



The Human Side of Safety.®  
Since 1898.

# Spectrum Series Compressed Air Cylinder Safety Precautions



**SPECPDE5L Airline Respirator with 5-minute  
Escape Air Cylinder**

# Compressed Air Cylinder Safety Precautions

## Inspection

After each use and prior to recharging, each air cylinder shall be subject to a thorough visual inspection:

### **Cylinder**

Check the most recent hydrostatic test date, which is stamped into the cylinder shoulder. This date must be within 5 years of the current date. Inspect the exterior of the cylinder for cuts, gouges, dings, bulges, corrosion, etc. Remove cylinders from service if you find any signs of this type of wear.

### **Cylinder Valve**

The cylinder valve should be examined for obvious external damage such as a damaged handwheel, inaccurate or inoperative cylinder pressure gauge, damaged threads on the outlet connection, or other evidence of impact.

### **Additional Information**

Additional information on cylinder inspection and maintenance can be found in CGA pamphlet C-6.1, "Standards for Visual Inspection of High Pressure Aluminum Compressed Gas Cylinders," available from the Compressed Gas Association Inc. (Phone 703-413-4341). If there is any doubt about the suitability of a cylinder to recharge, it should be returned to a certified hydrostatic retest facility for expert examination and retesting.

A comprehensive listing of all licensed hydrostatic test stations is

available from the U.S. Department of Transportation (400 7th Street SW, Washington, DC 20590).

## Filling Air Cylinders

### **Air Purity**

Air cylinders shall be refilled with compressed air meeting the purity requirements for Grade D or cleaner air, conforming to the Compressed Gas Association Specification for Air, Publication G-7.1-1989. Moisture content, expressed as dewpoint, shall be maintained at -65°F (-54°C) or lower, or less than 24 PPM by volume moisture content. **UNDER NO CIRCUMSTANCES SHALL AN AIR CYLINDER BE FILLED OR PARTIALLY FILLED WITH OXYGEN.**

### **Maximum Fill Pressure**

The maximum fill pressure for Bullard's 5-Minute breathing air cylinder is 2,216 psig (15,280 kPa). The maximum fill pressure for Bullard's 10-Minute breathing air cylinder is 3,000 psig (20,685 kPa). **Cylinders must never be filled to a pressure greater than the marked service pressure.**

### **Filling Procedure**

The filling station should be constructed and equipped in accordance with applicable federal and state industrial safety codes. Use particular care to ensure that an air cylinder is never connected to a source capable of supplying air at a pressure greater than the maximum service pressure of that cylinder. To

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fill a cylinder, follow these instructions:

- Remove the first stage regulator from the cylinder and place the cylinder in a suitable safety sleeve or filling area. The cylinder may be partially immersed (DO NOT submerge the cylinder valve) in a water bath to minimize the temperature rise that occurs as the cylinder is filled. The filler hose should be equipped with a restraining cable to prevent uncontrolled “whipping” in case of hose failure.
- Connect the filler hose and open the cylinder valve FULLY. A separate metering valve must be used to control fill rate.
- Fill the cylinder slowly, at a rate not exceeding 500 psig (3,448 kPa) per minute. When the cylinder is full, close the cylinder valve. Allow the cylinder to cool to room temperature. Check the gauge reading. If necessary, “top off” to achieve full service pressure.
- Slowly bleed pressure from the filling lines. Disconnect the filling lines.

## Storage

For maximum safety, the cylinders should be stored fully charged. Air cylinders should be recharged as soon as is practical after use. Cylinders should not be stored partially charged, for several reasons:

- If used without recharge, the service duration of the apparatus is reduced.

- The safety relief device is designed specifically to protect a fully charged cylinder from the effects of a fire.
- If the cylinder is stored empty and the valve is inadvertently left open, humid atmospheric air may enter the cylinder and result in interior corrosion.

If an SCBA cylinder is to be maintained in “stand by” mode, i.e. available for immediate emergency usage, the cylinder pressure gauge shall be checked at least once a month to assure that the cylinder is charged to full service pressure, as part of a complete inspection of the entire respirator as required by OSHA regulations.

REFER TO THE RESPIRATOR INSTRUCTIONS ACCOMPANYING THE SPECPDE RESPIRATORS FOR MORE INFORMATION CONCERNING THE USE AND MAINTENANCE OF THE 5- AND 10-MINUTE CYLINDERS.

**▲ WARNING ▲:** Only trained personnel may store, fill, maintain, handle, use or dispose of cylinders used with the Bullard SPECPDE respirators. Follow the guidelines of the Compressed Gas Association (CGA) pamphlets P-1, C-1, C-6.2, G-7 and G-7.1-1989, as appropriate. Always follow established safety precautions when recharging cylinders.

**Do not fill the cylinder if it is not marked as being hydrostatically tested within five years of the current date.**



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