SLOVENSKI STANDARD
SIST EN 15202:2020

01-februar-2020

Nadomešča:
SIST EN 15202:2012

Oprema in pribor za utekočinjeni naftni plin (UNP) - Glavne mere izhodnega priključka ventila jeklenke za UNP ter priključkov pripadajoče opreme

LPG equipment and accessories - Essential operational dimensions for LPG cylinder valve outlet and associated equipment connections

Flüssiggas-Geräte und Ausrüstungsteile - Grundlegende Betriebsmaße für Ausgangsanschlüsse von Flaschenventilen für Flüssiggas (LPG) und zugehörige Anschlüsse für Geräte

Équipements pour GPL et leurs accessoires - Dimensions opérationnelles essentielles des connexions des robinets et valves de bouteilles de GPL et des équipements associés

Ta slovenski standard je istoveten z: **EN 15202:2019**

ICS:

23.020.35	Plinske jeklenke	Gas cylinders
23.060.40	Tlačni regulatorji	Pressure regulators

SIST EN 15202:2020 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15202

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ICS 23.060.40

Supersedes EN 15202:2012

English Version

LPG equipment and accessories - Essential operational dimensions for LPG cylinder valve outlet and associated equipment connections

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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.

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

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

Ref. No. EN 15202:2019 E

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European foreword

This document (EN 15202:2019) has been prepared by Technical Committee CEN/TC 286 “Liquefied petroleum gas equipment and accessories”, the secretariat of which is held by NSAI.

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of an identical text or by endorsement, at the latest by June 2020, and conflicting national standards shall be withdrawn at the latest by June 2020.

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 15202:2012.

The revisions to this document include amendments to figures and/or tables for:

— Figure 2 (G.2),

— Figure 7 (G.7),

— Figure 10 (G.10),

— Figure 15 (G.29),

— Figure 16 (G.30),

— Figure 20 (G.50),

— Figure 22 (G.52),

— Figure 23 (G.53),

— Figure 26 (G.56),

— Figure 27 (G.57).

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Introduction

The primary objective of this document is to ensure the safe connection of LPG cylinder valves to their connectors.

This document is the fundamental source for identifying the essential manufacturing dimensions of the LPG cylinder valve connections used in Europe.

EN 16129 is the fundamental source for identifying the essential manufacturing dimensions of connector types that are not used in LPG cylinder valve connections.

This document identifies the existing cylinder valves and the connectors that are currently in use with LPG.

It is the intention that only connections which are identified in this document should be used with LPG cylinder valves.

1 Scope

This document specifies basic connection dimensions of LPG cylinder valves (manufactured in accordance with EN ISO 14245 and EN ISO 15995) and connectors (including pressure regulators) to enable them to be safely connected together.

NOTE 1 Figure 1 (type G.1) to Figure 19 (type G.33) give the types of threaded outlet connections.

NOTE 2 Figure 20 (type G.50) to Figure 34 (type G.66) give the types of non-threaded outlet connections.

This document lists potentially unsafe connections where it might be possible to connect together, but which, when connected, might not be sound or secure in some operating conditions or orientations.

This document specifies a marking system that is intended to ensure that only valves and connecters that are marked with the same connector type number are used in combination.

This document also recommends tightening torques for the attachment of screwed metal-to-metal connections.

Quality assurance systems, production testing and particularly certificates of conformity are not covered in this document.

This document excludes connections for automotive vehicles covered by UN/ECE Regulation No. 67 Part 1 and EN 13760.

This document excludes connections for gas cartridges covered by EN 417.

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 549, *Rubber materials for seals and diaphragms for gas appliances and gas equipment*

EN 560, *Gas welding equipment – Hose connections for equipment for welding, cutting and allied processes*

ISO 4658, *Acrylonitrile-butadiene rubber (NBR) – Evaluation procedure*

ANSI/CGA V-1, *American National, Compressed Gas Association Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections*

3 Terms and definitions

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 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
connector
device that attaches to a cylinder valve to allow the passage of LPG to or from the cylinder

3.3
valve operating mechanism
mechanism that opens the valve when, or after, a regulator or connector is fitted and closes the valve automatically when, or before, a regulator or connector is disconnected

4 Symbols and abbreviations

NBR	Nitrile Butadiene Rubber (Acrylonitrile-butadiene rubber) (see ISO 4658).
STP	Standard Temperature and Pressure [15,6 °C (288,7 K), 1,013 bar absolute (0,101 3 MPa absolute)]
IRHD	International Rubber Hardness Degrees
LH	Left hand
RH	Right hand
INT	Internal thread
EXT	External thread
ref	make reference to

5 Design

The dimensions shall be in accordance with those given in the following figures.

The travel distance of the valve operating mechanisms is identified where required.

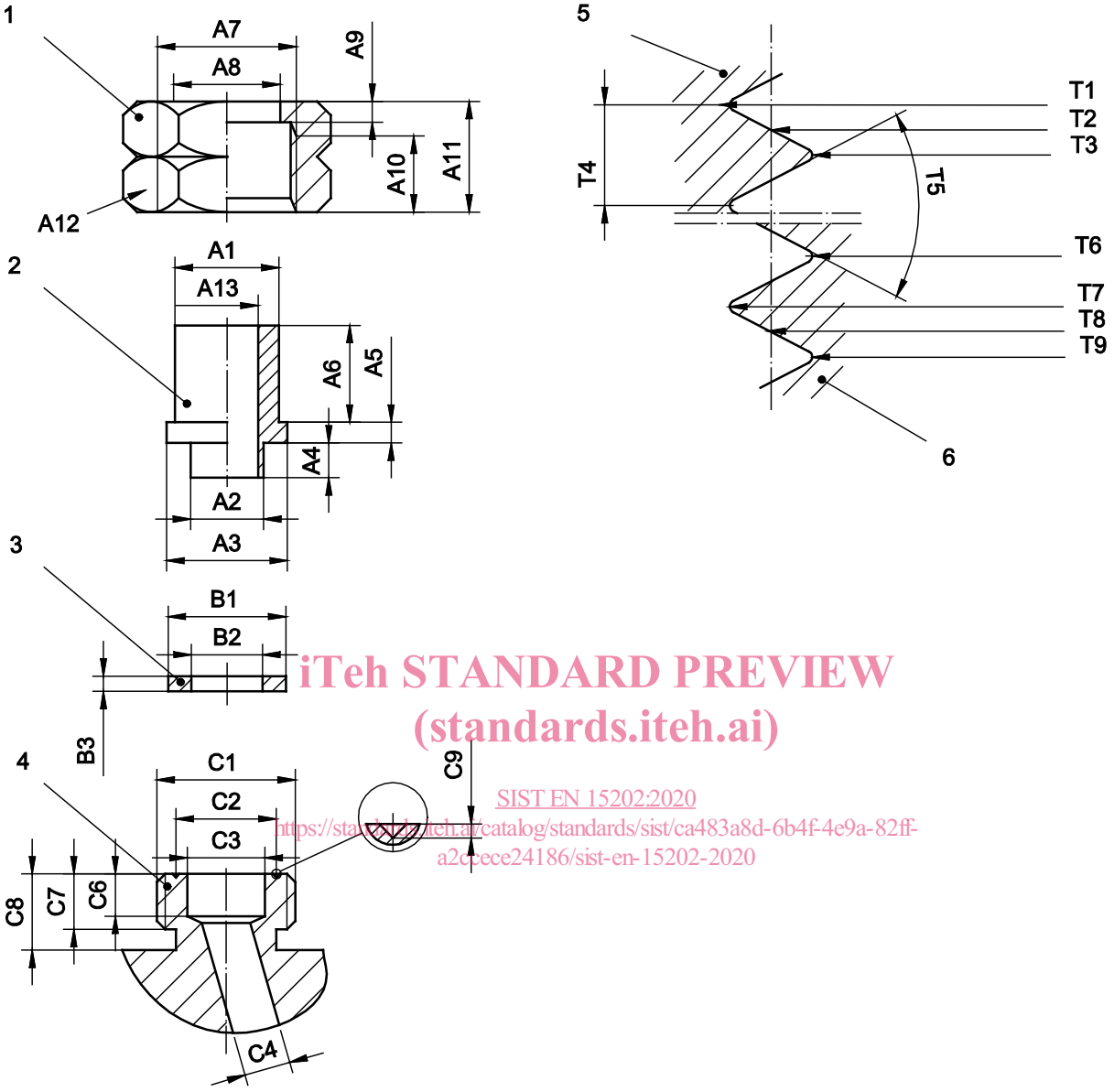
The drawings show the location of sealing elements where required.

Any hexagon nut with a left hand (LH) thread shall, for easy identification, have notches (for example a 60° V groove) midway at the corners of each adjoining spanner flat. Where concentricity and surface finish are not specified, the requirements shall be as specified by the manufacturer.

New valve/connection proposals shall not make an unsafe connection or interference fit with the valves and connectors shown in this document.

NOTE The figure titles contain connection type numbers preceded by the letter “G” to maintain consistency with EN 12864.

Dimensions in millimetres



Key

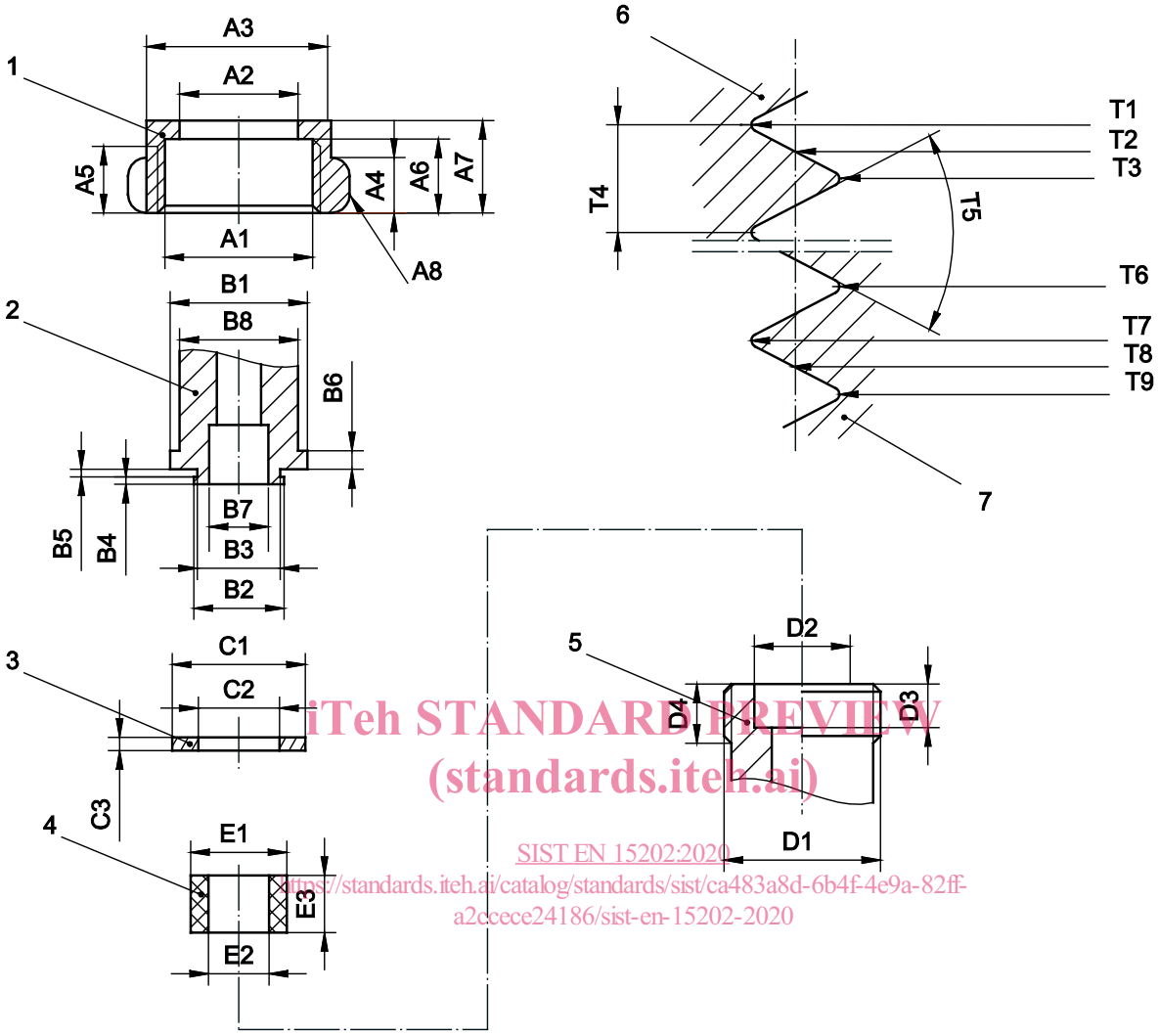
		Connector/Nut		Seal		Thread	
1	nut	A1[a]	Ø 14- Ø 15 $^{+0,37}_{+0,1}$	B1	Ø 16,8 - Ø 17	T1	Ø 20 min
2	connector	A2	Ø 10,5 - Ø 10,6	B2	Ø 10,2 - Ø 10,4	T2	Ø 18,838 – Ø 19,973
3	seal	A3	Ø 17,4 - Ø17,5	B3	2,0 – 2,2	T3	Ø 17,696 – Ø 18,266
4	valve	A4	4,8 – 5,2	Seal material shall be NBR or equivalent, or EN 549 A2/H3		T4	1,814
5	nut thread	A5	2,9 – 3,1			T5	55°
6	valve thread	A6	14 min	**Valve**		T6	R 0,249
		A7	20 × 1,814 LH	C1	20 × 1,814 LH	T7	Ø 19,589 – Ø 19,98
		A8b	Ø A1 ($^{-0,1}_{-0,37}$)	C2	Ø 14,3 – 14,7	T8	Ø 18,703 – Ø 18,838
		A9	2,9 – 3,1	C3	Ø 11,1 – 11,3	T9	Ø 17,317 – Ø 17,676
		A10	11 min	C4	Ø 6,8 - Ø 7,2		
		A11	15,8 – 16,2	C5	R0,3 – R0,7		
		A12	25 A/F	C6	6,0 – 6,3		
		A13	Ø 8,4 max	C7	7,0 – 10,0		
				C8	11 min		
				C9	0,5 × 90°		

[a] The dimension A1 shall be chosen from the range given in the table and shall be considered the nominal dimension.

[b] The dimension A8 is based on the nominal dimension chosen for A1.

Figure 1 — Type G.1 – Threaded connection 20 × 1,814 LH - Spanner tightened

Dimensions in millimetres



Key

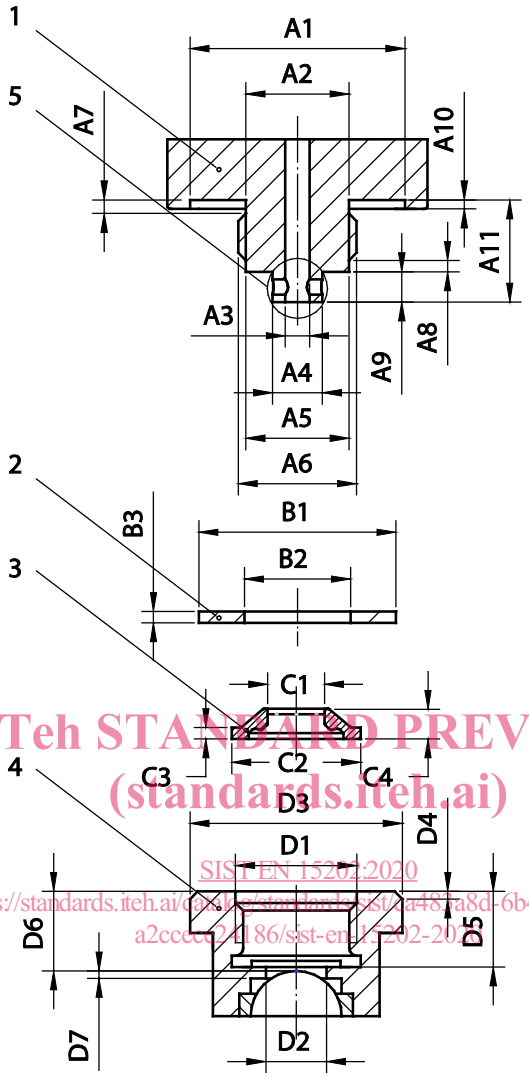
		Nut		Connector		Black Seal	
1	nut	A1	21,8 × 1,814 LH	B1	Ø 18,5 – Ø 18,7	C1	Ø 17,7 - Ø 18,0
2	connector	A2[a]	Ø 14- Ø 16 $^{+0,37}_{+0,1}$	B2	Ø 12,2 – Ø 12,3	C2	Ø 10,7 - Ø 11,0
3	black seal	A3	Ø 24,6 min	B3	Ø 11,1 – Ø 11,3	C3	1,7 – 2,0
4	seal	A4	7,5 min	B4	0,9 – 1,0	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3	
5	valve	A5	7,5 – 8,1	B5	2,0 – 2,2		
6	nut thread	A6	9,9 – 10,5	B6	2,4 – 2,6	**Thread**	
7	valve thread	A7	12,5 min	B7	Ø 9,0 max	T1	Ø 21,8 min
		A8	5 wings equally spaced	B8[b]	Ø A2 $^{-0,1}_{-0,37}$	T2	Ø 20,622 – Ø 20,722
		Valve		**Seal**		T3	Ø 19,444 – Ø 19,544
		D1	21,7 × 1,814 LH	E1	Ø 13,35 - Ø 13,65	T4	1,814
		D2	Ø 13 – 13,1	E2	Ø 8,0 - Ø 8,4	T5	60°
		D3	8,6 – 8,7	E3	7,5 – 7,8	T6	R 0,249
		D4	7,8 – 8,0	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3		T7	Ø 21,435 – Ø 21,666
						T8	Ø 20,372 – Ø 20,488
						T9	Ø 19,344 max

[a] The dimension A2 shall be chosen from the range given in the table and shall be considered the nominal dimension.

[b] The dimension B8 is based on the nominal dimension chosen for A1.

Figure 2 — Type G.2 – Threaded connection 21,7 × 1,814 LH - 60°– Hand tightened

Dimensions in millimetres



Key

1 connector
2 seal
3 gasket
4 valve
5 example of one configuration of the inlet/gas passage to the connector

Connector		**Seal**	
A1	Ø 27 - Ø 27,21	B1	Ø 25,7 - Ø 26,3
A2	Ø 13,9 - Ø 14,1	B2	Ø 14,0 - Ø 14,6
A3	Ø 3,0 - Ø 3,2	B3	1,35 – 1,65
A4	Ø 6,4 - Ø 6,6	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3	
A5	Ø 13,7 - Ø 13,9		
A6	M16 × 1,5-6g		
A7	1,6 – 1,8	**Valve**	
A8	1,4 – 1,6	D1	M16 × 1,5 – 6H
A9	3,9 – 4,1	D2	Ø 8,4 – Ø 8,6
A10	1,2 – 1,4	D3	Ø 26,5 – Ø 27,3
A11	13,4 – 13,6	D4	1 × 45°
Gasket		D5	10,3 – 10,5
C1	Ø 7,5 ± 0,15	D6	10,2 – 10,6
C2	Ø 17,0 ± 0,1	D7	1,0 min
C3	1,5 ± 0,15		
C4	4,0 ± 0,15		

Figure 3 — Type G.3 – Threaded connection M16 × 1,5 RH - Hand tightened