



# SLOVENSKI STANDARD

## SIST EN 15202:2012

01-september-2012

Nadomešča:  
SIST EN 15202:2007

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### Oprema in pribor za utekočinjeni naftni plin (UNP) - Glavne mere izhodnega priključka ventila jeklenke 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 Betriebsabmaße für Ventilausgänge von Ventilen für Flüssiggas (LPG) und zugehörige Anschlüsse für Geräte  
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Equipements 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 15202:2012**

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#### **ICS:**

|           |                                 |                                 |
|-----------|---------------------------------|---------------------------------|
| 23.020.30 | Tlačne posode, plinske jeklenke | Pressure vessels, gas cylinders |
| 23.060.40 | Tlačni regulatorji              | Pressure regulators             |

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EUROPEAN STANDARD

**EN 15202**

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2012

ICS 23.060.40

Supersedes EN 15202:2006

English Version

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

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

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

This European Standard was approved by CEN on 13 April 2012.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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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## Foreword

This document (EN 15202:2012) 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 November 2012, and conflicting national standards shall be withdrawn at the latest by November 2012.

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

This document supersedes EN 15202:2006.

The revisions to this document include:

- addition of the Introduction;
- amendment to the Scope;
- addition of G65 and G66 connections;
- amendments to Annex B; and
- Annex B has been changed to normative.

Environmental aspects have been considered in the drafting of this standard.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

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

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

prEN 16129 is the fundamental source for identifying the essential manufacturing dimensions of other connector types not used with LPG cylinder valves.

This European Standard 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 standard should be used with LPG cylinder valves.

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

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

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## 1 Scope

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

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

This European Standard 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 standard.

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

This European Standard excludes connections for gas cartridges covered by EN 417.

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## 2 Normative references

[SIST EN 15202:2012](#)

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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.

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*

EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1)*

ISO 68-1, *ISO general purpose screw threads — Basic profile — Part 1: Metric screw threads*

ISO 3601-1, *Fluid power systems — O-rings — Part 1: Inside diameters, cross-sections, tolerances and designation codes*

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

ANSI/ASME/B1.5, *ACME Screw Threads issued by American Society of Mechanical Engineers 1990*

DIN 477-1, *Gas cylinder valves rated for test pressures up to 300 bar; types, sizes, and outlets*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**EN 15202:2012 (E)****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 (0,1013 MPa absolute)]

IRHD International Rubber Hardness Degrees

LH Left hand

RH Right hand

INT Internal thread

EXT External thread

ref make reference to

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**5 Design**

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

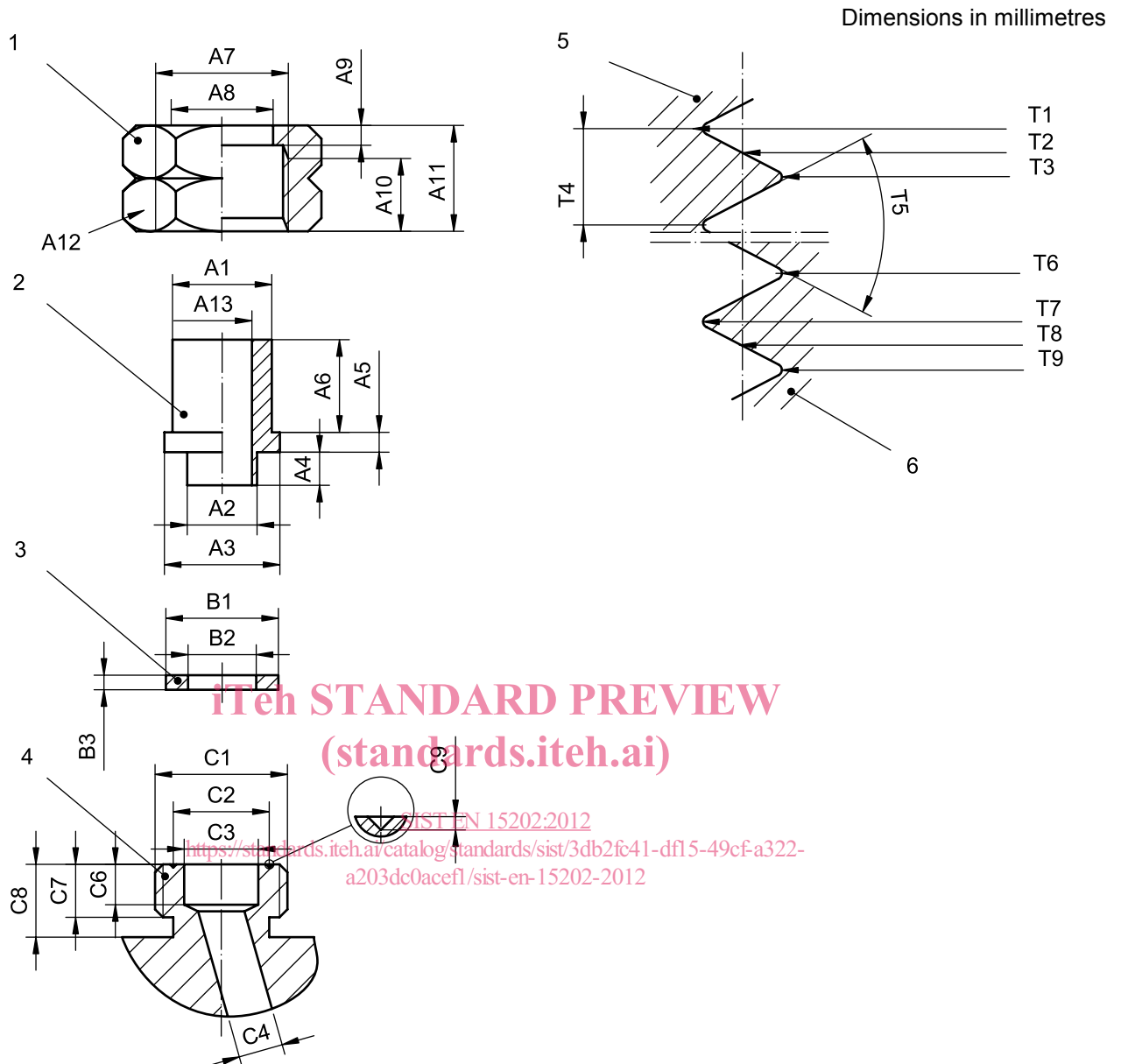
The travel distance of the valve operating mechanisms is identified where required.

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 European Standard.



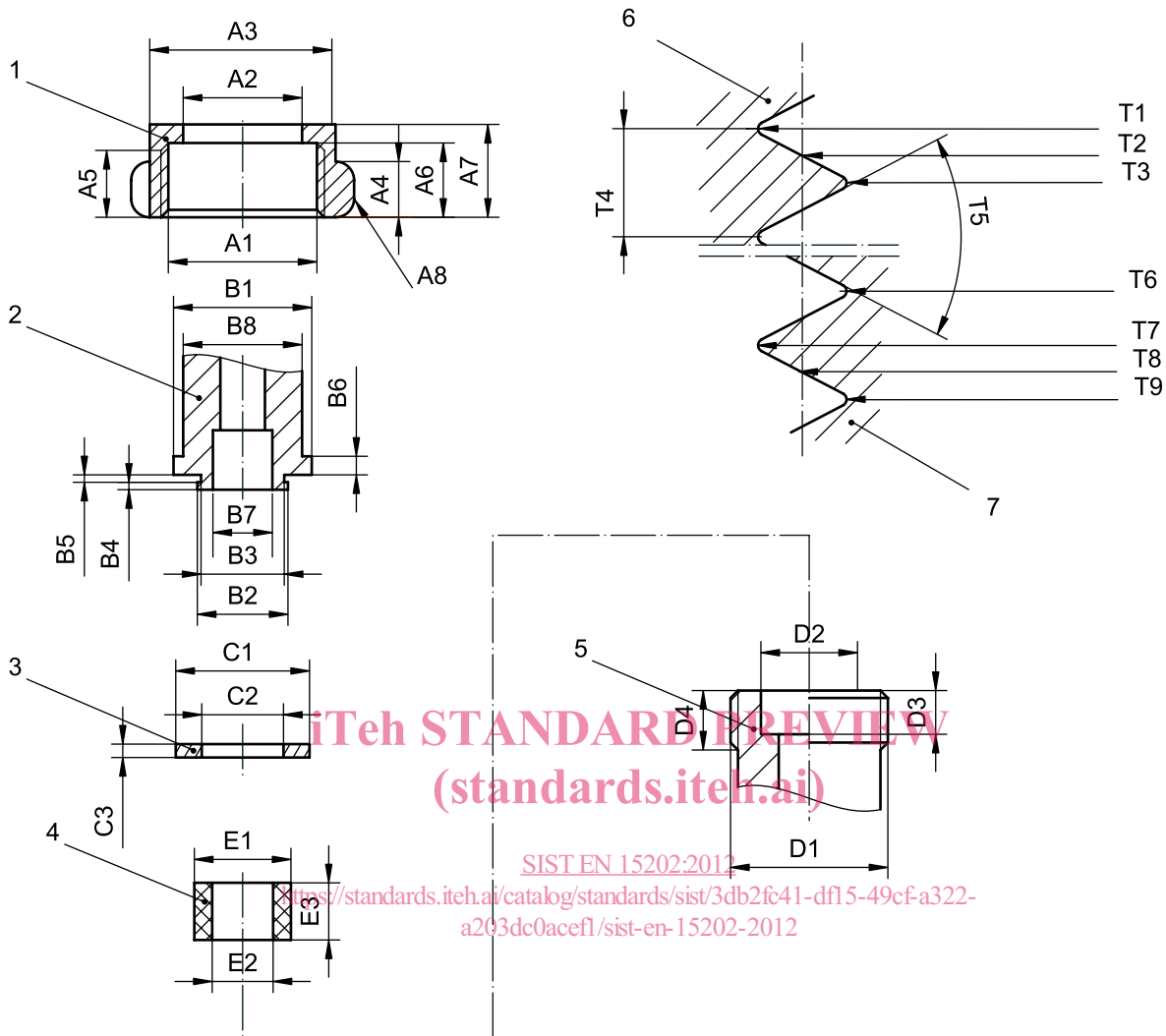
**Key**

|   |              |
|---|--------------|
| 1 | nut          |
| 2 | connector    |
| 3 | seal         |
| 4 | valve        |
| 5 | nut thread   |
| 6 | valve thread |

| Connector/Nut |                   | Seal  |                 | Thread  |                     |
|---------------|-------------------|---|-----------------|---------|---------------------|
| A1            | ∅ 14,80 - ∅ 15    | B1  | ∅ 16,8 - ∅ 17   | T1      | ∅ 20 min            |
| A2            | ∅ 10,5 - ∅ 10,6   | B2  | ∅ 10,2 - ∅ 10,4 | T2      | ∅ 18,838 - ∅ 19,973 |
| A3            | ∅ 17,4 - ∅ 17,5   | B3  | 2,0 - 2,2       | T3      | ∅ 17,696 - ∅ 18,266 |
| A4            | 4,8 - 5,2         | Seal material shall be NBR or equivalent, or EN 549 A2/H3 | T4              | 1,814   |                     |
| A5            | 2,9 - 3,1         |   | T5              | 55°     |                     |
| A6            | 14 min            |   | T6              | R 0,249 |                     |
| A7            | 20 x 1,814 LH     | <b>Valve</b>  |                 | T7      | ∅ 19,589 - ∅ 19,98  |
| A8            | ∅ 15,15 - ∅ 15,26 | C1  | 20 x 1,814 LH   | T8      | ∅ 18,703 - ∅ 18,838 |
| A9            | 2,9 - 3,1         | C2  | ∅ 14,3 - 14,7   | T9      | ∅ 17,317 - ∅ 17,676 |
| A10           | 11 min            | C3  | ∅ 11,1 - 11,3   |         |                     |
| A11           | 15,8 - 16,2       | C4  | ∅ 6,8 - ∅ 7,2   |         |                     |
| A12           | 25 A/F            | C5  | R0,3 - R0,7     |         |                     |
| A13           | ∅ 8,4 max         | C6  | 6,0 - 6,3       |         |                     |
|               |                   | C7  | 7,0 - 10,0      |         |                     |
|               |                   | C8  | 11 min          |         |                     |
|               |                   | C9  | 0,5 x 90°       |         |                     |

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

Dimensions in millimetres



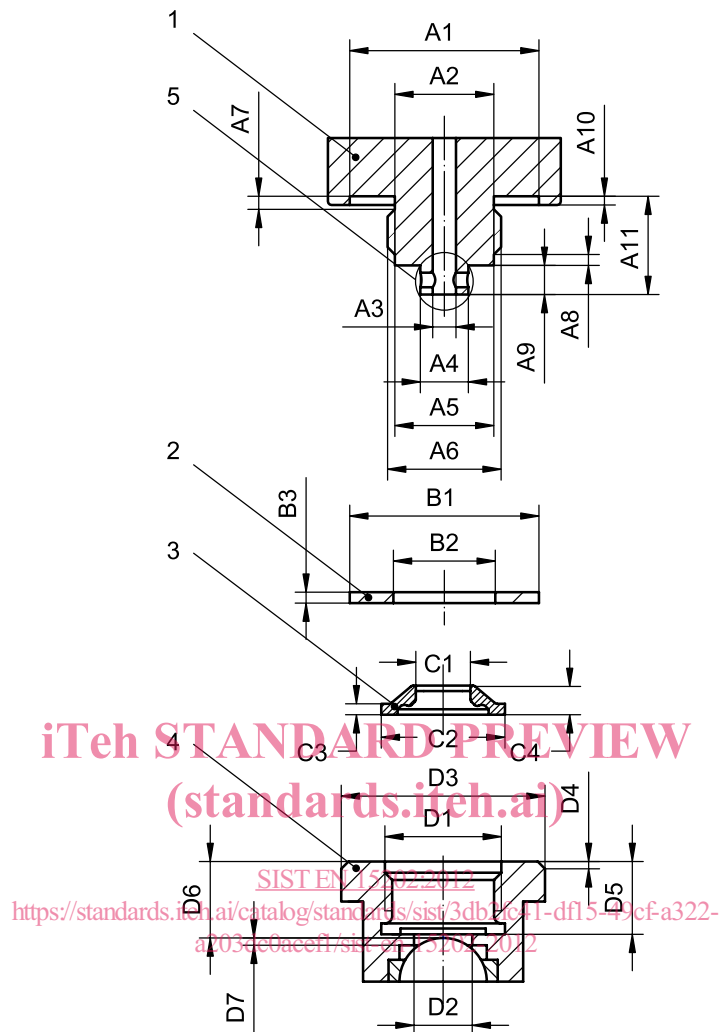
**Key**

- 1 nut
- 2 connector
- 3 black seal
- 4 seal
- 5 valve
- 6 nut thread
- 7 valve thread

| Nut          |                        | Connector   |                                      | Black Seal               |                     |
|--------------|------------------------|---|--------------------------------------|--------------------------|---------------------|
| A1           | 21,8 x 1,814 LH        | B1  | ∅ 18,5 – ∅ 18,7                      | C1                       | ∅ 17,7 - ∅ 18,0     |
| A2           | ∅ 16 max               | B2  | ∅ 12,2 – ∅ 12,3                      | C2                       | ∅ 10,7 - ∅ 11,0     |
| A3           | ∅ 24,6 min             | B3  | ∅ 11,1 – ∅ 11,3                      | C3                       | 1,7 – 2,0           |
| A4           | 7,5 min                | B4  | 0,9 – 1,0                            | Material shall be:       |                     |
| A5           | 7,5 – 8,1              | B5  | 2,0 – 2,2                            | a) NBR or equivalent; or |                     |
| A6           | 9,9 – 10,5             | B6  | 2,4 – 2,6                            | b) EN 549 A2/H3          |                     |
| A7           | 12,5 min               | B7  | ∅ 9,0 max                            | <b>Thread</b>            |                     |
| A8           | 5 wings equally spaced | B8  | ∅ A2 <sup>-0,1</sup> <sub>-0,3</sub> | T1                       | ∅ 21,8 min          |
| <b>Valve</b> |                        | <b>Seal</b>   |                                      | T2                       | ∅ 20,622 – ∅ 20,722 |
| D1           | 21,7 x 1,814 LH        | E1  | ∅ 13,35 - ∅ 13,65                    | T3                       | ∅ 19,444 – ∅ 19,544 |
| D2           | ∅ 13 – 13,1            | E2  | ∅ 8,0 - ∅ 8,4                        | T4                       | 1,814               |
| D3           | 7,8 – 8,0              | E3  | 7,5 – 7,8                            | T5                       | 60°                 |
| D4           | 8,6 – 8,7              | Material shall be:<br>a) NBR or equivalent; or<br>b) EN 549 A2/H3 |                                      | T6                       | R 0,249             |
|              |                        |   |                                      | T7                       | ∅ 21,6 – ∅ 21,7     |
|              |                        |   |                                      | T8                       | ∅ 20,422 – ∅ 20,522 |
|              |                        |   |                                      | T9                       | ∅ 18,7 – ∅ 18,8     |

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

Dimensions in millimetres

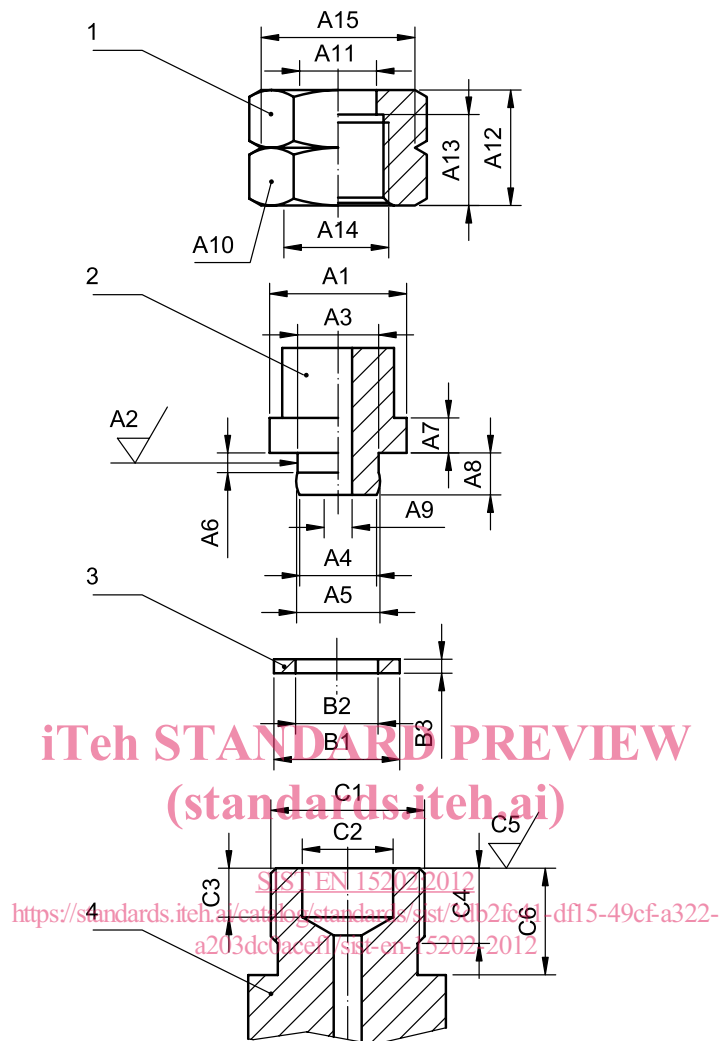
**Key**

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

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

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

Dimensions in millimetres

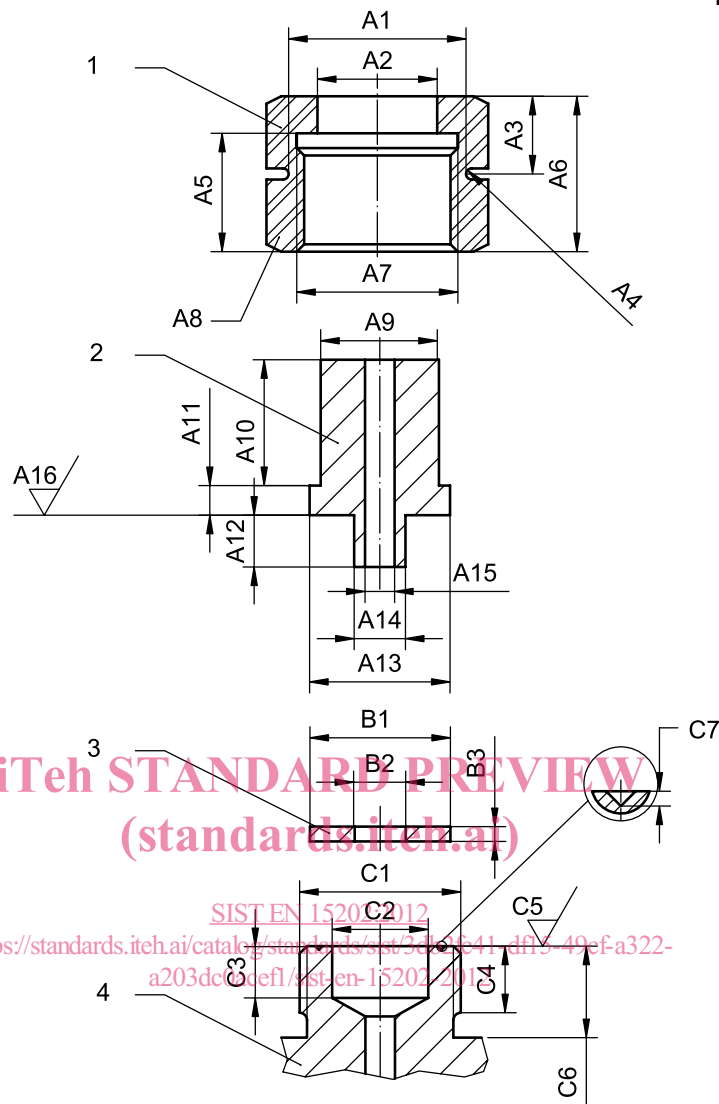
**Key**

- 1 nut  
 2 connector  
 3 seal  
 4 valve

| Connector/Nut  |                               | Seal  |                             |
|--|-------------------------------|---|-----------------------------|
| A1   | ∅ 18,8 - ∅ 19,2               | B1  | ∅ 19,8 - ∅ 19,2             |
| A2   | √Ra 3,2                       | B2  | ∅ 11,6 - ∅ 12               |
| A3   | ∅ 11,3 - ∅ 11,7               | B3  | 1,9 – 2,1                   |
| A4   | ∅ 10,8 - ∅ 11,2               | Material shall be:<br>a) NBR or equivalent; or<br>b) EN 549 A2/H3 |                             |
| A5   | ∅ 11,89 - ∅ 12,0              |   |                             |
| A6   | 1,7 – 1,9                     | <b>Valve</b>  |                             |
| A7   | 4,9 – 5,1                     |   |                             |
| A8   | 5,9 – 6,1                     | C1  | W 21,8 x 1,814 LH DIN 477-1 |
| A9   | ∅ 8 max                       | C2  | ∅ 12,7 – ∅ 13,3             |
| A10  | 30 A/F                        | C3  | 6,8 – 7,2                   |
| A11  | ∅ 16,15 - ∅ 16,26             | C4  | 9,0 min                     |
| A12  | 21,0 – 21,3                   | C5  | √Ra 3,2                     |
| A13  | 16,0 – 16,3                   | C6  | 11,5 min                    |
| A14  | W 21,8 x 1/1,814 LH DIN 477-1 |   |                             |
| A15  | ∅ 30,0 – ∅ 30,1               |   |                             |
| <sup>a</sup> For guidance on the selection of aluminium, see EN ISO 11114-1. |                               |   |                             |
| <sup>b</sup> For guidance on the selection of polyamide, see EN ISO 11114-2. |                               |   |                             |

Figure 4 — Type G.4 – Threaded connection W 21,8 x 1,814 LH - 55° – Spanner tightened

Dimensions in millimetres

**Key**

- 1 nut  
2 connector  
3 seal  
4 valve

| Connector/Nut |                             | Seal   |                             |
|---------------|-----------------------------|--|-----------------------------|
| A1            | ∅ 29,8 - ∅ 30               | B1   | ∅ 18,8 - ∅ 19,2             |
| A2            | ∅ 16,15 - ∅ 16,26           | B2   | ∅ 6,9 - ∅ 6,95              |
| A3            | 10,3 - 10,7                 | B3   | 1,9 - 2,1                   |
| A4            | R 0,75                      | The seal material is polyamide <sup>a</sup> .        |                             |
| A5            | 16,0 - 16,3                 | The Connector/Nut and seal also fits G.12 connection |                             |
| A6            | 21,0 - 21,3                 | Valve  |                             |
| A7            | W 21,8 x 1,814 LH DIN 477-1 | C1   | W 21,8 x 1,814 LH DIN 477-1 |
| A8            | 30 A/F                      | C2   | ∅ 12,7 - ∅ 13,3             |
| A9            | ∅ 15,84 - ∅ 15,96           | C3   | 6,8 - 7,2                   |
| A10           | 17 min                      | C4   | 9,0 min                     |
| A11           | 3,9 - 4,1                   | C5   | √Ra 3,2                     |
| A12           | 6,8 - 7,2                   | C6   | 11,5 min                    |
| A13           | ∅ 18,8 - ∅ 19,2             | C7   | 0,5 x 90°                   |
| A14           | ∅ 6,92 - ∅ 6,96             |  |                             |
| A15           | ∅ 3,9 - ∅ 4,1               |  |                             |
| A16           | √Ra 3,2                     |  |                             |

<sup>a</sup> For guidance on the selection of polyamide, see EN ISO 11114-2.

Figure 5 — Type G.5 – Threaded connection W 21,8 x 1,814 LH – 55°– Spanner tightened