



COMMONWEALTH OF AUSTRALIA

COMMONWEALTH OF AUSTRALIA

AUSTRALIAN DESIGN RULE 41

FOR

MANDATORY OPERATION ON UNLEADED PETROL

As endorsed by the  
Australian Transport Advisory Council

The intention of this Australian Design Rule is to require new motor vehicles to be manufactured to operate on unleaded petrol.

The Australian Transport Advisory Council has recommended to Commonwealth, State and Territory Government that all motor vehicles specified below equipped with petrol fuelled spark ignition internal combustion engines shall comply with Australian Design Rule 41 - Mandatory Operation on Unleaded Petrol.

VEHICLE CATEGORY	RULE		AMENDMENT
	MANUFACTURED ON OR AFTER		
	41		
Passenger Cars			
Forward Control			
Passenger Vehicles			
up to 2.7 tonnes		N/A	
over 2.7 tonnes		1 Jan 1988	
Other Passenger Cars		N/A	
Passenger Car Derivatives		N/A	
Multi-Purpose Passenger Cars			
up to 2.7 tonnes		N/A	
over 2.7 tonnes GVM		1 Jan 1988	
Omnibuses			
up to 2.7 tonnes GVM		N/A	
over 2.7 tonnes GVM		1 July 1988	
Motorcycles		1 March 1988	
Mopeds		1 March 1988	
Specially Constructed Vehicles		1 July 1988	
Other Vehicles not listed above			
up to 2.7 tonnes		N/A	
over 2.7 tonnes GVM		1 July 1988	

N/A - Not Applicable  
GVM - Abbreviation for Gross Vehicle Mass

The Australian Transport Advisory Council has also recommended to Commonwealth, State and Territory Governments that motor vehicles manufactured on or after 1 July 1985 which comply with ADR 37 or ADR 40 need not comply with ADR 41.

The Australian Transport Advisory Council has also recommended to Commonwealth, State and Territory Governments that motor vehicles manufactured on or after 1 July 1985 which comply with the requirements of ADR27A, ADR27B or ADR27C with mandatory operation on unleaded petrol exclusively need not comply with ADR 41.

Issued by:

Department of Transport  
PO Box 594  
CIVIC SQUARE ACT 2608  
AUSTRALIA

Issued: July 1984

AUSTRALIAN DESIGN RULE 41 - MANDATORY OPERATION ON UNLEADED PETROL

---

41.1 DEFINITIONS

'Approved' - means approved by the Australian Motor Vehicle Certification Board (AMVCB).

'Motor Spirit' - a synonym for petrol (refer Definition of 'Petrol').

'Petrol' - means any fuel sold in Australia for use in motor vehicles and motor vehicle engines and commonly or commercially known or sold as petrol (or motor spirit), and includes 2-stroke fuels and mixtures of petrol and oxygenated hydrocarbons.

'Unleaded Petrol' - means petrol (or motor spirit) containing not more than 0.013 gram of lead per litre and not more than 0.0013 gram of phosphorus per litre.

'Vehicle' - means a motor vehicle to which this Design Rule applies (refer "green sheet" for applicability details).

41.2 REQUIREMENTS41.2.1 Requirements for fuel

Every vehicle shall be designed and constructed to operate on unleaded petrol.

41.2.2 Requirements for fuel label

Every vehicle shall have the words "UNLEADED PETROL ONLY" or "UNLEADED FUEL ONLY" on a durable label or by other durable means permanently affixed to the area immediately adjacent to the petrol filler inlet(s), on the door to the filler inlet compartment, or within 150 millimetres of the door to the filler inlet compartment, or on or within 150 millimetres of the filler inlet cap, readily visible to any person intending to refuel the vehicle. The lettering shall be legible and in capital letters no smaller than 6.0 millimetres high.

Alternative wording or location may be used, if approved (refer Definition of "Approved").

AUSTRALIAN DESIGN RULE 41 - MANDATORY OPERATION ON UNLEADED PETROL

---

41.2.3 Requirements for petrol filler inlet

The requirements of Clause 41.2.3 shall apply to every vehicle  
EXCEPT MOTORCYCLES AND MOPEDS:

- (a) Vehicles shall be equipped with a petrol tank filler inlet assembly which prevents the insertion of a nozzle having a spout with an external diameter of 23.6 millimetres or greater (leaded petrol nozzle) and allows the insertion of a nozzle having a spout with an external diameter of 21.34 millimetres or less (unleaded petrol nozzle).

For details of nozzles, refer Appendix I.

- (b) The design and construction of the filler inlet assembly shall be such that it is not possible for it to be readily altered to allow the insertion of a leaded petrol nozzle having a spout with an external diameter of 23.6 millimetres or greater, without causing such damage as would require its replacement or major repair to enable it to be restored to the design condition.
- (c) The filler inlet assembly shall be designed to pass not more than 700 millilitres of petrol into the tank when the introduction of petrol into such filler inlet assembly from a leaded petrol nozzle complying with the characteristics specified in Appendix I.
- (d) A test shall be conducted to establish compliance with Clause 41.2.3(c), using a test fixture which positions the filler inlet assembly in the same position as it is installed in the vehicle. For the purpose of this test, an attempted introduction shall be conducted by inserting a leaded petrol nozzle such that its automatic shutoff vacuum port is at various depths within the filler inlet, except those locations which cause spillage (not including splash back) outside the filler inlet assembly shall not be used. The nozzle may have any orientation within the filler inlet assembly which may reasonably be expected to be encountered in use. The nozzle valve shall be fully and rapidly opened to a  $30 \pm 4$  litres/minute flow setting.

## AUSTRALIAN DESIGN RULE 41 - MANDATORY OPERATION ON UNLEADED PETROL

APPENDIX IPETROL NOZZLE CHARACTERISTICS

(This Appendix is to be read in conjunction with Clause 41.2.3 - Requirements for petrol filler inlet).

Filler pipes and openings of motor vehicle fuel tanks may be as described in Society of Automotive Engineers, Incorporated Recommended Practice J1140, entitled "Filler Pipes and Openings of Fuel Tanks", to accommodate petrol dispenser nozzle spouts as described in Society of Automotive Engineers, Incorporated Recommended Practice J285a entitled "Gasoline Dispenser Nozzle Spouts".

Leaded Petrol Nozzle - a nozzle used for demonstrating compliance with Clause 41.2.3 having a spout with an external diameter of 23.6 millimetres or more.

This leaded petrol nozzle shall have an automatic shutoff vacuum port, the centre of which shall be located within 22.1 millimetres of the tip of the terminal end.

This leaded petrol nozzle shall pass less than 120 millilitres of petrol when fully and rapidly activated with the automatic shutoff vacuum port plugged.

Unleaded Petrol Nozzle - a nozzle having:

- (i) a spout with an external diameter of 21.34 millimetres or less;
- (ii) the terminal end of the spout shall have a straight section of at least 63 millimetres in length;
- (iii) any retaining spring fitted to the nozzle shall terminate 76 millimetres from the terminal end.