

**Designers, Manufacturers, Suppliers
of Specialised Gas Control Equipment**

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Life expectancy of high pressure cylinder leads

Flexible high pressure cylinders leads may need replacing throughout their life. The key question is how often should they be replaced?

There no current Australia Standards that have specific guidance for the replacement of flexible cylinder leads. There are some International Standards (ISO) for high pressure flexible leads that give guidance on minimum working life of cylinder leads. These are:

- ISO 16964 - Gas cylinders — Flexible hoses assemblies — Specification and testing
- ISO 21696 - High-pressure flexible connections for use with medical gas systems
- ISO 10380 - Pipework — Corrugated metal hoses and hose assemblies

There are several reasons why flexible cylinder leads may need replacing. They are:

1. Because of physical damage to lead.
2. Because of leakage from the lead.
3. Because of the age of the lead.

Replacement due to physical damage is usually fairly obvious to detect. Typically this might be kinked hose, frayed hose braiding, corrosion, threaded end fittings damage. These can be caused by things like failing to dis-connect hoses when replacing manpacks, dropping cylinders with hoses still connected, crushing hose by driving over it (hose length should be such that they do not lay on the ground).

Replacement due to leakage is normal due to damage/wear of hose liner material or loosening of end fitting due repeated flexing or stretching.

Replacement due age is really dependent on the number of pressure cycles the leads are exposure to, (ie. number of time they go from full cylinder pressure to empty). For cylinder leads installed at end user customer sites the International Standards recommend that leads should be able to be exposed to a minimum 5000 pressure cycles without failure. If a customer was replacing one cylinder every day of the week, that equates to around 13.5 years. The cylinder leads Gascon Systems supplies have been type tested to well in excess of this 5000 pressure cycle recommendation.

Recommendation for cylinder replacement

1. Because of physical damage or leakage of lead – replace as soon as damage or leak is detected.
2. Because of the age of the lead – replacement every 10 – 15 years.

Some companies will recommend replacement of cylinder leads every 5 years. This might be appropriate in a gas cylinder filling station application where cylinder lead is exposure to multiple pressure cycles every day, but it is excessive for end user customer sites.

For the ultimate in protection/safety, Gascon Systems would recommend the use of a so called “Smarthose” design flexible cylinder. These have an internal anti-whip safety cable and flow shut-off valves that operate in the event of a lead failure, see www.smarthose.com/the-connection/videos/

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