

**CABLE PRESSURE SYSTEMS
NITROGEN GAS CYLINDERS
DESCRIPTION**

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1. GENERAL	1	<ul style="list-style-type: none"> ● Change 3.05 and 3.07, and add 3.08 to include additional precautions. ● Add Fig. 3 to illustrate outlet valve protection cap.
2. DESCRIPTION	1	<ul style="list-style-type: none"> ● Change reference from ICC Regulations to DOT Regulations.
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1. GENERAL		1.03 Both the 112 and 224 cubic foot cylinders usually are owned by the nitrogen supplier, while the B nitrogen cylinder (24 cubic foot) is owned by the telephone company.
1.01 This section describes the three standard nitrogen gas cylinders and includes precautions to be observed in their use.		2. DESCRIPTION
1.02 This section is reissued to:		2.01 These cylinders are of one-piece, drawn steel construction, and heavy enough to withstand high internal pressures. They are charged with dry nitrogen gas to a pressure of 2200 psi (pounds per square inch). The weights, dimensions, and approximate volume of gas for each of the cylinders are given in Table A.
<ul style="list-style-type: none"> ● Include information pertaining to the replacement of the inspection disc for the B nitrogen cylinder at each test period. 		

TABLE A
CYLINDER CHARACTERISTICS

SIZE	DIA (IN.)	OVERALL LENGTH WITH CAP (IN.)	GROSS WEIGHT (LBS)	APPROX WEIGHT OF NITROGEN (LBS)	VOLUME OF NITROGEN (CU FT)
B Cylinder	4-1/2	32	30.0	1.8	24
112 Cu Ft	7	44	83.5	8.5	112
224 Cu Ft	9	52	150.0	17.0	224

**Reprinted to comply with modified final judgment.

SECTION 637-300-100

2.02 The pressure of the gas in these cylinders varies with the temperature, as indicated in Table B.

2.03 The pressure and volume of nitrogen gas in the cylinders are read on the high-pressure gauge of the B and C pressure testing regulators, as described in Section 081-601-100.

2.04 In some areas cylinders may be supplied with female threaded regulator connections.

In this case the pressure testing regulator is connected to the regulator connection by means of an adapter which may be obtained locally.

2.05 The cylinders must be tested and inspected in accordance with Department of Transportation (Bureau of Hazardous Material) regulations, usually every 5 years or less. Return the cylinders for retesting to an authorized agent at the appropriate time in accordance with local procedure.

TABLE B

PRESSURE RELATED TO TEMPERATURE

TEMPERATURE (FAHRENHEIT)	PRESSURE POUNDS (PER SQ IN.)	TEMPERATURE (FAHRENHEIT)	PRESSURE POUNDS (PER SQ IN.)
0	1800	70	2200
10	1850	80	2250
20	1950	90	2300
30	2000	100	2350
40	2050	110	2450
50	2100	120	2500
60	2150	130	2550

2.06 Each cylinder is marked with a Department of Transportation (DOT) number, a serial number, and an indication of ownership (Fig. 1 and 2). Also marked on 112 and 224 cubic foot cylinders is the date of manufacture or initial test (Fig. 1), together with subsequent test dates. The distributor of 112- and/or 224-cubic foot

cylinders shall stencil, stamp, or tag, at the valve end, the type gas contained in each cylinder supplied. The B nitrogen cylinder is equipped initially and at each test period with an inspection disc (Fig. 2) showing the due date of the next test, as well as the type of gas.

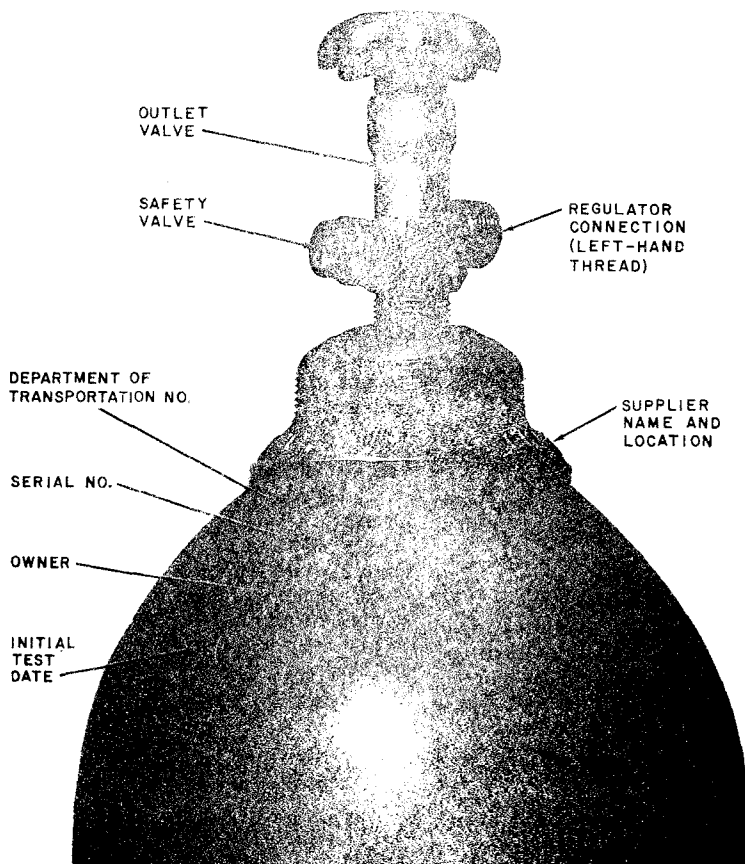


Fig. 1—112 and 224 Cubic Foot Cylinder—Typical Markings

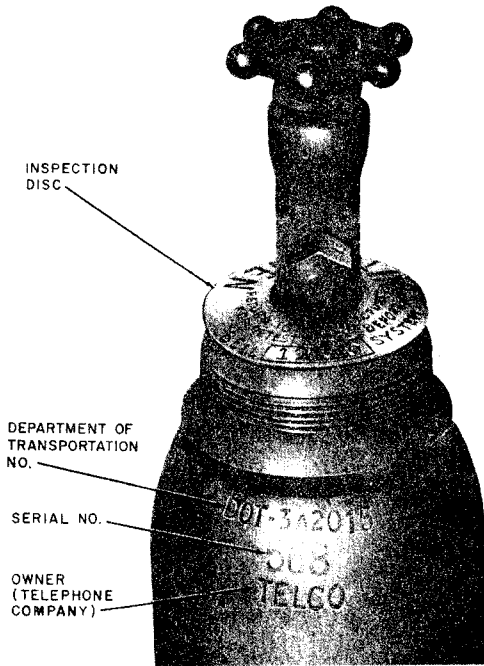


Fig. 2—B Nitrogen Cylinder—Typical Markings

3. PRECAUTIONS

3.01 Cylinders normally are color coded to aid in identifying the type of gas contained therein. Since there is no universal color code for indicating the type of gas, **do not** rely on the color of a cylinder to determine the type of gas it contains. Regulations require that each compressed gas cylinder be legibly marked indicating the type of gas within the cylinder. **Any cylinder not marked in this manner must not be used and should be returned in accordance with local routine.**

3.02 *The cap for protecting the outlet valve must always be in place when the cylinder is not in use* (Fig. 3).

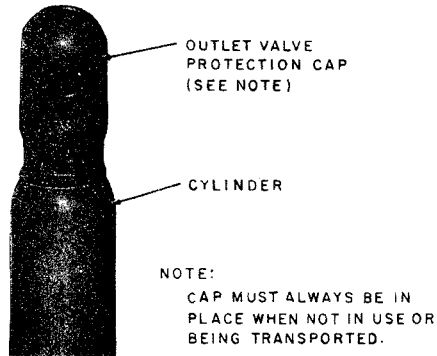


Fig. 3—Outlet Valve Protection Cap in Place

3.03 Always open and close the outlet valve by hand. Never use tools for this purpose.

3.04 Before storing, mark the high-pressure gauge reading on the cylinder in chalk or crayon to permit identification of partly filled cylinders.

3.05 Cylinders should not be dropped or struck violently. Also, cylinders should not be placed in a horizontal position except in motor vehicle compartments where provisions have been made to store them horizontally. When storing these cylinders in a garage or other area, they should be stored in a vertical position and secured with a chain or heavy strap. Due to their size and shape, they present a safety hazard if stored unsecured.

3.06 To prevent moist air from entering the cylinders, do not allow cylinder pressure to drop too low. When cylinder pressure drops to approximately 25 psi, return the cylinder for refilling.

3.07 Precautions covering the handling and use of the gas cylinders are outlined in Section

637-025-010. Section 081-600-104 describes the B gas cylinder sling which is used for transporting, hoisting, or suspending nitrogen cylinders.◆

3.08 ◆ Although nitrogen is nontoxic and nonflammable, it can cause asphyxiation in a confined area without adequate ventilation. Any atmosphere which does not contain enough oxygen

for breathing can cause dizziness, unconsciousness, and even death. Nitrogen, being colorless, odorless, and tasteless, cannot be detected by the human senses and will be inhaled normally. Without adequate ventilation, the expanding nitrogen will displace normal air without warning. Refer to Section 620-140-501 for manhole ventilation procedures.◆