

---

## Safety Advice No. 17

---

Document No. 142-017 (Version 02)

### AS 2896- Manifold Upgrades

#### ANZIGA

ANZIGA is the peak industry group for the manufacture and distribution of gases in Australia and New Zealand. As a leading industry association, ANZIGA promotes the highest standards of safety, quality and reliability.

#### ANZIGA aims to:

- consult with government authorities and organisations that make policy or prepare regulations and standards which govern the production, transportation, storage, handling and use of gases.
- collaborate with other industry and trade organisations on safety and technical matters, including public programs that relate to the gases industry.
- produce information that promotes the safe storage, handling and use of gases.

The members of ANZIGA produce and distribute gases for the health and medical industries, manufacturing, food, scientific and hospitality industries.

#### Notice of Safety Advice

In general a notice of Safety Advice is intended to provide information and relevant recommendations on a safety concern relating to the production, transportation, storage, handling and use of gases.

#### Manifold Conversions for introduction of Pin Index valves changes.

This Safety Advice addresses safety concerns relating to medical oxygen manifolds. It is recommended that verification, and updating or replacement as appropriate, should be performed in readiness for the introduction of pin index valved large medical oxygen cylinders in accordance with AS 2473.3.

#### Safety Concern

AS 2896-1998 requires medical oxygen manifolds to be suitable for the pressure, gas and service conditions involved (clause 2.4.2) and have their maximum working pressure prominently marked (clause 2.4.8). Since large medical oxygen cylinders may be filled to a maximum working pressure of 200 bar, the manifolds to which they connect require to be compatible with this pressure, and be so marked.

Many manifold installations now in service may be unsafe due to the following:

- manifolds and associated components may have a rated maximum working pressure of less than 200 bar.
- manifolds may have welded headers and be manufactured from materials no longer considered safe for use in high pressure medical oxygen systems.
- having manifold header inlets not according to Figure 2.2 in AS 2896-1998, including not having gas specific connections, e.g. nuts with 3/8 BSP threads which may have been also in use for other medical gases.

## Safety Requirements

It is a requirement of AS 2896 - 1998 that all new manifolds incorporate header inlets manufactured to the dimensions noted in clause 2.4.5 and Figure 2.2.

ANZIGA recommends that all manifold installations must be verified against the following safety requirements prior to pin index conversion:

- All medical oxygen manifolds must have headers with gas-specific threaded nipples for connection of the cylinder lead according to Figure 2.2 in AS 2896-1998.
- Any currently installed medical oxygen manifold that is not rated for 200 bar working pressure will need to be upgraded or replaced. This may also include replacement of the header inlet connections if they do not comply with Figure 2.2 of AS 2896 (see previous bullet point).
- If regulators, gauges, pressure switches or other components on manifolds have working pressures rated to less than 200bar these will need to be upgraded or replaced to accommodate a 200 bar working pressure rating.
- All medical oxygen manifolds must be checked to ensure their component materials are both suitable and compatible for the use with high pressure medical oxygen service.
- All components used should be assessed for suitability and safety risk if they contain halogenated polymers in direct contact with the high pressure gas stream.

**If in doubt owners, operators and installers of manifold installations should contact their gas supplier for advice on the suitability of their current manifold systems.**

## Reference

**ANZIGA 142-012 – Safety Advice: Equipment used in breathing gas systems.**

Yours sincerely,

The Australia New Zealand Industrial Gas Association

## CONTACTS:

### Australia and New Zealand Industrial Gas Association (ANZIGA)

ACN 003 067 178  
Level 10, 10 Queen Street, Melbourne 3000

PO Box 422  
Flinders Lane Vic 8009

Telephone: +61 3 9611 5412  
Facsimile: +61 3 9611 5499  
Email: office@anziga.org

#### Member Companies in Australia:

##### **Air Liquide Australia Limited**

ABN 57 004 385 782  
380 St. Kilda Road  
Melbourne VIC 3004 Australia  
Adelaide: (08) 8209 3600  
Brisbane: (07) 3246 6363  
Darwin: (08) 8947 1184  
Launceston: (03) 6334 9666  
Melbourne: (03) 9290 1100  
Perth: (08) 9329 1234  
Sydney: (02) 9892 9777  
Air Liquide Healthcare:  
(02) 9364 7474  
Emergency Number:  
1800 812 588

##### **BOC Limited**

ABN 95 000 029 729  
Riverside Corporate  
Park  
10 Julius Ave  
North Ryde NSW 2113  
Australia  
Telephone: 131 262  
Facsimile: 132 427  
Emergency Number:  
1800 653 572

##### **Coregas Pty Ltd**

ABN 32 001 255 312  
66 Loftus Road  
Yennora NSW 2161  
Australia  
Telephone:  
1800 807 203  
Emergency Number  
1300 657 070

## Disclaimer

This publication contains information sourced by **anziga** from its members and third parties. The information is summary in nature and intended only as a guide or overview. While **anziga** has taken care to ensure the accuracy of the information, you should not rely on the information as being suitable for your particular circumstances. The information is also not intended to replace any training required by the regulatory authorities or which may generally be desirable. Legislation and approved standards concerning the subject matter of this publication may apply. You should obtain appropriate legal or technical advice and you should also refer to the applicable legislation and any relevant approved standards to ensure compliance with your legal obligations. To the extent permitted at law, **anziga** in its own right and on behalf of its members expressly disclaims liability for all loss, including damage to or loss of property, personal injury, death and economic loss, that may arise as a result of negligence, or other tort, or breach of statutory or contractual obligation, on the part of **anziga** or any of its members in the preparation, circulation and distribution of this publication.