

NATIONAL CODE OF PRACTICE



VSB 6

HEAVY VEHICLE MODIFICATIONS

Section B
Replacement Transmissions

HEAVY VEHICLE MODIFICATIONS**1. SCOPE**

This Section, which is part of the National Code of Practice for Heavy Vehicle Modifications, relates to the fitting of replacement transmissions to heavy vehicles.

It outlines the minimum installation and performance requirements for the fitting of replacement manual or automatic transmissions on heavy vehicles. It also covers the fitting of ancillary and transfer gearboxes or transfer cases.

2. ADRs AFFECTED

ADR 18, 18/..; where speedometer accuracy may be affected.

ADR 28,28A,28/..,ADR 83/.. where engine speeds may be altered beyond the range tested.

ADR 35, 35A, 35/..; (where the ratio changes increases the maximum speed from less than 70 km/h to over 80 km/h).

ADR 42/..; where the fitting of an automatic transmission is carried out.

ADR 65/..; where gear ratio changes may affect the maximum speed for vehicles with speed limited by gearing.

3. AFFECTING MODIFICATIONS

The fitting of any transmission or gearbox that is not an option offered by the original manufacturer of the vehicle.

4. GENERAL REQUIREMENTS

This Section applies to all vehicles and should be used in conjunction with other sections that are specific for the type of modification that is being performed. The following requirements must be met:

- Replacement gearboxes must have adequate torque capacity for the output of the vehicle's engine.
- In relation to the vehicle's engine, the replacement gearbox must provide sufficient reduction to permit the vehicle when laden to its rated GCM, to meet the gradeability and startability requirements mentioned in the S3 Modification Code in VSB 6 (typical gradeability 23% and typical startability 13%).
- The fitting of the replacement gearbox must not require removal or weakening of sub-frames, chassis, cross members or body members.
- Any openings into the cab necessary for the gearshift control must be adequately sealed to prevent ingress of exhaust gases into the vehicle cabin.

5. RECORDING

It is not feasible in this code to cover every aspect of analysis that might be necessary in a transmission modification. See Appendix B1 for:

- Summary of the scope of modification work that may be certified under Modification Code B.

A list of Sections of the National Code of Practice covering other areas of the vehicle which may have been affected by the modification and which should be analysed to determine whether they too require certification.

It is suggested that records such as the analysis work, calculation sheets, sketches, vehicle specification data, and the completed Check List be retained by the Certifying Officer for at least the period specified in Part A of this National Code of Practice.

HEAVY VEHICLE MODIFICATIONS

Appendix B1

Modification Code B1

TRANSMISSION SUBSTITUTION OR ADDITIONAL FITTING

Modifications that are covered under this Code are:

1. Fitting of alternative transmission.
2. Fitting of additional transmission.
3. Altering of transmission gear ratios.
4. Conversion from manual transmission to automatic and vice versa.

NOTE: The modified vehicle/modifications must continue to comply with all applicable ADR's, Australian Standards or Regulations/Acts.

Outlined below are areas of the vehicle that may have been affected by the modifications and that may require recertification, testing and/or data to show compliance of the modified vehicle.

DETAIL	REQUIREMENTS
Change of Gear Ratio	ADR 35, 35A, 35/.. (This applies where the vehicle's maximum speed is increased from below 70km/h to above 80km/h); ADR 28/.., ADR 83/..(as applicable); National Code of Practice
Vehicle Startability & Gradeability	National Code of Practice - Section S
Maximum Road Speed	National Code of Practice - Section A
Transmission Mountings	Good engineering practice
Tail Shaft	National Code of Practice - Section C
Fitting of Automatic Transmission	ADR 42/..;
Change Speedo Ratio to obtain accurate speedometer reading	ADR 18, 18/..;
Road speed limiting	ADR 65/..;

HEAVY VEHICLE MODIFICATIONS

Checklist for Modification Code B1

TRANSMISSION SUBSTITUTION OR ADDITIONAL FITTING