

SLOVENSKI STANDARD
oSIST prEN ISO 11117:2019
01-januar-2019

**Plinske jeklenke - Zaščitne kape in varovala ventilov plinskih jeklenk -
Konstruiranje, izdelava in preskusi (ISO/DIS 11117:2018)**

Gas cylinders - Valve protection caps, guards and shrouds - Design, construction and tests (ISO/DIS 11117:2018)

Gasflaschen - Ventilschutzkappen, Schutzkörbe und Schutzkragen - Auslegung, Bau und Prüfungen (ISO/DIS 11117:2018)

Bouteilles à gaz - Chapeaux fermés, chapeaux ouverts et cols de protection des robinets - Conception, construction et essais (ISO/DIS 11117:2018)

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Gas cylinders — Valve protection caps, guards and shrouds — Design, construction and tests

Bouteilles à gaz — Chapeaux fermés, chapeaux ouverts et cols de protection des robinets — Conception, construction et essais

ICS: 11.040.10; 23.020.35

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ISO/DIS 11117:2018(E)

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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 58, *Gas cylinders*, Subcommittee SC 2, *Cylinder fittings*.

This third edition cancels and replaces the second edition (ISO 11117:2008) which has been technically revised.

The main technical modifications are:

- a) inclusion of shrouds,
- b) removal of exclusion for cylinders with a water capacity equal to or less than 5 litres,
- c) addition of other threads than W 80 × 1/11,
- d) renaming and modification of the "axial test" as "vertical pull test",
- e) modification of the "drop test"
- f) removal of the normative Annex A "Marking of caps".

Introduction

This document covers devices intended for the protection of cylinder valves, where such protection is fitted to allow safe transport, handling and storage.

This document specifies the principal dimensions, requirements for fitment and drop test procedure, to confirm the provision of adequate valve protection, in the event of the occurrence of a cylinder toppling from its base.

This standard has been written so that it is suitable to be referenced in the UN Model Regulations.

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Gas cylinders — Valve protection caps, guards and shrouds — Design, construction and tests

1 Scope

This document specifies the requirements for valve protection caps, valve guards and shrouds used on cylinders for liquefied, dissolved or compressed gases.

Valve protection caps, valve guards or shrouds are some of the options available to protect cylinder valves (including Valves with Integral Pressure Regulators, abbreviated VIPRs) during transport.

While this document is applicable to valve protection caps, valve guards and shrouds which inherently provide the primary protection of a cylinder valve, it might also be beneficially used to test other equipment attached to cylinder packages, even in cases where the cylinder valve is inherently able to withstand damage without release of the content.

NOTE Small cylinders (e.g. medical) are commonly transported in an outer-packaging (e.g. pallet) to meet transport regulations.

This document does not specify requirements that might be necessary to enable the valve protection device to be used for lifting the cylinder.

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, *Gas cylinders — Cylinder valves — Specification and type testing*

3 Terms and definitions

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

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

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

3.1

valve protection cap

device protecting the valve during handling, transport and storage, which is removed for access to the valve to allow for connection, disconnection, opening and closing

3.2

valve guard

device protecting the valve during handling, transport and storage, which does not need to be removed for access to the valve

Note 1 to entry: There are two types of valve guards: rotational and non-rotational valve guards.

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3.3**shroud**

integral and permanent part of a cylinder or pressure drum for valve protection during transport, handling and storage

[SOURCE: ISO 10286:2015, 362, "valve shroud", modified – "and permanent" was added, and "welded" was removed in front of "cylinder"]

3.4**test valve**

valve used for the drop test to qualify the valve protection device

3.5**permitted mass**

maximum mass of the cylinder package, including its permanent attachments and its maximum contents, to which the protection device is intended to be fixed

4 General requirements**4.1 Valve protection cap and guard****4.1.1 Valve protection cap**

A valve protection cap shall be of adequate strength to protect the valve.

It shall be capable of being securely fixed to the cylinder, either by screwed thread or other suitable means.

Provision should be made to assist fitting or removal of the valve protection cap, for example, by inclusion of a hexagonal boss enabling use of a wrench.

NOTE 1 Some valve protection caps not containing an inherent removal provision can be removed using a special tool.

The valve protection cap shall be provided with sufficient venting capacity equating to a cross sectional area of at least 157 mm² for a typical conventional cylinder valve.

NOTE 2 For caps designed to be used for very large discharge valves, e.g. quick-release cylinder valves for fire suppression systems, the venting capacity needs to match the potential discharge rate of the valve.

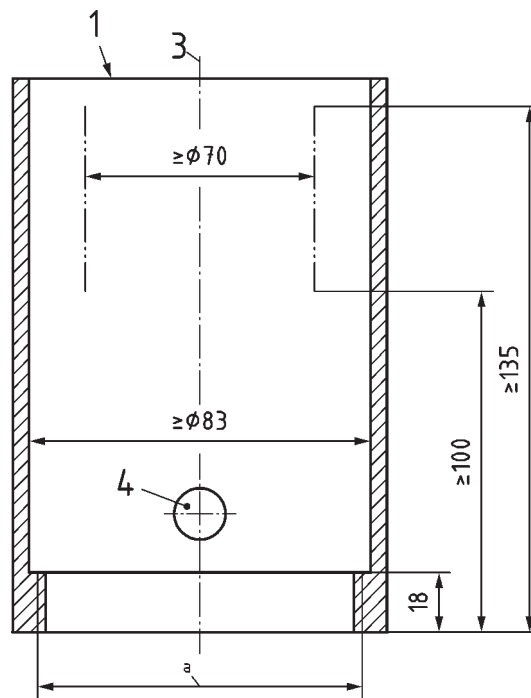
Possible examples are:

- using two or more vent holes of at least 10 mm diameter (see Figure 1) situated symmetrically so that any thrust caused by venting gas is balanced,
- using other means of venting, e.g. lifting under pressure (see Figure 6,).

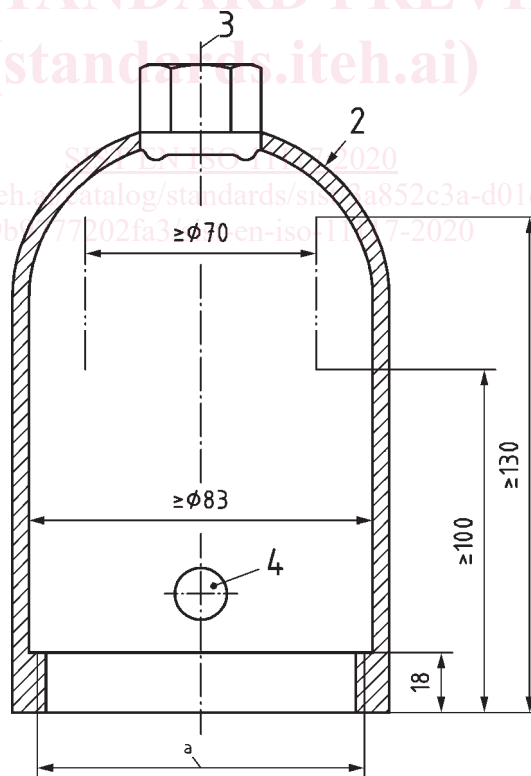
Valve protection caps designed to protect valves that have dimensions in accordance with Figure 2, as applicable, shall conform to dimensions given in Figure 1 and preferably Figure 5 where a threaded fixing connection is used. Valve protection caps designed for use with valves with larger dimensions shall be tested with the intended largest valve. The valve protection cap shall be of such dimensions as not to contact any part of the valve.

For thread dimensions, see Table 1 and Table 2.

Dimensions in millimetres



a) Example 1



b) Example 2

Key

- | | | | |
|---|------------------------------------|---|---|
| 1 | valve protection cap with open top | 3 | cylinder axis |
| 2 | closed valve protection cap | 4 | vents $\varnothing \geq 10$ mm, diametrically opposed |
| a | W 80 × 1/11 | | |