

Queensland Government / Workplace Health and Safety Dept. of Employment and Industrial Relations

<http://www.deir.qld.gov.au/workplace/publications/alerts/fillpressures/index.htm>

Fill pressures on scuba cylinders with yoke fittings

Deutsche Zusammenfassung:

Standards Australian Gas Cylinder Committee: BÜgelanschlüsse - wegen ihrer axialen Dichtung - haben nicht die Formstabilität für Drücke über 225 bar.

Compressed Gas Association (USA): Empfehlung, max. Druck von 200 bar bei BÜgelanschlüssen nicht zu überschreiten.

Europa (CEN): Empfehlung, ab 234 bar DIN Anschlüsse zu verwenden.

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The problem

This safety alert replaces Health and Safety Alert 93-I-9. Recent information indicates that some SCUBA cylinders with yoke fittings are being filled to pressures in excess of the safe working pressure for the fittings.

This issue was raised with Standards Australia Gas Cylinder Committee who indicated that the "mechanical seal of a yoke fitting i.e. a ring on a flat surface, does not have the integrity to seal pressures in excess of 22500 kPa (225 bar)".

Failure of the yoke sealing arrangement can result in unexpected severe loss of pressure.

Customers are also requesting fill pressures, or being advised of fill pressures which are incompatible with the design pressure rating of some yoke fittings.

Requirements

Guidance on the filling of gas cylinders is covered by the SAA Gas Cylinder Code, AS 2030. The person filling a cylinder is required to ensure that the intended filling pressure is appropriate for the cylinder specification and any integral fittings. Failure to do so may constitute an offence under the Workplace Health and Safety Act 1995.

Proposed solution

Cylinders should only be filled to the pressure recommended for the type of fittings to be attached. The fill pressure can vary because of the type of fitting - yoke or DIN - or the country of origin of the fittings - European (CEN) or American Standards.

The recommended safe working pressure for fittings to be attached to the cylinder must be established before filling and the cylinder must then only be filled to that pressure.

With respect to yoke fittings, the CGA (USA) recommends maximum fill pressures of 200 bar and CEN (Europe) recommends DIN fittings for fill pressures over 234 bar.

Customers should be advised not to seek fill pressures beyond the capacity of the cylinder or fittings attached to their SCUBA cylinder.