SLOVENSKI STANDARD
oSIST prEN 14912:2021

01-marec-2021

Oprema in pribor za utekočinjeni naftni plin (UNP) - Kontrola in vzdrževanje ventilov za jeklenko za UNP v času periodične kontrole jeklenk

LPG equipment and accessories - Inspection and maintenance of LPG cylinder valves at time of periodic inspection of cylinders

Flüssiggas-Geräte und Ausrüstungsteile - Inspektion und Wartung von Ventilen für Flaschen für Flüssiggas (LPG) zum Zeitpunkt der wiederkehrenden Inspektion der Flaschen

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Équipements pour GPL et leurs accessoires - Contrôle et entretien des robinets de bouteilles de GPL lors du contrôle périodique des bouteilles

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Ta slovenski standard je istoveten z: **prEN 14912**

ICS:

23.020.35	Plinske jeklenke	Gas cylinders
23.060.40	Tlačni regulatorji	Pressure regulators

oSIST prEN 14912:2021 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT prEN 14912

March 2021

ICS 23.060.40

Will supersede EN 14912:2015

English Version

LPG equipment and accessories - Inspection and maintenance of LPG cylinder valves at time of periodic inspection of cylinders

Équipements pour GPL et leurs accessoires - Contrôle et entretien des robinets de bouteilles de GPL lors du contrôle périodique des bouteilles

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 286.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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This draft European Standard was established by CEN 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document prEN 14912:2021 has been prepared by Technical Committee CEN/TC 286 “LPG Equipment and Accessories”, the secretariat of which is held by NSAI.

This document is currently submitted to the CEN enquiry.

This document will supersede EN 14912:2015

The main changes in comparison with the previous edition are:

— alignment with the requirement of paragraph 12 of Packing Instruction P200 of ADR;

— introduction of inspection and refurbishment requirements for pressure relief valves.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

Users are advised to develop an environmental management policy. For guidance, see the EN ISO 14000 series ([1], [2] and [3]). Users of this document are expected to consult CEN/TS 16765 while implementing its requirements.

This document has been submitted for reference in the technical annexes of the ADR [5].

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NOTE These regulations take precedence over any clause of this document. It is emphasized that the ADR is regularly revised at intervals of two years, which can lead to temporary non-compliances with the clauses of this document.

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Introduction

This document has been prepared to reflect the current methods for periodically inspecting LPG cylinder valves, and is based upon the operating experience of millions of cylinder years of service over a period of more than 50 years.

The primary objective of the periodic inspection of transportable refillable LPG cylinder valves is that, at the completion of the tests, the cylinder valve can be re-introduced into service for a further period of time.

The valve inspection is an integral part of the periodic inspection of an LPG cylinder.

Periodic inspections/tests are intended to be carried out by a competent person under the authorization of an inspection body based on a written scheme of examination.

Protection of the environment is a key political issue in Europe and elsewhere. For CEN/TC 286 this is covered in CEN/TS 16765 and this Technical Specification should be read in conjunction with this document. This Technical Specification provides guidance on the environmental aspects to be considered regarding equipment and accessories produced for the LPG industry and the following is addressed:

a) design;

b) manufacture;

c) packaging;

d) use and operation; and

e) disposal.

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This document calls for the use of substances and procedures that can be injurious to health if adequate precautions are not taken. It refers to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

It has been assumed in the drafting of this document that the execution of its provisions is entrusted to appropriately qualified and experienced people.

Where judgements are called for, it has been assumed that they are made by competent persons who have been trained specifically for the tasks.

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1 Scope

This document specifies the requirements for inspection and maintenance of LPG cylinder valves, either manually operated or self-closing, for reuse. It applies when the valve is either inspected or refurbished at the time of periodic inspection of the cylinder.

This document may also be applied at any other time, for example, when maintenance of the valve is necessary.

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.

EN ISO 14245:2019, *Gas cylinders - Specifications and testing of LPG cylinder valves - Self-closing (ISO 14245:2019)*

EN ISO 15995:2019, *Gas cylinders - Specifications and testing of LPG cylinder valves - Manually operated (ISO 15995:2019)*

ISO 2859-1:1999, *Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

EN 13953:2020, *LPG equipment and accessories - Pressure relief valves for transportable refillable cylinders for Liquefied Petroleum Gas (LPG)*

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3 Terms and definitions

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For the purposes of this document, the following terms and definitions 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 https://www.iso.org/obp

3.1
liquefied petroleum gas
LPG
low pressure liquefied gas composed of one or more light hydrocarbons which are assigned to UN 1011, UN 1075, UN 1965, UN 1969 or UN 1978 only and which consists mainly of propane, propene, butane, butane isomers, butene with traces of other hydrocarbon gases

3.2
periodic inspection
activities carried out at defined intervals, such as examining, measuring, testing or gauging the characteristics of a pressure vessel and comparing these with specified requirements

3.3
dismantling
separation into component parts

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3.4
minor repair
operations that include cleaning and replacement of components accessible without any dismantling of the valve (e.g. outlet seal, excess flow device)

3.5
refurbishment
operation that includes complete dismantling of the valve, evaluation and replacement of internal components, and reassembly

3.6
competent person
person which by combination of appropriate qualification, training, experience and resources, is able to make objective judgments on the subject

3.7
external leak tightness
resistance to leakage through the fitting to or from the atmosphere when the valve/fitting is open

3.8
internal leak tightness
resistance to leakage across the valve or fitting seat or other internal sealing components when the valve is closed

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3.9
written scheme
document, prepared by an inspection body, containing inspection information

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3.10
self-closing valve
normally closed valve that provides a leak tight seal, opens by the engagement of a special connector or by fluid passing through it and closes automatically upon removal of the connector or by stopping the fluid flow

4 General requirements

4.1 General

The valve shall be cleaned externally if necessary to facilitate inspection.

The inspection shall determine if:

— the valve is suitable for service;

— maintenance is required; or

— the valve shall be scrapped.

4.2 Cleaning

Contaminants, foreign matter and corrosion products shall be removed from the valve to facilitate inspection, taking care not to damage any sealing surfaces. If any cleaning products are used, they shall be:

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— completely removed after use; or

— suitable for and compatible with LPG, the valve components, the LPG cylinder and the associated downstream equipment.

4.3 Personnel

Valves shall be inspected and maintained by a competent person. Where valve removal is required, it shall only be removed from LPG cylinders by competent personnel, or under the responsibility of a competent person.

4.4 Safety concerns

Prior to manually removing a valve, it shall be verified that the cylinder does not contain liquid and is not under pressure. Cylinders that contain liquid and/or pressure or residual pressure shall be emptied and depressurized in a safe and controlled manner. An additional check shall be made to ensure that the valve is not obstructed or blocked. Cylinders with inoperative or blocked valves shall be set aside for safe valve removal.

To confirm if an LPG cylinder contains residual liquid LPG, when its valve is suspected to be inoperative or blocked, it can be weighed and this weight compared to the tare mass.

Valves shall only be removed from and refitted safely to a pressurized LPG cylinder provided the facility includes suitable equipment or operation.

External inspection and minor repairs may be carried out on valves while they are connected to a pressurized LPG cylinder but this may require special procedures and equipment.

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Refurbishment shall only be performed on valves that have been removed.

5 Inspections

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5.1 General

All valves shall be inspected in accordance with 5.2.

If the valves have been removed from the cylinders, additional inspections shall be performed in accordance with 5.3.

Valves fitted with dip-tubes, eduction tubes, sediment tubes, inlet filters, level indicating devices or overfill protection devices shall be removed from the cylinders.

Valves with excess flow devices fitted onto the stems of manually operated valves shall also be removed from the cylinders unless the correct operation of the flow devices is checked after each filling.

Valves fitted with pressure relief valves shall also be tested in accordance with 5.4.

5.2 External inspection

All valves shall be externally inspected for:

a) spindles that do not move smoothly, are difficult to turn or are seized;

b) bent, deformed, corroded, scored or cracked bodies;

c) bent or damaged spindles;

d) cross-threaded, damaged or stripped valve outlet connections;

e) damaged outlet sealing surfaces and/or any non-metallic sealing elements;

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f) indications of having been subjected to excessive heat or having been in a fire;

g) foreign matter in visible internal passageways;

h) evidence of abuse or tampering;

i) evidence of damaged gauges or indicators;

j) damage to hand wheels;

k) damage to pressure relief valves; and

l) missing parts.

For acceptance criteria, see 5.5.

5.3 Additional inspection criteria

Valves removed from cylinders shall be inspected for:

a) contaminants, foreign matter and corrosion products;

b) cross-threaded, damaged or stripped valve stem threads;

c) damaged dip tubes, eduction tubes, sediment tubes and their retaining threads;

d) damaged inlet filters;

e) damaged liquid level and pressure indicating devices;

f) damaged overfill protection devices;

g) damaged excess flow devices; and

h) missing parts.

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For acceptance criteria, see 5.5.

5.4 Pressure relief valves

5.4.1 General requirement

A pressure relief valve shall be tested according to 5.4.2.

If the periodic inspection interval of the cylinder is less than 15 years, then the pressure relief valve may be tested using the batch test described in 5.4.3. This batch testing is only allowed for valve batches that are less than 15 years old, otherwise the method described in 5.4.2 shall be used.

5.4.2 Individual test

The start to discharge pressure shall be determined from the following procedure:

— apply a pneumatic pressure to lift the pressure relief valve sealing element off the seat to ensure that it is not sticking;

— depressurize to allow the pressure relief valve to close;