

Australian/New Zealand Standard™

**Natural gas (CNG) fuel systems for  
vehicle engines**



Standards Australia



STANDARDS  
NEW ZEALAND  
*Te Ara Raukawa*

## **AS/NZS 2739:1999**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME-046, Gas Fuel Systems for Vehicle Engines. It was approved on behalf of the Council of Standards Australia on 16 November 1998 and on behalf of the Council of Standards New Zealand on 9 November 1998. It was published on 5 March 1999.

---

The following interests are represented on Committee ME-046:

Australian Automobile Association  
Australian Chamber of Commerce and Industry  
Australian Gas Association  
Australian Liquefied Petroleum Gas Association  
Boiler and Pressure Vessel Manufacturers Association of Australia  
Box Hill Institute of TAFE  
Department for Industrial Affairs, S.A.  
Department of Mines and Energy, Qld  
Department of Primary Industries and Energy (Commonwealth)  
Department of Transport, S.A.  
Department of Urban Services, A.C.T.  
Federal Chamber of Automotive Industries  
Gas Association of New Zealand  
Institution of Engineers, Australia  
Insurance Council of Australia  
Land Transport Safety Authority, New Zealand  
LPG Association of New Zealand  
Metal Trades Industry Association of Australia  
Motor Trade Association, New Zealand  
Motor Traders Association of N.S.W.  
Motor Trades Association of Australia  
Office of Energy, W.A.  
VicRoads  
Victorian Police  
WorkCover N.S.W.  
Work Health Authority, N.T.

Additional interests participating in preparation of Standard:

Auckland University  
Australian Bus and Coach Association  
Gas utilities

---

### **Keeping Standards up-to-date**

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Australia web site at [www.standards.com.au](http://www.standards.com.au) or Standards New Zealand web site at [www.standards.co.nz](http://www.standards.co.nz) and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia International or Standards New Zealand at the address shown on the back cover.

---

# Australian/New Zealand Standard™

## Natural gas (CNG) fuel systems for vehicle engines

Originated in Australia as AS 2739—1984.  
Final Australian edition AS 2739—1992.  
Originated in New Zealand as NZS 5422.2:1980.  
Final New Zealand editions NZS 5422.2:1987 and NZS 5422.3:1991.  
AS 2739—1992, NZS 5422.2:1987 and part of NZS 5422.3:1991 jointly revised,  
amalgamated and designated AS/NZS 2739:1999.  
Reissued incorporating Amendment No. 1 (April 2001).  
Reissued incorporating Amendment No. 2 (September 2001).

### **COPYRIGHT**

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Jointly published by Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001  
and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 2401 9

## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME/46, Gas Fuel Systems for Vehicle Engines, to supersede AS 2739—1992, NZS 5422.2:1987 and NZS 5422.3:1991 (in part).

*This Standard incorporates Amendment No. 1 (April 2001) and Amendment No. 2 (September 2001). The changes required by the Amendments are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

The layout and content of Sections in this edition have been restructured and the requirements on a subject grouped to facilitate easy referencing.

The edition has been expanded to encompass New Zealand requirements and includes the following significant changes:

- (a) Maintenance and performance levels for closed loop engine management systems.
- (b) Requirements for the use of composite cylinders.
- (c) Expansion of fuel selection requirements to embrace bi-fuel and dual fuel systems.
- (d) Introduction of a CNG compliance plate.
- (e) Revision of cylinder fixation requirements.
- (f) Incorporation of Agency information in an appendix.

Australia requires an ISO quick action refuelling coupling and drive away protection to be provided by a hose break coupling. New Zealand requires the use of the refuelling coupling shown in Appendix C and also requires the use of a refuelling interlock device to prevent the engine from starting while the refuelling hose is attached to the vehicle. These differences are addressed in this edition.

The attachment design factor, (Clause 3.15.2) takes into account the work of ISO/TC 22/SC 25/WG 2.

A number of other changes of a comparatively minor nature have been made in order to align the Standard for Australia/New Zealand requirements and to align with other changes which have occurred in recent years to AS/NZS 1425, *LP Gas fuel systems for vehicle engines*.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the Appendix to which they apply. A 'normative' Appendix is an integral part of a Standard, whereas an 'informative' Appendix is only for information and guidance.

## CONTENTS

	<i>Page</i>
<b>SECTION 1 SCOPE AND GENERAL</b>	
1.1 SCOPE.....	5
1.2 OBJECTIVE.....	5
1.3 REFERENCED DOCUMENTS.....	5
1.4 NEW DESIGNS AND INNOVATIONS .....	5
1.5 DEFINITIONS.....	5
1.6 VEHICLE MODIFICATIONS.....	8
1.7 MINOR ALTERATIONS .....	9
1.8 ENGINE MANAGEMENT SYSTEM.....	9
1.9 APPROVED EQUIPMENT.....	9
1.10 PREVIOUSLY USED EQUIPMENT .....	9
1.11 WORKING AREA AND SAFE PRACTICES.....	9
<b>SECTION 2 COMPONENTS</b>	
2.1 GENERAL SUITABILITY .....	10
2.2 MOVING PARTS.....	10
2.3 MODIFICATION .....	10
<b>SECTION 3 FUEL SYSTEM COMPONENTS</b>	
3.1 APPLICATION .....	11
3.2 CYLINDER .....	11
3.3 COMPONENTS FOR REMOVABLE CYLINDERS .....	12
3.4 CYLINDER VALVE.....	12
3.5 REFUELLING CONNECTION.....	12
3.6 REFUELLING NON-RETURN VALVE .....	12
3.7 LOCATION OF REFUELLING CONNECTION .....	12
3.8 REFUELLING INFORMATION PLATE.....	13
3.9 SERVICE ISOLATION VALVE.....	14
3.10 FUEL FILTER.....	14
3.11 FUEL SHUT-OFF DEVICE .....	14
3.12 FUEL FLOW REGULATION DEVICE.....	14
3.13 CONTENTS INDICATOR.....	14
3.14 CYLINDER COMPARTMENTS AND SUB-COMPARTMENTS .....	14
3.15 MOUNTING OF FUEL CYLINDER .....	17
3.16 CYLINDER LOCATION AND GROUND CLEARANCES .....	19
3.17 PROTECTION.....	20
3.18 HEAT SHIELDING.....	21
<b>SECTION 4 FUEL SERVICE LINE</b>	
4.1 APPLICATION .....	23
4.2 RIGID PIPING .....	23
4.3 FLEXIBLE PIPING.....	23
4.4 JOINTS AND CONNECTIONS .....	23
4.5 PIPING INSTALLATION AND PROTECTION.....	23
4.6 PIPING OR FITTINGS IN ENCLOSED SPACES .....	24
4.7 TRAILERS AND SEMITRAILERS .....	24
4.8 PREVIOUSLY USED EQUIPMENT .....	25
4.9 FUEL HOSE FOR PRESSURE NOT EXCEEDING 100 KPA.....	25
4.10 BREAKAWAY COUPLING .....	25

This is a free preview. Purchase the entire publication at the link below:

**AS/NZS 2739 : 1999 : EN PDF**

- 
- ⊙ Looking for additional Standards? Visit SAI Global Infostore
  - ⊙ Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
- 

Need to speak with a Customer Service Representative - Contact Us