

STANDARD INFORMATION

Standard: ANSI Z21.15 / CSA 9.1

Standard ID:

Manually Operated Gas Valves for Appliances, Appliance Connector Valves, and Hose End Valves [ANSI Z21.15:2021 Ed.3]

Manually Operated Gas Valves For Appliances, Appliance Connector Valves, and Hose End Valves [CSA 9.1:2021 Ed.3]

Previous Standard ID:

Manually Operated Gas Valves For Appliances, Appliance Connector Valves, and Hose End Valves (R2019) [ANSI Z21.15:2009+AA;AB]

Manually Operated Gas Valves For Appliances, Appliance Connector Valves, and Hose End Valves (R2019) [CSA 9.1:2009 Ed.2+A1]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **December 1, 2023**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard. Reports not updated to this version by the effective date above will be withdrawn.

Overview of Changes:

- Addition of 72 psi maximum
- Addition of requirements for non-displaceable valve members
- Revision of test methods
- New requirements for markings
- New requirements for manufacturing and production tests

Specific details of new/revise requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined-out below.</i>
1	Info	Scope
1.2		This Standard applies to valves and devices for use with natural <u>and propane gases</u> , unless otherwise stated within this Standard, at maximum operating pressures of 1/2 psi <u>and up to and including 72 psi (496 kPa)</u> .
4	Info	General requirements
4.3	Info	Seating means
		<i>New cause added;</i>
4.3.2		Gas burner valves shall have non-displaceable valve members complying with Clause 5.6. Displaceable valve members shall comply with Clause 5.7.2.
4.8		Strength
4.8.1		Bending moment
		Method of test
		This test shall be conducted at room temperature. A new sample shall be subjected to the specified test.
4.8.1.2		d) With the valve in the closed position, the system shall be pressurized at 150% of the maximum rated pressure and the appropriate weight as specified in Table 4 and shall then be suspended on the inlet fitting, without shock, 12 in (305 mm) from the inlet of the valve for 15 min. Without removing the weight, the valve shall then be tested for leakage as specified in Clause 5.2, except at a maximum pressure of 21 in wc (5.23 kPa) <u>150% of the maximum rated pressure.</u>
4.8.3	Info	Impact
		This test applies only to individual manual valves not incorporated in devices that include other means to control main burner gas.
4.8.3.1		a) All valves, except those listed in Clause 4.8.3.2b), shall be capable of withstanding the applicable impact specified in Table 6, without cracking or breaking. b) <u>The following shall withstand the applicable impact specified in Table 7 without cracking or breaking:</u> i) <u>pilot adjustment and pilot shut-off valves and pilot shut-off devices;</u> ii) <u>valves with an outlet designed for an orifice fitting;</u> iii) <u>valves with an inlet designed for connection to other than threaded pipe or tubing; and</u> iv) <u>hose-end valves.</u>



CLAUSE	VERDICT	COMMENT
		Method of test
		<p>This test shall be conducted at room temperature. A new sample shall be subjected to the specified test.</p> <p>A valve whose inlet is designed for connection to threaded pipe shall be supported by securing its inlet to a close pipe nipple of Schedule 80 iron pipe or a standard-weight pipe coupling mounted on a rigid surface so the free length of the nipple or coupling is not greater than 1 in (25.4 mm). The valve shall be tightened to the support with a turning effort as specified in Table 5.</p> <p>A valve whose inlet is designed for connection to semi-rigid tubing shall be mounted on a straight length of steel tubing conforming to ANSI/SAE J525 or ANSI/SAE J524, and having a wall thickness of 0.035 in (0.889 mm). The tube fittings supplied with the valve or specified by the manufacturer shall be used, and the free <u>length of the support tubing shall not exceed 1 in (25.4 mm).</u></p>
4.8.3.2		<p>A valve whose inlet is designed for connection other than to threaded pipe or tubing shall be rigidly mounted in a manner consistent with its intended usage. <u>A valve with an outlet for connection to semi-rigid tubing shall have the fitting in place and drawn up tightly. A valve designed to use an orifice hood shall be equipped with a hood screwed down tightly. A valve designed to use an orifice spud shall be equipped with a suitable spud.</u></p> <p><u>The outlet end of the valve shall have assembled to it a fitting of the type for which it is designed. The test device shall be arranged so the centre line of contact between the striking weight and the valve will be 1/4 in (6.4 mm) from the extreme outlet end of the valve.</u></p> <p><u>The valve shall then be struck four successive times at right angles to the longitudinal centre line of the outlet gas way, with the valve being turned 90° (1.57 rad) between each impact. After each impact, the valve shall be examined visually for cracks or breakage. A pendulum-type impact machine is shown in Figure 4. A valve with an outlet designated for an orifice [see Clause 4.8.3.1b) ii)] shall then be subjected to the leakage test specified in Clause 5.2 and shall comply with Clause 5.2.</u></p>
		<i>New section added;</i>
4.12		Marking <p>All valves, including pilot shut-off and pilot adjustment valves and pilot shut-off devices, shall bear a permanent record of the manufacturer's identifying marking. See standard for details.</p>



CLAUSE	VERDICT	COMMENT
5	Info	Performance
5.3	Info	Capacity
5.3.1	Info	Rigid piping capacity
		Rigid piping capacity method of test
		This test shall be conducted at room temperature.
5.3.1.2		Standard weight pipe of proper size reamed to remove burrs caused by cutting shall be fitted to the inlet and outlet connections of the valve. The straight run of pipe before and after the valve shall be of a length not less than 10 pipe diameters (I.D.). Two short lengths of pipe or metal tubing shall be soldered to the pipe, one before the inlet and the other after the outlet connections. These pressure tappings shall be located 5 pipe diameters (I.D.) from the inlet and outlet connections. A drill shall be inserted in the short length of pipe or metal tubing and a hole drilled through the wall of the large pipe, with care being taken to remove any burrs caused thereby. The two pressure tappings shall be connected to a differential pressure gauge that can be read directly to at least 0.01 in wc (2.5 Pa) for <u>pressures rated up to and including 14 in wc (1/2 psi). For pressures greater than 1/2 psi, the two pressure tappings shall be connected to a differential pressure gauge that can be read directly to at least 2% of the pressure drop.</u>
		Either gas or air may be used for the test. If gas is used, it shall be vented or burned as far away from the valve, test meter, and other instruments as will preclude the heating of such equipment. The gas rate shall be adjusted to give an indication on the gauge approximately equal to the pressure drop specified above, and the necessary observations made and recorded. Observations may be made at a number of different pressure drops.
5.3.2	Info	Semi-rigid tubing capacity
		Semi-rigid tubing capacity method of test
		This test shall be conducted at room temperature.
5.3.2.2		Standard weight pipe of proper size, reamed to remove burrs caused by cutting, shall be fitted to the inlet connection. Semi-rigid tubing of the proper size, which has been cleaned and air-blown, shall be fitted to the outlet connection of the valve. The straight run of pipe before the valve and of semi-rigid tubing after the valve shall be of a length not less than 10 pipe diameters (I.D.) and 10 tubing diameters (I.D.), respectively. Two short lengths of metal tubing shall be soldered to the lengths of pipe and tubing before the inlet and after the outlet connections. These pressure tappings shall be located 5 pipe diameters (I.D.) from the inlet connection and 5 tubing diameters (I.D.) from the outlet connection. A drill shall be inserted in the short length of tubing and a hole drilled through the wall of the large pipe and tubing, with care being taken to remove any burrs caused thereby.



CLAUSE	VERDICT	COMMENT
		<p>The two pressure tappings shall be connected to a differential pressure gauge that can be read directly to at least 0.01 in wc (2.5 Pa) <u>for pressures rated up to and including 14 in wc (1/2 psi). For pressures greater than 1/2 psi, the two pressure tappings shall be connected to a differential pressure gauge that can read directly to at least 2% of the pressure drop.</u></p> <p>Either gas or air may be used for the test. If gas is used, it shall be vented or burned as far away from the valve, test meter, and other instruments as will preclude the heating of such equipment. The gas rate shall be adjusted to give an indication on the gauge approximately equal to the pressure drop specified above, and the necessary observations made and recorded. Observations may be made at a number of different pressure drops.</p>
5.4	Info	Continued operation
5.4.4	Info	Universal gas burner valves
		<i>New clause added;</i>
		General
5.4.4.1		<p>Universal gas burner valve samples shall comply with Clause 5.4.4 with the samples set to deliver one of the applicable gases. At the conclusion of the test, if the wear pattern of the internal parts is different for each gas setting, the valve samples shall be switched to the other gas setting and the continued operation test shall be repeated.</p>
		<i>New section added;</i>
		Manufacturing and production tests
6		<p>The manufacturer shall submit to the certifying agency a plan that is mutually acceptable to the manufacturer and the certifying agency, and that describes the programs and test procedures. See standard for details.</p>