

CGA P-5—2013

**SUGGESTIONS FOR THE CARE OF
HIGH PRESSURE AIR CYLINDERS
FOR UNDERWATER BREATHING**

SIXTH EDITION



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Work Item 10-024
Cylinder Specifications Committee

NOTE—Technical changes from the previous edition are underlined.

SIXTH EDITION: 2013
FIFTH EDITION: 2005
FOURTH EDITION: 2000
THIRD EDITION: 1987

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1 Introduction

Steel and aluminum alloy compressed gas cylinders used for underwater diving service in self-contained underwater breathing apparatus (SCUBA) are exposed to extremely harsh conditions. Corrosion caused by seawater can weaken cylinders and residue from corrosion can clog valves and regulators resulting in reduced or blocked airflow. Proper maintenance ensures a long life, satisfactory service, safety, and reliability for cylinders used in underwater diving.

2 Scope

This publication provides suggestions for the care of high pressure air cylinders for underwater breathing. In recognition of the extreme conditions to which compressed gas cylinders used for underwater diving service are exposed, this publication supplements information contained in the references listed in Section 7.

This publication is not intended to give detailed or specific recommended procedures for cleaning, paint stripping, inspection, valve maintenance, etc., that would be better provided by the cylinder manufacturer or distributor of the compressed gas underwater equipment.

This publication also recognizes that other types of SCUBA do exist. Closed-circuit oxygen and mixed gas systems have special cylinder requirements. All requests for information concerning such equipment should be directed to the cylinder manufacturer.

3 Description of cylinders

3.1 Cylinder types

3.1.1 History of regulatory crown markings on SCUBA cylinders

A variety of cylinders are in SCUBA diving service in the United States and Canada, all of which have the following in common:

- A marking denoting the regulatory authority that governs the specification. For U.S. cylinders, the regulatory marking of ICC was used prior to 1968 and DOT has been used since. In Canada, regulatory markings of CRC, BTC, and CTC were used prior to 1993, and TC has been used since. CTC/DOT has been used in dual regulatory marking of cylinders; and
- The cylinder features a mark representing the manufacturing or requalification date that indicates compliance with the periodic requalification regulations found in Title 49 of the U.S. *Code of Federal Regulations* (49 CFR) Part 180; Canadian Standards Association (CSA) B339, *Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods*; applicable special permits for U.S. Department of Transportation (DOT); and applicable equivalency certificates for Transport Canada (TC) [1, 2].¹

Only cylinders bearing such markings stamped on the shoulder, top head, or neck shall be used.

3.1.2 Current crown marking of regulation and pressure on SCUBA cylinders

Currently, the most common cylinders used for underwater diving are marked with the specification and service pressure markings.

3.1.2.1 Regulation and pressure markings of steel cylinders

The most common steel cylinders are marked with the following specification and service pressure markings:

- ICC-3AA1800, DOT-3AA1800, CTC/DOT-3AA1800, or TC-3AAM124;
- ICC-3AA2250, DOT-3AA2250, CTC/DOT-3AA2250, or TC-3AAM155;

¹ References are shown by bracketed numbers and are listed in the order of appearance in reference section.