

**Appendix is an integral part of  
Certificate of Accreditation No. 520/2022 of 01/11/2022**

**Accredited entity according to ČSN EN ISO/IEC 17025:2018:**

**GCE, s. r. o.**  
Testing laboratory by GCE  
Žižkova 381, 583 01 Chotěboř

**Testing laboratory workplaces:**

- |    |                          |                              |
|----|--------------------------|------------------------------|
| 1. | <b>Laboratory QC</b>     | Žižkova 381, 583 01 Chotěboř |
| 2. | <b>Oxygen laboratory</b> | Žižkova 381, 583 01 Chotěboř |

*The laboratory is qualified to provide expert opinions and to interpret test results.*

1. **Laboratory QC**

**Tests:**

Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
1	Test of artificial ageing in Xenon-arc chamber	ZP_O_23-2 (ČSN EN ISO 4892-2)	Rubber and plastic products
2	Salt mist corrosion test – NSS method	ZP_O_15 (ČSN EN ISO 9227, except chap. 5.2.3 and 5.2.4)	Metallic products
3	Safety test during gas supply	ZP_M_03-1, chapter 2 (ČSN EN ISO 9170-1, chapter 5.1)	Terminal units and quick couplers
4	Endurance test – connection/disconnection	ZP_M_03-1, chapter 10 (ČSN EN ISO 9170-1, chapter 7.2)	Terminal units and quick couplers
5	Pressure drop test	ZP_M_03-1, chapter 11 (ČSN EN ISO 9170-1, chapter 7.3)	Terminal units and quick couplers
6	Measuring of force and torque needed for probe connection	ZP_M_03-1, chapter 12 (ČSN EN ISO 9170-1, chapter 7.4)	Terminal units and quick couplers
7	Measuring of force and torque needed for probe disconnection	ZP_M_03-1, chapter 13 (ČSN EN ISO 9170-1, chapter 7.5)	Terminal units and quick couplers
8	Mechanical strength test	ZP_M_03-1, chapter 14 (ČSN EN ISO 9170-1, chapter 7.6)	Terminal units and quick couplers
9	Leakage test of terminal units and quick couplers	ZP_M_03-1, chapter 15 (ČSN EN ISO 9170-1, chapter 7.7)	Terminal units and quick couplers
10	Gas specificity test	ZP_M_03-1, chapter 16 (ČSN EN ISO 9170-1, chapter 7.8)	Terminal units and quick couplers
11	Effective connection of probe test	ZP_M_03-1, chapter 17 (ČSN EN ISO 9170-1, chapter 7.9)	Terminal units and quick couplers
12	Outlet pressure variation limits measurement	ZP_M_05-3, chapter 2 (ČSN EN ISO 10524-3, chapter 8.3)	Medical pressure regulators integrated with cylinder valves equipped with pressure outlet
13	Evaluation of pressure-relief valve	ZP_M_05-3, chapter 3 (ČSN EN ISO 10524-3, chapter 8.4)	Medical pressure regulators integrated with cylinder valves

**Appendix is an integral part of  
Certificate of Accreditation No. 520/2022 of 01/11/2022**

**Accredited entity according to ČSN EN ISO/IEC 17025:2018:**

**GCE, s. r. o.**  
Testing laboratory by GCE  
Žižkova 381, 583 01 Chotěboř

<b>Ordinal number<sup>1</sup></b>	<b>Test procedure/method name</b>	<b>Test procedure/method identification<sup>2</sup></b>	<b>Tested object</b>
14	Leakage test of medical pressure regulators integrated with cylinder valves	ZP_M_05-3, chapter 4 (ČSN EN ISO 10524-3, chapter 8.5)	Medical pressure regulators integrated with cylinder valves
15	Determination of stability and accuracy of flow of pressure regulators integrated with cylinder valves equipped with fixed orifices	ZP_M_05-3, chapter 7 (ČSN EN ISO 10524-3, chapter 8.8)	Medical pressure regulators integrated with cylinder valves equipped with fixed orifices
16	Determination of flow-setting torques and determination of loosening torques	ZP_M_05-3, chapter 8 (ČSN EN ISO 10524-3, chapter 8.9)	Medical pressure regulators integrated with cylinder valves
17	Test of integrity of the filling port under high flow	ZP_M_05-3, chapter 9 (ČSN EN ISO 10524-3, chapter 8.10)	Medical pressure regulators integrated with cylinder valves
18	Flow selector endurance test	ZP_M_05-3, chapter 11 (ČSN EN ISO 10524-3, chapter 8.12)	Medical pressure regulators integrated with cylinder valves
19	Filling port non-return valve endurance test	ZP_M_05-3, chapter 12 (ČSN EN ISO 10524-3, chapter 8.13)	Medical pressure regulators integrated with cylinder valves
20	Pressure regulator endurance test	ZP_M_05-3, chapter 13 (ČSN EN ISO 10524-3, chapter 8.14)	Medical pressure regulators integrated with cylinder valves
21	Flame impingement test	ZP_I_05, chapter 3 (ČSN EN ISO 10297, chapter 6.10)	Shut-off valve
22	Excessive torque test	ZP_I_05, chapter 4 (ČSN EN ISO 10297, chapter 6.11)	Shut-off valve
23	Leakage test of shut-off valves	ZP_I_05, chapter 5 (ČSN EN ISO 10297, chapter 6.12)	Shut-off valve
24	Endurance test of valve operating mechanism	ZP_I_05, chapter 6 (ČSN EN ISO 10297, chapter 6.13)	Shut-off valve
25	Impact test	ZP_I_05, chapter 7 (ČSN EN ISO 10297, Annex A)	Shut-off valve
26	Leakage test for acetylene shut-off valves	ZP_I_05, chapter 9 (ČSN EN ISO 10297, Annex B.2)	Shut-off valve
27	Measuring of maximum discharge, $Q_{max}$	ZP_I_04, chapter 2 (ČSN EN ISO 2503, chapter 9.5.2)	Industrial cylinder pressure regulator without equipment for flow measurement

**Appendix is an integral part of  
Certificate of Accreditation No. 520/2022 of 01/11/2022**

**Accredited entity according to ČSN EN ISO/IEC 17025:2018:**

**GCE, s. r. o.**  
Testing laboratory by GCE  
Žižkova 381, 583 01 Chotěboř

Ordinal number <sup>1</sup>	Test procedure/method name	Test procedure/method identification <sup>2</sup>	Tested object
28	Measurement of standard discharge, $Q_l$	ZP_I_04, chapter 3 (ČSN EN ISO 2503, chapter 9.5.3)	Industrial cylinder pressure regulator without equipment for flow measurement
29	Determination of coefficient of pressure increase upon closure, $R$	ZP_I_04, chapter 4 (ČSN EN ISO 2503, chapter 9.5.4)	Industrial cylinder pressure regulator without equipment for flow measurement
30	Determination of irregularity coefficient, $i$	ZP_I_04, chapter 5 (ČSN EN ISO 2503, chapter 9.5.5)	Industrial cylinder pressure regulator without equipment for flow measurement
31	Accuracy classification test	ZP_I_04, chapter 6 (ČSN EN ISO 2503, chapter 9.6.1)	Industrial cylinder pressure regulator with equipment for flow measurement
32	Measurement of flow stability	ZP_I_04, chapter 7 (ČSN EN ISO 2503, chapter 9.6.2)	Industrial cylinder pressure regulator with equipment for flow measurement
33	Leakage test of industrial cylinder pressure regulators	ZP_I_04, chapter 9 (ČSN EN ISO 2503, chapter 9.7.3)	Industrial cylinder pressure regulator
34	Pressure-relief valve test	ZP_I_04, chapter 10 (ČSN EN ISO 2503, chapter 9.7.5)	Industrial cylinder pressure regulator
35	Test method for durability of markings and colour coding	ZP_C_01 (ČSN EN ISO 2503, chapter 9.8, ČSN EN ISO 7291, chapter 9.5, ČSN EN ISO 10524-1, chapter 8.12, ČSN EN ISO 10524-2, chapter 8.6, ČSN EN ISO 10524-3, chapter 8.11, ČSN EN ISO 10524-4, chapter 6.10, ČSN EN ISO 9170-1, chapter 5.10, ČSN EN ISO 15002, chapter 6.4, ČSN EN ISO 5359, chapter 5.8, ČSN EN ISO 20417, Annex C)	Industrial cylinder/manifold pressure regulator, Medical pressure regulator and pressure regulator equipped with equipment for flow measurement, Manifold and line medical pressure regulator, Medical pressure regulators integrated with cylinder valves, Low-pressure medical pressure regulator, Terminal unit and quick coupler, Flow-metering devices for connection to terminal units of medical gas pipeline systems, Low-pressure hose assemblies for use with medical gases, Medical equipment (coding and marking)
36	Mechanical strength tests	ZP_C_03 (ČSN EN ISO 2503, chapter 9.7.2, ČSN EN ISO 7291, chapter 9.4.2, ČSN EN ISO 10524-1, chapter 8.6,	Industrial cylinder/manifold pressure regulator, Medical pressure regulator and pressure regulator equipped with equipment for flow measurement,

**Appendix is an integral part of  
Certificate of Accreditation No. 520/2022 of 01/11/2022**

**Accredited entity according to ČSN EN ISO/IEC 17025:2018:**

**GCE, s. r. o.**  
Testing laboratory by GCE  
Žižkova 381, 583 01 Chotěboř

<b>Ordinal number<sup>1</sup></b>	<b>Test procedure/method name</b>	<b>Test procedure/method identification<sup>2</sup></b>	<b>Tested object</b>
		ČSN EN ISO 10524-2, chapter 8.3.7, ČSN EN ISO 10524-3, chapter 8.6, ČSN EN ISO 10524-4, chapter 6.5, ČSN EN ISO 10297, chapter 6.9, ČSN EN ISO 22435, chapter 6.5, ČSN EN ISO 15996, chapter 5.9.1, CGA V-9, chapter 7.1.2, CGA E-18, chapter 8.5.1 and 8.5.2, CGA E-4, chapter 7.3.2 and 7.3.3)	Manifold and line medical pressure regulator, Industrial/medical valve integrated with pressure regulators, Medical low-pressure regulator, Shut-off valve

<sup>1</sup> asterisk at the ordinal number identifies the tests, which the Laboratory is qualified to carry out outside the permanent laboratory premises

<sup>2</sup> if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest edition of the specified procedure is used (including any changes)

**Appendix is an integral part of  
Certificate of Accreditation No. 520/2022 of 01/11/2022**

**Accredited entity according to ČSN EN ISO/IEC 17025:2018:**

**GCE, s. r. o.**  
Testing laboratory by GCE  
Žižkova 381, 583 01 Chotěboř

**2. Oxygen laboratory**

**Tests:**

<b>Ordinal number<sup>1</sup></b>	<b>Test procedure/method name</b>	<b>Test procedure/method identification<sup>2</sup></b>	<b>Tested object</b>
1	Resistance to ignition test	ZP_C_02 (ČSN EN ISO 2503 chap. 9.7.4, ČSN EN ISO 10524-1 chap. 8.7, ČSN EN ISO 10524-2 chap. 8.3.8, ČSN EN ISO 10524-3 chap. 8.7, ČSN EN ISO 10297 Annex C, ČSN EN ISO 15996 Annex B, ČSN EN ISO 7291 chap. 9.4.4, ČSN EN ISO 22435 chap. 6.16, ČSN EN ISO 21969, chap. 6.2.4 ASTM G175, chap. 8.1, CGA E-4, chap. 7.1, CGA V-9, Appendix E)	Industrial/medical cylinder/manifold/line pressure regulator, Industrial/medical pressure regulator integrated with cylinder valve, Industrial/medical cylinder/manifold shut-off valve either without or with a residual- pressure valve (RPV), Medical high-pressure flexible connection
2	Promoted ignition test	ZP_M_02 (ASTM G175, chapter 8.2)	Medical cylinder pressure regulator, Medical valve integrated with pressure regulator
3	Autogenous ignition temperature test of nonmetals in oxygen	ZP_O_01 (ČSN EN ISO 11114-3, chap. 6, ASTM G72/G72M, chap. 8)	Rubber and plastic products

<sup>1</sup> asterisk at the ordinal number identifies the tests, which the Laboratory is qualified to carry out outside the permanent laboratory premises

<sup>2</sup> if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest edition of the specified procedure is used (including any changes)

ZP – Test Procedure

CGA – Compressed Gas Association