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Gas cylinders - Quick-release cylinder valves -  
Specification and type testing (ISO 17871:2020)

## EESTI STANDARDI EESSÕNA

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ICS 23.020.35

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EUROPEAN STANDARD

**EN ISO 17871**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2020

ICS 23.020.35

Supersedes EN ISO 17871:2015

English Version

## Gas cylinders - Quick-release cylinder valves - Specification and type testing (ISO 17871:2020)

Bouteilles à gaz - Robinets de bouteilles à ouverture  
rapide - Spécifications et essais de type (ISO  
17871:2020)

Gasflaschen - Schnellöffnungs-Flaschenventile -  
Spezifikation und Baumusterprüfung (ISO  
17871:2020)

This European Standard was approved by CEN on 3 August 2020.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## European foreword

This document (EN ISO 17871:2020) 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of an identical text or by endorsement, at the latest by February 2021, and conflicting national standards shall be withdrawn at the latest by February 2021.

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

This document supersedes EN ISO 17871:2015.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Endorsement notice

The text of ISO 17871:2020 has been approved by CEN as EN ISO 17871:2020 without any modification.

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 2, *Cylinder fittings*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 23, *Transportable gas cylinders*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 17871:2015), which has been technically revised. It also incorporates the Amendment ISO 17871:2015/Amd 1:2018.

The main changes compared to the previous edition are as follows:

- extension of the scope to valves for pressure drums and tubes;
- addition of the valve burst test pressure;
- deletion of the flame impingement test;
- deletion of internal leak tightness test at  $-40\text{ °C}$  for quick-release cylinder valves only used for fixed fire-fighting systems installed in buildings;
- complete revision of [4.2.11](#) and [Annex A](#).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

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

Quick-release cylinder valves complying with this document can be expected to perform satisfactorily under normal service conditions.

This document pays particular attention to:

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

This document has been written so that it is suitable to be referenced in the UN Model Regulations<sup>[1]</sup>.

In this document, the unit bar is used due to its universal use in the field of technical gases. However, it is 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 document are given as gauge pressure (pressure exceeding atmospheric pressure) unless noted otherwise.

Charging of agents with a compressed gas is in some areas, e.g. fire-fighting, referred to as super-pressurization.

# Gas cylinders — Quick-release cylinder valves — Specification and type testing

## 1 Scope

This document, in conjunction with ISO 10297 and ISO 14246, specifies design, type testing, marking and manufacturing tests, and examinations requirements for quick-release cylinder valves intended to be fitted to refillable transportable gas cylinders, pressure drums and tubes which convey:

- non-toxic;
- non-oxidizing;
- non-flammable; and
- non-corrosive;

compressed or liquefied gases or extinguishing agents charged with compressed gases to be used for fire-extinguishing, explosion protection, and rescue applications.

NOTE 1 The main application of such quick-release cylinder valves is in the fire-fighting industry. However, there are other applications such as avalanche airbags, life raft inflation and similar applications.

NOTE 2 Where there is no risk of ambiguity, gas cylinders, pressure drums and tubes are addressed with the collective term “cylinders” within this document.

This document covers the function of a quick-release cylinder valve as a closure.

This document does not apply to quick-release cylinder valves for cryogenic equipment and for liquefied petroleum gas (LPG).

This document does not apply to quick-release cylinder valves if used as the main closure of portable fire extinguishers because portable fire extinguishers are not covered by transport regulation.

Quick-release cylinder valves of auxiliary refillable propellant gas cylinders used within or as part of portable fire extinguishers are covered by this document, if these cylinders are transported separately, e.g. for filling (see UN Model Regulations, Chapter 3.3, Special Provision 225, second note<sup>[1]</sup>).

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10286, *Gas cylinders — Terminology*

ISO 10297:2014+Amd.1:2017, *Gas cylinders — Cylinder valves — Specification and type testing*

ISO 14246, *Gas cylinders — Cylinder valves — Manufacturing tests and examinations*

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