

# Queensland Code of Practice: Vehicle Modifications (QCOP)

Code LS15: Gross Vehicle Mass Rating of Light Vehicles - Modifications

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# CODE LS15

## Gross Vehicle Mass Rating of Light Vehicles – Modifications

### 1.0 Scope

The LS15 modification code allows an Approved Person (AP) to certify physical modifications leading to the re-rating of Gross Vehicle Mass (GVM) of a light vehicle (GVM 4500 kg or less) when those modifications are carried out in accordance with instructions in the relevant LS11 design package. In addition to the requirements in this code, the AP providing LS15 certification must follow the instructions in the design package that came with the relevant LS11 design certification.

#### 1.1. Certifications permitted under LS15 code

Light vehicle modifications of the following types may be certified under LS15 code:

- Re-rating of a light vehicle's GVM by modifying it according to the instructions in an LS11 design certification issued for the same/make/model/variant/chassis series;
- Re-rating of a light vehicle's GVM in accordance with a letter from the original vehicle manufacturer.

#### 1.2. Certifications not permitted under LS15 code:

Light vehicle modifications of the following types must not be certified under LS15 code:

- Modifications other than those covered under Section 1.1.

### 2.0 General Requirements

#### 2.1. Typical Modifications

Typical physical modifications under LS15 may include changes to braking system, fitting of alternate suspension and/or additional chassis reinforcement and/or additional axle. These collectively may permit a different GVM rating.

#### 2.2. Re-rating without Modifications

In some cases, re-rating of GVM may involve no physical changes. For example, where a letter is issued by the original vehicle manufacturer clearly indicating that no changes are required for re-rating. Care must be taken when comparing vehicle components, as some properties may not be obvious and evident. In these instances, evidence must be retained to demonstrate that the vehicle is identical to the manufacturer's letter.

### **2.3. Affected ADRs**

The modified vehicle must continue to comply with the Australian Design Rules (ADRs) which are relevant to it. This includes ADRs which applied to it when it was originally constructed and the ADRs that apply to it after it is modified. If there is a conflict, the ADR requirement after modification takes priority.

### **2.4. Work Instructions from the LS11 Design Package**

Modifications must be carried out according to the work instructions that are in the design package that came with the relevant LS11 design certification. Replacement parts must conform to the design package.

### **2.5. Testing and Inspection**

Testing and inspection specified in the design package must be completed and the evidence of the same must be held by the LS15 certifier. This includes completing the checklist(s) that came with the LS11 design package. Such checklist(s) must not be confused with the LS15 checklist given at the end of this code. The LS15 checklist also must be completed.

## **3.0 Specific Requirements**

When certifying the re-rated GVM under LS15, the chassis frame, suspension, axles and drive train components must be suitable for the re-rated GVM. All instructions provided in the LS11 design package or the original vehicle manufacturer's re-rating letter must be followed.

The following specific requirements must be met.

### **3.1. Tyres and Rims**

The tyres and rims must be selected to comply with the requirements in the relevant LS11 design package or the original vehicle manufacturer's re-rating letter.

If a revised tyre placard is required to be fitted under the LS11 design package, the revised tyre size and load rating must also appear on the modification plate, the Load Capacity Label and in the owner's handbook.

### **3.2. Chassis Frame**

The chassis frame of the modified vehicle must be according to the LS11 design package or identical to the original vehicle manufacturer's alternate model/variant depending on the pathway of certification.

### **3.3. Brakes**

The complete braking system must be as specified in the LS11 design package or identical to the vehicle manufacturer's specifications for the alternate model/variant depending on the pathway of certification.

### **3.4. Axles and Suspension**

When loaded to the re-rated GVM, additional loads are placed on axles. Axles must conform to the requirements in LS11 design package or the original vehicle manufacturer's re-rating letter.

Where certification is by comparison with a manufacturer's reference vehicle, the axle and suspension assemblies fitted to the modified vehicle must be identical to those fitted by the manufacturer to the reference vehicle.

Axle ratings as specified in the LS11 design package must also be specified on the Load Capacity Label and in the owner's handbook.

### **3.5. Fabrication**

All work must be performed in accordance with recognised engineering standards. Cutting, heating, welding or bending of components should be avoided by choosing unmodified production components wherever possible.

### **3.6. Vehicle Eligibility and In-service Condition**

Before carrying out the modifications and certification under LS15 code, the vehicle details (make/model/variant/chassis series) and the in-service condition of the vehicle must be checked, as specified in the LS11 design package or the original vehicle manufacturer's re-rating letter, to ensure that the vehicle is eligible for re-rating and its condition is safe and suitable.

Step-1: Confirm that the vehicle make/model/variant/chassis series and build year is within the scope of the LS11 design package or the original vehicle manufacturer's re-rating letter.

Step-2: Inspect and confirm that the condition of the vehicle is safe and serviceable for re-rating. The instructions in the LS11 design package must be followed to ensure that the chassis frame, suspension, brakes and so on are in a safe and serviceable condition for re-rating. Evidence of this inspection must be recorded in the checklist provided in the design package.

### **3.7. Manufacturer's Letter**

If re-rating is based on the original vehicle manufacturer's letter, the manufacturer's letter must contain at least the following information:

- Vehicle manufacturer's details (i.e. manufacturer's letterhead with contact information).
- Make/model/variant of the vehicle.
- Vehicle Identification Number (VIN) of the particular vehicle being re-rated.
- Details of all physical changes required for re-rating (including the details of the specific upgrade parts to be fitted).
- Re-rated GVM.
- Signature and date by the delegate of the original vehicle manufacturer.

## 4.0 Owner's Handbook and Load Capacity Label

The vehicle operator must be adequately informed of the changes.

### 4.1. Owner's handbook

- 4.1.1 To inform the vehicle operator about the vehicle's load capacity and tyre and rim requirements, the vehicle's handbook should be updated. The update must provide specific details of the tyres, rims and the load capacity.
- 4.1.2 Of particular importance, is any sliding reduction in legal towing mass as the tow vehicle is loaded to its re-rated GVM and/or vertical load on the tow ball (ball weight).
- 4.1.3 If the vehicle handbook is not available, this information must be provided in written form to the owner of the vehicle.
- 4.1.4 A copy of all the information provided to the vehicle owner must be retained as part of the evidence of this certification.

### 4.2. Load capacity Label

- 4.2.1 A Load Capacity label must be fitted to the display information as explained below.
- 4.2.2 The Load Capacity Label must be made of durable material and letter size and contrast should be similar to the tyre placard.
- 4.2.3 The Label must be fitted to the vehicle, as close as practicable, to the vehicle's tyre placard.

## Load Capacity Label

| Item  | Information |
|---|-------------|
| SSM Approval Number (if applicable) <sup>1</sup>  |             |
| Re-rated GVM <sup>2</sup>   | kg          |
| GCM Rating by Original Vehicle Manufacturer (if available) <sup>3</sup>                                       | kg          |
| Maximum Allowed Front Axle Rating <sup>4</sup>  | kg          |
| Maximum Allowed Rear Axle/s Rating <sup>5</sup>   | kg          |
| For further information regarding towing capacity and operation please refer to the vehicle owner's handbook. |             |

### Explanatory Notes

1. Applicable only if GVM re-rating is based on SSM approval. If not applicable, indicate XXXX
2. Re-rated GVM certified under LS11 design package
3. GCM rating, if published by the OVM in owner's handbook or on OVM website. If not published, indicate XXXX
4. Front axle rating as published by the OVM in owner's handbook/OVM website, or as specified in the LS11 design package.
5. Rear axle rating as published by the OVM in owner's handbook/OVM website, or as specified in the LS11 design package.

## Checklist LS15

### CODE LS15: Gross Vehicle Mass Rating of Light Vehicles - Modifications

Form No: LS15

Provide an answer to each of the following (Y=Yes, N=No)

|   |  |
|---|--|
| <b>Modification Certificate Number:</b> _____ |  |
| <b>1</b>                                      | <b>General</b>   |
| 1.1   | <p>Have you received a copy of one of the below and understood it?<br/>Either</p> <p>The LS11 design package with all the instructions to modify, test and re-rate vehicle of this make/model/variant/chassis series?<br/>LS11 Design Certification No. _____ Date _____</p> <p><b>OR</b></p> <p>A letter from the original vehicle manufacturer for re-rating?<br/>Manufacturer's Letter Reference _____ Date _____</p> <p><b>Note:</b> If you do not have one of the above, you must not certify this vehicle.</p> |
| <b>2</b>                                      |  |
| <b>Chassis Frame</b>                          |  |
| 2.1   | <p>Does the chassis frame conform to the detail construction, section properties and cross-members of the LS11 design package or the original vehicle manufacturer's letter?</p>   |
| 2.2   | <p>Is the chassis frame structurally sound, free from deformation, cracks and rust perforation?<br/>Does the chassis frame pass the inspection requirement mentioned in the LS11 design package?</p>   |
| <b>3</b>                                      |  |
| <b>Brake system</b>                           |  |
| 3.1   | <p>Is the vehicle's braking system as specified in the LS11 design package or the original vehicle manufacturer's letter?</p>  |
| 3.2   | <p>Is the braking system in serviceable condition, free from leaks, wear and fouling/stretching?<br/>Does it pass the inspection requirement mentioned in the LS11 design package including any testing specified?</p>   |

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|          |   |  |
|----------|---|--|
| <b>4</b> | <b>Tyres and Rims</b>   |  |
| 4.1      | Does the Modification Plate record the correct tyre and rim sizes and load ratings for the modified vehicle?  | <input type="checkbox"/> Y<br><input type="checkbox"/> N |
| 4.2      | If a revised tyre placard is required, has it been fitted to the vehicle and a copy attached to this checklist?   | <input type="checkbox"/> Y<br><input type="checkbox"/> N |
| 4.3      | Do the tyres and rims fitted conform to the modification plate and the tyre placard?  | <input type="checkbox"/> Y<br><input type="checkbox"/> N |
| <b>5</b> | <b>Eligibility- Make/model/variant/chassis series</b>   |  |
| 5.1      | Does the vehicle meet the eligibility criteria as specified in the LS11 design package or the original vehicle manufacturer's letter?   | <input type="checkbox"/> Y<br><input type="checkbox"/> N |
| <b>6</b> | <b>Load Capacity Information</b>  |  |
| 6.1      | Is the Load Capacity Label attached to the vehicle  | <input type="checkbox"/> Y<br><input type="checkbox"/> N |
| 6.1      | Has the vehicle's handbook been amended and a copy of the relevant modified content attached to this checklist?   | <input type="checkbox"/> Y<br><input type="checkbox"/> N |
| <b>7</b> | <b>Workmanship</b>  |  |
| 7.1      | Is the quality of the workmanship to a satisfactory standard?   | <input type="checkbox"/> Y<br><input type="checkbox"/> N |
| 7.2      | Is(Are) the checklist(s) required in the LS11 design package completed?<br>OR<br>Are all the parts updated according to the original vehicle manufacturer's re-rating letter?           | <input type="checkbox"/> Y<br><input type="checkbox"/> N |
| 7.3      | Are all the inspections and tests as required in the LS11 design package completed?<br>OR<br>Does the modified vehicle conform to the original vehicle manufacturer's re-rating letter? | <input type="checkbox"/> Y<br><input type="checkbox"/> N |
| 7.4      | Have you kept all supporting documents you used to certify this modification and photos of the modified vehicle for future audit?   | <input type="checkbox"/> Y<br><input type="checkbox"/> N |

**Note:** If the answer to any question is **N (No)** the design cannot be certified under LS15 code.

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| CERTIFICATION DETAILS                           |  |  |  |  |  |              |  |  |  |  |             |                            |  |  |  |  |
|---|--|--|--|--|--|--------------|--|--|--|--|-------------|----------------------------|--|--|--|--|
| <b>Make</b>                                     |  |  |  |  |  | <b>Model</b> |  |  |  |  |             | <b>Year of Manufacture</b> |  |  |  |  |
| <b>VIN</b>                                      |  |  |  |  |  |              |  |  |  |  |             |                            |  |  |  |  |
| <b>Chassis Number<br/>(If applicable)</b>       |  |  |  |  |  |              |  |  |  |  |             |                            |  |  |  |  |
| <b>Brief Description of Modification/s</b>      |  |  |  |  |  |              |  |  |  |  |             |                            |  |  |  |  |
| <b>Vehicle Modified By</b>                      |  |  |  |  |  |              |  |  |  |  |             |                            |  |  |  |  |
| <b>Certificate Number<br/>(If applicable)</b>   |  |  |  |  |  |              |  |  |  |  |             |                            |  |  |  |  |
| <b>Vehicle Certified By (<i>Print</i>)</b>      |  |  |  |  |  |              |  |  |  |  |             |                            |  |  |  |  |
| <b>Signatory's Employer<br/>(If applicable)</b> |  |  |  |  |  |              |  |  |  |  |             |                            |  |  |  |  |
| <b>Signatory's Signature</b>                    |  |  |  |  |  |              |  |  |  |  | <b>Date</b> | _____                      |  |  |  |  |