



SLOVENSKI STANDARD
oSIST prEN ISO 17871:2020
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Plinske jeklenke - Ventili jeklenk za hitro razbremenitev - Specifikacija in preskušanje tipa (ISO/DIS 17871:2019)

Gas cylinders - Quick-release cylinder valves - Specification and type testing (ISO/DIS 17871:2019)

Gasflaschen - Schnellöffnungs-Flaschenventile - Spezifikation und Baumusterprüfung (ISO/DIS 17871:2019)

Bouteilles à gaz -- Robinets de bouteilles à ouverture rapide - Spécifications et essais de type (ISO/DIS 17871:2019)

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

Bouteilles à gaz — Robinets de bouteilles à ouverture rapide — Spécifications et essais de type

ICS: 23.020.35

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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.

This document was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 2, *Cylinder fittings*.

This second edition cancels and replaces the first edition (ISO 17871:2015), which has been technically revised.

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

- introduction of the draft amendment published in 2018;
- extension of the scope to pressure drums and tubes;
- addition of the valve burst test pressure;
- deletion of the flame impingement test;
- complete revision of the subclause Securing arrangements and [Annex A](#) Manufacturing tests end examination.

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) might be covered by other standards and/or regulations.

This document has been written to be in conformity with the UN Model Regulations. When published, it will be submitted to the UN Subcommittee 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

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 bar = 10^5 Pa = 10^5 N/m²).

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.

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

1 Scope

This document, in conjunction with ISO 10297:2014 and ISO 14246:2014, 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 to 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, for portable fire extinguishers, or for liquefied petroleum gas (LPG).

NOTE 3 Quick-release cylinder valves of refillable propellant gas cylinders used as part of portable fire extinguishers are also covered by this document, if these cylinders are transported separately.

2 Normative references

The following 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 10286, *Gas cylinders — Terminology*

ISO 10297:2014, *Gas cylinders — Cylinder valves — Specification and type testing*

ISO 14246:2014, *Gas cylinders — Cylinder valves — Manufacturing tests and examinations*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10286, ISO 10297:2014 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

ISO/DIS 17871:2019(E)

3.1 quick-release cylinder valve
cylinder valve with a valve operating mechanism designed for quick release of gas cylinder contents that is actuated by a valve operating device and which can be activated by an *activation device* (3.2) which might not be part of the quick-release cylinder valve

Note 1 to entry: Quick-release cylinder valves are further subdivided in accordance with 3.1.1 and 3.1.2.

Note 2 to entry: Commonly used valve operating mechanisms are pistons, flaps, bursting discs, piercing discs, or differential pressure devices.

3.1.1 quick-release cylinder valve of type A
quick-release cylinder valve for one-time operation for the purpose of discharging the entire contents of the gas cylinder where the valve operating mechanism is designed to be damaged/destroyed when operated

Note 1 to entry: Consequently, the valve operating mechanism needs to be replaced or reconditioned before re-use, if intended. See ISO 22434 for further information on inspection and maintenance of cylinder valves.

3.1.2 quick-release cylinder valve of types B to E
quick-release cylinder valve for multiple operation for the purpose of total or intermittent discharging of the contents of the gas cylinder where the valve operating mechanism remains operable but is designed for no more than a specific number of cycles of use

Note 1 to entry: Consequently, if the valve is to be re-used, only the valve operating device or activation device needs to be replaced or reconditioned before re-use, if at all.

- type B valve: total number of operations of the valve operating mechanism by all existing valve operating devices up to 10 times
- type C valve: total number of operations of the valve operating mechanism by all existing valve operating devices up to 100 times

Note 2 to entry: This number of operations was taken from ISO 16003 and EN 12094-4.

- type D valve: total number of operations of the valve operating mechanism by all existing valve operating devices up to 500 times

Note 3 to entry: This number of operations was taken from UL 2166, UL 2127 and FM 5600.

- type E valve: total number of operations of the valve operating mechanism by all existing valve operating devices up to 2000 times

Note 4 to entry: This number of operations was taken from ISO 10297:2014.

3.2 activation device
means for initiating the activation of the valve operating device, e.g. manually mechanically, electrically, magnetically, thermally, hydraulically, pneumatically, or by pyrotechnic means or combinations thereof

Note 1 to entry: A quick-release cylinder valve can be fitted with multiple valve activation devices and/or multiple valve operating devices.

4 Requirements

4.1 General requirements

Quick-release cylinder valves shall comply with the requirements of ISO 10297:2014, unless this document expressly allows differing requirements or stipulates additional requirements.