

Title	Measure, mark out, and make and assemble sub-frame for a vehicle in the coachbuilding industry		
Level	4	Credits	6

Purpose	People credited with this unit standard are able to: prepare to make and assemble a sub-frame for a vehicle in the coachbuilding industry; measure and mark out the sub-frame; and make and assemble the sub-frame.
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Classification	Motor Industry > Coachbuilding
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Available grade	Achieved
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Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, company requirements and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 2 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the Health and Safety at Work Act 2015 and any subsequent amendments or replacements.
- 3 Definitions
Company requirements refer to instructions to staff on policy and procedures that are available in the workplace. These requirements may include – company policies and procedures, work instructions, product quality specifications and legislative requirements.
Service information refers to information such as technical information for a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions; technical terms and descriptions; and detailed illustrations.

Outcomes and performance criteria

Outcome 1

Prepare to make and assemble a sub-frame for a vehicle in the coachbuilding industry.

Performance criteria

- 1.1 Vehicle identification plate and code numbers that enable parts to be procured and to ensure vehicle compliance are identified.
- 1.2 Loading requirements are identified.

- 1.3 Vehicle height and clearance between wheels, suspension travel, and fuel tank are identified.
- 1.4 Sub-frame material is selected and procured.
- Range may include – mild steel, high strength steel, ultra-high strength steel, galvanised steel, aluminium; tensile strength, yield strength.

Outcome 2

Measure and mark out the sub-frame.

Performance criteria

- 2.1 Main runners and cross bearers are measured and legibly marked.
- 2.2 Coaming rails are measured and legibly marked.
- Range may include – width, length, position of cross bars and wheels; relevance to flooring materials.

Outcome 3

Make and assemble the sub-frame.

Performance criteria

- 3.1 Metal is cut and all measurements are accurate.
- 3.2 Drilling is carried out.
- 3.3 Sub-frame is laid out and clamped in preparation for assembly.
- Range may include – front and rear cross bearers and main runners; sides of equal length and parallel to each other, ends of cross bearers in line in horizontal and longitudinal directions, diagonals equal, not twisted; allowance for wheel arch.
- 3.4 Sub-frame is assembled and joined.
- Range may include – welding, mechanical fastenings; sides of equal length and parallel to each other, ends of cross bearers in line in horizontal and longitudinal directions, diagonals equal, not twisted.
- 3.5 Frame alignment measurements are checked
- 3.6 Reinforcing and bracing are added to frame.

3.7 Frame is fitted on vehicle.

Range may include – mounting brackets, packers, flexible mountings.

3.8 Painting and anti-corrosion procedures are carried out.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 September 1997	31 December 2023
Revision	2	14 November 2000	31 December 2023
Revision	3	16 October 2003	31 December 2023
Revision	4	25 February 2008	31 December 2023
Review	5	25 November 2021	N/A

Consent and Moderation Requirements (CMR) reference	0014
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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.