AS 2473.2:2015

Australian STANDARD

Valves for compressed gas cylinders

Part 2: Outlet connections (threaded) and stem (inlet) threads

STANDARDS Australia

This Australian Standard® was prepared by Committee ME-002, Gas Cylinders. It was approved on behalf of the Council of Standards Australia on 13 October 2015.
This Standard was published on 12 November 2015.

The following are represented on Committee ME-002:

- Australasian Fire and Emergency Service Authorities Council
- Australia New Zealand Industrial Gas Association
- Australian Chamber of Commerce and Industry
- Engineers Australia
- Fire Protection Association of Australia
- Gas Energy Australia
- Gas Technical Regulators Committee
- Materials Australia
- National Association of Testing Authorities Australia
- SafeWork New South Wales
- The Australian Gas Association
- Welding Technology Institute of Australia
- WorkSafe Victoria

This Standard was issued in draft form for comment as DR AS 2473.2:2014.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

Australian Standard®

Valves for compressed gas cylinders

Part 2: Outlet connections (threaded) and stem (inlet) threads

Originally as part of AS B240—1966.
Previous edition AS 2473.2—2007.
Second edition AS 2473.2:2015.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 76035 295 0

PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee ME-002, Gas Cylinders to supersede AS 2473.2—2007, *Valves for compressed gas cylinders*, Part 2: *Outlet connections (threaded) and stem (inlet) threads*.

This Standard follows from a decision to expand AS 2473—1996 into a suite of Standards for valves for compressed gas cylinders based as much as possible on ISO Standards. AS 2473 comprises three parts as follows:

Part 1: Specifications, type testing, and manufacturing tests and inspections.

Part 2: Outlet connections (threaded) and stem (inlet) threads (this Standard).

Part 3: Outlet connections for medical gases (including pin-indexed yoke connections).

This Part specifies the system of threaded outlet connections for non-medical gases. It also includes specifications for valve stem threads. In the absence of a universally recognized threaded outlet system, this system has been continuously developed in Australia since the original release of AS B240—1966 by selective adoption and modification of specifications from ISO and overseas national standards. It therefore represents a unique solution.

This revision of Part 2 of the Standard continues the long term program of moving towards a system of valve outlet connections with greater differentiation of gas types and maximum filling pressures. The following is a summary of the main changes in this revision:

(a) Guidance for the integrity and leak tightness of outlet connections, including the possible use of O-ring and soft sealing tips, was revised to be based on general principles applicable to all the gases in the scope of the standard. Detail specification should be made from Australian and ISO material standards and standards applying to assembled equipment. This guidance is now provided in a main clause of the Standard and a Note to Figure 2.6 replacing Appendices B and C in the previous edition.

(b) The description and references applying to outlet connections Type 50 and Type 60 were clarified to indicate the Australian valves adopted in the absence of a full specification in the originating ISO Standard.

(c) Minimum body port lengths for the outlets were given or increased for several externally threaded outlet connections to avoid potential interference with the nipple tightening nut.

(d) Application details for the main legacy Australian stem (inlet) thread in the Standard were clarified to allow its use in valves designed for inherent protection according to AS 2473.1–2006.

(e) General detail error correction.

The program for conversion of relevant cylinders from the existing threaded outlet connections to the pin-indexed yoke connections of AS 2473.3 is now complete, and outlet connections for medical gases are only specified in that part of AS 2473.

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies. A ‘normative’ appendix is an integral part of a Standard.

Statements expressed in mandatory terms in notes to Figures are deemed to be requirements of this Standard.

NOTE THAT FULL COMPLIANCE WITH THIS STANDARD MIGHT NOT NECESSARILY FULFIL ALL LEGAL OBLIGATIONS.

CONTENTS

Page

SECTION 1 SCOPE AND GENERAL
1.1 SCOPE 4
1.2 REFERENCED DOCUMENTS 4
1.3 DEFINITIONS 5

SECTION 2 OUTLET CONNECTIONS (THREADED)
2.1 VALVE OUTLET CONNECTIONS 6
2.2 GAS PRESSURE AND MATERIAL COMPATIBILITY 6
2.3 OUTLET CONNECTION MARKING 6

SECTION 3 VALVE STEM (INLET) THREADS 48

APPENDIX A RECOMMENDED GAUGES FOR CYLINDER NECK AND VALVE STEM THREADS 51

STANDARDS AUSTRALIA

Australian Standard
Valves for compressed gas cylinders

Part 2: Outlet connections (threaded) and stem (inlet) threads

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies cylinder valve outlet connections (threaded). These connections are intended to be used with a nominated range of gases and within defined cylinder filling pressure ranges in order to minimize the possibility of hazardous misconnections and the use of downstream equipment at incorrect pressures.

Dimensional details of the outlet connecting parts are included so that each connection, designated by its type number, is fully defined and complete.

The Standard also specifies some stem (inlet) and cylinder neck threads suitable to connect cylinder valves with cylinders, as well as gauging systems to ensure the accuracy of these threads.

Although the main purpose in standardizing cylinder valve outlet connections is to prevent interconnection with incompatible gases or cylinder pressures, relying only on the valve outlet connection to prevent such interconnections is neither possible nor advisable. The primary means for identifying the contents of compressed gas cylinders is the cylinder markings, including labels.

WARNING: THE CYLINDER VALVE OUTLET CONNECTION IS NOT THE ONLY SAFEGUARD AGAINST ACCIDENTAL MISUSE. THE GAS CYLINDER MARKINGS SHOULD BE CHECKED BEFORE EVERY USE.

NOTES:

1 Specifications of the outlet connections for medical gases applications are given in AS 2473.3.

2 Specifications for outlet connections for use with SCUBA and SCBA applications are not given at this time. ISO 12209 Parts 1 to 3 specifies one such system.

1.2 REFERENCED DOCUMENTS

AS	
1722	Pipe threads of Whitworth form
1722.1	Part 1: Sealing pipe threads (metric units)
1722.2	Part 2: Fastening pipe threads
2030	Gas cylinders
2030.1	Part 1: General requirements
2473	Valves for compressed gas cylinders
2473.1	Part 1: Specifications, type testing, and manufacturing tests and inspections
2473.3	Part 3: Outlet connections for medical gases (including pin-indexed yoke connections)
4484	Gas cylinders for industrial, scientific, medical and refrigerant use—Labelling and colour coding