

CYLINDER I.D. CLEANING PROCEDURE

Revised: May 1997

Orig.: January 1982

High-pressure cylinders in normal traffic can accumulate I.D. contamination which may detrimentally affect end use. The following procedures are recommended for I.D. cleaning of aluminum cylinders.

- Moisture and grime
- Steam clean and blow dry

Oil, grease, lubricants

Clean with a soapy solution - one tablespoon of liquid dish washing detergent to one gallon of tap water. Rinse several times with tap water, rinse twice with demineralized or soft water, steam clean and blow dry. Complete the process without a break. Never leave cylinder freestanding with water.

Odors

Rinse thoroughly with a solution of baking soda (one cup baking soda to one gallon of tap water). Rinse with clean tap water. Then, rinse with a solution of vinegar (one half cup of household vinegar to one gallon of clean tap water). Rinse several times with fresh tap water, rinse twice with soft water. Steam clean and blow dry. Complete the process without a break. Never leave cylinder freestanding with water.

Corrosion

Tumble the cylinder at 25 to 35 rpm for 10 minutes with a wet detergent aluminum oxide chip combination (two to three cups of aluminum oxide tumbling chips to two quarts of soft water and one teaspoon of liquid washing detergent). Rinse cylinder well with warm tap water (or soft water if the tap water is hard), steam clean and blow dry.

Note: Use demineralized water or make sure water is soft.

OBSERVE MANUFACTURERS' CAUTIONS FOR ALL PRODUCTS USED.

NOTE: Tumbling Media is available from Galiso Nuvac, 22 Ponderosa Ct., Montrose, CO 81402-1468, (800) 854-3789. For more information, call Luxfer's Customer Service department at (951) 684-5110 or, if a scuba cylinder owner, see Luxfer's *Guide to Scuba Cylinder Inspection*.

TEMPERATURE EXPOSURE

Revised: March 1999

Orig.: April 1992

Luxfer Gas Cylinders strongly recommends that you make the following information available to any and all persons who handle and/or fill high-pressure aluminum gas cylinders:

You are warned that failure to strictly follow these guidelines could result in overheating of the cylinder which could weaken the cylinder, causing it to fail under pressure, exposing bystanders to serious injury or even death and/or loss of property.

WARNING:

- Do not expose any aluminum cylinder to temperatures in excess of 265 degrees F (130 degrees C).
- If you know or suspect an aluminum cylinder has been exposed to elevated temperatures BETWEEN 265 degrees F (130 degrees C) and 350 degrees F (175 degrees C), it MUST be hydrostatically retested before being returned to service.

Common evidence of exposure to elevated temperatures above 265 degrees F (130 degrees C) includes:

- Charring or blistering of the paint or other protective coating
- Distortion of the cylinder

- Melting of fuse plugs
- Charring or burning of labels
- Increases in total or permanent expansion from hydrotesting
- Distortion of valve or carrying handles

WARNING:

- Any cylinder exposed to the direct action of fire **MUST** be removed from service as its mechanical properties are adversely affected by exposure to high temperatures (49 CFR 173.34) and it may fail under pressure.
- Any aluminum cylinder exposed or suspected of having been exposed to temperatures in excess of 350 degrees F (175 degrees C) **MUST** be condemned (CGA C-6.1) and removed from service.
- If your cylinder has a heat-indicating clear coat, it must be condemned immediately if the coat changes to a brown color.

The properties of aluminum cylinders rapidly degrade or change when temperatures *exceed* 350 degrees F (175 degrees C). The longer the exposure the greater the degradation of the metal, which weakens and may later fail under pressure. The higher the temperature above 350 degrees F (175 degrees C), the faster and greater the degradation.

PAINTING RECOMMENDATION:

To avoid the risk of cylinder failure and risk to human life, Luxfer strongly recommends that cylinders should only be repainted using paints that cure and dry at *room temperature*. These paints may be water-based although some areas permit solvent paints (check with your local authorities). A clear coat, which also cures and dries at room temperature, may be applied over the new paint. Use only paints specifically recommended for use on aluminum surfaces.

WARNING:

- Do not use caustic paint strippers or corrosive cleaners to remove paint from aluminum cylinders. They will damage the cylinder and weaken the metal which could later cause a failure under pressure.
- Do not remove old paint by using blasting media that will or may remove metal from the cylinder.

If you have any questions regarding the above, contact Luxfer's Customer Service at (951) 684-5110. If you are a professional refinisher or repainter of aluminum cylinders, please contact Luxfer for a special technical bulletin on cylinder repainting.