Vehicle Standards Instruction (Light 2.2)

Individually Constructed Vehicles

Released July 2014

This Vehicle Standards Instruction (VSI) has been produced by the Department of Transport and Main Roads (TMR) to explain the process that must be followed when constructing an Individually Constructed Vehicle (ICV).

Should a person have any enquiries about constructing or certifying an ICV must contact an Approved Person Engineer.

1. Introduction

The Individually Constructed Vehicle Scheme (the Scheme) was introduced to allow enthusiasts to design and construct a unique and individual vehicle for their own pleasure and have access to the road network.

With the privileges given under the Scheme comes responsibility, obligation and accountability from all parties involved in the construction and certification of a vehicle under this Scheme to ensure that:

- the vehicle is safe for use on the road network.
- the vehicle complies with all conditions and limitations under the Scheme.

An individual may construct up to three (3) lCVs in a 12 month period.

2. What is an Individually Constructed Vehicle (ICV)?

An ICV is manufactured as a one-off vehicle.

An ICV is built to an individual plan or design and includes; a vehicle constructed to the builder's own unique design, certain kit cars and certain replicas of production vehicles.

An ICV may be composed of parts from one or more ***Production Vehicles***. The parts do not need to be new.

An ICV is subject to the vehicle certification procedures under the Motor ***Vehicle Standards Act 1989 (MVSA)***.

An ICV has a Gross Vehicle Mass (GVM) of not more than 4.5 tonnes.

An ICV is a vehicle constructed under the supervision of a TMR Approved Person (AP) Engineer.

An ICV is a vehicle which complies with all applicable Australian Design Rules (ADRs) and construction standards as defined in this VSI and the ***National Code of Practice for Light Vehicle Construction and Modification*** (VSB 14) approved under the ***Transport Operations (Road Use Management) Act 1995*** and subordinate legislation.

ICVs include certain ***kit cars*** and certain production vehicle replicas that have been assembled in accordance with the production limitations mentioned above.

3. What is Not an Individually Constructed Vehicle?

An ICV is not a production vehicle or modified production vehicle

An ICV is not an extensively modified production vehicle

ICVs are not vehicles manufactured on a commercial basis

If 3 or more ICVs are manufactured by a person in a 12 month period VSB 14 does not apply to these vehicles. These vehicles are subject to the vehicle certification procedures under the MVSA.

An ICV can not use a vehicle body or chassis from a body in white, statutory write off or imported vehicle (which has not received Federal Import Approval).

This scheme is not intended to allow 'production" whereby individuals or manufacturers supply vehicles to the market, offer vehicles for sale or bypass the federal compliance schemes or requirements of the MVSA.

4. Conformance with ADRs and Special Conditions

4.1. Conformance with ADR Vehicle Category

Vehicles constructed under the Scheme must comply with all requirements of the ADRs applicable to the vehicle category (apart from the exemptions mentioned in section 6.2 below) at the time the Approved Person attaches the modification plate and Vehicle Identification Number to the vehicle.

The following points should be carefully considered:

- The full ADR Vehicle Category and sub category definition and description
- Any ADRs which may change during the construction process
- The limits (mass, dimension, engine power, etc) placed on an ADR Vehicle Category
- Some ADR Vehicle Categories may appear to overlap (some 3 wheel vehicles).
- Ensure the requirements of each category and sub category are understood and clearly met. Contact TMR for clarification if needed.

Vehicles that do not fall into an ADR Vehicle Category or are not built to conform to all requirements of an ADR category are **not** permitted under this Scheme.

4.2. ADR Compliance Dates and Concessions

4.2.1. General ADR Compliance Date, Excluding Engine Emissions

When certifying an ICV the AP Engineer must ensure that the vehicle complies with all the ADRs applicable at that time. Therefore, it is important the AP Engineer advises the vehicle owner of any ADRs which may potentially change during the construction process, as it may be several years before the vehicle is ready for certification.

4.2.2. ADR Compliance Date for Engine Emissions

TMR will accept engines which comply with ADR 37/01 (Emission Control for Light Vehicles) or later.

4.2.3. Concession for Small Engines in LE Category Vehicles

Non-motorcycle four stroke engines that are 1000cc or less, used in LE category vehicles, will be considered equivalent to motorcycle engines for compliance.

4.2.4. Exemption from Crash Test ADRs

lCVs are exempt from ADR69/. . , ADR72/. . and ADR73/. . but not from ADR 29/. . (or, for vehicles without doors, the intent of ADR 29/. .). Further detail is provided within the requirements of Annex "C".

While ICVs are exempt from some nominated ADR requirements, it is expected that all lCVs are constructed to good engineering standards to ensure a high level of crashworthiness and occupant protection is provided.

4.2.5 Exemption from Electronic Stability Control (ESC)

ICVs are exempt from the fitment of ESC as required by ADR31/.. Brake Systems for Passenger Cars. However, if fitted, the ESC must be tested and function in accordance to the requirements provided in ADR31/02.

4.3. Recommended Engine Capacities

The following section provides recommended engine capacities for all vehicle categories. However, whether the vehicle's engine capacity fits within these recommendations or exceeds them, the Approved Person Engineer must ensure the vehicle's structure and systems are suitable for the engine.

4.3.1. Engine Capacity Recommendations for Vehicles (Other Than L Group Vehicles)

Recommended Maximum Engine Capacity

MASS OF VEHICLE	Engine Capacity	
	Naturally Aspirated	Turbo/Supercharged
All vehicles with a tare mass less than **800 kg**.	tare mass (kg) x **3.0** = max. capacity in cc's	tare mass (kg) x **2.5** = max. capacity in cc's
All vehicles with a tare mass between **800 kg and 1100 kg**.	tare mass (kg) x **4.0** = max. capacity in cc's	tare mass (kg) x **2.75** = max. capacity in cc's
All vehicles with a tare mass more than **1100 kg**.	tare mass (kg) x **5.0** = max. capacity in cc's	tare mass (kg) x **3.0** = max. capacity in cc's

4.3.2. Engine Capacity Recommendations for LC Category Vehicles

2000 cc or less capacity when naturally aspirated
1300cc when turbo or supercharged.

4.3.3. Engine Capacity Recommendations for LE Category Vehicles

2400cc or less capacity when naturally aspirated
2000cc when turbo or supercharged.

5. Intention to Construct an ICV

Owners should discuss their intention to construct an ICV with an AP Engineer prior to the commencement of the project.

As initial approval by TMR is no longer required*, it is imperative that all aspects of the vehicle's design and construction be discussed to ensure the vehicle meets the requirements of the Scheme and no unexpected obstacles transpire. If the AP Engineer believes that any part of the proposed ICV may be contentious or not fit within the Scheme they are to contact Vehicle Standards to discuss the matter.

* In cases where a professional engineering service is required during the ICV construction and the area is not serviced by a Registered Professional Engineer of Queensland (RPEQ), initial approval by TMR is still required.

6. Construction of the ICV

6.1. General Safety

The ICV owner in conjunction with their AP Engineer, has a responsibility to ensure that the vehicle they are building complies with the relevant ADRs and is safe for themselves, passengers, other road users, pedestrians and the environment.

As ICVs are considered new vehicles they do not require a Safety Certificate to be issued for first registration. However, as these vehicles are often made up of a number of second hand components it is important to ensure that the vehicle and its components are safe for road use. Consequently the AP engineer must ensure that the vehicle is safe for road use and that is meets at least, the intention of the Vehicle Inspection Guidelines in the Approved Inspection Station (AIS) Code of Practice. If the AP Engineer does not believe they have sufficient experience to provide this statement, they may engage a 3rd party Approved Inspection Station Examiner who can provide this assurance.

lCVs must be constructed in accordance with the requirements of the National Code of Practice for Light Vehicle Construction and Modification and state based legislation including the ***Transport Operations (Road Use Management - Vehicle Standards and Safety) Regulation 2010***.

6.2. Owner Involvement

The owner may seek assistance in the design and construction of the vehicle to ensure vehicle safety, ADR compliance, structural integrity and durability.

7. Build number

At the beginning of the build process the AP Engineer and the vehicle owner must decide on a build number to be stamped on a substantial part of the vehicle. The build number ensures the vehicle, associated paperwork and inspections can be tracked and retrieved more easily through out the construction process. The build number will also assist if a vehicle is sold part way through construction.

8. ICVs Requiring RPEQ Endorsement

During the design and certification of the ICV if any professional engineering service* (as defined in the Professional Engineers Act 2002) is provided it must be endorsed by an engineer registered as a RPEQ. This can be either by the AP Engineer (if they are a registered RPEQ) or alternatively by a third party RPEQ registered engineer.

In some cases a RPEQ will not be readily available to consult/work with the Approved Person Engineer (for example, the AP Engineer is operating in a remote area). In these circumstances, the process outlined in Annex “B” must be followed.

**** professional engineering service*** means an engineering service that requires, or is based on, the application of engineering principles and data to a design, or to a construction or production activity, relating to engineering, and does not include an engineering service that is provided only in accordance with a prescriptive standard.

9. Issuing of a ICVs Vehicle Identification Number (VIN) and Identification Plate Exemption Permit

Refer Annex "A" - Approval Procedure for an ICV.

After the ICV has been constructed and the relevant testing performed, the AP Engineer must complete all of the documents listed in Annex "A" and forward them to TMR. Once TMR receives the correctly completed documents, a VIN and exemption permit will be issued for the vehicle.

When the VIN is obtained, the AP Engineer must ensure the VIN is correctly stamped onto the vehicle as per the requirements of section 13 "Stamping of a VIN on an ICV". The AP Engineer must also finalise the modification plate/s and associated paperwork and attached the modification plate to the vehicle.

Please note TMR will conduct random audits of these applications.

10. Stamping of a VIN on an ICV

The VIN should be clearly and legibly stamped as closely as possible to its modification plate on the chassis or frame at a location that is clearly visible.

The characters of the VIN must be:
(i) at least 7mm high on all motor vehicles other than motorcycles;
(ii) at least 4mm high on motorcycles; and
(iii) legible, uniform, in one line and less than one character width apart.

11. Registration of ICVs

Once a VIN has been allocated and stamped onto the ICV and an exemption permit issued to the vehicle owner, the vehicle is eligible for registration. The vehicle must be registered in the owner's name within 28 days or the VIN may be cancelled.

12. Modifying an ICV after approval

Once an ICV is approved and registered any further modification must be performed and certified under an approved code of practice prescribed by the ***Transport Operations (Road Use Management - Vehicle Standards and Safety) Regulation 2010***.

Additional Information

National Code of Practice for Light Vehicle Construction and Modification
(Vehicle Standards Bulletin 14)
http://www.infrastructure.gov.au/roads/vehicle_regulation/bulletin/index.aspx

Transport Operations (Road Use Management—Vehicle Standards and Safety) Regulation 2010
http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/T/TrantOpRUVSSR10.pdf

Third Edition Australian Design Rules
http://www.infrastructure.gov.au/roads/motor/design/adr_online.aspx

Australian Standards
http://www.saiglobal.com/online/

Professional Engineers Act 2002
https://www.legislation.qld.gov.au/LEGISLTN/CURRENT/P/ProfEnginA02.pdf

Form F5050 - Individually Constructed Vehicle Completion Certificate
http://www.support.transport.qld.gov.au/qt/formsdat.nsf/Forms/QF5050

ANNEX "A"

Approval Procedure for an ICV

1. Owner of proposed ICV contacts an AP Engineer to discuss the proposed vehicle.
2. The AP Engineer considers the proposed vehicle against all the relevant standards.
3. If the AP Engineer is content that the vehicle will meet the requirements of the scheme the construction process can begin. However, if the AP Engineer is concerned the proposed vehicle will not meet the requirements changes will need to be made to the proposed design prior to starting the construction process.
4. During initial construction a build number must be stamped/permanently affixed to the vehicle.
5. AP Engineer assesses the vehicle's safety and compliance with the ADRs and vehicle standards.
6. Once the vehicle is constructed and the relevant testing conducted, the AP Engineer completes the ICV Engineering Report (detailed in Annex "D"), F5050 form and allocates the Modification Certificate and Modification plate which will be used on the vehicle.
7. AP Engineer requests a VIN and exemption permit for the ICV by submitting the following information to TMR :
    - Photos of the construction process (if possible) and the final vehicle
    - Inspection and testing details
    - Engineering report (see Annex "D")
    - Relevant NCOP checklist
    - Individually Constructed Vehicle Completion Certificate (F5050)

    Please ensure (A) All photos contain clear images (B) At least one photo shows the build number of the ICV (C) The documents must be correct and complete.
8. Once TMR receives the correctly completed submission, a Vehicle Identification Number and exemption permit for the ICV will be issued.
9. When the AP Engineer obtains the VIN they are to complete all the appropriate paperwork, complete and affix the Modification plate/s and stamp the VIN into the vehicle.
10. The vehicle owner may then apply for registration.

ANNEX "B"

Approval procedure for an ICV where an RPEQ is not readily available

1. Owner of proposed ICV contacts AP Engineer to discuss vehicle details
2. If the AP Engineer is content that the vehicle will meet the requirements of the scheme an initial application to construct can be submitted to Vehicle Standards. This application consists of an F1854 Motor Vehicle Modification Application form which details the type of vehicle being constructed, details of the components used, available identification numbers of major components (for example, frame, engine, etc) and the nominated build number.
3. Vehicle Standards will consider the application and if successful send an Initial Approval letter to the applicant. This initial approval letter provides in-principle approval to the concept of the proposed vehicle and also endorsement to apply for a Vehicle Identification Number.
4. Once initial approval has been received the construction of the vehicle can begin.
5. During initial construction a build number must be stamped/permanently affixed to the vehicle.
6. AP Engineer assesses the vehicle's safety and compliance with the ADRs and vehicle standards.
7. Once the vehicle is constructed and the relevant testing conducted, the AP Engineer completes the ICV Engineering Report (detailed in Annex "D"), F5050 form and allocates the Modification Certificate and Modification plate which will be used on the vehicle.
8. AP Engineer requests a VIN and exemption permit for the ICV by submitting the following information to TMR :
    - Photos of the construction process (if possible) and the final vehicle
    - Inspection and testing details
    - Engineering report (see Annex "D")
    - Relevant NCOP checklist
    - Individually Constructed Vehicle Completion Certificate (F5050)

    Please ensure, (A), All photos contain clear images, (B), At least one photo shows the build number of the ICV, (C), The documents are correct and complete
9. Once TMR receives the correctly completed submission, a Vehicle Identification Number and exemption permit for the ICV will be issued.
10. When the AP Engineer obtains the VIN they are to complete all the appropriate paperwork, complete and affix the modification plate/s and ensure the VIN is stamped into the vehicle.
11. The vehicle owner may then apply for registration.

ANNEX "C"

ADR Exemptions for ICVs

Due to the complexities and destructive nature of some ADR testing, ICVs are exempt from some nominated ADR requirements. However, it is expected that all ICVs are constructed to good engineering standards to ensure a high level of crashworthiness and occupant protection is provided.

The introduction of ADRs based on crash testing and vehicle stability control has raised concerns about approval of ICVs where it is not possible to demonstrate compliance. TMR will accept ICVs approved to the National Code of Practice for light vehicle construction and modification where compliance cannot be demonstrated with ADR's 69/00, 72/00 and 73/00, if the following conditions are complied with:

- The vehicle must demonstrate compliance with all other applicable ADR's.
- A permanent label must be fitted to the dash in front of the passenger's seating position. The label must incorporate the warning "This vehicle has not been tested to Australian Design Rules 69/00 Full Frontal Impact Occupant Protection, 72/00 Dynamic Side Impact Occupant Protection, 73/00 Offset Frontal Impact Protection, or the electronic stability requirements of 31/02 Brake Systems for Passenger Cars (as applicable). It may not provide the level of safety which a vehicle fitted with these mandatory active/passive safety systems can offer".

Please note: In lieu of compliance with ADR 72/.., vehicles must comply with ADR 29/00 (or, for vehicles without doors, the intent of ADR 29/. .).

ANNEX "D"

Individually Constructed Vehicle
Engineering Report

When certifying an ICV the Engineering Report shall contain at least the following:

- an ADR compliance report containing evidence of compliance to each applicable ADR.
- a signed summary statement of assurance.
- AP certified copies for each physical test report. These include:
  - Brake test.
  - Engine emission test where alternative assurance of compliance is not available.
  - Fibreglass panel testing where applicable.
  - Bump steer plots
  - Lane Change Test report
  - Beaming and Torsional test report
- any available and relevant engineering drawings, assembly plans (for kit type ICVs it is acceptable to refer to plan numbers, etc rather than supplying drawings and plans) and any photographs that document the development and construction of the ICV.