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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 13077-2024

Replacing GB/T 13077-2004

**Periodic inspection and evaluation of seamless aluminum alloy
gas cylinders**

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting:

This document replaces GB/T 13077-2004 "Periodic Inspection and Evaluation of Aluminum Alloy Seamless Gas Cylinders" and is consistent with GB/T 13077-2004:

In addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) Changed the range of nominal volume and the lower limit of nominal working pressure, added the ambient temperature requirements for gas cylinders, and deleted the requirements for inapplicable gases:

Description of bottle type (see Chapter 1, Chapter 1 of the:2004 edition);

b) The requirements for inspection bodies have been deleted (see 3.1 of the:2004 edition);

c) The provisions on inspection cycle have been deleted (see 3.2 of the:2004 edition);

d) Added the follow-up handling requirements for gas cylinders whose valves cannot be opened (see 5.3:2);

e) Deleted the wall thickness test requirements for gas cylinders manufactured before 1989 and imported (see 5.1:4 of the:2004 edition);

f) The inspection and assessment requirements for dents have been changed (see 6.2:3, 6:2:4, 5:2:1, 5:2:2 of the:2004 edition);

g) Added inspection and assessment requirements for collars (see 6.6:1);

h) Added the assessment requirement for the inability of gas cylinders to stand upright stably (see 6.6:3);

i) The qualified index of cylinder straightness has been changed (see 6.5, 5:6 of the:2004 edition);

j) Added inspection requirements for straight threads (see 7.4);

k) The rejection requirements for internal surface defects have been changed (see 8.3, 8:3:2 of the:2004 edition);

l) The evaluation index of the measured hardness value has been changed (see 9.3, 6:3 of the:2004 edition);

m) The requirements for the evaluation of measured quality results have been changed (see 10.3, 9:3:1 of the:2004 edition);

- n) The requirements for the evaluation of the measured volume of gas cylinders have been changed (see 10.4, 9:3:3 of the:2004 edition);
- o) The qualified index of volume residual deformation rate during water pressure test has been changed (see 11.4, 10:1:4 of the:2004 edition);
- p) Changed the requirements for inspection and replacement of cylinder valves (see Chapter 13, 12:1:3 of the:2004 edition);
- q) The content of work after inspection has been changed (see Chapter 15, Chapter 14 of the:2004 edition);
- r) Added the requirements for cylinder valve assembly torque (see Appendix D):

1 Scope

This document specifies the basic methods and technical requirements for the periodic inspection and assessment of aluminum alloy seamless gas cylinders (hereinafter referred to as gas cylinders):

This document is applicable to use at ambient temperature of -40°C~60°C, nominal volume of 0:4L~150L, nominal working pressure not greater than 30MPa, used for regular inspection and assessment of refillable gas cylinders containing compressed gas, liquefied gas or mixed gas:

Gas cylinders with a capacity of 0:4L or above can be inspected regularly with reference to this document; and safety assessment of gas cylinders can be carried out with reference to this document:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this text:

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document:

GB/T 230.1 Rockwell hardness test for metallic materials Part 1: Test method GB/T 231.1 Brinell hardness test for metallic materials Part 1: Test method GB/T 3464.1 Machine and hand taps Part 1: Machine and hand taps with general shanks GB/T 3934 Technical requirements for common thread gauges GB/T 7144 Color marking of gas cylinders GB/T 8335 Special threads for gas cylinders GB/T 8336 Thread gauge for gas cylinders GB/T 9251 Gas cylinder water pressure test method GB/T 10878 Gas cylinder taper thread taps GB/T 12137 Test method for gas cylinder air tightness GB/T 13005 Gas Cylinder Terminology TSG23 Gas Cylinder Safety Technical Regulations

3 Terms and definitions

The terms and definitions defined in GB/T 13005 apply to this document:

4 Periodic inspection items

The regular inspection items of gas cylinders include appearance inspection, bottle thread inspection, internal inspection, hardness test, mass and volume test, water pressure test, Bottle valve inspection, assembly and air tightness test:

5: Inspection Preparation

5.1 Records

5.1.1 Check and record the manufacturing mark and inspection mark of each gas cylinder:
The record should at least include the manufacturer's license number or unit code: