AS 2473—1985
UDC 621.646.2: 621.642.17: 66.076.51

Australian Standard®
2473—1985

VALVES FOR COMPRESSED GAS CYLINDERS (THREADED OUTLET)

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

G

This Australian standard was prepared by Committee ME/2, Gas Cylinders. It was approved on behalf of the Council of the Standards Association of Australia on 28 November 1984 and published on 4 April 1985.

The following interests are represented on Committee ME/2:

Aluminium Development Council
Australasian Steamship Owners Federation
Australian Chamber of Commerce
Australian Liquefied Petroleum Gas Association
Australian Underwater Federation
Australian Welding Institute
Board of Fire Commissioners, N.S.W.
Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
Department of Defence
Department of Employment and Industrial Affairs, Qld
Department of Industrial Affairs, W.A.
Department of Industrial Relations, N.S.W.
Department of Labour and Industry, Tas.
Department of Labour, S.A.
Department of Mines and Energy, N.T.
Department of Mines, Qld.
Department of Territories and Local Government
Ministry of Employment and Training, Vic.
Railways of Australia Committee

AUSTRALIAN STANDARD

VALVES FOR COMPRESSED GAS CYLINDERS (THREADED OUTLET)

AS 2473—1985

First published (as AS B240) 1966
AS 2473 first published 1981
Second edition 1985

PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.

ISBN 0 7262 3654 3

PREFACE

This edition of this standard was prepared by the Association's Committee on Gas Cylinders, to supersede AS 2473—1981.

The changes introduced in this edition are mainly corrections of errors and editorial, but also include explanation of the thread truncations for Type 10 and 11 connections, and a note on use of locking compounds on the spindle-retaining device (see Clause 6).

Some clarification has been carried out for the hydrocarbons listed in Table 3 by differentiating between pure and commercial grades and listing LPG.

The committee proposes to devise impact tests for the valve *in situ*, to take into account protection by any valve protection ring or valve cap.

True metrication of valve threads is not feasible at this time owing to the very great number of cylinders in traffic with imperial threads. Soft metrication has been made.

A left-hand thread is listed for combustible gases generally. There are small cylinders in use in Australia that have right-hand threads and are used for combustible gases, and the committee considers that these should not be included in the standard but be treated as special cases.

CONTENTS

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
VALVES FOR COMPRESSED GAS CYLINDERS (THREADED OUTLET)

1 SCOPE. This standard specifies inlet and outlet connection threads, material, testing, valve spindle dimensions and operations, and marking requirements, for compressed gas cylinder valves with threaded outlet connections for a nominated range of gases. It also specifies dimensional details of the outlet connecting parts.

NOTES:

1. Requirements for compressed gas cylinder valves with a diameter-indexed system of outlet connections, or with a pin-indexed system of outlet connections (for medical application) are specified in AS 2472 and AS 2474.
2. For convenience the special valve (previously specified in Interpretation No 11 to AS CB4) for use on small seamless gas cylinders for carbon dioxide, is now specified in Appendix C.

This standard does not apply to valves for portable gas cylinders of less than 11 kg capacity for self-contained breathing apparatus, or to valves for fire extinguishers.

2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1391	Methods for Tensile Testing of Metals
AS 1544	Methods for Impact Tests on Metals Part 1 — Izod
AS 1596	SAA LP Gas Code
AS 1677	SAA Refrigeration Code
AS 1722	Pipe Threads of Whitworth Form Part 1 — Sealing Pipe Threads Part 2 — Fastening Pipe Threads
AS 2030.1	SAA Gas Cylinders Code, Part 1 — Cylinders for Compressed Gases Other than Acetylene
AS 2472	Valves for Medical Gas Cylinders (Pin-indexed Outlet)
AS 2474	Valves for Compressed Gas Cylinders (Diameter-indexed Outlets)
AS 2613	Safety Devices for Gas Cylinders
ANSI B57.1 CGA V—1 CSA B96	Compressed Gas Cylinder Valve Outlet and Inlet Connections
ANSI B2.1	Pipe Threads (Except Dryseal)

3 DEFINITIONS. For the purpose of this standard, the definitions given in AS 2030.1 apply.

4 THREADS

4.1 Valve Stem (Inlet) Thread. The valve stem (inlet) thread shall be one of the following:

(a) Taper thread listed in Table 1.

(b) Parallel thread listed in Table 2.

(c) Thread compatible with one of the cylinder neck threads specified in AS 2030.1.

NOTE: Recommended limit gauges for checking the specified taper threads are detailed in Appendix A.

4.2 Valve Outlet Connection Thread. The valve outlet connection thread shall be that shown in column 4 of Table 3 as appropriate or, where not listed in Table 3, shall be that shown in column 4 of Table 4.

NOTE: Thread designations in Table 3 are from various origins, and care is necessary in their interpretation. For example, in the designation GB ⅝/16 LH, the values ⅝ and 16 both refer to a nominal bore (in imperial and metric units), and 16 does not indicate threads per inch. In the designation 0.825 – 14 NGO – LH – EXT, the value 0.825 refers to major diameter and 14 refers to threads per inch.

Where the gas is not listed in Table 3 or Table 4, or is a gas mixture, the valve outlet connection thread, and type of outlet connection, shall comply with Table 6 for the appropriate classification of gas or gas mixture.

5 DIMENSIONS.

5.1 Spindle. Valves operated by a spindle shall have a handwheel not separable from the spindle without the use of tools, or shall have a squared end to the spindle. The dimension of the squared end shall be that nominated in column 6 of Table 3 or in column 5 of Table 4 as appropriate, and as specified in Table 5.

5.2 Outlet Connection. The outlet connection shall conform to the dimensions given in Table 7(a) to 7(o) as appropriate, applicable to the type of connection specified in Table 3 for the particular gas. If the particular gas is not listed in Table 3, the outlet connection shall conform to the dimensions given in Table 7(a) to 7(o) as appropriate, applicable to the type of connection specified in Table 4 for the particular gas.

6 VALVE OPERATION. Spindles for valve operation shall close the valve when rotated clockwise (when viewed from the spindle end). The spindle gland and spindle-retaining nut shall not be loosened by operation of the spindle.

The spindle shall not be separable from the valve body without the prior removal of the spindle-retaining device by the use of tools.

NOTE: Locking compound is not considered to be an adequate means to ensure the retaining nut is not loosened by operation of the spindle.

7 MATERIALS.

7.1 Compatibility. Materials used for valve components in contact with the contained gas shall be compatible with the contained gas.

NOTE: Some compatible materials are listed in column 5 of Table 3 and in column 4 of Table 4.

The copper content of the material of valve bodies for use with acetylene gas shall not exceed 70 percent.

7.2 Valve Body Mechanical Properties. The mechanical properties shall comply with all of the following requirements when tested in accordance with Clauses 10.2 and 10.3: