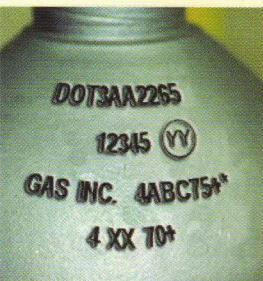


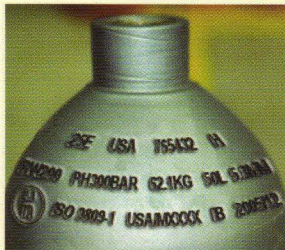
WHAT ARE SOME DIFFERENCES BETWEEN UN PRESSURE RECEPTACLES AND DOT CYLINDERS?

DOT CYLINDERS



- Are acceptable for transport to, from, or within the United States
- Aluminum oxygen cylinders must have straight threads only
- Markings
 - Marks conform to applicable requirements of §178.35
 - Service pressure shown
 - Markings expressed in conventional units

UN PRESSURE RECEPTACLES



- Must have "USA" country of approval marking to be acceptable for transport to, from, or within the United States
- Aluminum oxygen cylinders may have straight or tapered threads
- Markings
 - Required Part 178 markings displayed in 3 rows in accordance with §178.71
 - Test pressure shown
 - Markings expressed in metric units
 - Thread type must be marked on each receptacle and valve

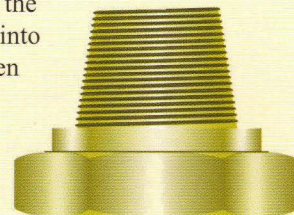
ALUMINUM CYLINDERS IN OXYGEN SERVICE

The openings on aluminum alloy UN oxygen cylinders may be configured with straight (parallel) or taper threads. The thread type must be marked on the cylinder and on the valve. Any person who installs a valve into a UN aluminum alloy cylinder in oxygen service must verify the valve and the cylinder have the same thread type.

For example:

| Straight | Tapered |
|----------|---------|
| 18P | 17E |
| 25P | 25E |

The openings on aluminum alloy DOT specification oxygen cylinders must be configured with straight threads only.



Taper thread



Straight (parallel) thread

Note: A thread mismatch can lead to an unintentional release of product or a violent expulsion of the valve which can cause personal injury or death. Improper valve torquing can lead to cylinder damage. The correct amount of torque applied to a valve must be obtained from the cylinder manufacturer.

WHAT ARE THE FILLING REQUIREMENTS?

Filling limits for UN pressure receptacles are outlined in §173.302b and §173.304b. UN pressure receptacles may be filled with a gas by using the numerical limits or the formulas provided in P200 of the UN Model Regulations unless otherwise provided.

WHAT ARE THE REQUALIFICATION FREQUENCY AND MARKINGS?

UN pressure receptacles must be requalified at least once every ten years, except that composite cylinders and pressure receptacles used for certain specialized service must be requalified every five years (see §180.207). The requalification markings must conform to the requirements in §180.213.

HOW ARE UN PRESSURE RECEPTACLES REQUALIFIED?

UN pressure receptacles may be requalified by a hydraulic pressure test or ultrasonic examination (UE). The hydraulic pressure test may be either the volumetric expansion or the proof pressure test. UN seamless steel pressure receptacles with a tensile strength ≥ 950 MPa must be requalified by UE in accordance with ISO 6406 by a requalifier authorized to requalify UN pressure receptacles by UE. Alternative requalification methods may be used if prior approval has been obtained from PHMSA's Associate Administrator for Hazardous Materials Safety.