National Certificate in Motor Industry (Automotive Heavy Engineering) with strands in Agricultural Equipment, Plant and Equipment, and Road Transport

Level 4

Credits 300, 301 or 309

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

Version 5 of this qualification has been republished to extend the last date for assessment from 31 December 2016 to 31 December 2020 and to set a last date for entry as 31 December 2016.

Transition Arrangements

This qualification has been replaced by the National Certificate in Motor Industry (Automotive Heavy Engineering) (Level 3) with strands in Agricultural Equipment, Materials Handling Equipment, Plant and Equipment, and Road Transport [Ref: 1445] and the National Certificate in Motor Industry (Automotive Heavy Engineering) (Level 4) with strands in Agricultural Equipment, Materials Handling Equipment, Plant and Equipment, and Road Transport [Ref: 1446].

The last date for entry into this qualification is 31 December 2016.

People currently working towards this qualification must complete the requirements by 31 December 2020.

For detailed information see Review Summaries on the NZQA website.

NZQF National Qualification Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	October 1995	December 2002
Review	2	September 1999	December 2012
Revision	3	November 2000	December 2012
Review	4	September 2008	December 2012
Revision	5	November 2010	December 2020
Republished	5	November 2016	December 2020

Standard Setting Body

NZ Motor Industry Training Organisation (Incorporated)
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Other standard setting bodies whose standards are included in the qualification

NZQA

National Certificate in Motor Industry (Automotive Heavy Engineering) with strands in Agricultural Equipment, Plant and Equipment, and Road Transport

Level **4**

Credits **300, 301 or 309**

Purpose

This certificate is designed as the national qualification for people working in the Automotive Heavy Engineering branch of the Motor Industry. Holders of this qualification are able to inspect automotive heavy vehicles, machines and equipment for mechanical, electrical and electronic faults; and diagnose and rectify faults in mechanical, electrical and electronic components on heavy vehicles, machines, and equipment within the scope of their selected strand. The certificate is designed for people wishing to work in a safe and professional manner; to maintain standards in the automotive heavy engineering industry; and to provide a means of recognising prior learning for those already working in the industry.

This certificate is now linked to exit points for industry recognition purposes, where apprentices may on application receive NZ Motor Industry Training Organisation (MITO) certificates for credits achieved. Details regarding industry recognition, industry registration, and entry and exit points for the apprenticeship can be obtained from the NZ Motor Industry Training Organisation in the first instance.

Unit standards in this qualification have relevance to other automotive engineering qualifications, and those people who wish to consider additional unit standards or qualifications should contact the NZ Motor Industry Training Organisation for advice.

Replacement Information

This qualification has been replaced by the National Certificate in Motor Industry (Automotive Heavy Engineering) (Level 3) with strands in Agricultural Equipment, Materials Handling Equipment, Plant and Equipment, and Road Transport [Ref: 1445] and the National Certificate in Motor Industry (Automotive Heavy Engineering) (Level 4) with strands in Agricultural Equipment, Materials Handling Equipment, Plant and Equipment, and Road Transport [Ref: 1446].

Special Notes

It is expected that most people will undertake training towards this qualification in the form of apprenticeship with the use of record of achievement books and training manuals. It is recommended that in the first instance, a “training plan” is developed with the assistance of a NZ Motor Industry Training Organisation representative.

Applications for recognition of prior learning should be made to the NZ Motor Industry Training Organisation or accredited training providers. Credits are not automatic and normally an assessment of ability is required.

Credit Range

	Core Compulsory
Level 1 credits	4
Level 2 credits	54
Level 3 credits	64
Level 4 credits	49
Minimum total	171

	Agricultural Equipment Strand	
	Compulsory	**Elective**
Level 2 credits	4	0-14
Level 3 credits	12	0-63
Level 4 credits	32	0-90
Level 5 credits	-	0-6
Minimum totals	48	90

	Plant and Equipment Strand	
	Compulsory	**Elective**
Level 2 credits	-	0-14
Level 3 credits	-	0-57
Level 4 credits	23	0-82
Level 5 credits	25	0-6
Minimum totals	48	82

	Road Transport Strand	
	Compulsory	**Elective**
Level 2 credits	-	0-14
Level 3 credits	32	0-52
Level 4 credits	27	0-70
Level 5 credits	-	0-6
Minimum totals	59	70

Requirements for Award of Qualification

Award of NZQF National 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 on the New Zealand Qualifications Authority (NZQA) website: http://www.nzqa.govt.nz/qualifications-standards/standards/standards-exclusion-list/.

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

- Core Compulsory standards
- Core Elective – Balance if required

One of the following strands is required
- Agricultural Equipment Strand
- Plant and Equipment Strand
- Road Transport Strand

Detailed Requirements

Core Compulsory
The following standards are required

Engineering and Technology > Motor Industry > Automotive Administration

ID	Title	Level	Credit
225	Identify the occupational areas and structure of the New Zealand Automotive Industry	1	2
249	Carry out automotive industry personal workplace requirements	2	5
398	Interpret warranties and guarantees that apply to the automotive industry	4	2

Engineering and Technology > Motor Industry > Automotive Air Conditioning

ID	Title	Level	Credit
15373	Demonstrate knowledge of automotive air conditioning	3	4

Engineering and Technology > Motor Industry > Automotive Electrical and Electronics

ID	Title	Level	Credit
232	Test an automotive electrical circuit	2	8
233	Service an automotive battery	2	2
234	Describe automotive starting and charging systems and their operation	2	4
877	Identify functions of automotive lighting systems, rectify lighting faults, and adjust vehicle lamps	3	5
898	Identify an automotive wiring diagram and translate information to a motor vehicle circuit	3	3
899	Carry out automotive wiring repairs and test circuits for serviceability	3	3
915	Service multiple battery installations on heavy commercial vehicles, machines, or units	3	2
3396	Diagnose and rectify faults in heavy vehicle and/or machine electrical starting and charging systems	4	8
15375	Diagnose and repair faults in electronically controlled systems used on heavy vehicles and machines	4	8

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

ID	Title	Level	Credit
241	Describe the operation of a diesel fuel system and perform minor servicing tasks	2	3
917	Remove and replace a diesel fuel injection pump	3	2
3394	Repair heavy vehicle and/or machine exhaust systems	3	4
15384	Demonstrate knowledge of electronic diesel management	4	4
15403	Describe, test and diagnose diesel fuel injection systems, and repair fuel delivery systems	3	6
15404	Demonstrate knowledge of diesel engine air intake and exhaust systems, and inspect and test them	3	6
15405	Repair diesel engine air intake and exhaust systems	4	4

Engineering and Technology > Motor Industry > Automotive Hydraulics

ID	Title	Level	Credit
931	Describe the application of hydraulics for automotive heavy engineering use	4	8

Engineering and Technology > Motor Industry > Automotive Preventative Maintenance

ID	Title	Level	Credit
237	Describe automotive brake, steering, and suspension systems, and their operation	2	3
245	Select and apply lubricants and sealants for automotive and related industry applications	2	2
2322	Carry out a periodic maintenance check on heavy vehicles and/or equipment	3	2

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
2316	Demonstrate knowledge of heavy vehicle and machine driveline and assembly operation and terminology	3	3
15418	Describe the operation and servicing requirements of heavy vehicle and equipment clutches	3	4

Engineering and Technology > Motor Industry > Automotive Workshop Engineering

ID	Title	Level	Credit
227	Carry out general engineering tasks to repair and make automotive components	2	4
228	Select and use hand tools and workshop equipment for an automotive application	2	5
230	Repair and manufacture automotive components by oxy-acetylene gas welding	2	3
924	Clean automotive components and maintain cleaning equipment	2	1
950	Manual metal arc weld automotive components in flat and vertical positions	3	6
16113	Demonstrate knowledge of safe working practices in an automotive workshop	2	2

Engineering and Technology > Motor Industry > Engine Repairs

ID	Title	Level	Credit
231	Explain the operation of two and four stroke petrol and diesel engines	2	4
236	Service automotive cooling systems	2	4
2334	Remove and install an engine in a heavy vehicle and/or equipment item	3	2
3391	Diagnose and rectify faults in heavy vehicle and/or machine diesel engine cooling systems	4	4
15440	Remove and replace a heavy vehicle and/or machine diesel engine cylinder head	3	2
15448	Demonstrate knowledge of engine performance testing, and tune and test a 4 stroke diesel engine	4	7

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
242	Change the fluid and bleed a brake hydraulic system	2	2
15475	Demonstrate knowledge of foundation (drum) brakes on heavy vehicles and machines, and repair them	3	5
15478	Demonstrate knowledge of hydraulic brakes on heavy vehicles and machines, and repair them	4	4

Engineering and Technology > Motor Industry > Vehicle Recovery

ID	Title	Level	Credit
3387	Respond to vehicle breakdown	3	1

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
16112	Demonstrate knowledge of heavy vehicle and machine power steering systems	3	4

Service Sector > Service Sector Skills > Service Sector - Core Skills

ID	Title	Level	Credit
56	Attend to customer enquiries face-to-face and on the telephone	1	2
57	Provide customer service in given situations	2	2

Core Elective Balance

Engineering and Technology > Motor Industry > Automotive Administration

ID	Title	Level	Credit
248	Describe an apprenticeship employment contract for the automotive industry	2	1
391	Prepare a quotation for the supply of an automotive product, repair, or service	3	3
934	Cost a job for an automotive repair or service	4	3
968	Estimate the cost of an automotive repair	4	4

Engineering and Technology > Motor Industry > Automotive Air Conditioning

ID	Title	Level	Credit
881	Test, service, and repair an automotive air conditioning system	4	4
902	Test a vehicle heating and ventilation system	3	3
906	Diagnose and rectify automotive climate control system faults	4	4

Engineering and Technology > Motor Industry > Automotive Auxiliary Fittings and Systems

ID	Title	Level	Credit
2344	Repair winches and pulley block assemblies on heavy machinery and equipment	4	2

Engineering and Technology > Motor Industry > Automotive Electrical and Electronics

ID	Title	Level	Credit
235	Describe automotive ignition systems and their operation	2	3
887	Diagnose and repair automotive wiper system faults	4	2

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

ID	Title	Level	Credit
240	Demonstrate knowledge of petrol fuel systems	2	3

Engineering and Technology > Motor Industry > Automotive Hydraulics

ID	Title	Level	Credit
2314	Test, service and repair faults in hydraulic systems on heavy equipment, vehicles, and machines	4	6
15410	Test and repair hydraulic equipment components on heavy equipment, vehicles, and machines	4	15

Engineering and Technology > Motor Industry > Automotive Pneumatics

ID	Title	Level	Credit
990	Repair an air operated engine starting system	4	3

Engineering and Technology > Motor Industry > Automotive Preventative Maintenance

ID	Title	Level	Credit
964	Implement a schedule for an automotive preventative maintenance programme	5	2
15407	Demonstrate knowledge of vehicle and/or machine storage procedures	2	1

Engineering and Technology > Motor Industry > Automotive Sales

ID	Title	Level	Credit
380	Carry out an appraisal of a vehicle	3	4

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
2320	Repair heavy vehicle or equipment manual transmissions	4	6
2321	Diagnose and rectify faults in heavy vehicle or equipment automatic transmissions	4	8
2336	Diagnose and repair heavy vehicle and/or equipment transmission fluid coupling faults	3	3
15424	Identify faults and repair heavy vehicle or equipment hydraulic driveline retarders	4	3

Engineering and Technology > Motor Industry > Automotive Workshop Engineering

ID	Title	Level	Credit
913	Use the oxy-acetylene process for welding and allied uses in the motor industry	3	4
914	Metal-arc gas shield (MIG) weld automotive components	3	4
2310	Hardface automotive heavy equipment components using the manual electric arc welding process	4	2

Engineering and Technology > Motor Industry > Engine Repairs

ID	Title	Level	Credit
243	Carry out basic tuning on a four stroke petrol engine	2	4
929	Test and repair starting aid systems on a diesel engine	3	2
965	Analyse vehicle or machine cooling system problems and requirements	5	4
971	Diagnose and repair diesel engine shut-down systems	4	2
980	Service engine driven stationary and mobile generators and power units, and repair control systems	4	3
2317	Service diesel engine braking systems and exhaust braking systems	4	4
2335	Repower heavy vehicles and/or equipment	4	3
3392	Repair a heavy vehicle and/or machine diesel engine cylinder head	4	4
3393	Repair a heavy vehicle and/or machine diesel engine short block	4	10
15441	Overhaul an engine cooling system water pump	3	3

ID	Title	Level	Credit
15449	Test a diesel engine on a dynamometer and determine engine condition using test results	4	4

Engineering and Technology > Motor Industry > Tyres

ID	Title	Level	Credit
238	Remove and replace wheels and tyres, and balance wheels	2	2

Engineering and Technology > Motor Industry > Vehicle Bodywork

ID	Title	Level	Credit
2629	Demonstrate knowledge of, and work in proximity to, motor vehicle air bag mechanisms	3	2

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
15477	Demonstrate knowledge of braking systems on truck and trailer combinations	3	4
15479	Test and rectify pneumatic brake faults on heavy vehicles, trailers, and machines	4	6
15480	Demonstrate knowledge of heavy vehicle and machine disc brakes, and repair them	3	4

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
883	Check and adjust vehicle front and rear wheel alignment	3	4
2346	Demonstrate knowledge of heavy equipment clutch steering systems, and repair them	4	5
3398	Overhaul heavy vehicle power steering boxes and power steering pumps	4	4
15482	Demonstrate knowledge of heavy vehicle and trailer wheel alignment procedures	4	5

Agricultural Equipment Strand
Meet the requirements of all of the following sets

- Agriculture Equipment Compulsory
- Agricultural Equipment Elective

Agriculture Equipment Compulsory
The following standards are required

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
2331	Diagnose and rectify faults in heavy vehicle and/or equipment clutches	4	4
2342	Demonstrate knowledge of hydraulic transmission drives on plant and machinery, and repair them	4	5
2343	Demonstrate knowledge of belt and chain drive systems on heavy equipment, and repair them	4	2
3385	Describe the construction and operation of heavy machinery transmissions	3	8
5441	Describe, diagnose, and rectify faults in tractor and agricultural machine final drive assemblies	4	6

Engineering and Technology > Motor Industry > Tractor and Machine Body Systems

ID	Title	Level	Credit
5438	Describe the functions and general locations of tractor, agricultural machine, and equipment systems	2	4
5439	Inspect and fit tractor and agricultural machine safety frames, and repair guarding	4	4

Engineering and Technology > Motor Industry > Tyres

ID	Title	Level	Credit
5440	Identify tyre applications for tractors and agricultural machinery, and remove and replace tyres	3	4

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
5437	Describe tractor braking systems, and diagnose and rectify faults in wheel tractor braking systems	4	7

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
5443	Demonstrate knowledge of wheel tractor steering systems, and diagnose and rectify faults in them	4	4

Agricultural Equipment Elective

A minimum of 90 credits from the Agricultural Equipment Elective and/or the balance of credits, if required, to achieve a minimum of 90 credits may come from the Core Elective Balance

Agricultural Equipment Elective

Engineering and Technology > Motor Industry > Automotive Pneumatics

ID	Title	Level	Credit
2324	Repair and test heavy vehicle and/or equipment compressors and adjust their controls	3	4
2340	Demonstrate knowledge of pneumatic system principles and operation for heavy vehicles and equipment	3	6

Engineering and Technology > Motor Industry > Automotive Preventive Maintenance

ID	Title	Level	Credit
2347	Complete a pre-assessment of a motor vehicle to determine compliance with Certificate of Fitness (CoF) requirements	4	2

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
2332	Diagnose and rectify differential assembly faults on heavy vehicles or equipment	4	6
2333	Diagnose and rectify driveline faults on heavy vehicles or equipment	4	3

Engineering and Technology > Motor Industry > Vehicle Bodywork

ID	Title	Level	Credit
912	Remove, repair, and replace vehicle body interior components	3	3

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
937	Describe brake lining materials and reline brake shoes	3	2
15476	Demonstrate knowledge of pneumatic brakes on heavy vehicles and machines	3	4

Engineering and Technology > Motor Industry > Vehicle Recovery

ID	Title	Level	Credit
15481	Demonstrate knowledge of heavy commercial vehicle and on-road machine flat towing procedures	3	4

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
972	Repair track gear systems on machines	4	5
2312	Repair road transport heavy vehicle steering systems	4	4
2315	Describe heavy vehicle suspension systems, analyse suspension failure, and repair components	4	8

ID	Title	Level	Credit
2330	Describe heavy equipment suspension systems, and analyse and repair faults in them	4	6
15483	Demonstrate knowledge of machine track gear and undercarriage systems and their repair procedures	4	5

Plant and Equipment Strand
Meet the requirements of all of the following sets

- Plant and Equipment Compulsory
- Plant and Equipment Elective

Plant and Equipment Compulsory
The following standards are required

Engineering and Technology > Motor Industry > Automotive Pneumatics

ID	Title	Level	Credit
2324	Repair and test heavy vehicle and/or equipment compressors and adjust their controls	3	4
2340	Describe the operation of pneumatic systems for heavy vehicle and equipment use	3	6

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
2319	Describe the principles and operation of heavy vehicle and equipment automatic transmissions	3	5
2332	Diagnose and rectify differential assembly faults on heavy vehicles and/or equipment	4	6
2333	Diagnose and rectify driveline faults on heavy vehicles and/or equipment	4	3
2342	Demonstrate knowledge of hydraulic transmission drives on plant and machinery, and repair them	4	5
3385	Describe the construction and operation of heavy machinery transmissions	3	8

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
2330	Describe heavy equipment suspension systems, and analyse and repair faults in them	4	6
15483	Describe machine track gear and undercarriage systems and their repair procedures	4	5

Plant and Equipment Elective
A minimum of 82 credits from the Plant and Equipment Elective and/or the balance of credits, if required, to achieve a minimum of 82 credits may come from the Core Elective Balance

Plant and Equipment Elective

Engineering and Technology > Motor Industry > Automotive Preventive Maintenance

ID	Title	Level	Credit
2347	Complete a pre-assessment of a motor vehicle to determine compliance with Certificate of Fitness (CoF) requirements	4	2

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
2318	Demonstrate knowledge of the construction and operation of heavy vehicle and equipment manual transmissions	3	4
2331	Diagnose and rectify faults in heavy vehicle or equipment clutches	4	4
2343	Demonstrate knowledge of belt and chain drive systems on heavy equipment, and repair them	4	2
5441	Describe, diagnose, and rectify faults in tractor and agricultural machine final drive assemblies	4	6

Engineering and Technology > Motor Industry > Tractor and Machine Body Systems

ID	Title	Level	Credit
5439	Inspect and fit tractor and agricultural machine safety frames, and repair guarding	4	4

Engineering and Technology > Motor Industry > Vehicle Bodywork

ID	Title	Level	Credit
912	Remove, repair, and replace vehicle body interior components	3	3

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
937	Describe brake lining materials and reline brake shoes	3	2
5437	Describe tractor braking systems, and diagnose and rectify faults in wheel tractor braking systems	4	7
15476	Demonstrate knowledge of pneumatic brakes on heavy vehicles and machines	3	4

Engineering and Technology > Motor Industry > Vehicle Recovery

ID	Title	Level	Credit
15481	Demonstrate knowledge of heavy commercial vehicle and on-road machine flat towing procedures	3	4

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
972	Repair track gear systems on machines	4	5
2312	Repair road transport heavy vehicle steering systems	4	4
2315	Describe heavy vehicle suspension systems, analyse suspension failure, and repair components	4	8
5443	Demonstrate knowledge of wheel tractor steering systems, and diagnose and rectify faults in them	4	4

Road Transport Strand

Meet the requirements of all of the following sets

- Road Transport Compulsory
- Road Transport Elective

Road Transport Compulsory

The following standards are required

Engineering and Technology > Motor Industry > Automotive Pneumatics

ID	Title	Level	Credit
2324	Repair and test heavy vehicle and/or equipment compressors and adjust their controls	3	4
2340	Describe the operation of pneumatic systems for heavy vehicle and equipment use	3	6

Engineering and Technology > Motor Industry > Automotive Preventative Maintenance

ID	Title	Level	Credit
2347	Assess motor vehicles for Certificate of Fitness (CoF) requirements	4	2

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
2318	Describe the construction and operation of heavy vehicle and equipment manual transmissions	3	4
2319	Describe the principles and operation of heavy vehicle and equipment automatic transmissions	3	5
2331	Diagnose and rectify faults in heavy vehicle and/or equipment clutches	4	4
2332	Diagnose and rectify differential assembly faults on heavy vehicles and/or equipment	4	6

ID	Title	Level	Credit
2333	Diagnose and rectify driveline faults on heavy vehicles and/or equipment	4	3

Engineering and Technology > Motor Industry > Vehicle Bodywork

ID	Title	Level	Credit
912	Remove, repair, and replace vehicle body interior components	3	3

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
937	Describe brake lining materials and reline brake shoes	3	2
15476	Demonstrate knowledge of pneumatic brakes on heavy vehicles and machines	3	4

Engineering and Technology > Motor Industry > Vehicle Recovery

ID	Title	Level	Credit
15481	Demonstrate knowledge of heavy commercial vehicle and on-road machine flat towing procedures	3	4

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
2312	Repair road transport heavy vehicle steering systems	4	4
2315	Describe heavy vehicle suspension systems, analyse suspension failure, and repair components	4	8

Road Transport Elective

A minimum of 70 credits from the Road Transport Elective and/or the balance of credits, if required, to achieve a minimum of 70 credits may come from the Core Elective Balance

Road Transport Elective

Engineering and Technology > Motor Industry > Automotive Trailers

ID	Title	Level	Credit
2341	Describe heavy trailer systems, and maintain and repair heavy trailers and semi-trailers	4	15

Engineering and Technology > Motor Industry > Automotive Transmission Systems

ID	Title	Level	Credit
2342	Demonstrate knowledge of hydraulic transmission drives on plant and machinery, and repair them	4	5
2343	Demonstrate knowledge of belt and chain drive systems on heavy equipment, and repair them	4	2

ID	Title	Level	Credit
3385	Demonstrate knowledge of heavy machine manual and power shift transmissions	3	4
5441	Describe, diagnose, and rectify faults in tractor and agricultural machine final drive assemblies	4	6

Engineering and Technology > Motor Industry > Tractor and Machine Body Systems

ID	Title	Level	Credit
5439	Inspect and fit tractor and agricultural machine safety frames, and repair guarding	4	4

Engineering and Technology > Motor Industry > Vehicle Bodywork

ID	Title	Level	Credit
2345	Diagnose faults in heavy vehicle and equipment chassis	4	3

Engineering and Technology > Motor Industry > Vehicle Braking Systems

ID	Title	Level	Credit
5437	Describe tractor braking systems, and diagnose and rectify faults in wheel tractor braking systems	4	7

Engineering and Technology > Motor Industry > Vehicle Recovery

ID	Title	Level	Credit
2338	Describe salvage and recovery procedures and recover heavy vehicles and/or on-road machines	3	4

Engineering and Technology > Motor Industry > Vehicle Steering and Suspension

ID	Title	Level	Credit
2330	Describe heavy equipment suspension systems, and analyse and repair faults in them	4	6
5443	Demonstrate knowledge of wheel tractor steering systems, and diagnose and rectify faults in them	4	4
15483	Demonstrate knowledge of machine track gear and undercarriage systems and their repair procedures	4	5

Transition Arrangements

Version 5

Version 5 was issued to extend the expiry date of this qualification.

For detailed information see Review Summaries on the NZQA website.

Previous versions of the qualification

Version 4 was issued to indicate that this qualification is expiring.

This qualification has been replaced by the National Certificate in Motor Industry (Automotive Heavy Engineering) (Level 3) with strands in Agricultural Equipment, Materials Handling Equipment, Plant and Equipment, and Road Transport [Ref: 1445] and the National Certificate in Motor Industry (Automotive Heavy Engineering) (Level 4) with strands in Agricultural Equipment, Materials Handling Equipment, Plant and Equipment, and Road Transport [Ref: 1446].

Version 3 was issued in November 2000 in order to extend the last date for the award of version 1 to December 2002. The content of the qualification has not been changed.

Version 2 was issued in September 1999 as part of the review of Motor Industry unit standards.

Changes to structure and content

- removal of the prerequisite qualification the National Certificate in Motor Industry (Entry to Automotive Trades) [Ref: 0017];
- addition of unit standards 56, 57, 225, 227, 228, 230, 231, 232, 233, 234, 236, 237, 241, 242, 245, 249, 398, 15373, 15375, 15384, 15418, 15440, 15475, 15478, 16112, and 16113 to the core compulsory section. Many of these unit standards were previously covered by being included in the prerequisite qualification;
- the structure has been amended to provide for a core elective section and to expand the elective sections of the strands;
- unit standards 392, 900, 930, 967 and 2313 have been removed from the core compulsory section following changes to industry technology requirements. People holding credit for those unit standards may choose to complete either version 1 within the period of transition or use the credit to meet the elective requirements of version 2;
- unit standards 913, 2314, 3392 and 3393 moved from the core compulsory section to the core elective section;
- unit standard 2331 moved from the core compulsory section to Agricultural Equipment and Road Transport compulsory strands and the Plant and Equipment elective strand;
- expiring unit standards 885, 903, 908, 970, 2323, and 2325 replaced (see table below);
- unit standard 3386, Diagnose and rectify faults in agricultural equipment hydraulics has been removed (category D) from the Agricultural Equipment Strand because of duplication with corresponding elements in unit standards 931, 2314, and 15410;
- unit standard 381 (previously in the Agricultural Equipment and Plant and Equipment strands) has been removed from the qualification;
- credit total for the qualification increased from 162-170 to 300-309.

People may choose to stay on their existing programme leading to version 1 or transfer to this version. All versions of this qualification are acceptable to the NZ Motor Industry Training Organisation.

All existing apprentices are encouraged to transfer their existing achievements to this version of the qualification, through consultation with MITO and the use of training plans.

The last date for award of version 1 is 31 December 2002.

All existing training providers and MITO Regional Managers have been notified of the changes and all new programmes and apprenticeships from January 2001 will lead to the award of the qualification. No MITO training agreements have been available for version 1 of the qualification from 31 December 1998.

Most of the unit standards in the Motor Industry sub-field have been reviewed and replacement details for those unit standards can be obtained from MITO.

Details regarding this qualification are included in the MITO publication "National Certificates in Automotive Heavy Engineering" which is available free of charge on application to NZ Motor Industry Training Organisation (Freephone: 0800 88 2121).

Any person who considers that they have been disadvantaged by these transition arrangements is requested to contact the NZ Motor Industry Training Organisation.

This qualification contains standards that replace 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 standards – see table below.

Credit for	**Exempt from**
885, 908	15448
903	15403, 15404
970	15405
2323	15475, 15478, 15479, 15480
2325	15424

Some unit standards specified in this qualification are considered similar in nature to other MITO unit standards. MITO recommends that people holding credit for those unit standards should apply for recognition of prior learning (RPL) as indicated in the table below.

Credit already held for:	***Apply for RPL for:***
900 or 5463 and 8182	15375
3392	15440
967	15449
3389	15481
972	15483

Credit already held for:	***Apply for RPL for:***
226	16113
3386	2314

Any version of a unit standard contained within this qualification which retains its original unit standard identification number will continue to meet the requirements of this qualification.

Version 1 of this qualification was issued to replace the NZ Trade Certificate in Automotive Heavy Engineering with the National Certificate in Motor Industry (Automotive Heavy Engineering) with strands in Agricultural Equipment, Plant and Equipment, and Road Transport in October 1995. The Trade Certificate continues to be recognised by the NZQA, the NZ Motor Industry Training Organisation, and the motor industry. There will be no requirement for existing holders of that qualification to seek a national certificate.

Certification

This certificate will display the logos of NZQA, the NZ Motor Industry Training Organisation (Incorporated) and the organisation that has been granted consent to assess against standards that meet the requirements of the qualification (accredited).

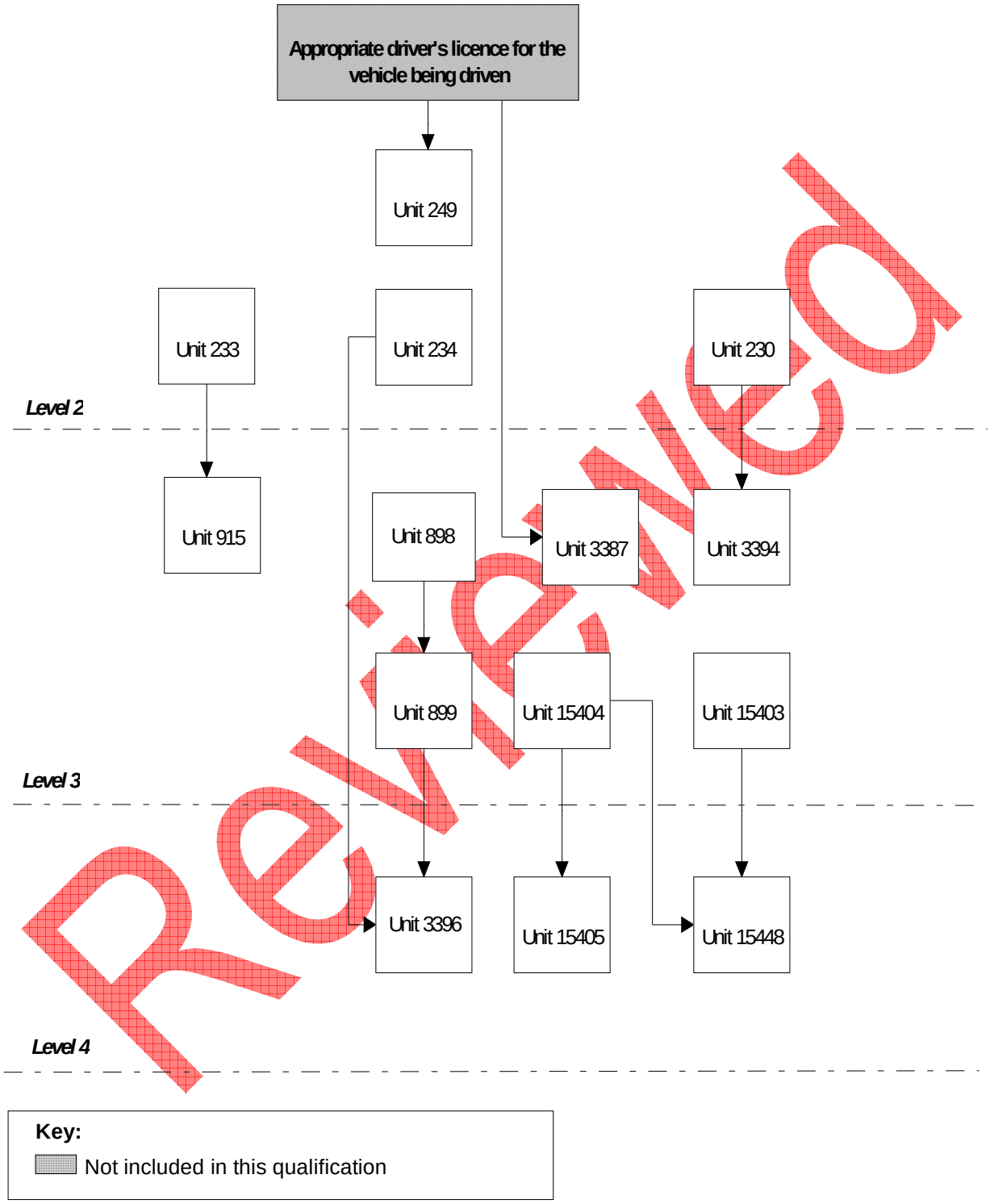
Classification

This qualification is classified according to the classification system listed on the Directory of Assessment Standards (DAS) and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

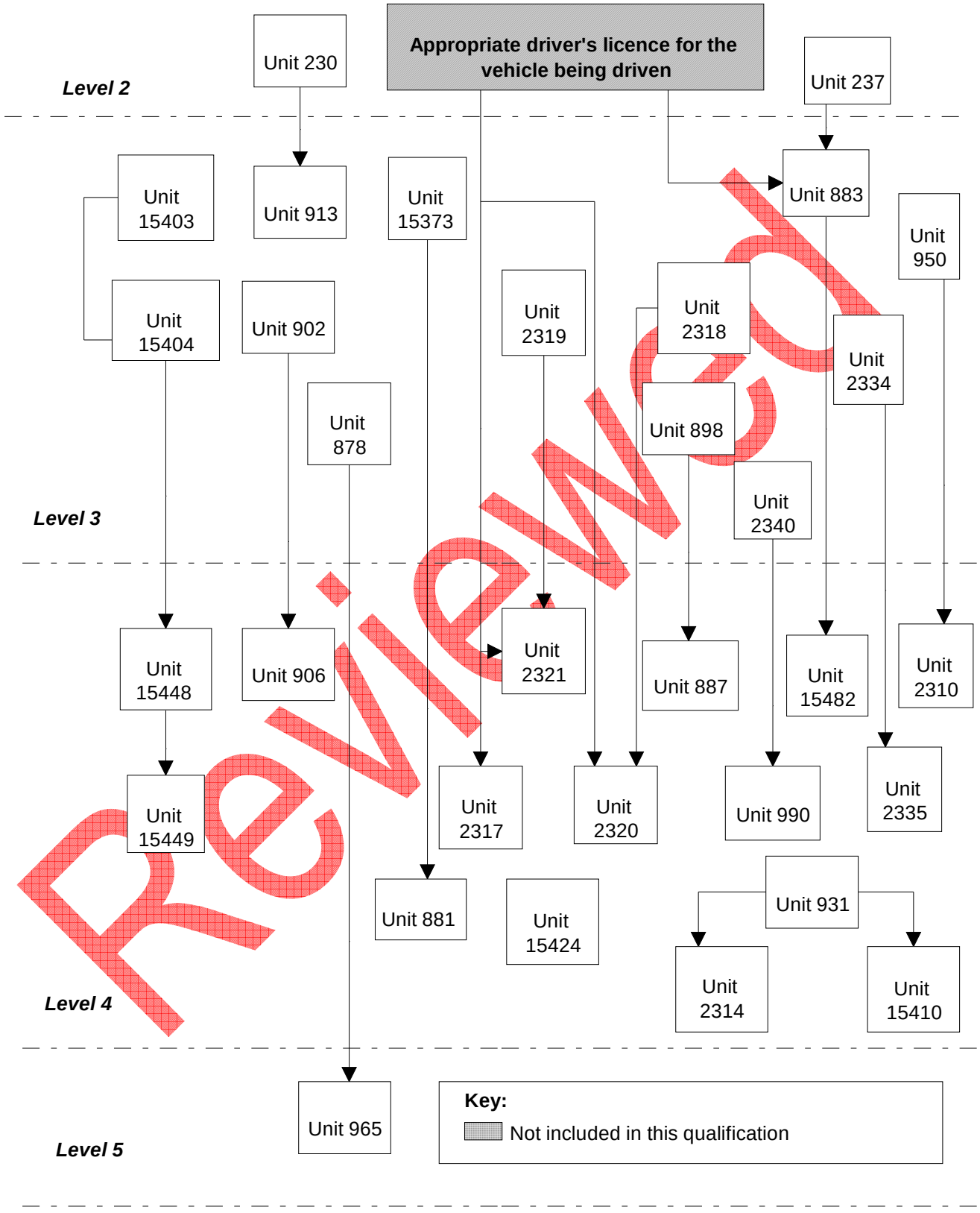
DAS Classification		**NZSCED**	
Code	**Description**	**Code**	**Description**
257	Engineering and Technology > Motor Industry	030503	Engineering and Related Technologies > Automotive Engineering and Technology > Vehicle Mechanics

Quality Management Systems
Providers and Industry Training Organisations must be granted consent to assess 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.

Prerequisite diagram for the core compulsory unit standards



Prerequisite diagram for the core elective unit standards



Prerequisite diagram for strand compulsory and strand elective unit standards