BS EN 15202:2012

BSI Standards Publication

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

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National foreword

This British Standard is the UK implementation of EN 15202:2012. It supersedes BS EN 15202:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PVE/19, LPG containers and their associated fittings.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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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.

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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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EUROPÄISCHES KOMITEE FÜR NORMUNG

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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of an identical text or by endorsement, at the latest by November 2012, and conflicting national standards shall be withdrawn at the latest by November 2012.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 connecters that are marked with the same connector type number are used in combination.

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 connecters 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.

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.

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.

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

5 Design

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

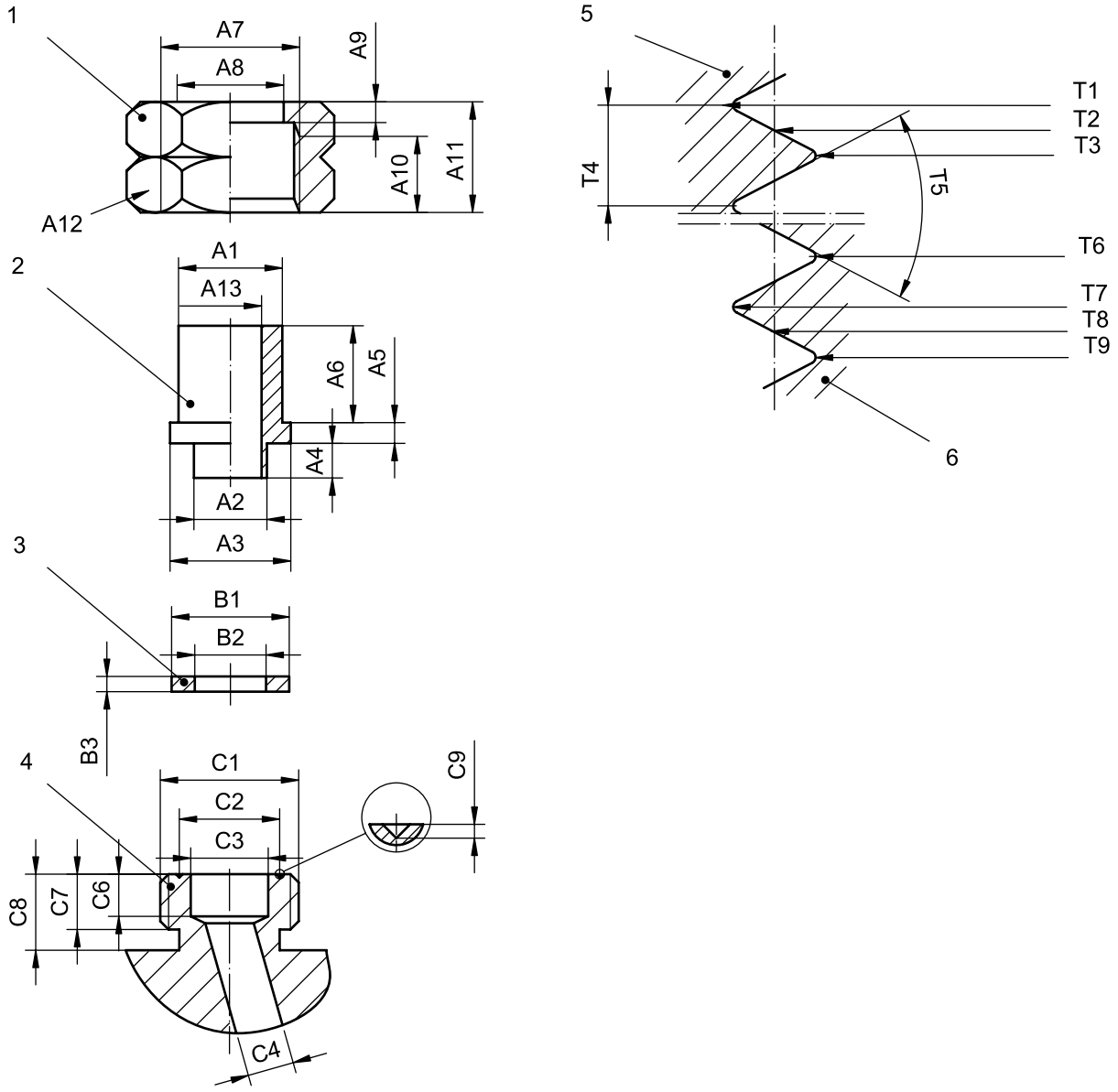
The travel distance of the valve operating mechanisms is identified where required.

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.

Dimensions in millimetres



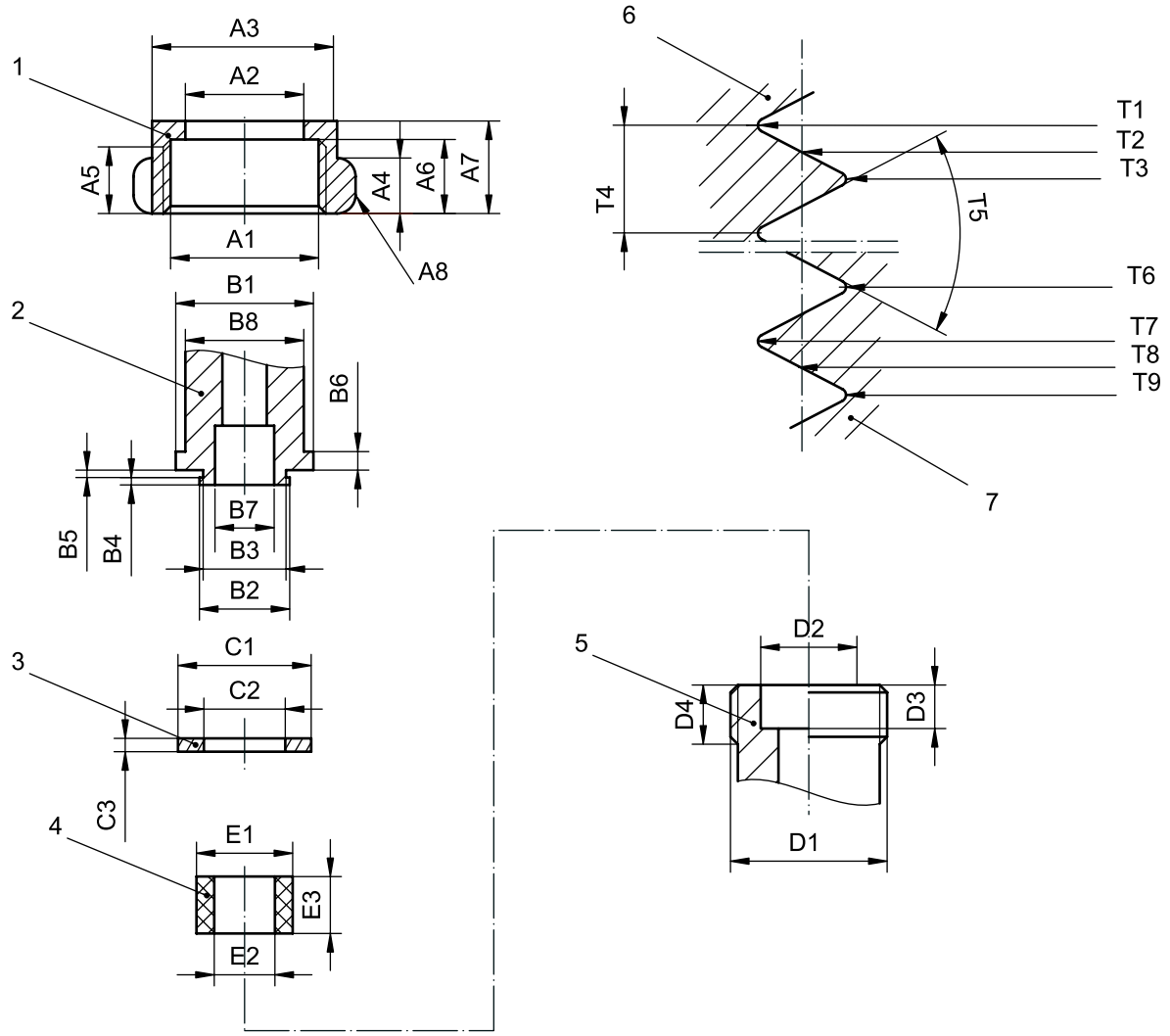
Key

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	**Valve**		T6	R 0,249
A7	20 x 1,814 LH	C1	20 x 1,814 LH	T7	∅ 19,589 – ∅ 19,98
A8	∅ 15,15 - ∅15,26	C2	∅ 14,3 – 14,7	T8	∅ 18,703 – ∅ 18,838
A9	2,9 – 3,1	C3	∅ 11,1 – 11,3	T9	∅ 17,317 – ∅ 17,676
A10	11 min	C4	∅ 6,8 - ∅ 7,2		
A11	15,8 – 16,2	C5	R0,3 – R0,7		
A12	25 A/F	C6	6,0 – 6,3		
A13	∅ 8,4 max	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

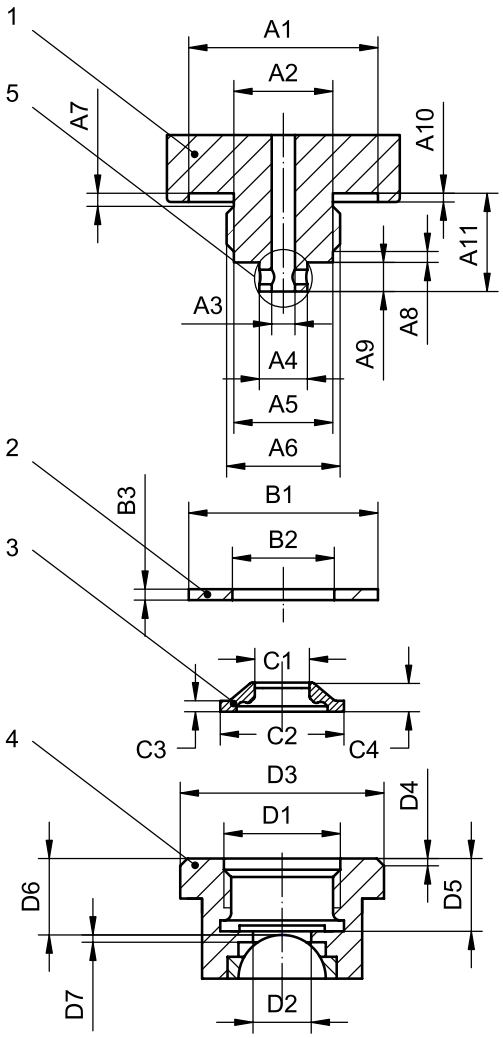
Dimensions in millimetres



Key		Nut		Connector		Black Seal	
1	nut	A1	21,8 x 1,814 LH	B1	∅ 18,5 – ∅ 18,7	C1	∅ 17,7 - ∅ 18,0
2	connector	A2	∅ 16 max	B2	∅ 12,2 – ∅ 12,3	C2	∅ 10,7 - ∅ 11,0
3	black seal	A3	∅ 24,6 min	B3	∅ 11,1 – ∅ 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	∅ 9,0 max	T1	∅ 21,8 min
		A8	5 wings equally spaced	B8	∅ $A2^{-0,1}_{-0,3}$	T2	∅ 20,622 – ∅ 20,722
		Valve		**Seal**		T3	∅ 19,444 – ∅ 19,544
		D1	21,7 x 1,814 LH	E1	∅ 13,35 - ∅ 13,65	T4	1,814
		D2	∅ 13 – 13,1	E2	∅ 8,0 - ∅ 8,4	T5	60°
		D3	7,8 – 8,0	E3	7,5 – 7,8	T6	R 0,249
		D4	8,6 – 8,7	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3		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



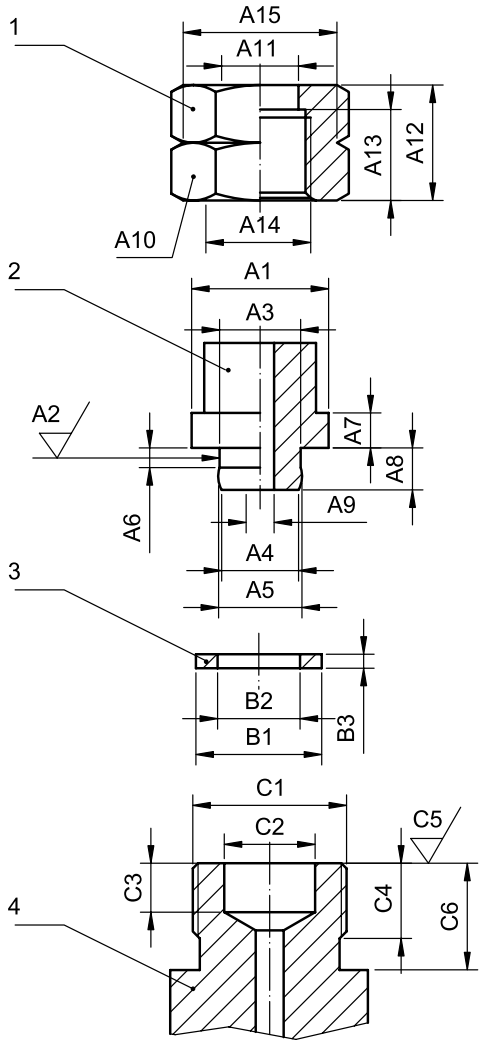
Key

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: a) NBR or equivalent; or b) EN 549 A2/H3	
A5	∅ 13,7 - ∅ 13,9		
A6	M16 x 1,5-6g		
A7	1,6 – 1,8	**Valve**	
A8	1,4 – 1,6	D1	M16 x 1,5 – 6H
A9	3,9 – 4,1	D2	∅ 8,4 – ∅ 8,6
A10	1,2 – 1,4	D3	∅ 26,5 – ∅ 27,3
A11	13,4 – 13,6	D4	1 x 45°
Gasket		D5	10,3 – 10,5
C1	∅ 7,5 ± 0,15	D6	10,2 – 10,6
C2	∅ 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 x 1,5 RH - Hand tightened

Dimensions in millimetres



Key

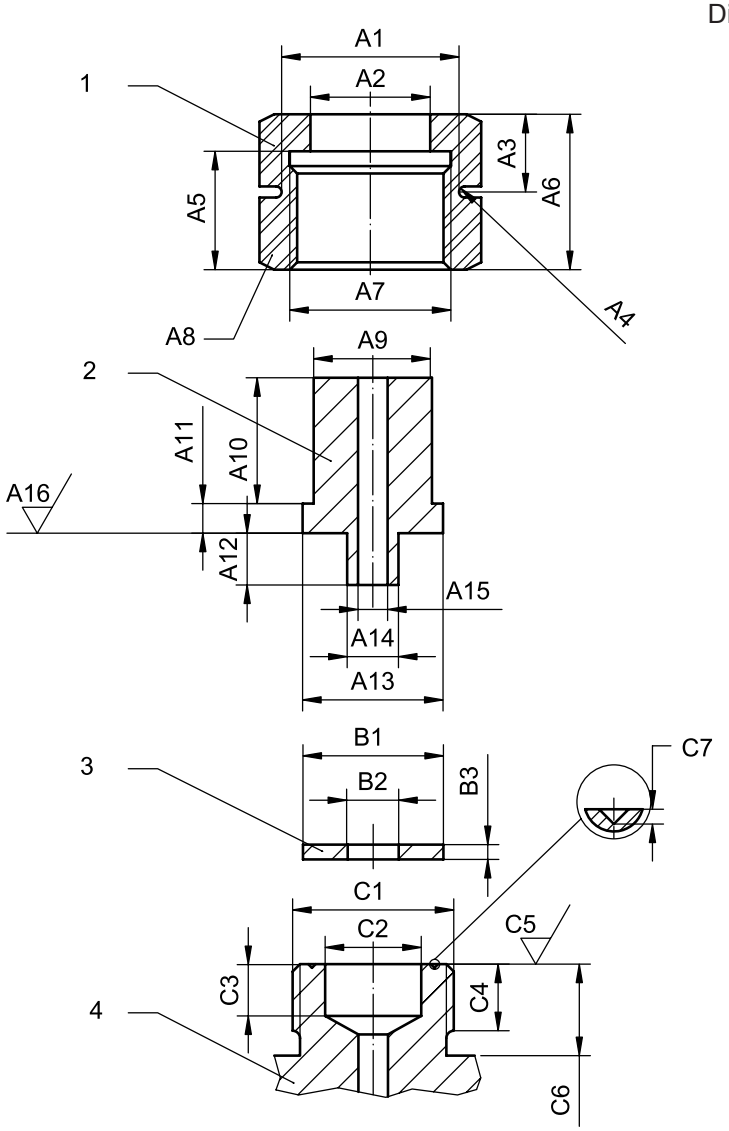
1	nut
2	connector
3	seal
4	valve

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:	
A5	∅ 11,89 - ∅ 12,0	a) NBR or equivalent; or	
A6	1,7 – 1,9	b) EN 549 A2/H3	
A7	4,9 – 5,1	**Valve**	
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		

[a] For guidance on the selection of aluminium, see EN ISO 11114-1.
[b] 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

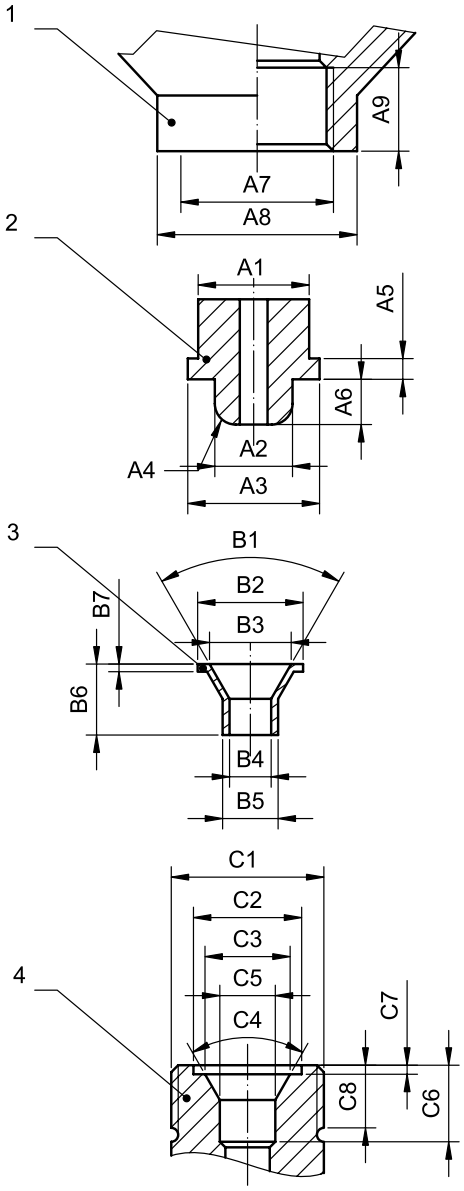
1 nut
2 connector
3 seal
4 valve

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 [a].	
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		

[a] 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

Dimensions in millimetres



Key

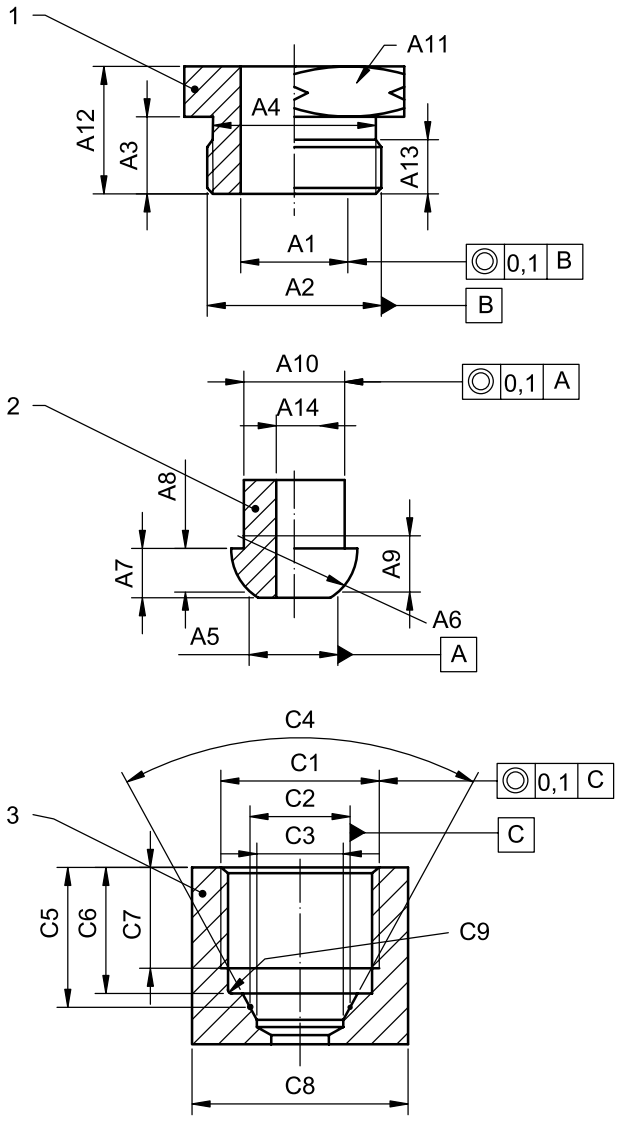
1 nut
2 connector
3 seal
4 valve

Connector		Seal		Valve	
A1	∅ 15,8 - ∅ 16	B1	59° - 61°	C1	W 22 x 1,155 LH
A2	∅ 11 - ∅ 11,2	B2	∅ 15 – ∅ 15,3	C2	∅ 15,5 - ∅ 15,7
A3	∅ 18,8 - ∅ 19	B3	∅ 10,8 – ∅ 11,2	C3	∅ 11,9 - ∅ 12,1
A4	2,9 – 3,1	B4	∅ 5,8 – ∅ 6,0	C4	59° - 61°
A5	2,8 – 3,2	B5	∅ 8 + 3 deformation ribs	C5	∅ 8,0 - ∅ 8,05
A6	6,3 – 6,7	B6	10,0 – 10,5	C6	11 min
A7	W 22 x 1,155 LH	B7	1,0 – 1,2	C7	1,2 – 1,4
A8	∅ 28,3 – ∅ 28,7	The seal material is polyamide [a].		C8	9 min
A9	11,8 – 12,2				

[a] For guidance on the selection of polyamide, see EN ISO 11114-2.

Figure 6 — Type G.6 – Threaded connection W 22 x 1,155 LH – Hand tightened

Dimensions in millimetres



Key

1 nut
2 connector
3 valve

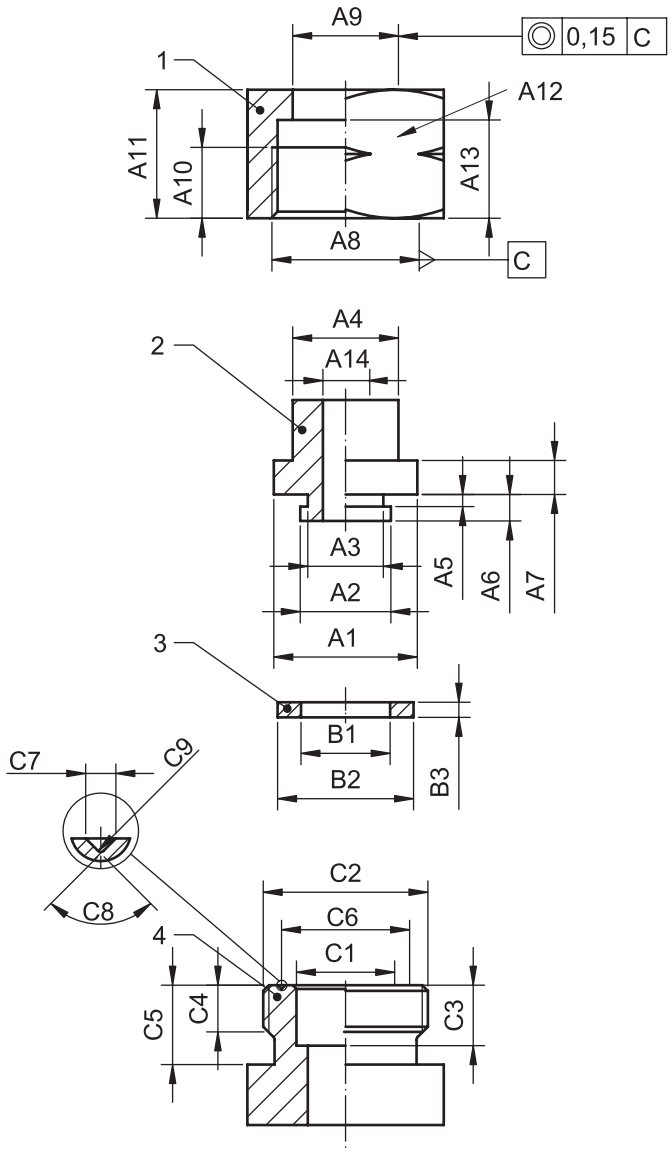
Connector/Nut		Valve	
A1	Nom ∅ 13 - ∅ 16 ($^{+0,1}_{+0,37}$)	C1	G 5/8 L.H EN ISO 228-1
A2	G 5/8 A LH EN ISO 228-1	C2	∅ 14 datum
A3	17 – 18	C3	∅ 11,5 max
A4	∅ 20,25 - ∅ 20,55	C4	59° - 61° √Ra 0,8
A5	∅ 14,0 datum	C5	20,35 – 20,65
A6	R18,75 – 19,25 √Ra 0,8	C6	17,75 – 18,25
A7	9,8 – 10,8	C7	14,3 min
A8	7,85 – 8,15	C8	∅ 37,75
A9	9,5	C9	R 0,5 - 1,0
A10	Nom. ∅ 13 - ∅ 16 ($^{-0,1}_{-0,37}$)		
A11	24 A/F . 28 A/F . 30,5 A/F		
A12	25 min		
A13	12,5 min		
A14	∅ 9 max		

WARNING

G.9 type should not be fitted into the G.7 type as this may produce an unsafe connection.

Figure 7 — Type G.7 – Threaded connection G 5/8 LH – Spanner tightened

Dimensions in millimetres



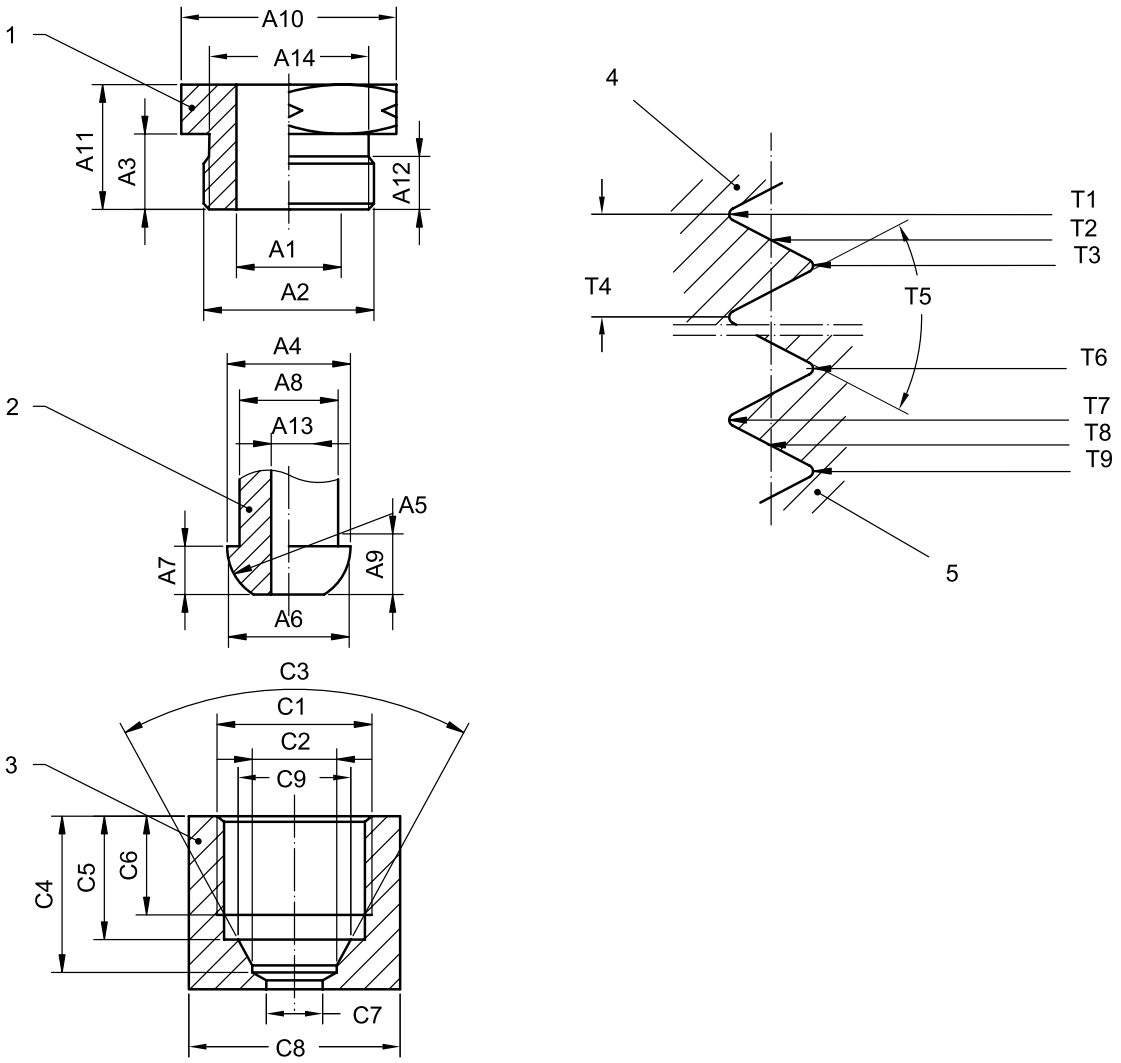
Key

1 nut
2 connector
3 seal
4 valve

Connector/Nut		Seal	
A1	∅ 18,85 - ∅ 19,15	B1	∅ 10,0 - ∅ 10,25
A2	∅ 11,75 - ∅ 12,15	B2	∅ 17,25 - ∅ 17,75
A3	∅ 10,00 - ∅ 10,15	B3	1,5 – 1,75
A4	Nom. ∅ 13 - ∅ 16 ($^{-0,1}_{-0,37}$)	Seal material shall be NBR or equivalent, or EN 549 A2/H3	
A5	1,4 – 1,70		
A6	3,25 – 3,75	**Valve**	
A7	4,25 – 4,75	C1	∅ 12,55 - ∅ 12,85
A8	M 21,8 x 1,814 6H LH ISO 68-1	C2	M 21,8 x 1,814 6g LH ISO 68-1
A9	Nom. ∅ 13 - ∅ 16 ($^{+0,37}_{+0,1}$)	C3	7,5 – 8,5
A10	9 min	C4	6 min
A11	17 min	C5	10,5 min
A12	28 A/F. 30,5 A/F	C6	16,0 ± 0,15
A13	12,75 – 13,25	C7	0,7
A14	∅ 8 max	C8	60°
		C9	R 0,2 max

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

Dimensions in millimetres



Key

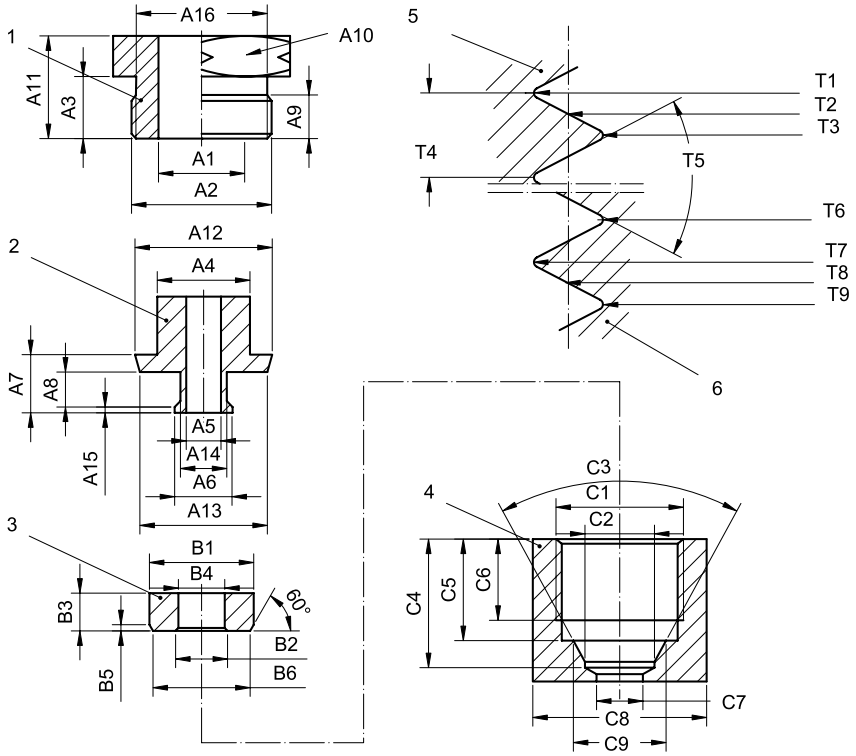
1 nut
2 connector
3 valve
4 nut thread
5 valve thread

Connector/Nut		Valve		Thread	
A1	Nom ∅ 13 - ∅ 16 ($^{+0,2}_{+0,05}$)	C1	0,885 inch – 14NGO [a] – LH INT	T1	∅ 22,479 min
A2	0,880 inch – 14NGO* – LH EXT	C2	∅ 11,1 max	T2	∅ 21,30 – ∅ 21,39
A3	17,07 – 17,83	C3	59° - 61° √Ra 0,8	T3	∅ 20,51 – ∅ 20,71
A4	∅ 19,0 - ∅ 19,1	C4	25,4 min	T4	1,814
A5	R19,05 √Ra 0,8	C5	17,07 – 17.83	T5	60°
A6	∅ 18,6 - ∅ 18,9	C6	14,3 min	T6	R 0,249
A7	10,2 – 10,4	C7	3,18 min	T7	∅ 22,22 – ∅ 22,35
A8	Nom ∅ 13 - ∅ 16 ($^{-0,05}_{-0,2}$)	C8	31,75 min	T8	∅ 21,08 – ∅ 21,17
A9	11,53 – 12,29	C9	17,07 – 17,83	T9	∅ 20,125 max
A10	22,2 A/F 24 A/F 28,6 A/F 30 A/F.				
A11	25 min				
A12	13,5 min				
A13	∅ 4 - ∅ 7.				
A14	19,8 min				

[a] NGO – National Gas Outlet in accordance with ANSI/CGA V-1.

Figure 9 — Type G.9 – Threaded connection/Nut 0,885 NGO[a] LH – Spanner tightened

Dimensions in millimetres



Key

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

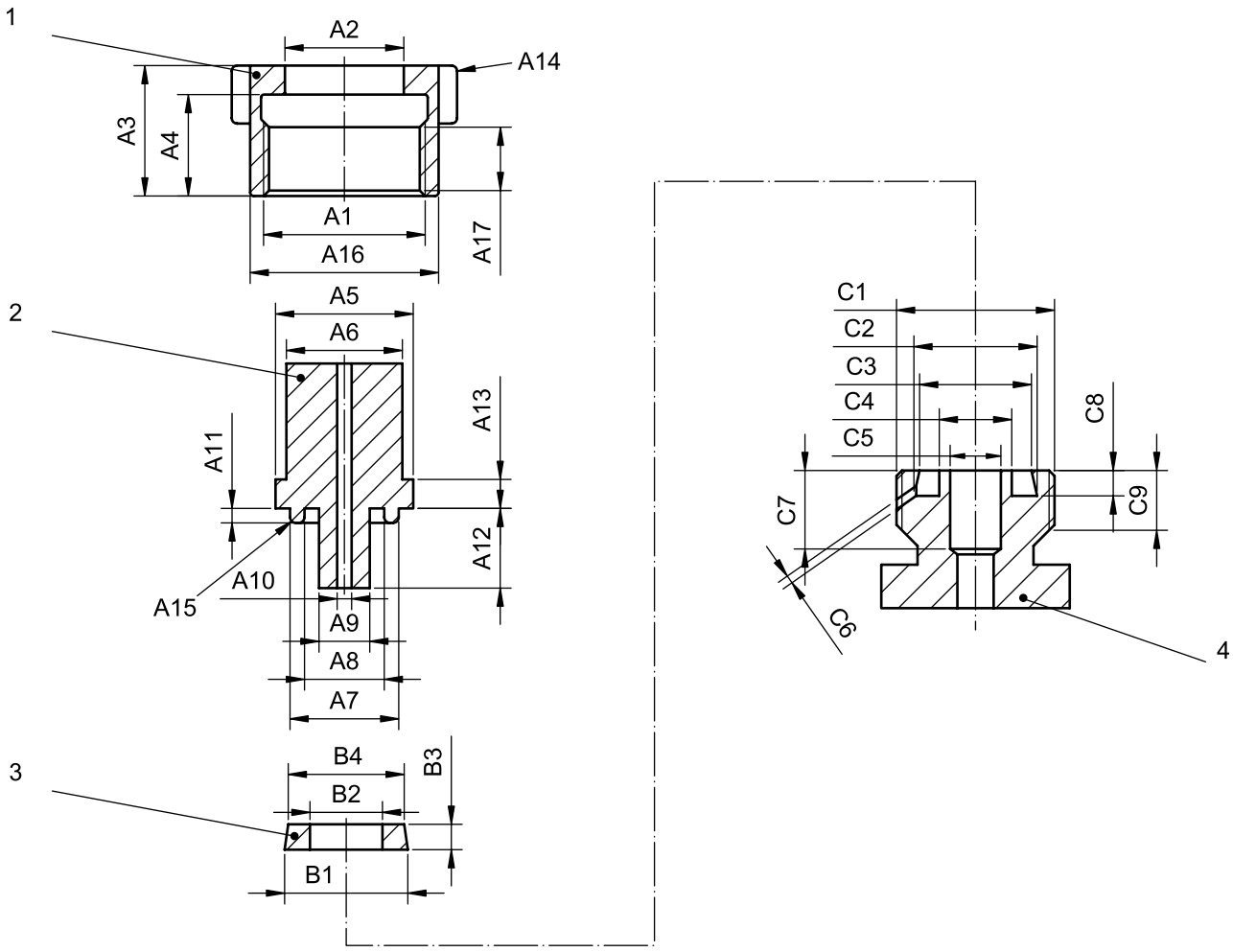
Connector/Nut		Seal		Thread	
A1	Nom ∅ 13 - ∅ 16 ($^{+0,2}_{+0,05}$)	B1	∅ 17,3 - ∅ 17,7	T1	∅ 22,479 min
A2	0,880 inch – 14NGO* – LH EXT	B2	∅ 9,3 - ∅ 9,7	T2	∅ 21,30 – ∅ 21,39
A3	17,07 – 17,83	B3	6,9 – 7,1	T3	∅ 20,51 – ∅ 20,71
A4	Nom ∅ 13 - ∅ 16 ($^{-0,05}_{-0,2}$)	B4	∅ 7,9 - ∅8,1	T4	1,814
A5	∅ 3,5 - ∅ 5,5	B5	0,8 – 1,2	T5	60°
A6	∅ 9,4 – ∅ 9,6	B6	∅ 13,8 - ∅ 14,2	T6	R 0,249
A7	9,9 – 10,1	Material shall be:		T7	∅ 22,22 – ∅ 22,35
A8	5,9 – 6,1	a) NBR or equivalent; or		T8	∅ 21,08 – ∅ 21,17
A9	13,5 min	b) EN 549 A2/H3		T9	∅ 20,125 max
A10	22.2 A/F 24 A/F 28.6 A/F 30 A/F.[a]	**Valve – (same as G9)**			
A11	25 min	C1	0,885 inch– 14NGO[b] – LH INT		
A12	∅ 19 – ∅ 19,1	C2	∅ 11,1 max		
A13	∅ 17,4 - ∅ 17,6	C3	59° - 61° √Ra 0,8		
A14	∅ 8,4 – ∅ 8,6	C4	25,4 min		
A15	0,9 – 1,1	C5	17,07 – 17.83		
A16	19,8 min	C6	14,3 min		
		C7	3,18 min		
		C8	31,75 min		
		C9	17,07 – 17,83		

[a] Dimension A10 only applies to spanner tightened connections. Hand tightened versions may also be used with different dimensions.

Figure 10 — Type G.10 – Threaded connection 0,885 NGO[1] LH – Rubber nose

1 NGO – National Gas Outlet in accordance with ANSI/CGA V-1.

Dimensions in millimetres



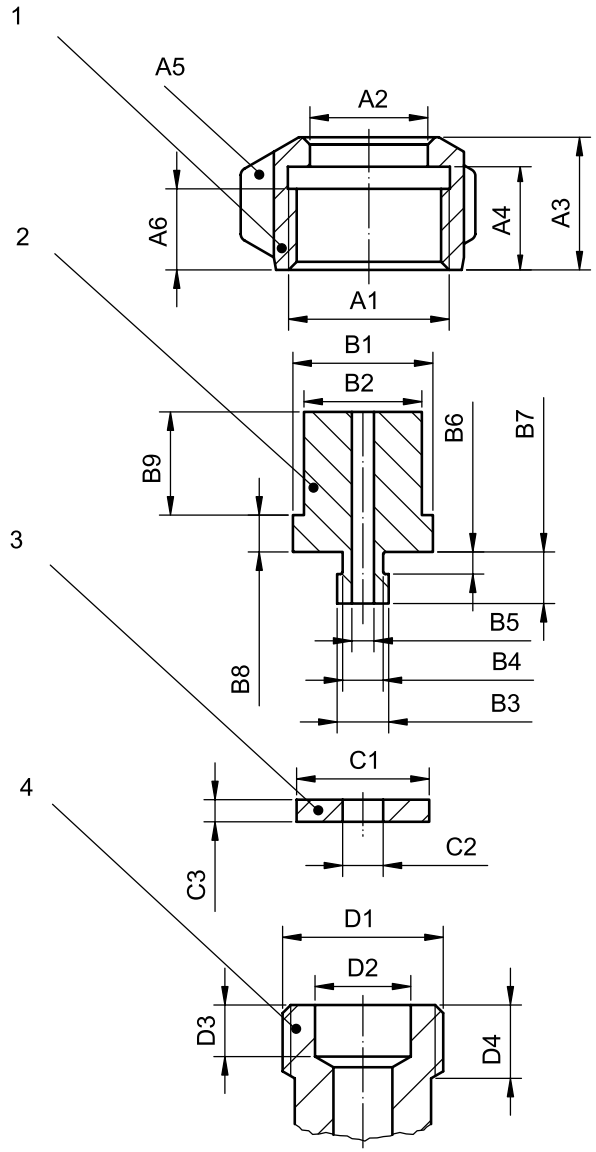
Key

1 nut
2 connector
3 seal
4 valve

Connector/Nut		Seal	
A1	W 21,8 x 1,814 LH - DIN 477-1	B1	∅ 17,0 - ∅ 17,3
A2	∅ 16,15 - ∅ 16,26	B2	∅ 10,0 - ∅ 10,2
A3	17,8 – 18,2	B3	3,5 – 3,7
A4	13,8 – 14,2	B4	∅ 16,0 – 16,3
A5	∅ 18,8 - ∅ 19,2	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3	
A6	∅ 15,84 - ∅15,95		
A7	∅ 14,8 - ∅15,2		
A8	∅ 10,8 - ∅ 11,2	**Valve**	
A9	∅ 6,92 - ∅ 6,96	C1	W 21,8 x 1,814 LH - DIN 477-1
A10	∅ 4 max	C2	∅ 16,9 – ∅ 17,1
A11	1,9 – 2,1	C3	∅ 15,9 - ∅ 16,1
A12	10,8 – 11,2	C4	∅ 9,9 - ∅ 10,1
A13	3,9 – 4,1	C5	∅ 7,04 – ∅ 7,1
A14	5 wings equally spaced or similar	C6	∅ 0,9 - ∅ 1,1
A15	R0,9 – 1,1	C7	12 min
A16	∅24,8 – ∅25,9	C8	3,5 – 3,7
A17	9 min	C9	9 min

Figure 11 — Type G.12 – Threaded connection W 21,8 x 1,814 LH – Hand tightened

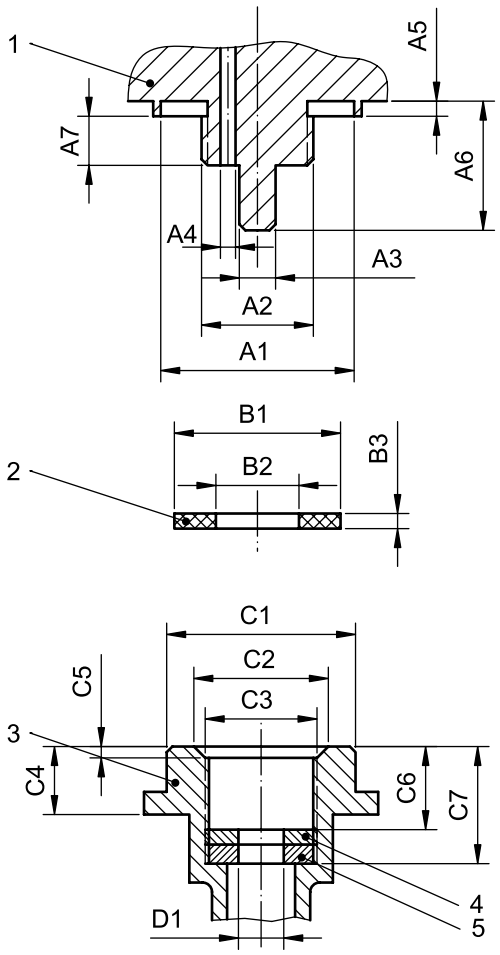
Dimensions in millimetres



Key		Nut		Connector	
1	nut	A1	W 21,8 x 1,814 LH - DIN 477-1	B1	∅ 18,8 - ∅ 19,2
2	connector	A2	∅ 16,15 - ∅ 16,26	B2	∅ 15,84 - ∅ 15,95
3	seal	A3	17,8 – 18,2	B3	∅ 6,92 - ∅ 6,96
4	valve	A4	13,8 – 14,2	B4	∅5,4 - ∅ 5,6
		A5	5 wings equally spaced or similar. Also used with spanner flats 30 A/F	B5	∅ 2,9 - ∅ 3,1
				B6	2,9 – 3,1
		A6	9 min	B7	7 max
		Seal		B8	3,9 – 4,1
		C1	∅ 17 - ∅ 18	B9	14 min
		C2	∅ 5,4 – ∅ 5,6	**Valve**	
		C3	2,9 – 3,1	D1	W 21,8 x 1,814 LH - DIN 477-1
		Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3		D2	∅ 12,7 - ∅ 13,3
				D3	6,8 – 7,2
				D4	9 min

Figure 12 — Type G.19 – Threaded connection W 21,8 x 1,814 LH – Hand tightened

Dimensions in millimetres



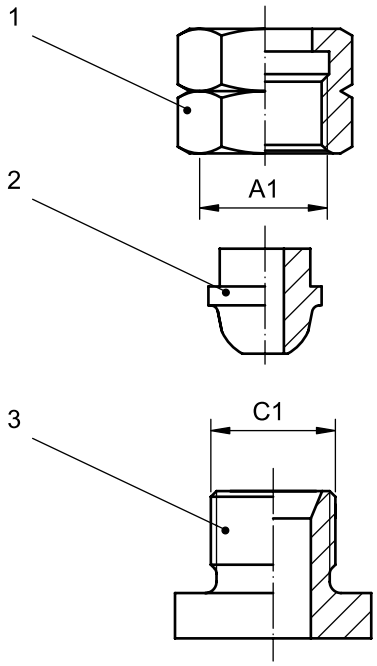
Key

1	connector
2	seal
3	valve
4	retaining ring
5	lower seal

Connector		**Seal**		**Valve**	
A1	∅ 25,6 - ∅ 25,8	B1	∅ 25,2 - ∅ 25,8	C1	∅ 24,7 - ∅ 25,3
A2	W 14,8 x 1/18	B2	∅ 13,2 ∅ 13,8	C2	∅ 14,7 – ∅ 15,3
A3	∅ 4,8 - ∅ 5,0	B3	1,8 – 2,2	C3	W 14,8 x 1/18
A4	∅ 1,9 - ∅ 2,1	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3		C4	6,8 – 7,2
A5	1,9 – 2,1			C5	1,5 x 45°
A6	15,1 – 15,3			C6	11,3 – 11,7
A7	6,5 – 6,7	**Lower seal**		C7	15,3 – 15,7
		D1	7,0 ± 0,1		
		Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3			

Figure 13 — Type G.21 - Threaded connection W 14,8 x 1/18 – Hand tightened

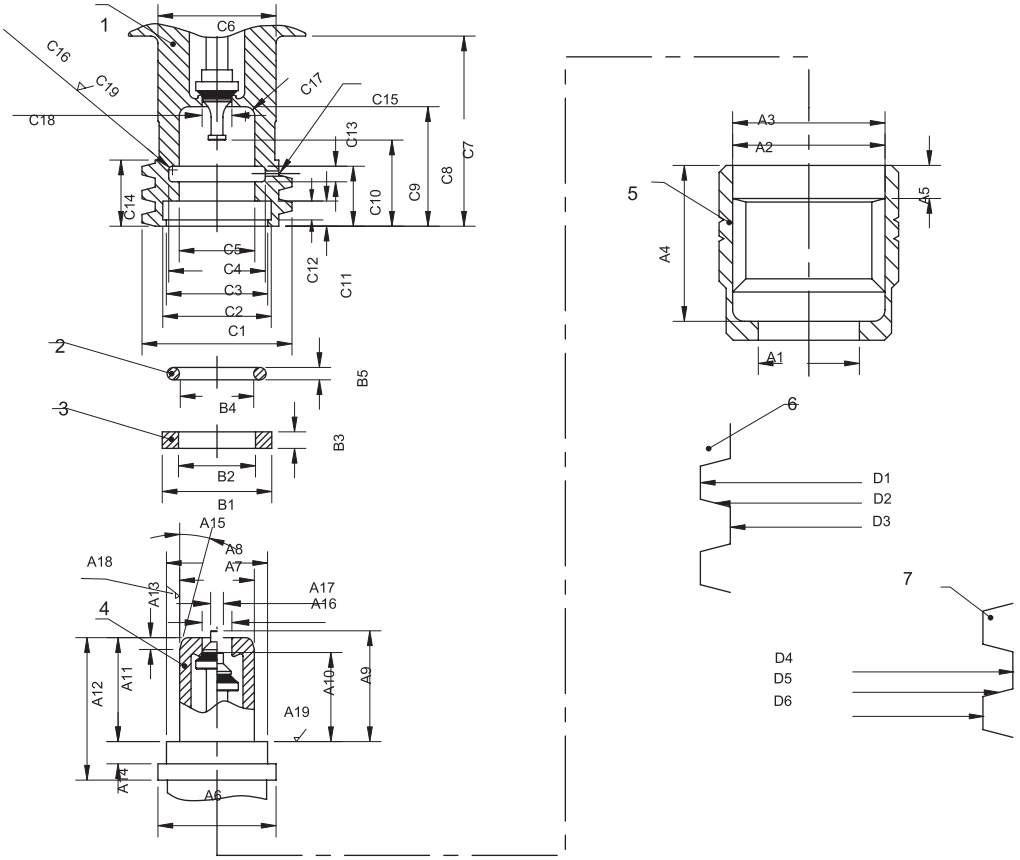
Dimensions in millimetres



Key		**Connector** (conforms with EN 560)		**Valve** (conforms with EN 560)	
1	nut	A1	G 3/8 LH EN ISO 228-1	C1	G 3/8 LH EN ISO 228-1
2	connector				
3	valve	NOTE For detailed dimensions see EN 560.			

Figure 14 — Type G.25 – Threaded connection G 3/8 LH EN ISO 228-1 – Spanner tightened

Dimensions in millimetres



Key

1 valve
2 O Ring
3 seal
4 connector
5 nut
6 external thread
7 internal thread

NOTE 1 This connection is similar to CGA V1 Connector 790.

NOTE 2 The connector and the nut should be captive.

Nut	
A1	∅ 21,3 - ∅ 21,5
A2	1 ¼" x 5 ACME 2G ANSI/ASME/B 1.5
A3	∅32,8 - ∅33,0
A4	32,8 – 33,2
A5	6,8 – 7,2

Connector	
A6	∅ 24,9 - ∅ 25,1
A7	∅ 15,8 - ∅ 15,85
A8	∅ 21,2 - ∅ 21,4
A9	23,15 – 23,95 (Fully closed)
A10	17,85 – 19,85 (Fully open)
A11	21,9 – 22,1
A12	30,00 – 30,15
A13	2,37 – 2,63
A14	4,6 – 4,8
A15	15
A16	∅ 6,3
A17	2,5 min
A18	√Ra0,8
A19	√Ra1,6

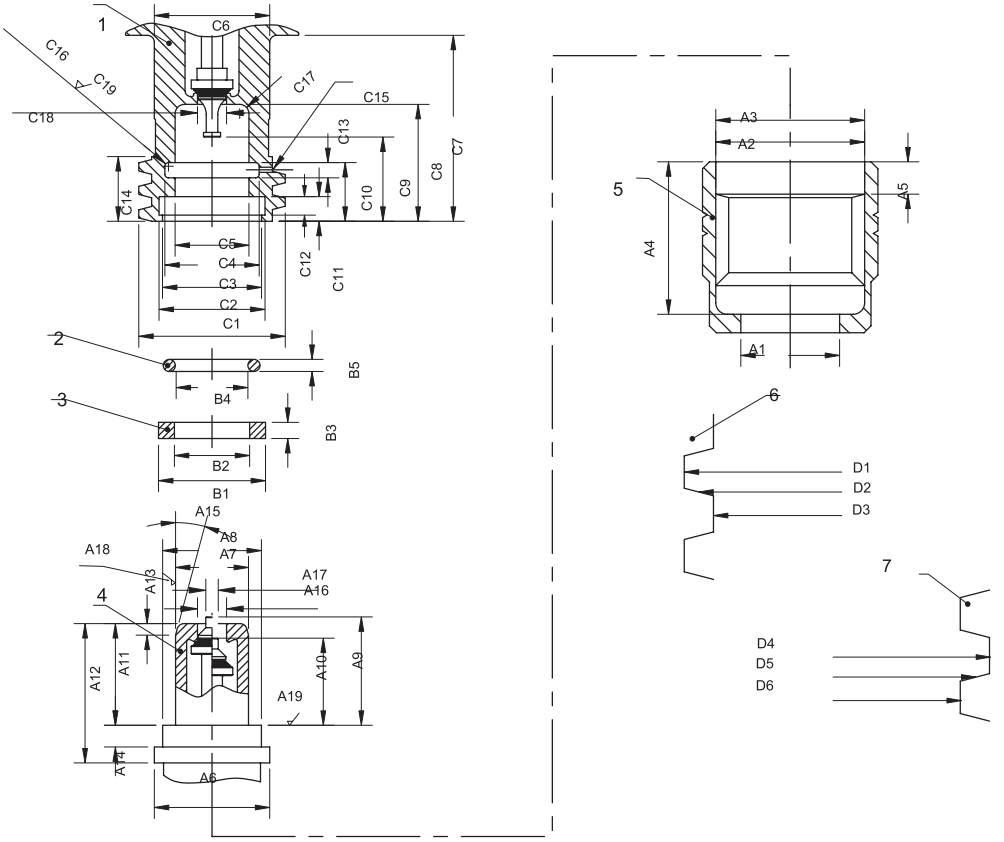
Seal	
B1	∅ 23,00 - ∅ 23,36
B2	∅ 15,82 - ∅ 16,48
B3	3,3 – 3,7
B4	∅ 15,41 - ∅ 15,67
B5	2,54 – 2,7
Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3	

Valve	
C1	1 ¼" x 5 ACME 2G ANSI/ASME/B 1.5
C2	∅ 22,96 - ∅ 23,11
C3	∅ 21,46 - ∅ 21,59
C4	∅ 20,19 - ∅ 20,44
C5	∅ 16,00 - ∅ 16,13
C6	∅ 24,75 - ∅ 25,25
C7	30 min
C8	24,7 – 25,3
C9	18,00 – 18,54
C10	12,45 – 12,95
C11	5,33 – 5,46
C12	3,93 – 4,07
C13	3,23 – 3,37
C14	13,75 – 14,25
C15	∅ 1,3
C16	R0,8
C17	R2 max
C18	∅ 6,3
C19	√Ra1,6

Screw	
D1	Major ∅ 31,75 - ∅ 31,49
D2	Pitch ∅ 28,98 - ∅ 28,47
D3	Minor ∅ 26,16 - ∅ 25,39
D4	Major ∅ 32,26 - ∅ 32,77
D5	Pitch ∅ 29,21 - ∅ 29,72
D6	Minor ∅ 26,67 - ∅ 26,92

Figure 15 — Type G.29 – 1 1/4" x 5 ACME liquid service connection – Hand tightened

Dimensions in millimetres



Key

1 valve
2 O Ring
3 seal
4 connector
5 nut
6 external thread
7 internal thread

NOTE 1 This connection is similar to CGA V1 Connector 790.

NOTE 2 The connector and the nut should be captive.

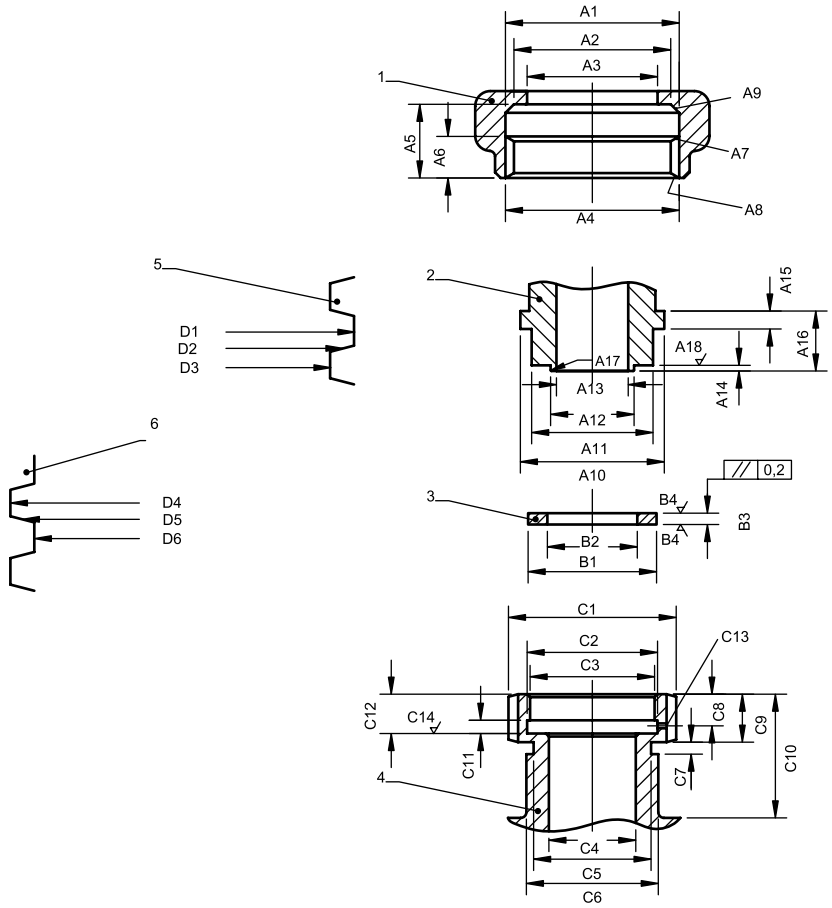
Nut	
A1	∅ 21,3 - ∅ 21,5
A2	1 ¼" x 5 ACME 2G LH ANSI/ASME/B 1.5
A3	∅32,8 - ∅33,0
A4	32,8 – 33,2
A5	6,8 – 7,2

Connector	
A6	∅ 24,9 - ∅ 25,1
A7	∅ 15,8 - ∅ 15,85
A8	∅ 21,2 - ∅ 21,4
A9	23,15 – 23,95 (Fully closed)
A10	17,85 – 19,85 (Fully open)
A11	21,9 – 22,1
A12	30,00 – 30,15
A13	2,37 – 2,63
A14	4,6 – 4,8
A15	15
A16	∅ 6,3
A17	2,5 min
A18	√Ra0,8
A19	√Ra1,6
Seal	
B1	∅ 23,00 - ∅ 23,36
B2	∅ 15,82 - ∅ 16,48
B3	3,3 – 3,7
B4	∅ 15,41 - ∅ 15,67
B5	2,54 – 2,7
Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3	

Valve	
C1	1 ¼" x 5 ACME 2G LH ANSI/ASME/B 1.5
C2	∅ 22,96 - ∅ 23,11
C3	∅ 21,46 - ∅ 21,59
C4	∅ 20,19 - ∅ 20,44
C5	∅ 16,00 - ∅ 16,13
C6	∅ 24,75 - ∅ 25,25
C7	30 min
C8	24,7 – 25,3
C9	18,00 – 18,54
C10	12,45 – 12,95
C11	5,33 – 5,46
C12	3,93 – 4,07
C13	3,23 – 3,37
C14	13,75 – 14,25
C15	∅ 1,3
C16	R0,8
C17	R2 max
C18	∅ 6,3
C19	√Ra1,6
Screw	
D1	Major ∅ 31,75 - ∅ 31,49
D2	Pitch ∅ 28,98 - ∅ 28,47
D3	Minor ∅ 26,16 - ∅ 25,39
D4	Major ∅ 32,26 - ∅ 32,77
D5	Pitch ∅ 29,21 - ∅ 29,72
D6	Minor ∅ 26,67 - ∅ 26,92

Figure 16 — Type G.30 – 1 1/4" x 5 ACME LH – not-odorised LPG – Hand tightened

Dimensions in millimetres



Key

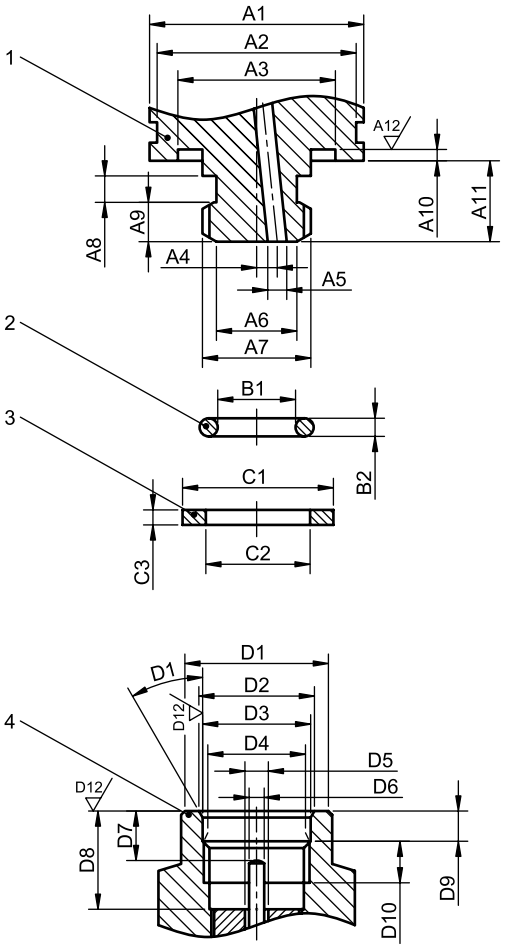
1 nut
2 connector
3 seal
4 valve
5 internal thread
6 external thread

Nut		Seal	
A1	∅ 45,47 - ∅ 46,23	B1	∅ 33,9 - ∅ 34,1
A2	∅ 41 min	B2	∅ 23,7 - ∅ 23,9
A3	∅ 34,4 - ∅ 34,65	B3	2,9 – 3,1
A4	1 ¾" x 6 ACME 2G ANSI/ASME/B 1.5	B4	√ Ra 0,8
A5	19,35 – 19,65	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3.	
Connector		**Valve**	
A6	10,85 – 11,15	C1	1 ¾" x 6 ACME 2G ANSI/ASME/B 1.5
A7	30° chamfer from ∅ 45,47 - ∅ 46,23	C2	∅ 34,25 - ∅ 34,75
A8	30° chamfer to thread depth	C3	∅ 32,7 - ∅ 33,2
A9	45° chamfer	C4	∅ 22,87 - ∅ 23,13
A10	∅ 38,0 - ∅ 38,3	C5	∅ 30,66 - ∅ 30,81
A11	∅ 32,0 - ∅ 32,3	C6	∅ 38,25 - ∅ 38,75
A12	∅ 22,0 - ∅ 22,3	C7	3,2 – 4,0
A13	∅ 19,0 - ∅ 19,3	C8	8,3 – 8,7
A14	1,4 – 1,6	C9	12,5 – 13,2
A15	4,5 – 5,0	C10	20,0 min
A16	15,75 – 16,0	C11	3,4 – 3,6
A17	R0,25	C12	10,25 – 10,4
A18	√ Ra 1,6	C13	Drill ∅ 1,3 enters through minor ∅ of thread
		C14	√ Ra 1,6

Screw	
D1	Major ∅ 45,47 - ∅ 44,96
D2	Pitch ∅ 42,85 - ∅ 42,33
D3	Minor ∅ 40,43 - ∅ 40,21
D4	Major ∅ 44,45 - ∅ 41,55
D5	Pitch ∅ 42,06 - ∅ 41,55
D6	Minor ∅ 39,7 - ∅ 38,94

Figure 17 — Type G.31 – 1 ¾" x 6 ACME connection – Hand tightened

Dimensions in millimetres



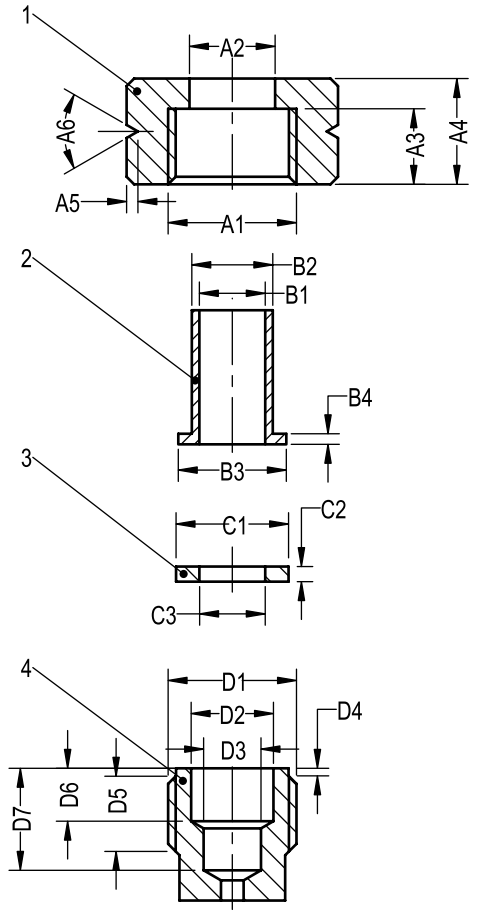
Key

1	connector
2	O-Ring
3	seal
4	valve

Connector		**Seal**	
A1	Ø 27,74 - Ø 28,26	C1	Ø 19,74 - Ø 20,26
A2	Ø 25,74 - Ø 26,26	C2	Ø 13,5 - Ø 13,8
A3	Ø 20,24 - Ø 20,76	C3	1,74 - 2,26
A4	2,78 - 3,03	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3.	
A5	Ø 2,38 - Ø 2,63		
A6	Ø 10,2 - Ø 10,4		
A7	M14 x 1,5-6g	**Valve**	
A8	2,38 - 2,63	D1	Ø 19,74 - Ø 20,26
A9	5,35 - 5,65	D2	Ø 15,1 - Ø 15,5
A10	1,38 – 1,63	D3	Ø 14,3 - Ø 14,41
A11	9,79 - 10,22	D4	M14 x 1,5-6H
A12	√Ra 0,8	D5	Ø 2,95 - Ø 3,25
		D6	Ø 1,88 - Ø 2,13
O-Ring		D7	Ø 6,55 - Ø 8,05
B1	Ø 10,1 - Ø 10,5	D8	11 min
B2	Ø 2,32 - Ø 2,48	D9	3,85 - 4,15
Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3.		D10	5,5 min
		D11	30°
		D12	√Ra 0,8

Figure 18 — Type G.32 – M 14 x 1,5 Self-closing connection

Dimensions in millimetres



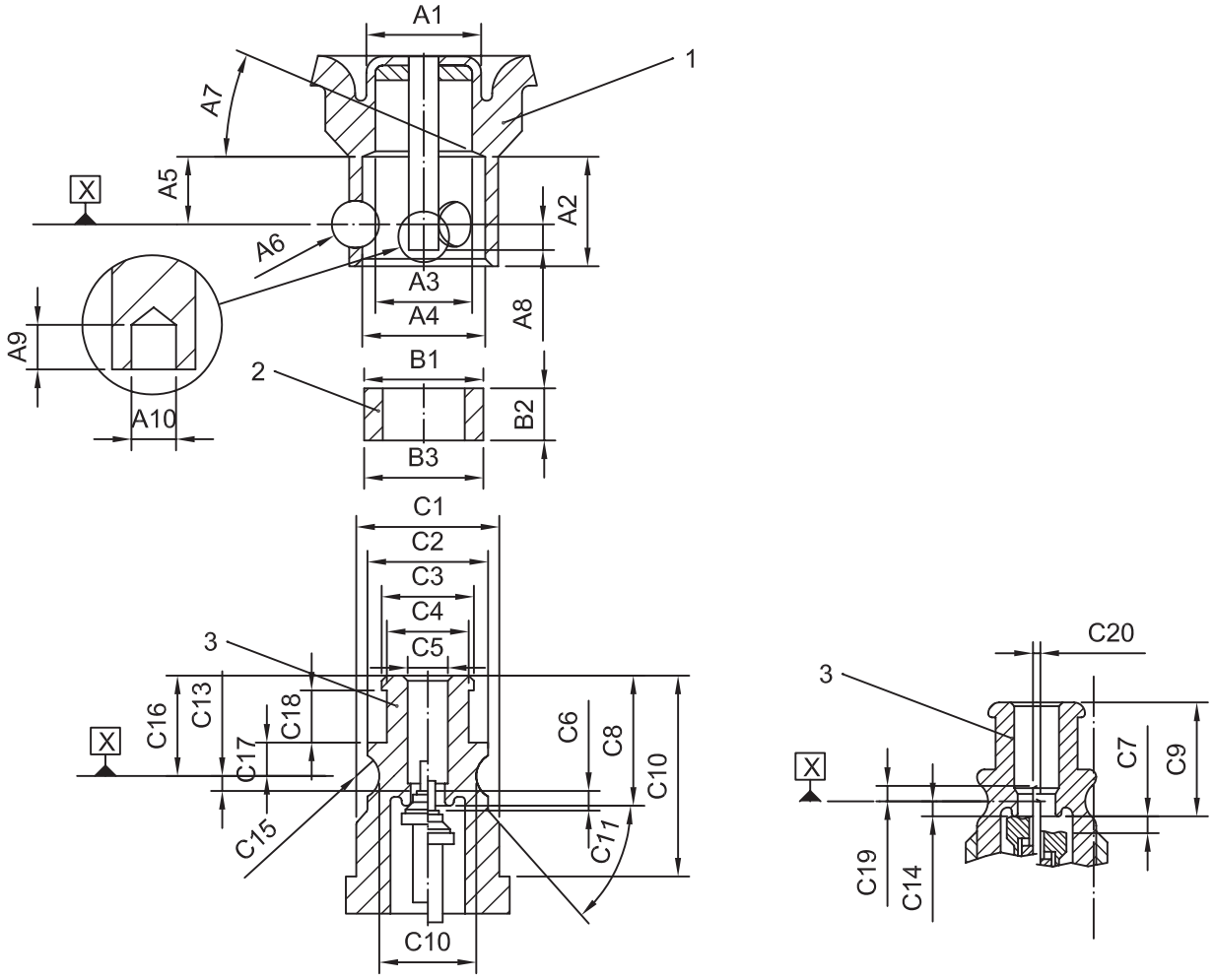
Key

1 nut
2 connector
3 seal
4 valve

Nut		Connector		Valve	
A1	G 3/8 LH EN ISO 228-1	B1	Ø 9,9 – Ø 10,1	D1	G 3/8 LH EN ISO 228-1
A2	Ø 13,2 – Ø 13,3	B2	Ø 12,9 – Ø 13,1	D2	Ø 9,9 – Ø 10,1
A3	9,5 – 10,5	B3	Ø 14,0 – Ø 14,2	D3	Ø 7,6
A4	13,5 – 14,5	B4	1,4 – 1,6	D4	1,0
A5	1,5	**Seal**		D5	9,0 min
A6	60°	C1	Ø 14,0 – Ø 14,2	D6	7,0
		C2	2,0 – 2,2	D7	13,5 max
		C3	Ø 9,8 – Ø 10,0		
		Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3			

Figure 19 — Type G33 - G 3/8 LH

Dimensions in millimetres



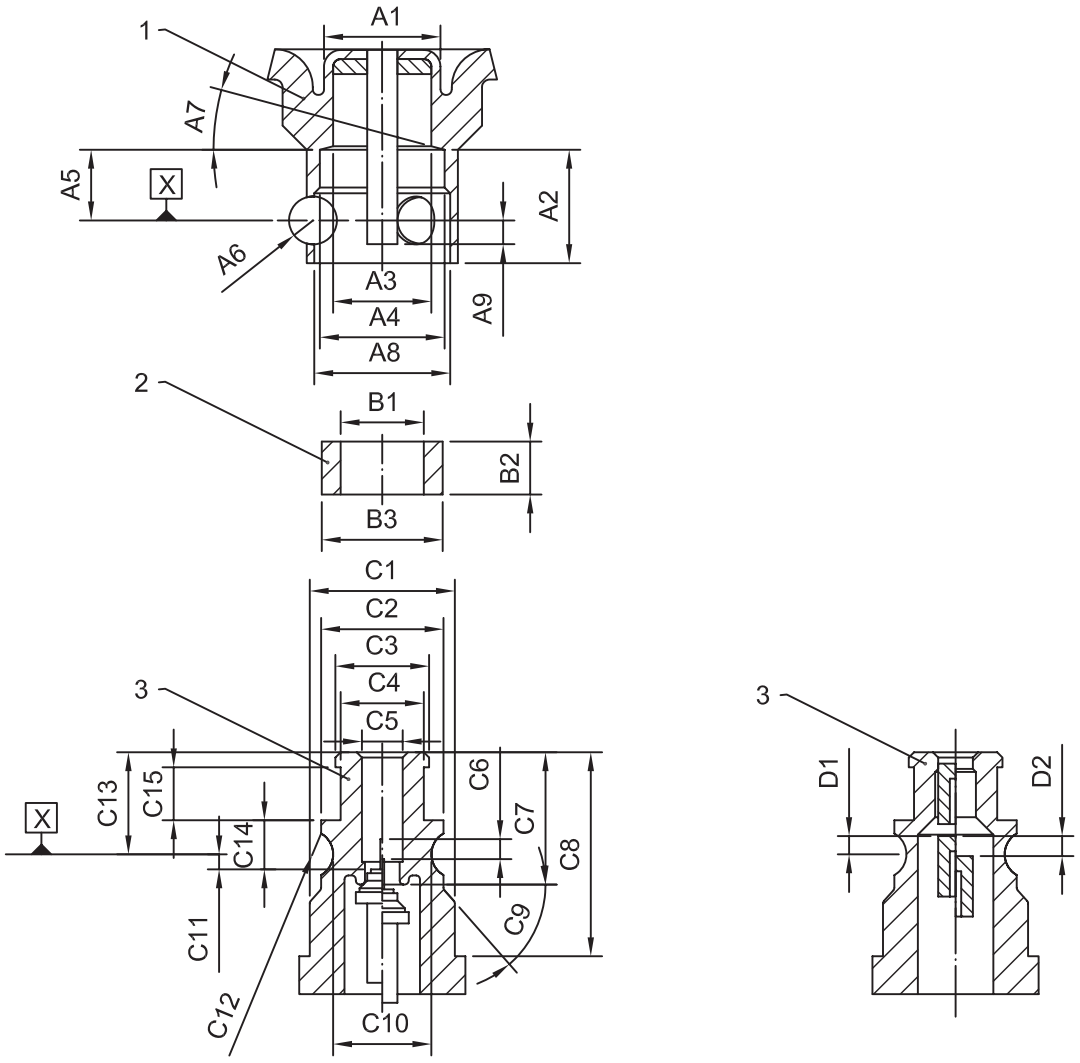
Key

1	connector
2	seal
3	valve
X	datum

Connector		Valve	
A1	∅ 15,4 Nom.	C1	∅ 19,2 max
A2	14,8 – 15,0	C2	∅ 16,05 - ∅ 16,2
A3	∅ 13,0 - ∅ 13,1	C3	∅ 12,69 - ∅ 12,8
A4	∅ 16,3 - ∅ 16,7	C4	∅ 10,9 - ∅ 11,1
A5	9,35	C5	∅ 5,4 min
A6	∅ 6,25 - ∅6,45	C6	2,65 min
	min 3 balls	C7	1,4 min
A7	14° - 16°	C8	17,5 min
A8	1,05 max in closed position	C9	15,4 min
	3,75 max in open position	C10	27,0 min
A9	4,3 – 4,7	C11	44°- 46°
A10	∅ 1,9 -∅ 2,1	C12	∅ 13,0 - ∅ 13,1
Seal		C13	1,3 – 1,7
B1	∅ 10,0 - ∅ 10,4	C14	1,9 – 2,3
B2	7,0 – 7,4	C15	R3,17 – R3,18
B3	∅ 15,15 - ∅ 15,45	C16	13,5 – 13,7
Measured on a ∅ 11 plug gauge		C17	4,3 – 4,5
Material shall be:		C18	6,9 – 7,1
a) NBR or equivalent; or		C19	1,5 max
b) EN 549 A2/H3.		C20	∅ 1,0 max

Figure 20 — Type G.50 - Quick coupling – Diameter 16

Dimensions in millimetres



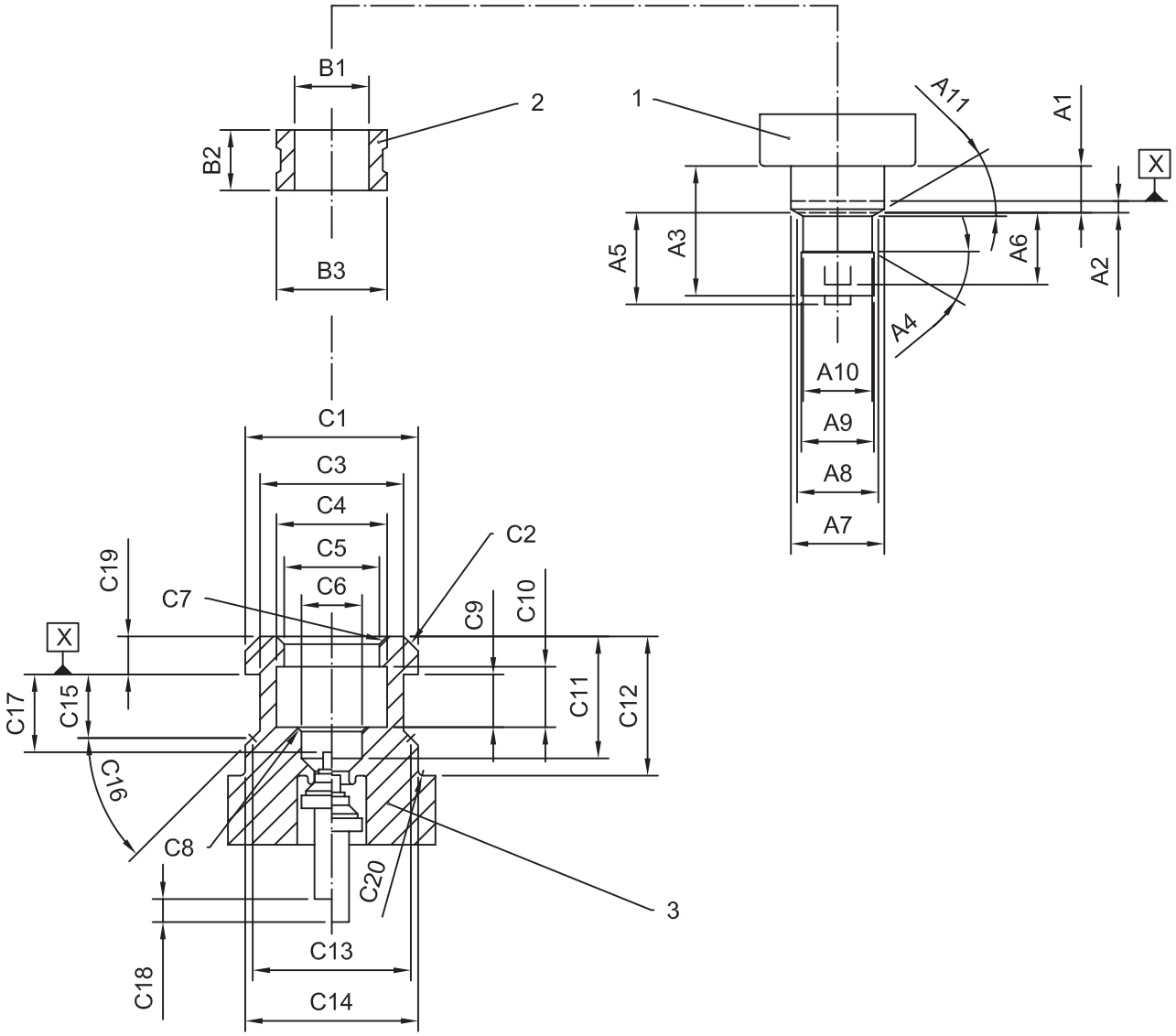
Key

1	connector
2	seal
3	valve
X	datum

Connector		Valve	
A1	∅ 15,4 Nom.	C1	∅ 22,0 max
A2	14,8 – 15,0	C2	∅ 18,85 - ∅ 19,0
A3	∅ 13,0 - ∅ 13,1	C3	∅ 12,69 - ∅ 12,8
A4	∅ 16,3 - ∅ 16,7	C4	∅ 10,9 - ∅ 11,1
A5	9,35	C5	∅ 5,4 min
A6	∅ 6,25 - ∅6,45 min 3 balls	C6	2,65 min
		C7	19,4 min
A7	14° - 16°	C8	27,0 min
A8	∅ 19,1 - ∅ 19,3	C9	44°- 46°
A9	1,9 closed max	C10	∅ 15,8 - ∅ 16,0
Seal		C11	2,4 – 2,8
B1	∅ 10,0 - ∅ 10,4	C12	R3,125 – R3,225
B2	7,0 – 7,4	C13	13,5 – 13,7
B3	∅ 15,15 - ∅ 15,45	C14	4,3 – 4,5
Measured on a ∅ 11 plug gauge		C15	6,9 – 7,1
Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3.		D1	2,4 – 2,8
		D2	2,65 min

Figure 21 — Type G.51 - Quick coupling – Diameter 19

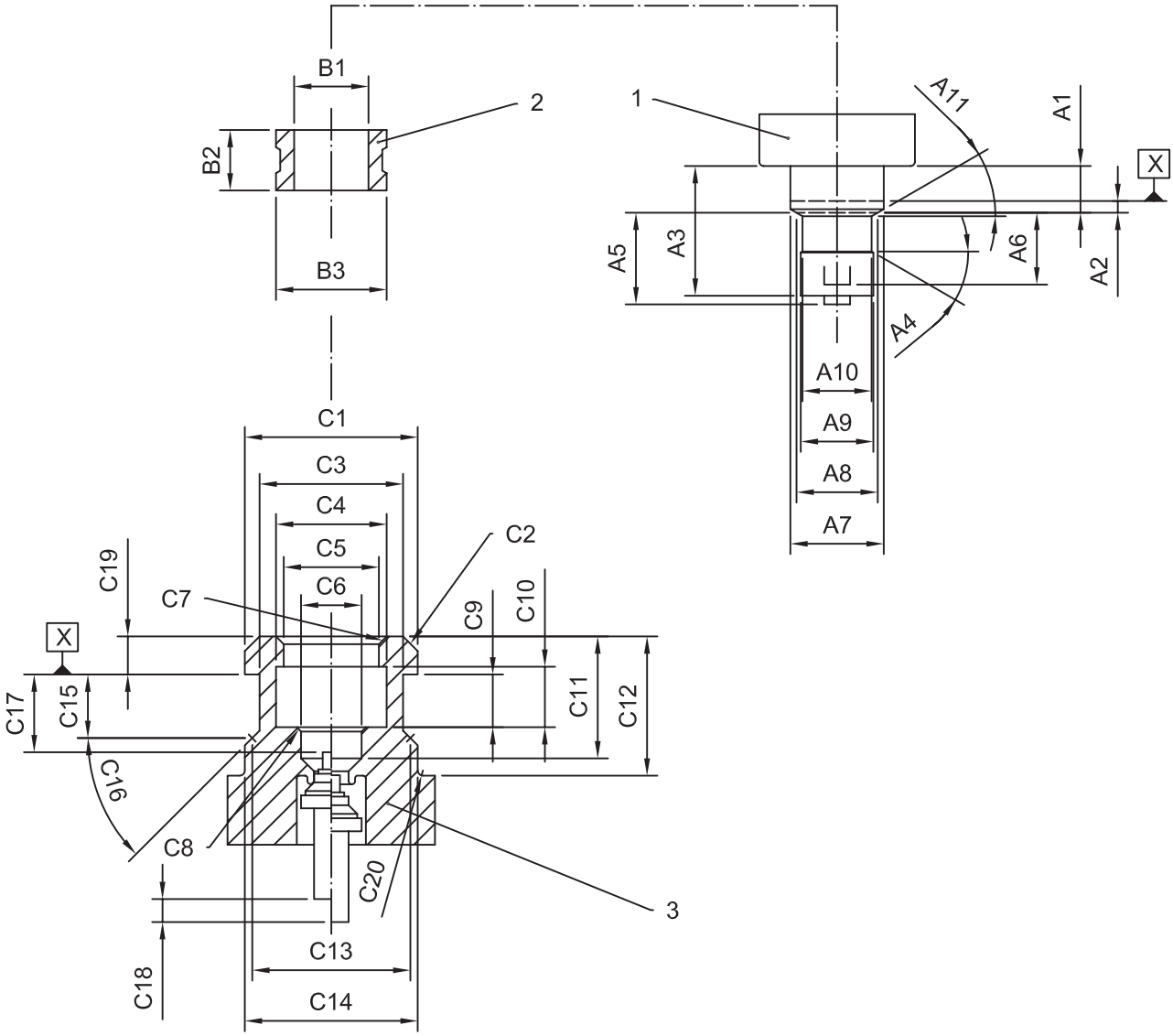
Dimensions in millimetres



Key		Connector		Seal		Valve			
1	connector	A1	5,3 – 5,5	B1	∅ 8,65 - ∅ 8,75	C1	∅ 19,9 - ∅ 20,1	C11	15,1 min
2	seal	A2	1,0 – 1,7	B2	6,9 – 7,1	C2	∅ 17,1 - ∅ 17,5 x 45°	C12	16,1 min
3	valve	A3	13 – 15	B3	∅ 12,8 - ∅ 12,95	C3	∅ 16,45 - ∅ 16,75	C13	∅ 18,0 ref. C15
X	datum	A4	29° - 31°	Material shall be:		C4	∅ 12,6 - ∅ 12,9	C14	∅ 20,0 - ∅ 20,15
		A5	10,5 max	a) NBR or equivalent;		C5	∅ 10,95 - ∅ 11,1	C15	6,9 – 7,2
		A6	6,75 max	or		C6	∅ 8,05 - ∅ 8,15	C16	44°- 46°
		A7	∅ 10,8 - ∅ 10,9	b) EN 549 A2/H3.		C7	0,6 – 1,0 x 45°	C17	8,9 – 9,5
		A8	∅ 9,3 ref. A2			C8	0,3 – 0,6 x 45°	C18	2,65 min
		A9	∅ 8,05 - ∅ 8,15			C9	6,4 – 6,6	C19	3,4 – 3,6
		A10	∅ 8,0 max			C10	6,9 – 7,2	C20	R 0,5 – R0,8
		A11	29° - 31°						

Figure 22 — Type G.52 - Quick coupling – Diameter 20

Dimensions in millimetres



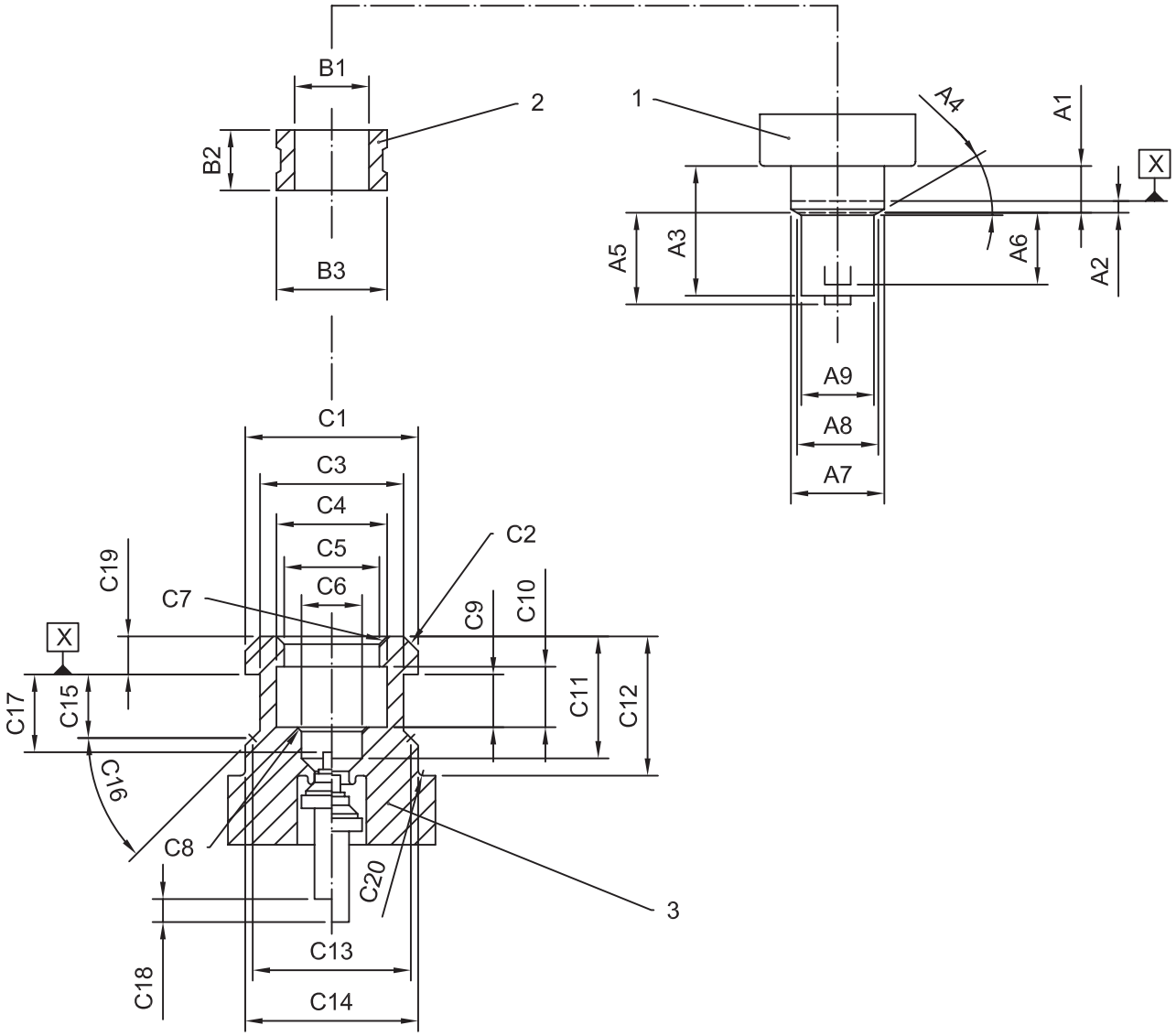
Key

1	connector
2	seal
3	valve
X	datum

Connector		Seal		Valve			
A1	5,3 – 5,5	B1	∅ 9,65 - ∅ 9,75	C1	∅ 20,9 - ∅ 21,1	C11	15,1 min
A2	1,3 – 1,7	B2	7,1 – 7,3	C2	∅ 18,1 - ∅ 18,5 x 45°	C12	16,1 min
A3	13 – 15	B3	∅ 14,2 - ∅ 14,35	C3	∅ 17,45 - ∅ 17,75	C13	∅ 19,0 ref. C15
A4	29° - 31°	Material shall be:		C4	∅ 14,1 - ∅ 14,4	C14	∅ 21,0 - ∅ 21,15
A5	10,5 max	a) NBR or equivalent;		C5	∅ 12,45 - ∅ 12,6	C15	6,9 – 7,2
A6	6,75 max	or		C6	∅ 8,05 - ∅ 8,15	C16	44°- 46°
A7	∅ 12,3 - ∅ 12,4	b) EN 549 A2/H3		C7	0,6 – 1,0 x 45°	C17	8,9 – 9,5
A8	∅ 9,8 ref. A2			C8	0,3 – 0,6 x 45°	C18	2,65 min
A9	∅ 8,75 - ∅ 8,85			C9	6,6 – 6,8	C19	3,4 – 3,6
A10	∅ 8,0 max			C10	7,1 – 7,4	C20	R 0,5 – R0,8
A11	29° - 31°						

Figure 23 — Type G.53 - Quick coupling – Diameter 21

Dimensions in millimetres



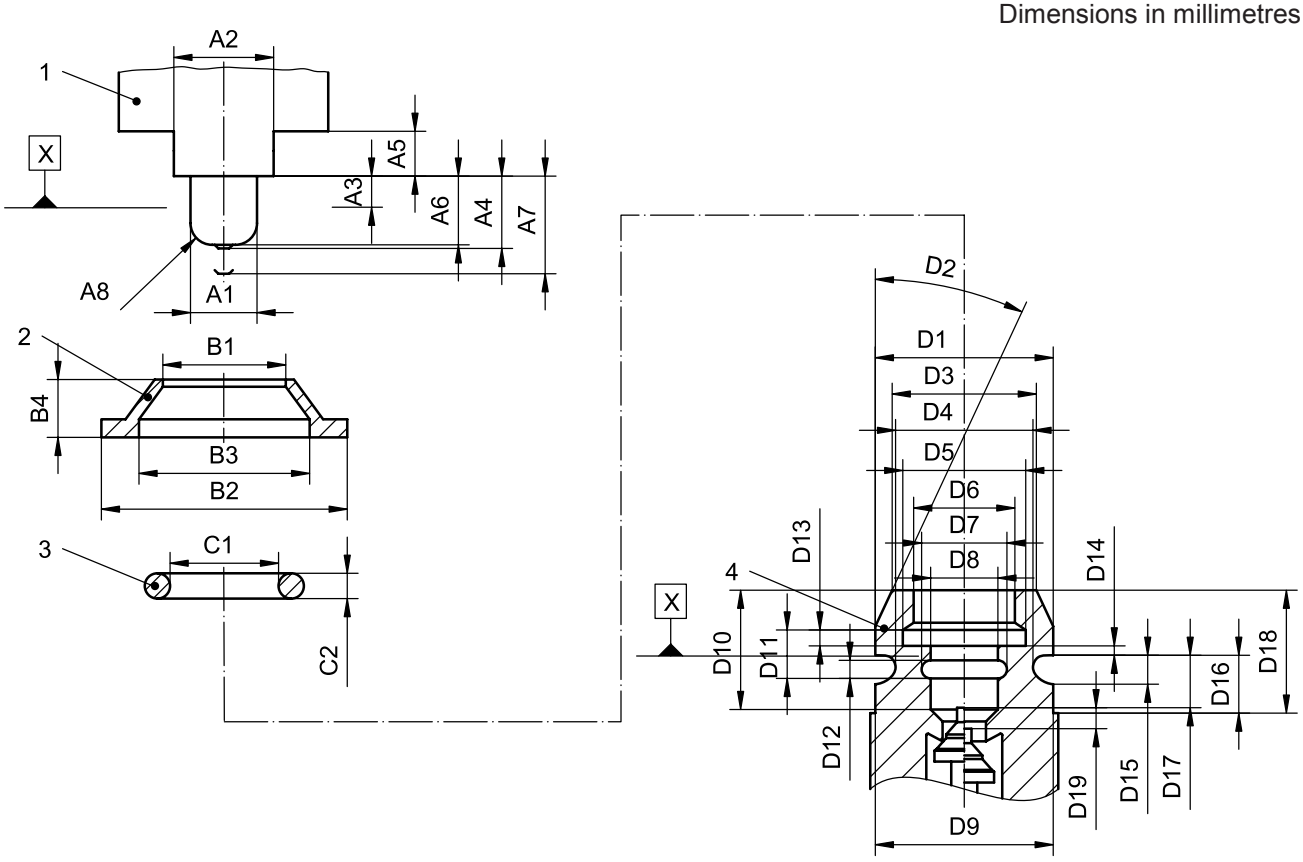
Key

1	connector
2	seal
3	valve
x	datum

Connector		Seal		Valve			
A1	5,6 – 6,0	B1	∅ 9,65 - ∅ 9,75	C1	∅ 21,9 - ∅ 22,1	C11	15,1 min
A2	1,8 – 2,2	B2	7,1 – 7,3	C2	∅ 18,7 - ∅ 19,1 x 45°	C12	16,1 min
A3	13 – 15	B3	∅ 14,2 - ∅ 14,35	C3	∅ 18,25- ∅ 18,55	C13	∅ 20,0 ref. C15
A4	29° - 31°	Material shall be:		C4	∅ 14,1 - ∅ 14,4	C14	∅ 22,0 - ∅ 22,15
A5	10,025 max	a) NBR or equivalent;		C5	∅ 12,45 - ∅ 12,6	C15	6,9 – 7,2
A6	6,25 max	or		C6	∅ 9,05 - ∅ 9,15	C16	44°- 46°
A7	∅ 12,3 - ∅ 12,4	b) EN 549 A2/H3		C7	0,6 – 1,0 x 45°	C17	8,9 – 9,5
A8	∅ 9,8 ref. A2			C8	0,3 – 0,6 x 45°	C18	2,65 min
A9	∅ 8,5 - ∅ 9,0			C9	7,1 – 7,3	C19	3,4 – 3,6
				C10	7,1 – 7,4	C20	R0,5 – R0,8

Figure 24 — Type G.54 - Quick coupling – Diameter 22

Dimensions in millimetres



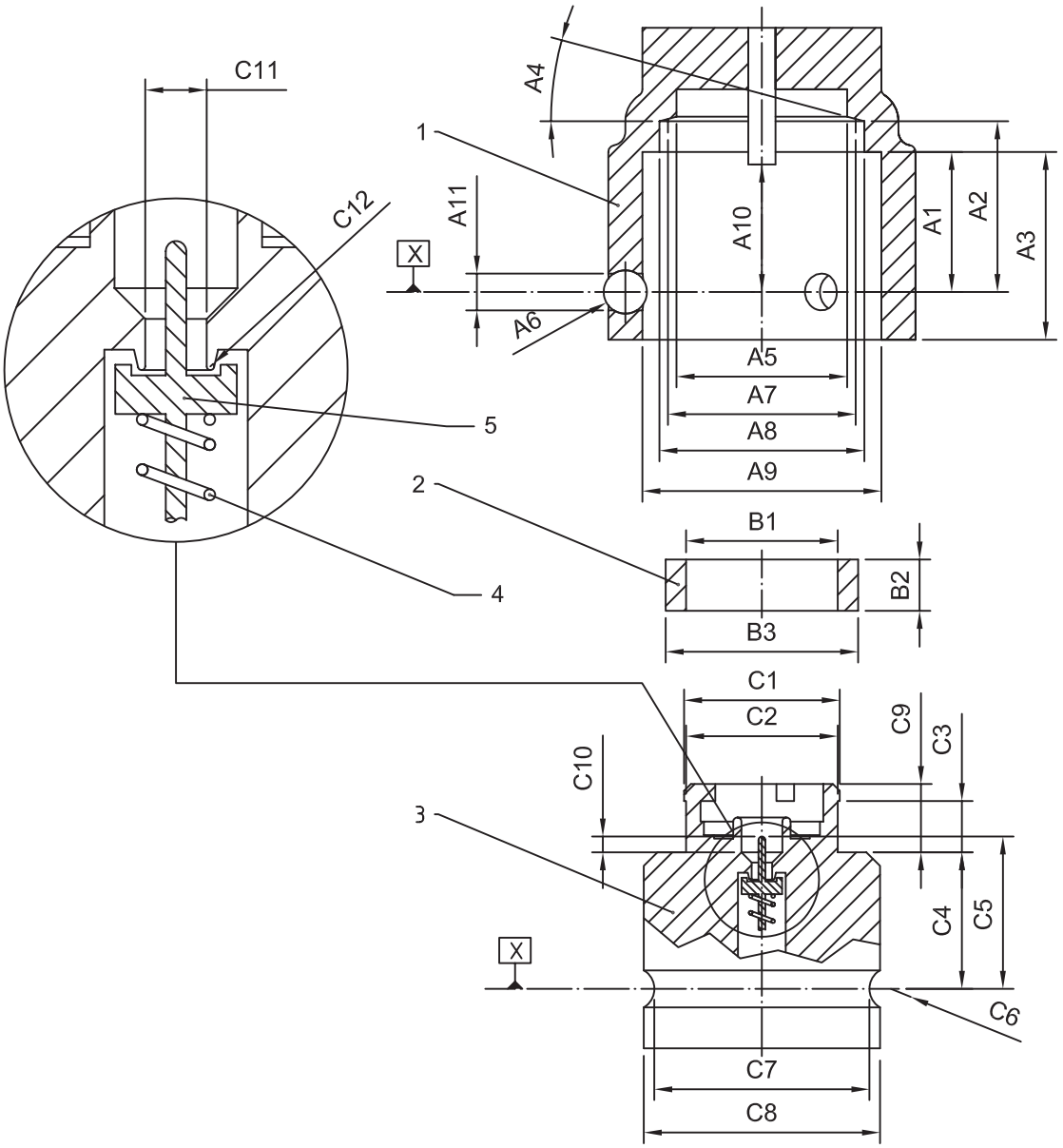
Key

1	connector
2	seal
3	O-Ring
4	valve
X	datum

Connector		**Valve**	
A1	∅ 9,07 - ∅ 9,16	D1	∅ 24,4 - ∅ 24,7
A2	∅ 13,75 - ∅ 13,85	D2	23° - 27°
A3	4,3 – 4,7	D3	∅ 18,9- ∅ 19,3
A4	10,0 max	D4	∅ 18,8 - ∅ 19,0
A5	6,1 – 6,5	D5	∅ 16,9 - ∅ 17,0
A6	9,3 – 9,7	D6	∅ 13,95 - ∅ 14,05
A7	13,5 max	D7	∅ 12,1 - ∅ 12,2
A8	R2,9 – R3,1	D8	∅ 9,25 - ∅ 9,35
Seal		D9	∅ 24,4 - ∅ 24,75
B1	∅ 9,2 - ∅ 9,3	D10	16,5 min
B2	∅ 16,7 - ∅ 16,9	D11	6,4 – 7,0
B3	∅ 11,9 - ∅ 12,1	D12	2,4 – 2,6
B4	4,0 – 4,2	D13	2,1 – 2,3
Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3.		D14	1,9 – 2,1
		D15	3,8 – 4,2
		D16	7,3 – 7,7
O-Ring		D17	6,1 – 6,7
C1	∅ 9,12 - ∅ 9,38	D18	17 max
C2	∅ 1,7 - ∅ 1,86	D19	3,2 min
Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3.			

Figure 25 — Type G.55 - Quick coupling – Diameter 24,5

Dimensions in millimetres



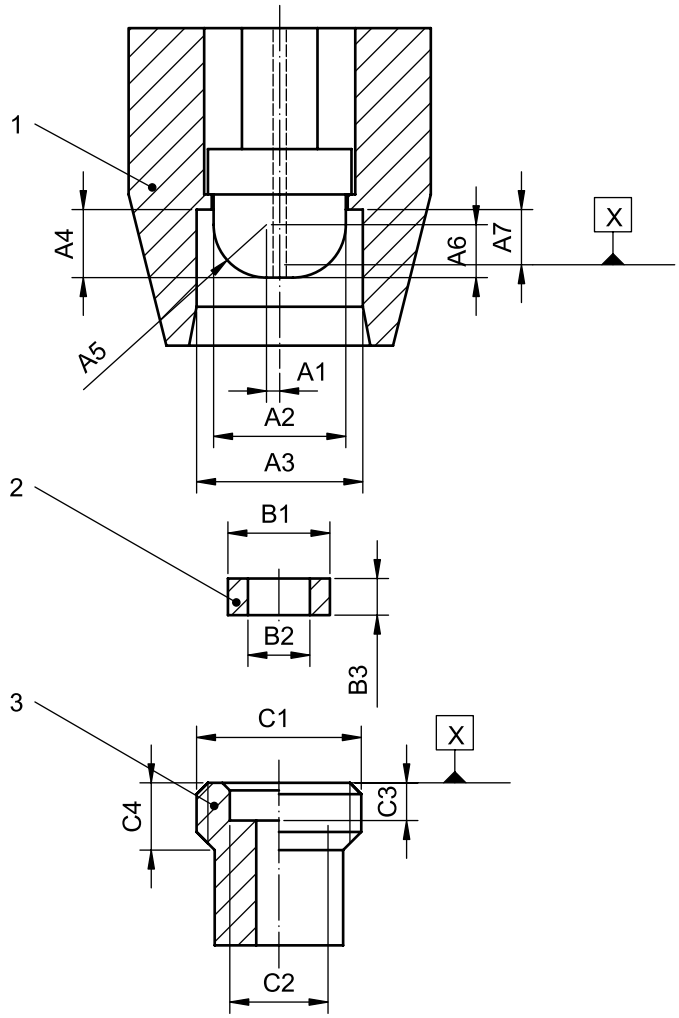
Key

1	connector
2	seal
3	valve
4	spring
5	spindle
X	datum

Connector		Seal		Valve	
A1	20,475 – 20,775	B1	∅ 19,4 - ∅ 20,0	C1	∅ 24,8 max
A2	24,750 – 25,125	B2	7,5 – 7,9	C2	∅ 22,25 - ∅ 22,55
A3	27,00 – 27,65	B3	∅ 25,4 - ∅ 26,0	C3	7,35 – 7,65
A4	10° - 17°	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3.		C4	19,95 – 20,25
A5	∅ 24,85 - ∅ 25,25			C5	22,10 – 22,45 closed
A6	∅ 6,32 - ∅ 6,38 min 3 balls			C6	R3,125 – R3,225
				C7	∅ 31,84 - ∅ 32,0
A7	∅ 27,5 ref A2	**Spring**		C8	∅ 34,6 - ∅ 34,8
A8	∅ 29,85 - ∅ 30,05	Spring load at closure 12 N max		C9	9,9 – 10,1
A9	∅ 35,05 min	Spring elastic constant 2 N/mm		C10	3,5 min
A10	Open position: max 21,5 min 21,1 Closed position: max 23,9 min 23,2			C11	∅ 5 max
				C12	R 0,3 max
A11	6,45 – 6,55				

Figure 26 — Type G.56 - Quick coupling – Diameter 35

Dimensions in millimetres



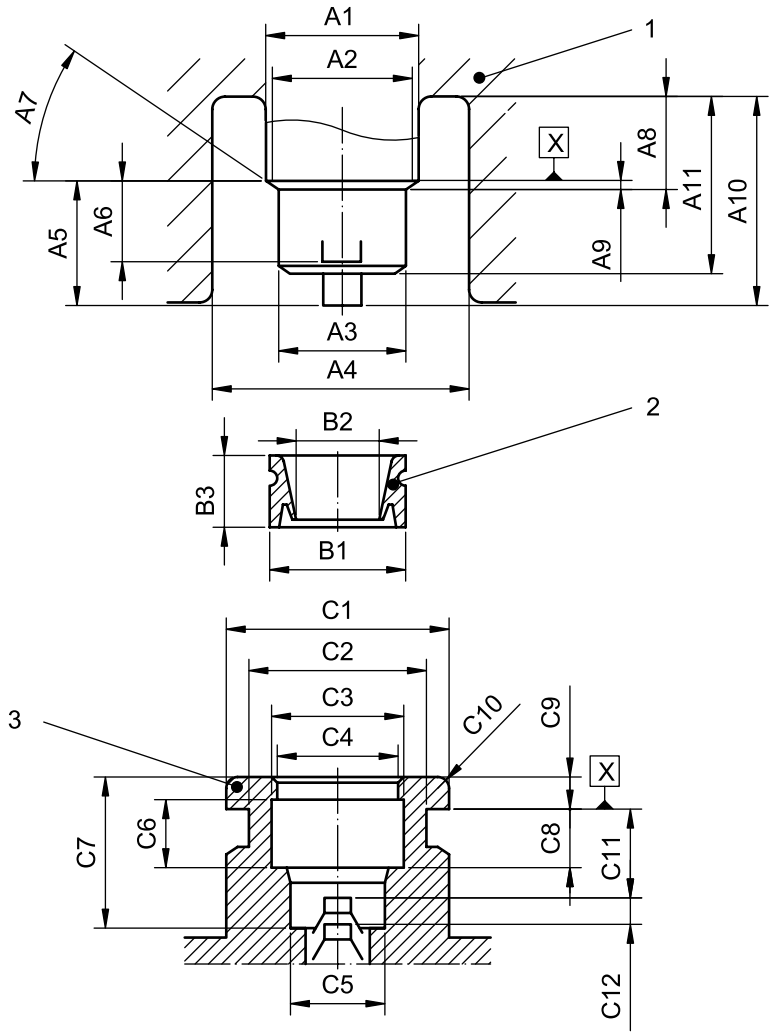
Key

1	connector
2	seal
3	valve
X	datum

Connector		**Seal** – (same as G2)		**Valve** – (same as G2)	
A1	1,6 – 2,0 ref. A5	B1	∅ 13,35 - ∅ 13,65	C1	21,7 x 1,814 LH
A2	∅ 17,35 - ∅ 17,85	B2	∅ 8,0 - ∅ 8,4	C2	∅ 13,0 - ∅ 13,1
A3	∅ 21,8 - ∅ 22,0	B3	7,5 – 7,8	C3	7,8 – 8,0
A4	9,6 – 9,8	Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3.		C4	8,6 – 8,7
A5	R6,8 – R7,0				
A6	6,0 – 6,6 ref. A5				
A7	7,3 max				

Figure 27 — Type G.57 - Quick coupling for threaded valves 21,7

Dimensions in millimetres



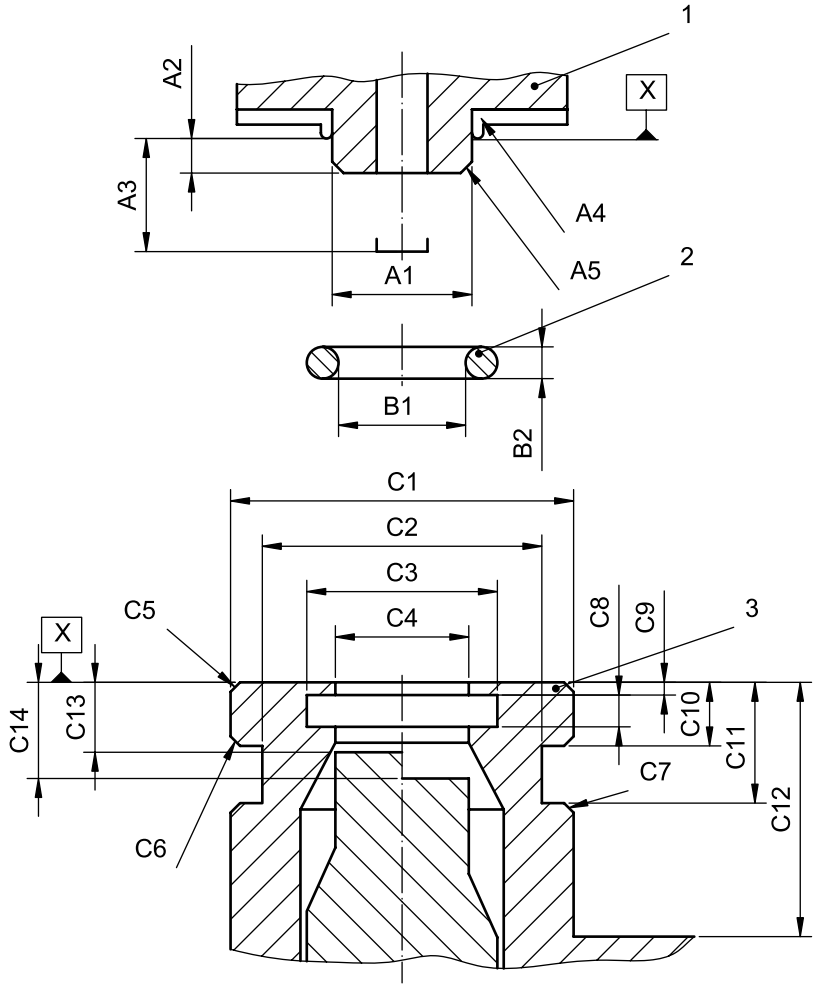
Key

1	connector
2	seal
3	valve
X	datum

Connector		Seal		Valve	
A1	∅ 13,3 - ∅ 13,4	B1	∅ 15,2 - ∅ 15,3	C1	∅ 24,35 - ∅ 24,45
A2	∅ 12,0 ref. A9	B2	∅ 10,1 - ∅ 10,2	C2	∅ 19,2 - ∅ 19,3
A3	∅ 10,60 - ∅ 10,75	B3	7,9 –7,95	C3	∅ 14,9 - ∅ 15,0
A4	∅ 24,5 – ∅ 24,6	Material shall be:		C4	∅ 13,6 - ∅ 13,7
A5	11,3 max	a) NBR or equivalent; or		C5	∅ 10,9 -∅ 11,0
A6	7,6 max closed	b) EN 549 A2/H3		C6	7,4 – 7,5
A7	29° - 31°			C7	16,3 min
A8	4,9 – 5,1			C8	6,4 – 6,5
A9	0,6 – 0,8			C9	3,5 – 3,55
A10	15,8 – 16,5 open			C10	R1,4 – R1,6
A11	13,6 – 14,0			C11	9,4 – 9,9
				C12	2,0 min

Figure 28 — Type G.58 - Quick coupling – Diameter 24,4

Dimensions in millimetres



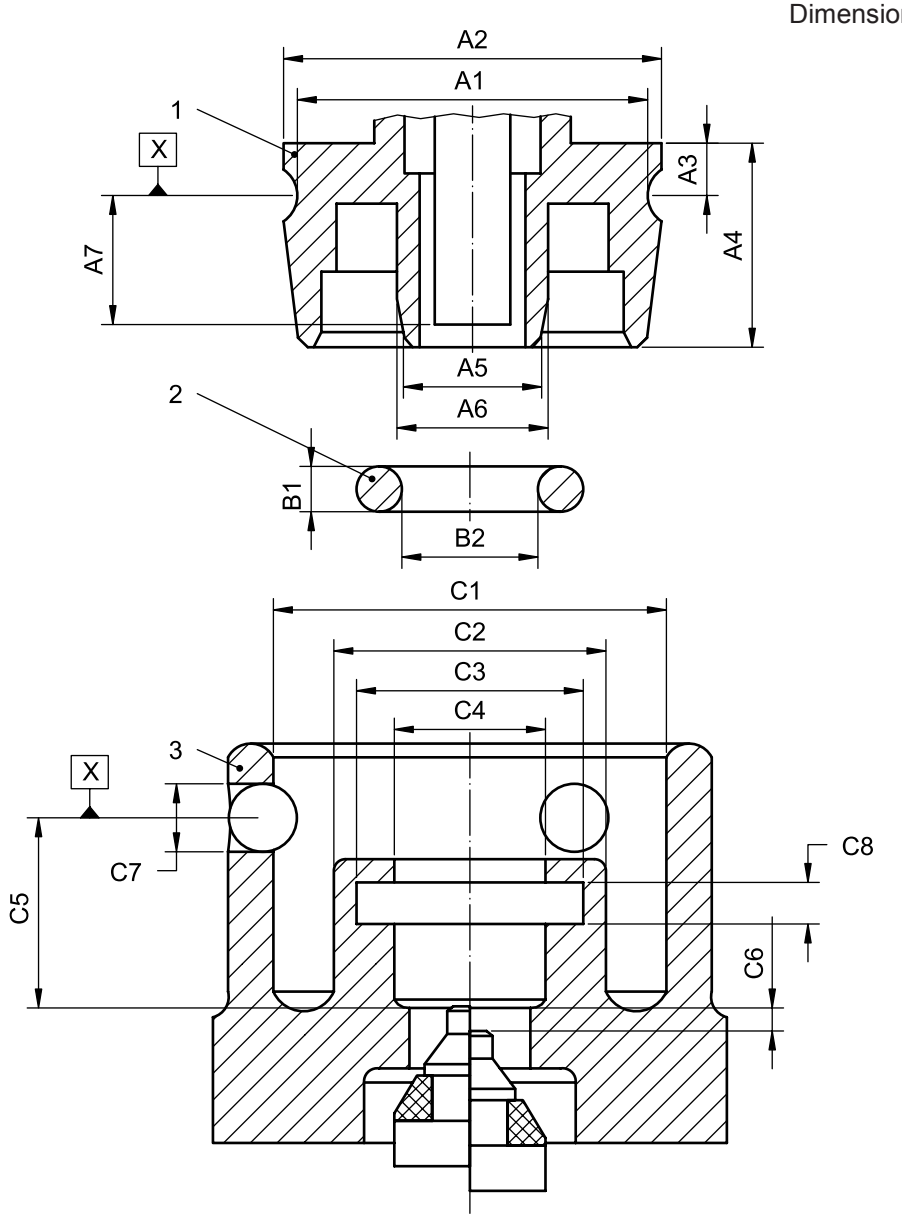
Key

1 connector
2 seal
3 valve
X datum

Connector		Valve	
A1	∅ 10,64 - ∅ 10,74	C1	∅ 26,9 - ∅ 27,0
A2	5,6 max	C2	∅ 21,8 - ∅ 22,1
A3	9,4 max	C3	∅ 15,24 - ∅ 15,34
A4	NBR or equivalent EN 549 A2/H3 60 shore A	C4	∅ 10,79 - ∅ 10,85
		C5	0,5 x 45°
A5	Chamfer 0,5 x 0,5 or R1,2	C6	0,5 x 45°
Seal – ("O" ring – ISO 3601-1)		C7	0,5 x 45°
B1	∅ 10,61 - ∅ 10,93	C8	2,8 – 3,00
B2	∅ 2,54 - ∅ 2,70	C9	1,00 – 1,17
Material shall be: a) NBR or equivalent; or b) EN 549 A2/H3		C10	4,93 – 5,03
		C11	9,40 – 9,66
		C12	19,5 min
		C13	5,6 max
		C14	9,4 – 10,4

Figure 29 — Type G.59 - Quick coupling – Diameter 27

Dimensions in millimetres



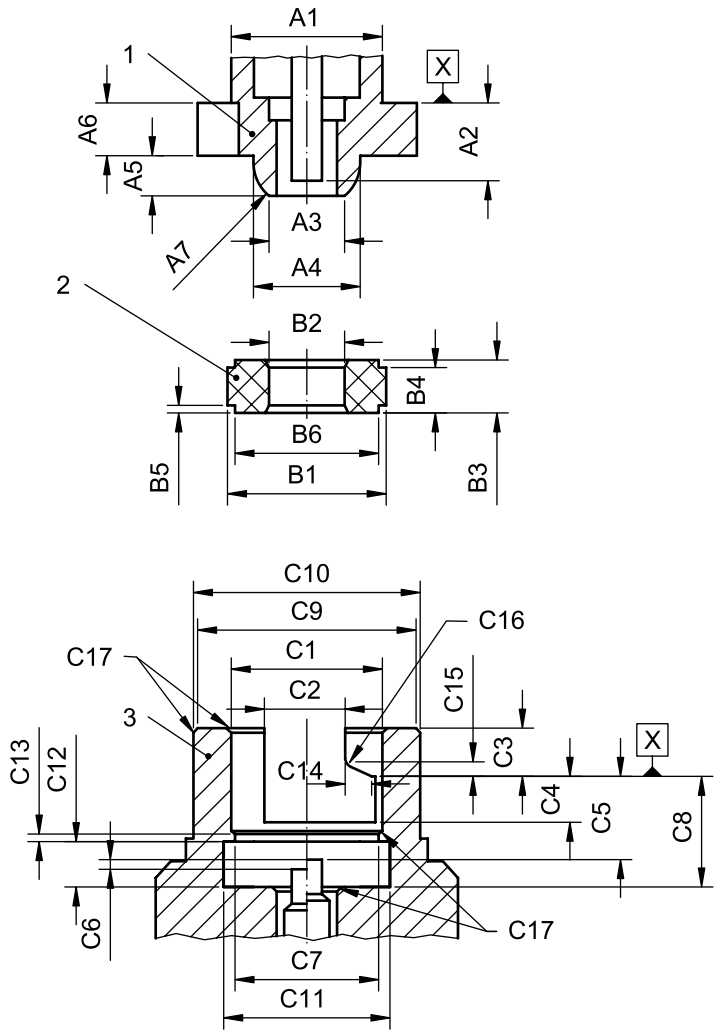
Key

1 connector
2 seal
3 valve
X datum

Connector		Seal		Valve	
A1	∅ 22,73 - ∅ 22,86	B1	∅ 2,9 -∅ 3,1	C1	∅ 25,55 - ∅ 25,66
A2	∅ 24,86 - ∅ 25,1	B2	∅ 8,85 - ∅ 9,15	C2	∅ 17,45 - ∅ 17,70
A3	4,47 – 4,59	Material shall be:		C3	∅ 14,63 - ∅ 14,73
A4	14,70 – 15,05	a) NBR or equivalent; or		C4	∅ 9,65 - ∅ 9,79
A5	∅ 8,3 - ∅ 8,5	b) EN 549 A2/H3 – 70±5 IRHD		C5	10,4 – 11,3
A6	∅ 9,49 - ∅ 9,55			C6	4 min opening
A7	Opened 11,9 min			C7	4,76
	Closed 9,85 max			C8	3,68 ± 0,12

Figure 30 — Type G.60 - Quick coupling – Diameter 25,4

Dimensions in millimetres



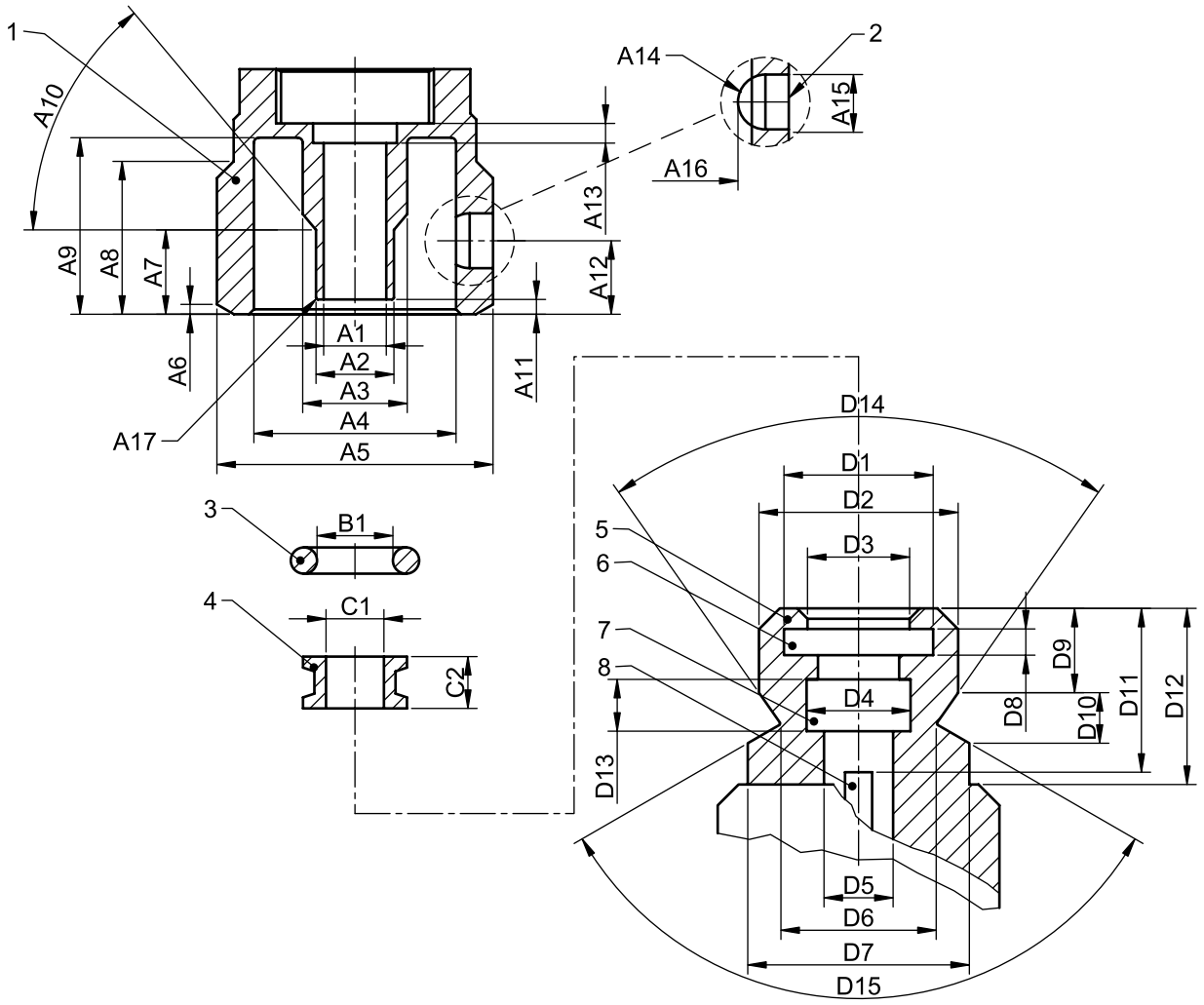
Key

1	connector
2	seal
3	valve
X	datum

Connector		Seal		Valve			
A1	∅ 19,3 - ∅ 19,4	B1	∅ 20,53 - ∅ 20,73	C1	19,69 – 19,79	C10	∅ 30,7 - ∅ 31,3
A2	11,0 max closed	B2	∅ 9,00 - ∅ 9,20	C2	9,23 – 9,83	C11	∅ 20,57 - ∅ 20,73
	12,9 min opened	B3	6,75 – 6,95	C3	7,06 – 7,21	C12	6,35 – 6,48
A3	∅ 8,9 max	B4	6,25 – 6,45	C4	7,21 – 7,72	C13	0,67 – 0,93
A4	∅ 14,9 - ∅ 15,3	B5	0,4 – 0,6	C5	11,6 – 12,2	C14	2,1 – 2,7
A5	5,55 – 5,90	B6	17,8 – 18,0	C6	4 min	C15	0,77 – 0,83
A6	7,00 – 7,15	Material shall be:		C7	18,0 – 18,6	C16	R0,7 – R 1,3
A7	R14 – R16	a) NBR or equivalent; or b) EN 549 A2.– 60±5 IRHD		C8	15,80 – 15,95	C17	45°
				C9	∅ 29,9 - ∅ 30,5		

Figure 31 — Type G.61 – Quick coupling bayonet connection

Dimensions in millimetres



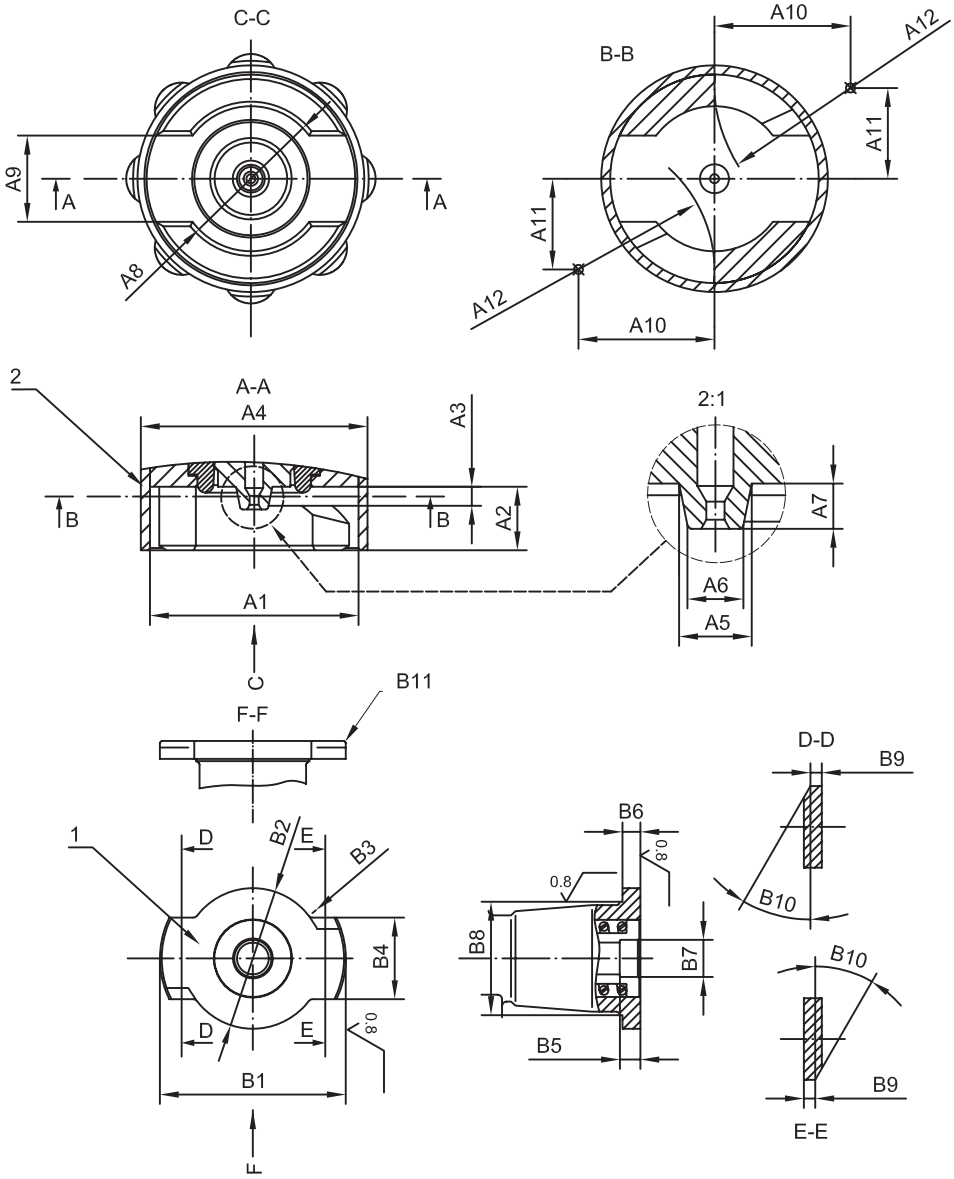
Key

1 connector
2 3 balls spaced equally
3 upper seal
4 lower seal
5 valve
6 upper seal location
7 lower seal location
8 valve operating position (closed position)

Connector		Upper seal		Valve	
A1	∅ 6,35 - ∅ 6,48	B1	9,98 max when fitted	D1	∅ 15,1 - ∅ 15,2
A2	∅ 7,9 - ∅ 8,0	NBR or equivalent		D2	∅ 20,20 - ∅ 20,25
A3	∅ 10,6 - ∅ 10,7	EN 549 A2/H3		D3	∅ 10,8 - ∅ 10,9
A4	∅ 20,5 - ∅ 20,6	**Lower seal**		D4	∅ 13,1 - ∅ 13,2
A5	∅ 28,0 ± 0,1	C1	8,6 max when fitted	D5	∅ 8,3 - ∅ 8,4
A6	1,0 ± 0,1 x 30°	C2	4,95 ± 0,1	D6	∅ 16,0 ∅ 16,1 at bottom of groove
A7	8,55 – 8,65	Material shall be:		D7	∅ 20,40 - ∅ 20,45
A8	15,5	a) NBR or equivalent; or		D8	3,38 – 3,40
A9	17,9 ± 0,1	b) EN 549 A2/H3.		D9	6,7 – 6,8
A10	50°			D10	4,9 – 5,0
A11	1,5 ± 0,1			D11	15,0 nom.
A12	7,45 – 7,55			D12	17,9 – 18,0
A13	2,0 ± 0,1			D13	5,20 – 5,25
A14	R 2,78 – 2,80			D14	70°
A15	∅ 5,56 - ∅ 5,61			D15	120°
A16	∅ 17,7 - ∅ 17,8				
A17	R 0,5				

Figure 32 — Type G.64 – Neck valve – Diameter 20

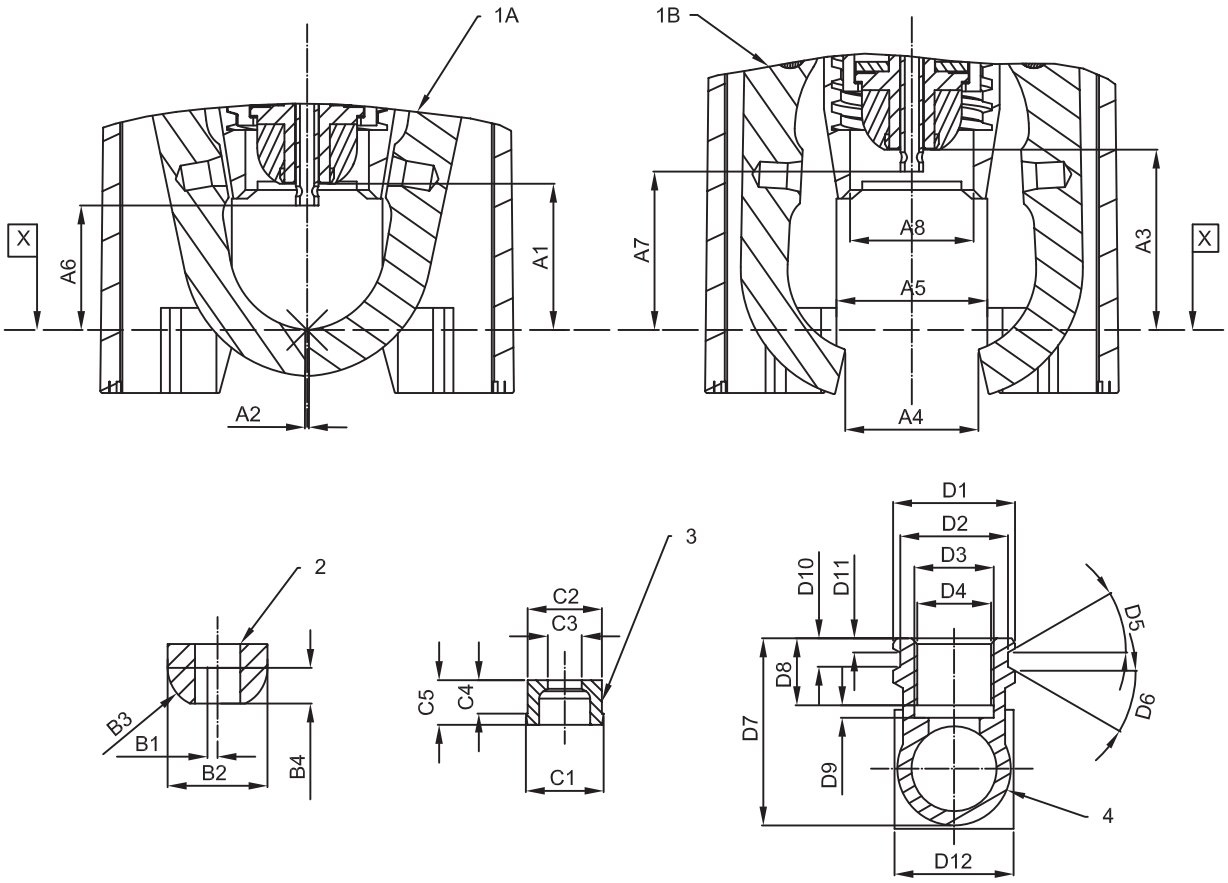
Dimensions in millimetres



Key		Connector				Valve			
1	valve	A1	∅ 45,9 - ∅ 45,95	A7	4,85 – 5,15	B1	∅ 39,5 - ∅ 41,0	B7	8,15 – 8,25
2	connector	A2	13,9 – 14,1	A8	∅ 31,9 - ∅ 32,1	B2	∅ 30,5 - ∅ 31,0	B8	∅ 24,7 -∅ 25,0
X	datum	A3	4,15 – 4,25	A9	18,9 – 19,1	B3	R 0,8 – R 1,0	B9	2,3 – 2,7
		A4	∅ 49,9 - ∅ 50,1	A10	29,9 – 30,1	B4	17,8 - 18,0	B10	29,8° - 30,2°
		A5	∅7,85 - ∅ 8,15	A11	19,9 – 20,1	B5	4,0 – 5,0	B11	0,4 x 45°
		A6	∅ 5,85 - ∅ 6,15	A12	R 29,9 – R 30,1	B6	3,80 – 3,95		

Figure 33 — Type G.65 – Quick Coupling Fork Lift Bayonet Connection

Dimensions in millimetres



Key		Valve				Connector			
1A	fitting (closed)	End tap retainer		End tap valve		Fitting closed		Connector	
		C9021 Natural		Brass		A1	25,9 – 27,3	Polyurethane 75 IRHD	
1B	fitting (open)	C1	∅13,65 - ∅13,75	D1	∅21,4 0- ∅21,51	A2	0,7 – 2,7	B1	1,6 - 2,0 ref B3
		C2	∅13,05 - ∅13,00	D2	∅18,90 - ∅19,01	A6	21,9 – 23,5	B2	∅17,35 - ∅17,85
2	connector	C3	∅5,9 – ∅6,1	D3	∅13,9 - ∅14,1			B3	R6,8 – R7,0
3	end tap retainer	C4	5,8 – 5,9	D4	∅13,00 - ∅13,05	Fitting open		B4	6,0 – 6,6 ref B3
		C5	7,8 – 7,9	D5	30º	A3	30,7 – 32,1		
4	end tap valve			D6	30º	A4	23,9		
				D7	32,8 – 33,2	A5	26,6 – 27,0		
X	datum			D8	11,75 – 11,85	A7	26,7 – 28,3		
				D9	2,15 – 2,25	A8	21,8 – 22,0		
				D10	4,95 – 5,05				
				D11	2,45 – 2,55				
				D12	25,8 – 26,3				

Figure 34 — Type G.66 – Quick Coupling Fork Lift Connection

6 Connections in use

This European Standard identifies the essential dimensions for compatible connections. The corresponding valve and connector shall be marked in accordance with Clause 9. Annex A indicates the most common connections in use in countries that are members of CEN.

7 Unsafe connections

Table B.1 lists connections where it is possible to connect together but which may not be sound or secure in some operating conditions or orientations, when connected.

8 Tightening torque

The use of tools where required is identified.

Table 1 gives the recommended tightening torque for metal-to-metal connections to achieve soundness.

Table 1 — Recommended tightening torque for metal-to-metal connections

Connection type	**Torque** Nm
G.7	20
G.9	20

9 Marking

To ensure that a correct connection is formed between the cylinder valve and connector, it is necessary to mark each unit with a clear identification mark.

Each cylinder valve and corresponding connector shall be marked with the same number. This number will be the Connection Type Number of this standard.

EXAMPLE G.2 – for the dimensions represented in Figure 2 - Type G.2.

G.21 – for the dimensions represented in Figure 13 - Type G.21.

Annex A
(informative)

Connections by country

The different types of threaded and non-threaded valve outlet connections used in different countries are given in Table A.1 and Table A.2. Figure 1 (type G.1) to Figure 19 (type G.33) give the types of threaded outlet connections and Figure 20 (type G.50) to Figure 34 (type G.66) give the types of non-threaded outlet connections.

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

Table A.1 — Threaded outlet connections used in the various countries

Country code [a]	Type																		
	G.1	G.2	G.3	G.4	G.5	G.6	G.7	G.8	G.9	G.10	G.12	G.19	G.21	G.25	G.29	G.30	G.31	G.32	G.33
AT	x		x	x	x						x						x		
BE			x											x			x		
BG			x						x								x		
CH		x	x														x		
CY																			
CZ			x														x		
DE			x	x	x						x	x		x			x		
DK			x	x		x											x		
EE																			
ES			x										x				x		
FI			x		x						x				x				
FR		x	x																
GB			x				x	x							x	x		x	
GR	x		x														x		
HU																			
IE			x					x							x		x		
IS			x																
IT	x		x														x		
LT																			
LU			x																
LV																			
MT	x																		
NL			x											x					
NO			x						x	x								x	
PL							x		x		x								x
PT			x						x	x								x	
SE			x						x	x					x			x	
SI																			
SK																			

[a] Country codes are in accordance with EN ISO 3166-1.

Table A.2 — Non-threaded outlet connections used in the various countries

Country code [a]	Type														
	G.50	G.51	G.52	G.53	G.54	G.55	G.56	G.57	G.58	G.59	G.60	G.61	G.64	G.65	G.66
AT															
BE										x					
BG							x								
CH															
CY							x								
CZ															
DE															
DK	x	x	x	x	x		x								
EE															
ES							x								
FI							x								
FR			x				x	x		x				x	x
GB			x	x	x		x			x					
GR			x		x	x			x						
HU															
IE				x			x			x			x		
IS															
IT			x		x	x			x						
LT															
LU															
LV															
MT					x										
NL															
NO															
PL										x					
PT			x		x		x			x	x	x			
SE							x								
SI															
SK															

[a] Country codes are in accordance with EN ISO 3166-1.

Annex B
(normative)

Unsafe connections

Table B.1 lists connections where it is possible to connect together but which may not be sound or secure in some operating conditions or orientations, when connected.

Table B.1 — Unsafe connections

Connector type	Makes an unsafe combination with cylinder valve
G.2, G.4, G.5, G.8, G.19	G.1
G.4, G.5, G.8, G.12, G.19, G.66	G.2
G.21	G.3
G.12, G.57	G.4
G.12, G.57	G.5
G.9, G.10	G.7
G12, G.57	G.8
G.2, G.4, G.8, G.57	G.12
G.2, G.8, G.57	G.19
G.4, G.5, G.8, G.12, G.19, G.66	G.57
G.2, G.57	G.66

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