

# INTERNATIONAL STANDARD

# ISO 5145

Second edition  
2004-04-15

**AMENDMENT 2**  
2008-02-15

---

---

## Cylinder valve outlets for gases and gas mixtures — Selection and dimensioning

### AMENDMENT 2

*Raccords de sortie de robinets de bouteilles à gaz et mélanges de gaz — Choix et dimensionnement*

*AMENDEMENT 2*

STANDARDSISO.COM : Click to view the full PDF of ISO 5145:2004/Amd 2:2008



Reference number  
ISO 5145:2004/Amd.2:2008(E)

© ISO 2008

**PDF disclaimer**

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

STANDARDSISO.COM : Click to view the full PDF of ISO 5145:2004/Amd 2:2008



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

Amendment 2 to ISO 5145:2004 was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 2, *Cylinder fittings*.

STANDARDSISO.COM : Click to view the full PDF of ISO 5145:2004/Amd 2:2008

# Cylinder valve outlets for gases and gas mixtures — Selection and dimensioning

## AMENDMENT 2

Page 7, Table 2 — Allocation of valve outlets for gases and gas mixtures by connection type

To be replaced with the following:

STANDARDSISO.COM : Click to view the full PDF of ISO 5145:2004/Amd 2:2008

Table 2 — Allocation of valve outlets for gases and gas mixtures by connection type

Nominal diameter of the connection														
24				27				30						
A-B combination mm	Left-hand thread		Right-hand thread		A-B combination mm	Left-hand thread		Right-hand thread		A-B combination mm	Left-hand thread		Right-hand thread	
	Group (utilisa- tion)	Gas or gas mixture (FTSC code)	Group (utilisa- tion)	Gas or gas mixture (FTSC code)		Group (utilisa- tion)	Gas or gas mixture (FTSC code)	Group (utilisa- tion)	Gas or gas mixture (FTSC code)		Group (utilisa- tion)	Gas or gas mixture (FTSC code)	Group (utilisa- tion)	Gas or gas mixture (FTSC code)
11,2-16,8	8 (M) <sup>a</sup>	Medical cyclopropane (2100)	3 (M)	He (0150) and Xe (0110)	11,8-20,2		3 (M) (l)	N <sub>2</sub> (0150)	12,4-23,6		3 (M)		He/O <sub>2</sub> or N <sub>2</sub> /O <sub>2</sub> mixture (O <sub>2</sub> < 20 %)	25
11,9-16,1			10 (l)	O <sub>2</sub> (4050)	12,5-19,5		12 (l)	(4153; 4203; 4300; 4301; 4303; 4330; 4343; 4351)	13,1-22,9		15 (M)		O <sub>2</sub> /N <sub>2</sub> (O <sub>2</sub> > 22 %) or O <sub>2</sub> /He mixtures	26
12,6-15,4			15 (M)	Medicinal air and synthetic medicinal air	13,2-18,8		15 (M)	50 % O <sub>2</sub> / 50 % N <sub>2</sub> O mixture	13,8-22,2		15 (M)		O <sub>2</sub> /CO <sub>2</sub> mixture (CO <sub>2</sub> ≤ 7 %)	27
13,3-14,7	6 (l)	(2150) except H <sub>2</sub>	3 (l) (M)	Inert gases and gas mixtures (0150) except for He and N <sub>2</sub>	13,9-18,1	13 (l)	5 (l)	Air (1050)	14,5-21,5		15 (M)		O <sub>2</sub> /CO <sub>2</sub> mixture (CO <sub>2</sub> > 7 %) Air/He/CO (CO < 1 %) mixture	28
14-14	6 (l) <sup>a</sup>	H <sub>2</sub> (2150)	10 (M)	O <sub>2</sub> (4050)	14,6-17,4	9 (l)	4 (l)	(0200; 0201; 0203; 0213; 0300; 0303; 0253)	15,2-20,8		3 (M)		N <sub>2</sub> /NO mixture (100 < NO < 1 000 ppm)	29
			8 (l)		15,3-16,7	8 (l)	11 (M)	N <sub>2</sub> O (4110)	15,9-20,1		3 (l)			30
			6 (l)		16-16	6 (l)	2 (M)	CO <sub>2</sub> (0110)	16,6-19,4		5 (l)		Air (1070)	31
									17,3-18,7		6 (l)			32
											6 (l)		(2100; 2110) (except commercial butane and propane)	33
											14 (l)		C <sub>2</sub> H <sub>2</sub> <sup>b</sup> (5130)	34
									18-18		1 (M) 1 (l)		SF <sub>6</sub> ; C <sub>2</sub> F <sub>6</sub> ; C <sub>3</sub> F <sub>8</sub> (0100)	35

<sup>a</sup> l for industrial applications; M for medical applications (< 250 bar). See Annex D.

<sup>b</sup> Acetylene.



Table 3 (continued)

Group No.	Gas and gas mixture characteristic at 15°C	Single gases, FTSC code, FTSC code	Right-hand (RH) or left-hand (LH) thread	All location of outlet connections				Nominal diameter of the connection				
				24		27		30		Gases and gas mixtures and/or FTSC code	A-B combination mm	
				Gases and gas mixtures and/or FTSC code	A-B combination mm	Gases and gas mixtures and/or FTSC code	A-B combination mm	Gases and gas mixtures and/or FTSC code	A-B combination mm			
9	Spontaneously flammable gases	3150; 3300; 3310	LH			3150; 3300; 3310	14,6-17,4					
10	O <sub>2</sub> and high pressure oxidant	4050 4070	RH	4050 (M) O <sub>2</sub> (M)	14-14						4070 including high pressure oxidant	17,3-18,7
				4050 (l) O <sub>2</sub> (l)	11,9-16,1	5						
11	N <sub>2</sub> O	4110	RH			4110 (M)	15,3-16,7					
12	Oxidant, toxic and corrosive gases	4203; 4300; 4301; 4303; 4330; 4343; 4351	RH			4203; 4300; 4301; 4303; 4330; 4343; 4351	12,5-19,5					
13	Flammable gases subject to decomposition or polymerization	5100; 5200; 5300; 5301; 5350	LH			5100; 5200; 5300; 5301; 5350	13,9-18,1					
14	C <sub>2</sub> H <sub>2</sub> <sup>b</sup>	5130	LH						5130			18-18
15	Oxidant, non-toxic and non-corrosive gas mixture		RH	Medicinal air and synthetic medicinal air (M)	12,6-15,4	50 % N <sub>2</sub> O/ 50 % O <sub>2</sub> mixture (M)	13,2-18,8		O <sub>2</sub> / N <sub>2</sub> or O <sub>2</sub> / He mixtures	13,1-22,9		
							12,5-19,5		CO <sub>2</sub> /O <sub>2</sub> (CO <sub>2</sub> > 7 %) (M) air/He/CO (CO < 1 %) mixture (M)			14,5-21,5
					3					12		28

a For medical application, see group 15.

b Acetylene.

*Page 15, Table A.2 — Gases and gas mixtures belonging to group 1*

Trifluoromethane: FTSC code to be changed into 0110

*Page 16, Table A.4 — Gases and gas mixtures belonging to group 3*

Xenon: add to the FTSC code 0110 the following note "FTSC code due to the critical point of the gas (above 15 °C)".

*Page 18, Table A.7 — Gases and gas mixtures belonging to group 6*

Difluoromethane: FTSC code to be changed into 2110

*Page 20, Table A.11 — Gases belonging to group 10*

Oxygen: FTSC code to be changed into 4050

*Page 20, Table A.12 — Gases belonging to group t1*

Replace table title with the following: Gases belonging to group 11

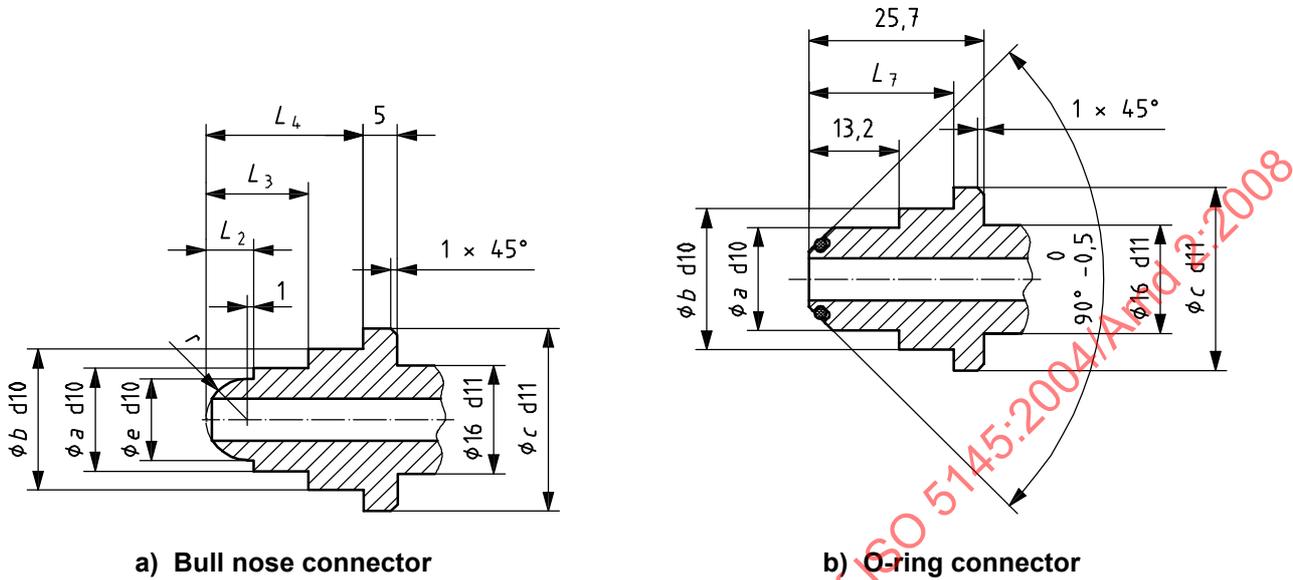
*Page 21, Table A.13 — Gases and gas mixtures belonging to group 12*

- Nitrogen tetroxide to be added as a synonym for Nitrogen dioxide and deleted where it appears as a synonym for Nitrogen trifluoride.
- Nitrogen trifluoride: FTSC code to be changed into 4150

Page 23, Clause B.1

Modify the note to read: "The tolerances on lengths are  $\pm 0,1$  mm".

Replace Figure B.2 with the following:



NOTE If bull nose connectors (hard seat connectors) are used, similar dimensions shall be used and the recommendation of Annex C followed.

Figure B.2 — Connectors

STANDARDSISO.COM : Click to view the full PDF of ISO 5145:2004/Amd.2:2008

Page 25, Table B.2 — Dimensions of connectors

Replace Table B.2 with the following:

**Table B.2 — Dimensions of connectors**

Dimensions in millimetres

Nominal diameter of the connection = nominal diameter of the thread <i>D</i>	Constant A+B	<i>A</i>	<i>B</i>	<i>C</i>	<i>r</i>	<i>e</i>	<i>L</i> <sub>2</sub>	<i>L</i> <sub>3</sub>	<i>L</i> <sub>4</sub>	<i>L</i> <sub>7</sub>
24	28	11,2	16,8	21	5,5	11	6,5	14,5	22,5	21,5
		11,9	16,1							21,5
		12,6	15,4							21,2
		13,3	14,7							21,2
		14	14							21,2
27	32	11,8	20,2	24						21,5
		12,5	19,5							21,2
		13,2	18,8							21,2
		13,9	18,1							21,2
		14,6	17,4							21,2
		15,3	16,7							21,2
30	36	12,4	23,6	27	6	12	7	15	23	21,2
		13,1	22,9							
		13,8	22,2							
		14,5	21,5							
		15,2	20,8							
		15,9	20,1							
		16,6	19,4							
		17,3	18,7							
18	18									

NOTE The tolerances on lengths are ± 0,1 mm.

Page 26, Figure B.3 — Union nut

Modify the note to Figure B.3 to read: "The tolerances on lengths are ± 0,1 mm."