AS 2902—2005
Reconfirmed 2016

AS 2902—2005

Australian Standard™

Medical gas systems—Low pressure flexible hose assemblies

This Australian Standard was prepared by Committee HE-017, Medical Gas Systems. It was approved on behalf of the Council of Standards Australia on 17 June 2005. This Standard was published on 15 July 2005.

The following are represented on Committee HE-017:

Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Society of Anaesthetists
Australian and New Zealand College of Anaesthetists
Department of Health Western Australia.
Engineers Australia
Master Plumbers and Mechanical Contractors Association of New South Wales
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STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 2902—2005
Medical gas systems—Low pressure flexible hose assemblies

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Technical Committee HE-017 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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NOTES

Australian Standard™

Medical gas systems—Low pressure flexible hose assemblies

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PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee, HE-017, Medical Gas Systems, to supersede AS 2902—1986, *Medical gas systems—Low pressure flexible connecting assemblies (hose assemblies).* After consulting with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to ensure gas specificity and to prevent cross-connection between systems conveying different gases. In essence, low-pressure flexible hose assemblies are the extension of the pipeline to the device being used for patient care.

This Standard differs from ISO 5359:2000, *Low pressure hose assemblies for use with medical gases*, in that the most common connections specified for the hoses are those of the Australian Sleeve Index System (SIS) and not DISS or NIST. The non-interchangeable connection specified for flexible hose assemblies for less common gases is the NIST fitting as specified in ISO 5359:2000.

The Standard differentiates the pressure requirements for hoses for positive pressure for services up to 460 kPa from those for surgical tool applications for services up to 1400 kPa.

Special care needs to be taken in the repair of low-pressure flexible hose assemblies as a serious patient hazard exists if uninformed repairs are allowed.

Previous editions of the Standard have permitted connecting systems other than SIS design, e.g. quick connectors. For safety reasons, such connectors are no longer acceptable in this Standard, and facilities using these connectors should upgrade to SIS connectors by 2009. Connections for low-pressure flexible hose that do not presently comply with the requirement of this Standard should do so also by 2009.

Specifications for both parts of the SIS are given in this Standard and in AS 2896, *Medical gas systems—Installation and testing of non-flammable medical gas pipeline systems.*

The principal differences between this edition and the 1986 edition are as follows:

(a) Flexible hoses within fixed secondary equipment are excluded from this edition.

(b) A requirement for oxygen compatibility has been included.

(c) Flow resistance and resistance to collapse of the hose have been altered.

(d) The connection for less commonly used gases has been specified as the appropriate NIST connection in ISO 5359:2000.

(e) Nitrogen has been excluded from the specified gases in Table 1.

(f) Anti-static hose requirements have been excluded from this edition.

(g) New medical gas mixtures have been included.

(h) Permitted SIS end fittings and other end fittings have been specified.

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.

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FOREWORD

This Standard takes account of the need for a safe method of connecting medical equipment to a fixed medical gas pipeline system or other gas supply systems. Fixed medical gas pipelines, once installed, are rarely disturbed and are subjected to commissioning procedures to avoid the possibility of cross-connections or contamination of the medical gas conveyed. Low pressure flexible hose assemblies are, throughout their relatively short service life, subjected to physical wear and tear, general misuse and abuse and are frequently disconnected from the medical equipment and fixed pipeline. The importance of a maintenance procedure is therefore stressed within this document. Although no system is absolutely safe, this Standard includes all elements considered necessary to prevent foreseeable hazards arising from the use of flexible connecting assemblies. Users should be continually alert to the possibility of damage being caused by external factors, such as trolleys, and anaesthetic machines.

This Standard is complementary to AS 2896, *Medical gas systems—Installation and testing of non-flammable medical gas pipeline systems*.

STANDARDS AUSTRALIA

Australian Standard
Medical gas systems—Low pressure flexible hose assemblies

1 SCOPE

This Standard specifies requirements for the design and manufacture of low pressure flexible hose assemblies for use with medical gases.

Provision is made for the design, performance, identification and testing of low pressure flexible connecting assemblies used for conveying the medical gases at positive pressure up to 1400 kPa, and negative pressures not exceeding –95 kPa. Flexible hoses used in fixed secondary equipment are not dealt with in this Standard.

This Standard does not apply to manufacturer specific hoses provided by manufacturers of surgical tools as an integral part for use in the sterile operating area.

Nitric oxide/nitrogen mixtures are not included because special designs of the supply may be required.

2 APPLICATION

This Standard applies to low pressure flexible hose assemblies which can be used to convey medical gases from the first point at which users can connect or disconnect gases. It also applies to hoses which act as an extension coupler of an existing hose and to hoses from other medical gas sources which can be connected or disconnected by the user (see Figure 1).

NOTES:

1 There is no existing Australian Standard which covers supply from other than a central supply system.

2 Other medical gas sources include supply from a single cylinder to which a medical regulator, complying with AS 3840.1, is connected.

3 REFERENCED DOCUMENTS

The documents below are referred to in this Standard.

AS	
1180	Methods of test for hose made from elastometric materials
1180.5	Method 5: Hydrostatic pressure
1180.11	Method 11: Hose and coupling compatibility—Tensile method
1722	Pipe threads of Whitworth form
1722.2	Part 2: Fastening pipe threads
2700	Colour Standards for general purposes
2896	Medical gas systems—Installation and testing of non-flammable medical gas pipeline systems
3840	Pressure regulators for use with medical gases
3840.1	Part 1: Pressure regulators and pressure regulators with flow-metering devices
4484	Gas cylinders for industrial, scientific, medical and refrigerant use—Labelling and colour coding

