AS 2472—1985

Australian Standard®

VALVES FOR MEDICAL GAS CYLINDERS

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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
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PREFACE

This edition of this standard was prepared by the Association's Committee on Gas Cylinders to supersede AS 2472 — 1983, Valves for Medical Gas Cylinders (Pin-indexed Outlet).

Dimensions for the pin-index couplings are taken from the metric range of BS 1319, Medical Gas Cylinders, Valves and Yoke Connections which in turn generally aligns with ISO/R 407, Yoke Type Valve Connections for Small Medical Gas Cylinders Used for Anaesthetic and Resuscitation Purposes, and follows ANSI B57.1, Compressed Gas Cylinder Valve Outlet and Inlet Connections.

For larger cylinders in medical oxygen and medical nitrous oxide traffic, the industry has employed non-interchangeable outlet connections within the medical connections system complying with AS 2473. The cost of converting large numbers of those cylinders to pin-indexed outlet connections is prohibitive. The committee has decided to formalize the present situation by specifying Type 10 and Type 30 outlet connections for medical oxygen and nitrous oxide respectively, where those gases are contained in cylinders of greater than 5 kg water capacity. All other medical gas cylinders, including large and small for nitrogen, are to have pin-indexed outlet connections as previously specified.

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VALVES FOR MEDICAL GAS CYLINDERS

1 SCOPE. This standard specified inlet threads, outlet non-interchangeability features, material, testing, and marking requirements for medical gas cylinder valves.

NOTE: Although medical gases may also be used for non-medical breathing application, it is not intended that valves specified in this standard be mandatory for non-medical applications.

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

AS 2030.1 SAA Gas Cylinders Code

AS 2473 Valves for Compressed Gas Cylinders (Threaded Outlet)

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

4 VALVE STEM THREAD. The valve stem (inlet) thread shall comply with AS 2473.

5 OUTLET CONNECTIONS.

5.1 Larger medical oxygen and nitrous oxide cylinders. For gas cylinders exceeding 5 kg water capacity to contain medical oxygen or medical nitrous oxide, the outlet connections shall be as follows (see Table 1):

(a) Oxygen . . . . . Type 10 (see AS 2473).
(b) Nitrous Oxide . . . . . Type 30 (see AS 2473).

5.2 Other than larger medical oxygen and nitrous oxide cylinders. The outlet connection shall conform to the yoke arrangement and dimensions of the yoke connecting features given in Fig. 1(a) or to either of the alternatives given in Fig.1 (c) and (d).

NOTE: The user should nominate any preference for one particular yoke arrangement.

The pin locations shall comply with Figs 2 to 11 and 13 as nominated for the particular gas or gas mixtures in Table 1. The pin dimensions and corresponding hole dimensions shall comply with Fig. 1(a), or for single pin connections Fig. 1(b), as appropriate.

Pins shall not be readily detachable from the yoke.

NOTE: Pins that may be unscrewed with commonly available spanners are considered to be readily detachable unless special thread locking is provided.

TABLE 1
PIN CODES FOR PARTICULAR GASES AND GAS MIXTURES

Gas	Cylinder water capacity kg	Pin code (see Figs 1 to 11 and 13)	Reference Figure
Oxygen	≤5	2.5	2
	>5	NA (See Clause 5.1)	NA (See Clause 5.1)
Oxygen/carbon dioxide mixture (carbon dioxide not exceeding 7 percent)	All	2.6	3
Oxygen/helium mixtures (helium not exceeding 80 percent)	All	2.4 (See note)	4
Ethylene	All	1.3	5
Nitrogen	All	1.4	13
Cyclopropane	All	3.6	7
Helium, and for helium/oxygen mixtures (oxygen less than 20 percent)	All	4.6 (See note)	8
Carbon dioxide, and for carbon dioxide/ oxygen mixtures (carbon dioxide exceeding 7 percent)	All	1.6	9
Medical air	All	1.5	10
Oxygen 50 percent/nitrous oxide 50 percent	All	Single pin	11
Nitrous oxide	≤5	3.5	6
	>5	NA (See Clause 5.1)	NA (See Clause 5.1)

NOTE: For valves of cylinders used in hyperbaric treatment, threaded valve outlet connections are acceptable.