

**Gas cylinders - Cylinder valves
Specification and type testing
(ISO 10297:2014, Corrected version 2014-11-01)**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 10297:2014 sisaldab Euroopa standardi EN ISO 10297:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 10297:2014 consists of the English text of the European standard EN ISO 10297:2014.
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English Version

Gas cylinders - Cylinder valves - Specification and type testing
(ISO 10297:2014, Corrected version 2014-11-01)

Bouteilles à gaz - Robinets de bouteilles - Spécifications et
essais de type (ISO 10297:2014, Version corrigée 2014-11-
01)

Gasflaschen - Flaschenventile - Spezifikation und
Baumusterprüfungen (ISO 10297:2014, korrigierte Fassung
2014-11-01)

This European Standard was approved by CEN on 28 June 2014.

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Foreword

This document (EN ISO 10297:2014) has been prepared by Technical Committee ISO/TC 58 "Gas cylinders" in collaboration with Technical Committee CEN/TC 23 "Transportable gas cylinders" the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2015, and conflicting national standards shall be withdrawn at the latest by January 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 10297:2006.

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Endorsement notice

The text of ISO 10297:2014, Corrected version 2014-11-01 has been approved by CEN as EN ISO 10297:2014 without any modification.

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Introduction

This International Standard covers the function of a cylinder valve as a closure (defined by the UN Model Regulations). Additional features of cylinder valves (e.g. pressure regulators, residual pressure devices, non-return devices and pressure relief devices) might be covered by other standards and/or regulations.

Cylinder valves complying with this International Standard can be expected to perform satisfactorily under normal service conditions.

This International Standard pays particular attention to:

- a) suitability of materials;
- b) safety (mechanical strength, impact strength, endurance, leak tightness, resistance to ignition, resistance to acetylene flashback);
- c) testing;
- d) marking.

This standard has been written to be in conformity with the UN Model Regulations. When published it will be submitted to the UN Sub Committee of Experts on the Transport of Dangerous Goods with a request that it be included in the UN Model Regulations.

Where there is any conflict between this International Standard and any applicable regulation, the regulation always takes precedence.

Considering the changes described in the Foreword, when a cylinder valve has been approved according to the previous version of this International Standard the body responsible for approving the same cylinder valve to this new edition should consider which tests need to be performed.

In this International Standard the unit bar is used, due to its universal use in the field of technical gases. It should, however, be noted that bar is not an SI unit, and that the corresponding SI unit for pressure is Pa ($1 \text{ bar} = 10^5 \text{ Pa} = 10^5 \text{ N/m}^2$).

Pressure values given in this International Standard are given as gauge pressure (pressure exceeding atmospheric pressure) unless noted otherwise.

Gas cylinders — Cylinder valves — Specification and type testing

1 Scope

This International Standard specifies design, type testing and marking requirements for:

- a) cylinder valves intended to be fitted to refillable transportable gas cylinders;
- b) main valves (excluding ball valves) for cylinder bundles;
- c) cylinder valves or main valves with integrated pressure regulator (VIPR);

which convey compressed, liquefied or dissolved gases.

NOTE 1 Where there is no risk of ambiguity, cylinder valves, main valves and VIPR are addressed with the collective term “valves” within this International Standard.

This International Standard covers the function of a valve as a closure.

This International Standard does not apply to

- valves for cryogenic equipment, portable fire extinguishers and liquefied petroleum gas (LPG), and
- quick-release valves (e.g. for fire-extinguishing, explosion protection and rescue applications), non-return valves or ball valves.

NOTE 2 Requirements for valves for cryogenic vessels are specified in ISO 21011 and at a regional level e.g. in EN 1626. Requirements for LPG valves are specified in ISO 14245 or ISO 15995. Requirements for quick-release valves are specified e.g. in ISO 17871. Requirements for valves for portable fire extinguishers at a regional level are specified e.g. in EN 3 series. Requirements for non-return valves and ball valves might be specified in international/regional standards.

NOTE 3 Requirements for manufacturing tests and examinations of valves covered by this International Standard are given in ISO 14246.

NOTE 4 Additional requirements for VIPR are specified in ISO 22435 for industrial applications or ISO 10524-3 for medical applications. Additional requirements for residual pressure valves with or without a non-return function are specified in ISO 15996. Additional requirements for pressure-relief devices might be specified in international/regional regulations/standards.

NOTE 5 Additional specific requirements for valves for breathing apparatus at a regional level are specified e.g. in EN 144 series. Additional specific requirements for quick-release valves for fixed fire-fighting systems are specified in ISO 16003 and at a regional level e.g. in EN 12094-4.

2 Normative references

The following referenced documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method*

ISO 407, *Small medical gas cylinders — Pin-index yoke-type valve connections*

ISO 10286, *Gas cylinders — Terminology*

ISO 10524-3, *Pressure regulators for use with medical gases — Part 3: Pressure regulators integrated with cylinder valves*

ISO 11114-1, *Gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 1: Metallic materials*

ISO 11114-2, *Gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 2: Non-metallic materials*

ISO 11117:2008, *Gas cylinders — Valve protection caps and valve guards — Design, construction and tests*

ISO 13341, *Gas cylinders — Fitting of valves to gas cylinders*

ISO 15615:2013, *Gas welding equipment — Acetylene manifold systems for welding, cutting and allied processes — Safety requirements in high-pressure devices*

ISO 15996, *Gas cylinders — Residual pressure valves — General requirements and type testing*

ISO 22435, *Gas cylinders — Cylinder valves with integrated pressure regulators — Specification and type testing*

3 Terms, definitions and symbols

For the purposes of this document, the terms and definitions given in ISO 10286, and the following apply.

3.1

valve operating mechanism

mechanism which closes and opens the valve orifice and which includes the internal and external sealing systems

Note 1 to entry: In ISO 22435 the valve operating mechanism is called shut-off mechanism.

Note 2 to entry: For some VIPR designs the pressure regulating valve can act as the shut-off mechanism.

EXAMPLE A threaded valve spindle which, when rotated, raises and lowers a seal/seal.

3.2

valve design

classification of valves with regard to the *valve operating mechanism* ([3.1](#))

3.3

valve operating device

component which actuates the *valve operating mechanism* ([3.1](#))

EXAMPLE Handwheel, key, knob, toggle, lever or actuator.

3.4

external leak tightness

leak tightness to atmosphere (leakage in and/or leakage out) when the valve is open

Note 1 to entry: See [Figure 1](#).