fuel injection pumps	4	2
24201	Overhaul a Simms Minimec diesel fuel injection pump	4	6
24202	Demonstrate knowledge of DPA-type diesel fuel injection pumps	4	2
24203	Overhaul a DPA-type diesel fuel injection pump	4	6
24206	Demonstrate knowledge of P-type diesel fuel injection pumps	4	2
24207	Overhaul a P-type diesel fuel injection pump	4	6
24208	Demonstrate knowledge of A-type diesel fuel injection pumps	4	2

ID	Title	Level	Credit
24209	Overhaul an A-type diesel fuel injection pump	4	6
24212	Demonstrate knowledge of RSV-type diesel governors	4	2
24213	Overhaul a RSV-type diesel fuel governor	4	4
24214	Demonstrate knowledge of RQ-type and RQV-type diesel governors	4	2
24215	Overhaul an RQ-type or RQV-type diesel fuel governor	4	4
24216	Demonstrate knowledge of RAD-type and RFD-type diesel governors	4	2
24217	Overhaul an RAD-type or RFD-type diesel governor	4	4
24218	Demonstrate knowledge of R801-type and R901-type diesel governors	4	2
24219	Overhaul an R801-type or R901-type diesel governor	4	4
24220	Demonstrate knowledge of RLD-type diesel governors	4	2
24221	Overhaul an RLD-type diesel governor	4	4
24223	Overhaul VE-type diesel fuel injection pump additional devices	4	6
24224	Demonstrate knowledge of Stanadyne diesel fuel injection pumps	4	2
24225	Overhaul a Stanadyne diesel fuel injection pump	4	6
24232	Demonstrate knowledge of turbocharger diagnostic procedures	4	2
24233	Diagnose faults and recondition an automotive turbocharger	4	5
24235	Diagnose and rectify faults in a common rail diesel fuel system	4	3
24240	Demonstrate knowledge of Bosch VP44 diesel fuel injection pumps	4	2

#### Engineering and Technology > Motor Industry > Engines

ID	Title	Level	Credit
2313	Rectify fuel injection pump drive faults on diesel engines	4	2

#### Diesel Fuel Injection Elective

A minimum of 16 credits

#### Engineering and Technology > Motor Industry > Automotive Fuel Systems and Exhaust

ID	Title	Level	Credit
15405	Repair diesel engine air intake and exhaust systems	4	4

ID	Title	Level	Credit
24193	Demonstrate knowledge of Cummins PT diesel fuel injection pumps	4	2
24194	Diagnose faults and overhaul a Cummins PT diesel fuel injection pump	4	4
24197	Overhaul Cummins diesel fuel injectors	4	3
24204	Demonstrate knowledge of DPS-type diesel fuel injection pumps	4	2
24205	Overhaul a DPS-type diesel fuel injection pump	4	6
24226	Demonstrate knowledge of Caterpillar diesel fuel injection pumps	4	2
24227	Overhaul a Caterpillar diesel fuel injection pump	4	10
24228	Demonstrate knowledge of DPC-type diesel fuel injection pumps	4	2
24229	Overhaul a DPC-type diesel fuel injection pump	4	6
24230	Demonstrate knowledge of EP9-type diesel fuel injection pumps	4	2
24231	Overhaul an EP9-type diesel fuel injection pump	4	6
24237	Demonstrate knowledge of the operation and testing of vehicle diesel emission controls	3	4
24239	Demonstrate knowledge of Denso electronically controlled diesel (ECD) fuel injection pumps	4	2

## Engineering and Technology &gt; Motor Industry &gt; Engines

ID	Title	Level	Credit
24278	Demonstrate knowledge of engine performance testing using a dynamometer	4	2
24279	Tune and test a four stroke diesel engine	4	6

**Motorsport Strand**

Prior award of National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 3) [Ref: 1415]

Meet the requirements of all of the following sets

- Motorsport Compulsory
- Motorsport Elective

**Motorsport Compulsory**

The following standards are required

## Engineering and Technology &gt; Mechanical Engineering &gt; Engineering - Fabrication

ID	Title	Level	Credit
16956	Demonstrate knowledge of force and stress in engineering fabrications	4	4

## Engineering and Technology &gt; Motor Industry &gt; Automotive Administration

ID	Title	Level	Credit
21708	Maintain stock security in the workplace in the motor and related industries	3	2
23800	Analyse information from a competition race vehicle's electronic data analysis system	5	4

## Engineering and Technology &gt; Motor Industry &gt; Automotive Electrical and Electronics

ID	Title	Level	Credit
975	Design a wiring harness for a particular automotive application	4	4

## Engineering and Technology &gt; Motor Industry &gt; Automotive Fuel Systems and Exhaust

ID	Title	Level	Credit
23806	Demonstrate knowledge of exhaust system tuning for performance and noise in competition race vehicles	5	4

## Engineering and Technology &gt; Motor Industry &gt; Automotive Preventive Maintenance

ID	Title	Level	Credit
23807	Carry out competition race vehicle preparation and maintenance requirements at a motorsport event	4	6

## Engineering and Technology &gt; Motor Industry &gt; Automotive Transmission Systems

ID	Title	Level	Credit
24315	Diagnose faults in final drive assemblies on light vehicles	4	2
24316	Prepare and overhaul a final drive assembly from a light vehicle	4	6
24317	Diagnose faults in manual transmissions on light vehicles	4	2
24318	Overhaul a manual transmission on a light vehicle	4	4

## Engineering and Technology &gt; Motor Industry &gt; Vehicle Braking Systems

ID	Title	Level	Credit
23820	Inspect and diagnose braking system faults, and repair braking systems on competition race vehicles	4	4

## Engineering and Technology &gt; Motor Industry &gt; Vehicle Steering and Suspension

ID	Title	Level	Credit
23821	Demonstrate knowledge of fine tuning competition race vehicle steering and suspension systems to suit motorsport events	5	8
24025	Diagnose suspension and manual steering faults on light vehicles	3	2

ID	Title	Level	Credit
24426	Demonstrate knowledge of diagnosing and rectifying vehicle power-assisted steering system faults	4	2
24427	Test, diagnose, and rectify vehicle hydraulic power-assisted steering system faults	4	2

### Motorsport Elective

A minimum of 63 credits

Engineering and Technology > Mechanical Engineering > Composites

ID	Title	Level	Credit
3192	Provide for and attach fixings and fastenings in composites	4	4

Engineering and Technology > Mechanical Engineering > Engineering Drawing and Design

ID	Title	Level	Credit
2431	Draw and interpret engineering drawings under supervision	2	8
2432	Construct engineering plane geometric shapes under supervision	2	3
2433	Create simple engineering drawings using computer aided design (CAD) software	2	6

Engineering and Technology > Mechanical Engineering > Engineering Machining and Toolmaking

ID	Title	Level	Credit
2702	Set and operate a CNC machining centre	4	15
2715	Produce components by performing engineering milling operations	3	15

Engineering and Technology > Mechanical Engineering > Welding

ID	Title	Level	Credit
2689	Weld aluminium with the gas tungsten arc welding process in all positions	4	10

Engineering and Technology > Motor Industry > Automotive Electrical and Electronics

ID	Title	Level	Credit
5462	Demonstrate knowledge of automotive electronic ignition system operation	4	5
24090	Demonstrate knowledge of diagnosing faults in engine management systems	3	1
24091	Inspect, diagnose, and rectify faults in engine management systems	4	6

ID	Title	Level	Credit
24094	Demonstrate knowledge of windscreen wiper and headlamp cleaning systems	3	1
24095	Test for and rectify automotive wiper system faults	4	2
24113	Demonstrate knowledge of automotive instruments and gauges, and testing and rectifying system faults	4	2
24114	Test for and rectify faults in automotive instruments and gauges	4	4
24119	Demonstrate knowledge of vehicle steering and suspension electronic control systems, and testing and rectifying faults	4	3
24120	Test for and rectify faults in vehicle mechanical and body electronic control systems	4	10
24124	Demonstrate knowledge of vehicle powertrain electronic control systems, and testing and rectifying faults	4	3
24127	Demonstrate knowledge of automotive lighting requirements and lighting circuit diagnosis	4	3
24141	Demonstrate knowledge of vehicle ABS, TCS, and ESC electronic control systems, and testing and rectifying faults	5	3
24142	Test and rectify faults in vehicle ABS, TCS, or ESC electronic control systems	5	6

## Engineering and Technology &gt; Motor Industry &gt; Automotive Fuel Systems and Exhaust

ID	Title	Level	Credit
894	Diagnose and rectify faults in a carburetted petrol fuel system	4	4
5435	Diagnose and rectify faults in automotive supercharging systems, and recondition superchargers	4	4
11734	Design, fabricate, and fit a non-standard exhaust system	5	5

## Engineering and Technology &gt; Motor Industry &gt; Automotive Heating, Ventilation, and Air Conditioning

ID	Title	Level	Credit
24443	Prepare to test, test and diagnose faults in an automotive air conditioning system	4	5
24444	Service and rectify faults in an automotive air conditioning system	4	7

## Engineering and Technology &gt; Motor Industry &gt; Automotive Transmission Systems

ID	Title	Level	Credit
24325	Demonstrate knowledge of four-wheel drive (4WD) and all-wheel drive (AWD) systems used on light vehicles	3	3
24326	Diagnose four-wheel drive (4WD) or all-wheel drive (AWD) system faults on light vehicles	4	2



ID	Title	Level	Credit
24327	Rectify four-wheel drive (4WD) or all-wheel drive (AWD) system faults on light vehicles	4	3

## Engineering and Technology &gt; Motor Industry &gt; Automotive Workshop Engineering

ID	Title	Level	Credit
11722	Inspect and repair driveshaft (propeller shaft) assemblies	4	15
11724	Inspect and balance automotive components	4	10

## Engineering and Technology &gt; Motor Industry &gt; Coachbuilding

ID	Title	Level	Credit
11711	Interpret vehicle drawings and job specifications for coachbuilding, and produce a sketch with relevant measurements	4	3

## Engineering and Technology &gt; Motor Industry &gt; Collision Repair

ID	Title	Level	Credit
23982	Inspect and identify vehicle damage	4	4
23993	Demonstrate knowledge of full and sectional panel replacement on motor vehicles	4	2
23995	Carry out a full and sectional panel replacement on motor vehicle panels	4	20

## Engineering and Technology &gt; Motor Industry &gt; Engines

ID	Title	Level	Credit
980	Service engine driven stationary and mobile generators and power units, and rectify control system faults	4	3
2350	Repower light vehicles	4	3
11726	Demonstrate knowledge of engine design factors and machining practices	4	20
23812	Demonstrate knowledge of competition race vehicle engine performance modification requirements and practices	5	7
24270	Diagnose and rectify faults in vehicle or machine engine cooling systems	4	5
24271	Demonstrate knowledge of diagnosing vehicle or machine cooling system faults and their causes	4	3
24278	Demonstrate knowledge of engine performance testing using a dynamometer	4	2
24280	Test engine performance using a dynamometer and determine engine condition	4	1

## Engineering and Technology &gt; Motor Industry &gt; Tyres

ID	Title	Level	Credit
23814	Select competition tyres for a specific motorsport event, and monitor tyre performance	4	2

## Engineering and Technology &gt; Motor Industry &gt; Vehicle Bodywork

ID	Title	Level	Credit
11720	Evaluate vehicle weight requirements, and calculate a vehicle weight from specifications	5	4
19638	Prepare and assemble vehicle body steel components by bonding	4	6

## Engineering and Technology &gt; Motor Industry &gt; Vehicle Steering and Suspension

ID	Title	Level	Credit
24428	Overhaul a power steering pump	4	2

## Transition Arrangements

This qualification and the National Certificate in Motor Industry (Automotive Specialist Engineering) (Level 3) with strands in Automotive Heating, Ventilation, and Air Conditioning; Automotive Machining; Diesel Fuel Injection; and Motorsport [Ref: 1415] replaced the National Certificate in Motor Industry (Automotive Air Conditioning) [Ref: 0002], the National Certificate in Motor Industry (Automotive Machining) [Ref: 0371], and the National Certificate in Motor Industry (Diesel Fuel Injection Engineering) [Ref: 0139].

Programmes leading to the new qualifications are being introduced from 2008. People currently working towards any of the replaced qualifications may either complete the requirements for that qualification or transfer their results to these qualifications.

The last date for entry to training programmes or courses for the replaced qualifications is 31 December 2009. The last dates for assessments to take place for the replaced qualifications are:

- National Certificate in Motor Industry (Automotive Air Conditioning) [Ref: 0002], 31 December 2011;
- National Certificate in Motor Industry (Automotive Machining) [Ref: 0371], 31 December 2012;
- National Certificate in Motor Industry (Diesel Fuel Injection Engineering) [Ref: 0139], 31 December 2012.

Industry will continue to recognise the former qualifications, so there should be no need to 'upgrade' by those who have already achieved one.

### Differences between new and replaced qualifications

There are substantial differences between the new and replaced qualifications. Changes include:

- The new qualifications have core compulsory and core elective sections.
- The new qualifications both have strands in Automotive Heating, Ventilation, and Air Conditioning; Automotive Machining; Diesel Fuel Injection; and Motorsport, with compulsory and elective sections in each strand.
- Candidates must complete a strand in the level 3 qualification [Ref: 1415] before they may progress to the corresponding strand in the level 4 qualification [Ref: 1416].

For detailed information see [Review Summaries](#) on the NZQA website.

This qualification contains standards that replace or are being used as substitutes for earlier standards. For the purposes of this qualification, people who have gained credit for the expiring standards are exempt from the requirement to gain credit for the replacement or substitute standards – see table below.

Credit for	Exempt from
385	12008
391	934
392 or 5739	21708
398	22789
878	24270
881	24443, 24444
887	24094, 24095
896	24025
901	24426, 24427, 24428
910	24113, 24114
914 or 5771	23992
957	24315, 24316
959	24317, 24318
961	24090, 24091
965 or 3391	24270, 24271
967 or 15449	24280
2317	24283
2348 or 5463	24119, 24124
2348 or 8182	24120
2670	21907

Credit for	Exempt from
3399	24127
3884	21683
5451	24193, 24194
5452	24197
5756	23982
5774	23993, 23995
8185	24325, 24326, 24327
15385	24200, 24201
15386	24202, 24203
15387	24204, 24205
15388	24206, 24207
15389	24208, 24209
15391	24212, 24213
15392	24214, 24215
15393	24216, 24217
15394	24218, 24219
15395	24220, 24221
15396	24223
15398	24224, 24225
15399	24226, 24227
15400	24228, 24229
15401	24230, 24231
15448	24278, 24279
19304	24232, 24233

It is anticipated that no existing trainees will be disadvantaged by these transition arrangements. Any person who feels they have been disadvantaged by these transition arrangements should contact MITO at the following address. All appeals will be considered on a case-by-case basis.

## Other standard setting bodies whose standards are included in the qualification

Competenz  
 NZQA  
 Retail ITO

## Certification

This certificate will display the logos of NZQA, the NZ Motor Industry Training Organisation (Incorporated) and the name of the accredited organisation.

## Classification

This qualification is classified according to the NQF classification system and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

NQF Classification		NZSCED	
Code	Description	Code	Description
257	Engineering and Technology > Motor Industry	030503	Engineering and Related Technologies > Automotive Engineering and Technology > Vehicle Mechanics

### Quality Management Systems

Providers and Industry Training Organisations must be accredited by a recognised Quality Assurance Body before they can register credits from assessment against standards. Accredited providers and Industry Training Organisations assessing against standards must engage with the moderation system that applies to those standards. Accreditation requirements and the moderation system are outlined in the associated Accreditation and Moderation Action Plan (AMAP) for each standard.