



## Information Bulletin IB-134

# Light Vehicle Modification Standards

### Summary

- All vehicles using Western Australian roads must comply, where applicable, with the *Road Traffic (Vehicles) Regulations 2014* (The Regulations) and the Australian Design Rules (ADR).
- The National Code of Practice for Light Vehicle Modifications (VSB14 Ver.2) is utilised by the Department of Transport (DoT) to assist defining the requirements and standards of light vehicle modifications to ensure compliance with the relevant ADRs and legislation is maintained.

### Background

All vehicles using Western Australian roads must comply, where applicable, with The Regulations and the ADRs.

Regulation 235 (2) of The Regulations relates to the 'Alteration of Vehicles':

A person must not, without the approval of the CEO, alter a motor vehicle or trailer from:

- the manufacturer's specifications; or
- the motor vehicle or trailers form when it was first licensed, in regard to any part of its construction, equipment or fittings that was effected, manufactured or constructed in accordance with an ADR by making an alteration referred to in the table to this sub regulation.

To assist with the administration of this law, DoT utilises VSB14 to ensure that common modifications are performed in a manner which will make them acceptable in all Australian jurisdictions.

VSB14 provides the technical requirements that need to be met when modifying or constructing a light vehicle and is utilised in WA as the basis for determining the compliance of any modifications. There are however some deviations from, or clarifications to VSB14 for light vehicle modifications requiring approval for registration in WA. This Information Bulletin serves as clarification on these irregularities.

### Purpose of this Bulletin

VSB14 applies to all applicants who wish to modify their light vehicle away from the manufacturer's original specifications. It is utilised to ensure consistency, fairness and that the public are aware of the requirements before starting any costly and timely modifications.

Different types of modifications require different levels of approval ranging from no approval needed, through to the undertaking of tests and compilation of a report by a DoT approved Automotive Consultant and DoT Vehicle Safety and Standards (VSS) signed approval.

Modifications to light vehicles are classified within three categories (defined further on the DoT website);

- **Minor:** modifications (generally accessory fitments) that do not require approval or inspection;
- **Simple:** modifications that require an inspection at a DoT Authorised Inspection Station; and
- **Complex:** modifications that require engineering certification and DoT VSS signed approval.

Under The Regulations, the CEO of DoT may grant approval to a modification on a vehicle, i.e. when the vehicle is altered away from its form when it was first registered, or away from the manufacturer's specifications.

WA utilises VSB14 as its basis for modification approvals. However to either help align VSB14 with WA industry standards, or to assist the interpretation of certain sections to provide consistency and clarity of the requirements for approval, the following shall be considered;

#### Inconsistent with VSB14

Section LA – Engine

LA3 – Supercharger and Turbocharger Installation;

These devices are able to be fitted to the original manufacturer's engine utilising LA3. Engine capacity to weight calculations specified in Table LA1 are not considered for LA3 provided the engine is the manufacturer's option for that vehicle model and the vehicle was originally complied to ADR 69/00 Full Frontal Impact Occupant Protection.

LT3 – Exhaust Emissions – IM240 Test;

The emission test (IM240) specified in VSB14 is not required. The general requirements in regards to vehicle emissions, including the specific ADR the vehicle was originally complied to meet, are still applicable however a 5-gas emission test will need to be performed in lieu of an IM240 test due to a lack of suitable testing facilities in WA. The emission limits specified by DoT are available to approved Automotive Consultants from VSS.

## Supplementary to VSB14

### Section LA – Engine

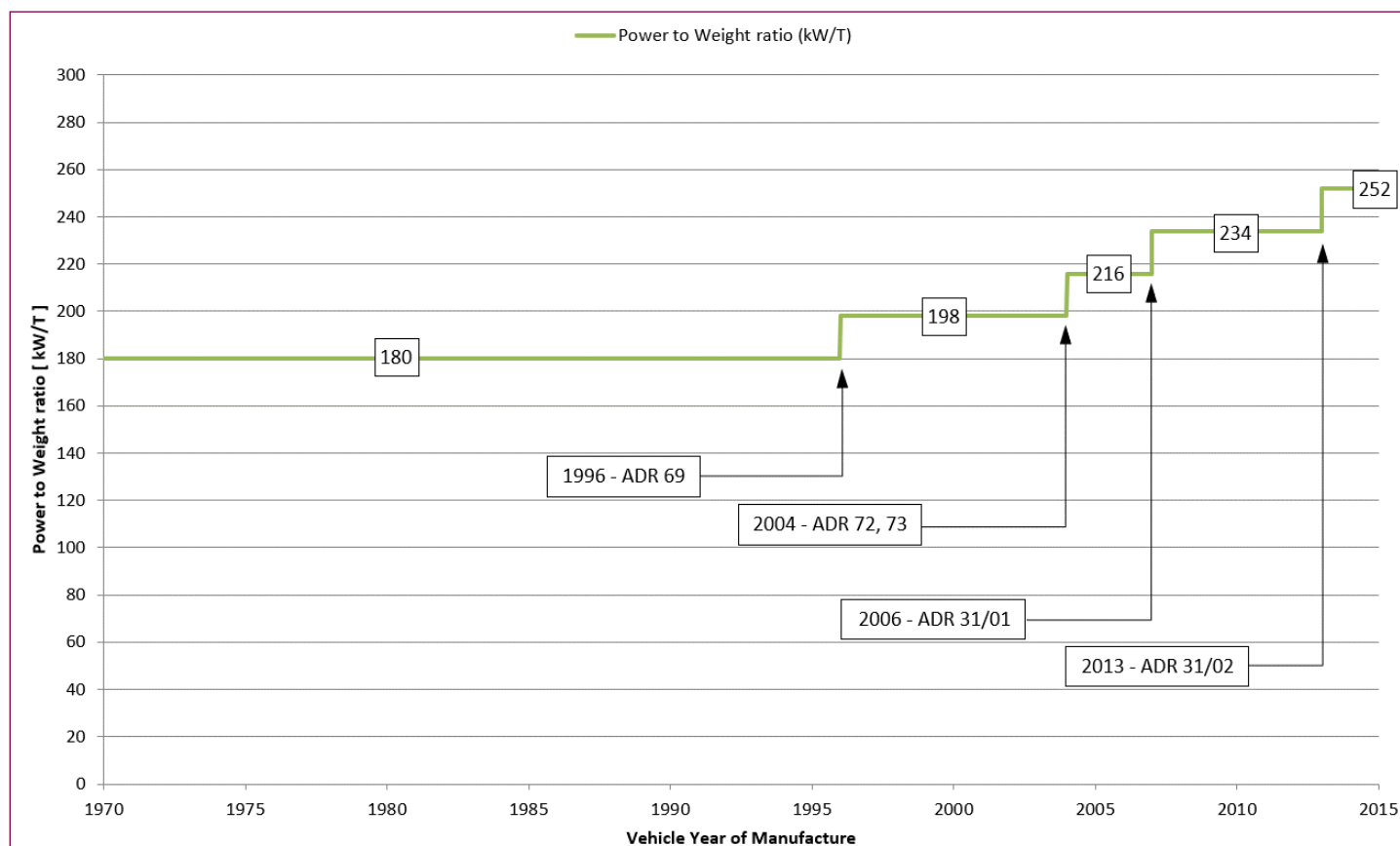
#### 2.13 – Engine Capacity;

Table LA1 Recommended Maximum Engine Capacity was developed to define the power to weight ratio of a modified vehicle. With the advancement of modern automotive components, this table is insufficient as a stand-alone means of vehicle modification assessment.

Furthermore, the following is stated in VSB14: An engine may not be a suitable replacement even if its capacity falls within the limits specified in Table LA1.

Table LA1 was initially developed over 20 years ago as means of limiting the power increase that a modified vehicle was permitted to have. Since that time, advances in engine technology have resulted in a significant increase in engine power in relation to capacity.

Therefore, to clarify this statement, in addition to Table LA1, the following Power to Weight ratio has been developed;



**Diagram 1 - Power to weight ratio limit**

This Power to Weight ratio considers safety and occupant protection advancements of the automotive industry since the initial introduction of ADRs and shall be used in conjunction with Table LA1 when assessing any replacement or modified engine subject to LA1, LA2 and/or LA4 of VSB14.

Any vehicle that has an unmodified power-to-weight ratio that falls outside the limit will be assessed on a case by case basis.

### Related documents and links

Australian Design Rules and Code of Practice for Light Vehicle Modifications: Vehicle Safety Bulletin VSB14

[www.infrastructure.gov.au](http://www.infrastructure.gov.au)

Road Traffic (Vehicles) Regulations 2014

[www.legislation.wa.gov.au](http://www.legislation.wa.gov.au)

Modify or construct a vehicle information

[www.transport.wa.gov.au](http://www.transport.wa.gov.au)

### Correspondence and enquiries

For enquiries contact VSS on 13 11 56.