Title	**Repair vehicle chassis damage**		
Level	**4**	**Credits**	**10**

Purpose	This unit standard is for people who work in the collision repair industry. People credited with this unit standard are able to diagnose vehicle chassis damage, prepare to align the chassis, and align the chassis.

Classification	Motor Industry > Collision Repair

Available grade	Achieved

Guidance Information

1 Legislation and references
Performance of the outcomes of this unit standard must comply with the following:
Health and Safety at Work Act 2015;
Land Transport Rules.

2 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

Land Transport Rules are available online at https://www.nzta.govt.nz/.

3 Definitions
Company requirements refer to instructions to staff on policy and procedures which are documented in memo or manual format and are available in the workplace. These requirements include but are not limited to – company specifications and procedures, work instructions, manufacturer specifications, product quality specifications and legislative requirements.
Heavy vehicle refers to a motor vehicle Class MD3, MD4, ME, NB, NC, TC or TD.
Light vehicle refers to a motor vehicle Classes passenger vehicle MA, MB, MC; omnibus MD, MD1, MD2; and goods vehicle NA.
Vehicle classes | Waka Kotahi NZ Transport Agency (nzta.govt.nz)
Service information may include but is not limited to – vehicle structural repairer code of practice, technical information of a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions and specifications; technical terms and descriptions; and detailed illustrations. This may be accessed from the manufacturer.
Suitable tools and equipment means industry approved tools and equipment that are recognised within the industry as being the most suited to complete the task in a professional and competent manner with due regard to safe working practices.

4 Range
Assessment may be carried out on a light vehicle or a heavy vehicle. Repair to heavy vehicle chassis must comply with Land Transport Rule: Heavy Vehicles 2004, Rule 31002, section 7 Repair 7.1(2).

Evidence of two chassis repairs is required.

5 Assessment
Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer's specifications, service information, company and legislative requirements.

Outcomes and performance criteria

Outcome 1

Diagnose vehicle chassis damage.

Performance criteria

1.1 Types, location, and thickness of metals on the vehicle are identified.

Range may include but is not limited to – mild steel, high-strength steel, ultra-high strength steel, aluminium, composite.
tensile strength, yield strength.

1.2 Identify and evaluate the extent of the damage and generate a repair plan.

Range may include – side, full frontal, rear end, underbody, angle, direct damage, indirect damage.

1.3 The effects of chassis damage on the body are established.

Range body and panel alignment, alignment of mechanical parts.

1.4 Misaligned and damaged mechanical parts are checked, assessed and recorded as part of the repair plan.

Range may include but is not limited to – steering, suspension, power train, engine, exhaust system, hydraulic and air pipes, brake cylinders, front and rear axles and wheels.

1.5 Misaligned chassis rails and cross members are checked, assessed and recorded as part of the repair plan.

Outcome 2

Prepare to align the chassis.

Performance criteria

2.1 Suitable tools and equipment for aligning the chassis are selected to enable the repair.

Range may include but is not limited to – welding equipment, body jacks, levers, drill, clamps, chains, alignment and measuring systems, metal cutting equipment, industry-approved chassis straightening equipment.

2.2 Electronic systems are identified and protected.

2.3 Measurements of the chassis are carried out prior to realignment and recorded as part of the repair plan.

Range may include but is not limited to – tape measure, and any one of – equipment trammel gauge, centring gauges, dedicated fixture measuring systems, laser systems, computer systems, universal measuring systems.

Outcome 3

Align the chassis.

Performance criteria

3.1 Chassis is secured to alignment machine.

3.2 Pull angles and anchor points are identified, and clamps and/or hooks are attached to the vehicle body and secured.

3.3 Demonstrate knowledge of manufacturer’s recommendations for use of heat to align a chassis.

Range manufacturer temperature limitations, time heat can be applied to metal.

3.4 Damaged chassis is realigned.

3.5 Measurements are carried out and recorded after realignment.

3.6 Confirm there is no damage to adjacent parts and fittings as a result of realigning the chassis.

3.7 Painting and anti-corrosion procedures to bare metal areas are carried out.

Planned review date	31 December 2027

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 November 1996	31 December 2018
Review	2	28 February 2001	31 December 2018
Review	3	26 November 2007	31 December 2018
Review	4	21 April 2016	31 December 2027
Review	5	25 May 2023	N/A

Consent and Moderation Requirements (CMR) reference	0014

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.