

Valve Testing Device

Valve Testing Device

The valve testing device accurately measures outlet static and residual water pressures and flow from 2½" hose connections. This valve test device facilitates the initial and periodic testing of pressure regulating valves (PRVs) in sprinkler and standpipe systems per NFPA 13, NFPA 14, and NFPA 25 requirements. This device can also be used for <u>standpipe</u>, <u>fire pump</u>, and <u>hydrant flow testing</u>



- Accuracy range from 100-500 GPMs and up to 250 PSI
- Entire unit weighs only 24 lbs.
- Powder-coated inline aluminum venturi flowmeter body with internal stream shapers
- 21/2" female NST swivel inlet x 21/2" male NST outlet
- Stability base with handle for easy carrying and storage
- Detachable 30-degree swiveling elbow for easy connection to a PRV
- Crank handle on brass gate valve for easy opening, closing, and throttling water flow
- Set field adjustable PRVs accurately on site
- Both gauges are tested and calibrated to N.I.S.T Standards
- Each device includes a calibration certificate

Part Number	Finish	Notes
VALVETEST2	Aluminum	Measures up to 500 GPM / 250 PSI
VALVETESTCASE2	Plastic	Custom molded carrying case for test device unit



VALVETEST2 USER MANUAL



2-1/2" Standpipe Testing Device

Introduction:

Standards for sprinkler and standpipe systems require the testing of pressure regulating valves when the valves are first installed and periodically after, ensuring they are free from defects and meet the system's hydraulic requirements. The "Standpipe Testing Device" (VALVETEST2) connects to a hose valve or other male threaded outlet connection to accurately measure flow up to 500 GPM and pressure up to 250 psi to facilitate testing requirements of the following standards:

NFPA 13, Standard for Installation of Sprinkler Systems NFPA 14, Standard for the Installation of Standpipe and Hose Systems NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.

The "Standpipe Testing Device" can also be used for standpipe, fire pump, backflow, and hydrant flow testing. Additional units may be necessary to meet the test requirements.

VALVETEST2C Parts List and Diagram

Standard Unit Components:



PART #	DESCRIPTION	
VALVETEST2C	Complete Standpipe Testing Device w/ Custom Foam Laser Cut Case	
VALVETEST2G	Quick Disconnect Gauge Assembly Only	
VAL05116C	2–1/2" Brass Slow Closing Gate Valve	
VALVETESTCASE2	Carry Case Only	

CAUTION: Always wear proper PPE when conducting flow testing or flushing. Make sure all connections are tight and no pedestrian or vehicular traffic is in the path of the waters flow.

www.americanfiresupply.com

sales@americanfiresupply.com

PH: (800) 252-7570



VALVETEST2 USER MANUAL



Operation:

Important Note: Scaling and other sediments can damage the internal components of the device. Flush the test connection water supply free of debris before each use. Always reference the applicable testing standard (s) and check with local codes and ordinances for amendments or exceptions.

1.Confirm the quick disconnect gauge assembly is installed correctly and secured to the ports on the body.

2.Fully close the swivel gate valve and attach it to the discharge side of the body.

3.Attach the 30° swiveling elbow as needed.

4.Secure the female swivel inlet of the device (or elbow if attached) to the 2 1/2" test connection after the water supply line has been properly flushed. Adapters are necessary to connect to threads other than NST.

5.Connect fire hose suitable for testing to the VALVETEST2's discharge side and the male outlet end of the test hose to the appropriate drainage connection or area. The hose should be of sufficient length to allow a smooth flow to the drain, and the drain should be sized to meet the test's flow demands. Make all necessary adjustments to the drainage system to ensure the anticipated flows can be safely discharged. If using a drain riser, verify that all the drain riser's openings are shut and tight, as flows can temporarily backup the riser before completely draining. Check local codes and ordinances for drainage requirements.

6.Use a wrench to fasten all connections securely. No leaks should be present during testing.

7. Slowly open the test connection valve and allow water to fill the device and gauge assembly until the valve is fully open. With the test connection fully open, the pressure gauge shows the static outlet pressure.

8.Gradually and smoothly open the throttling gate valve, making sure the hose is free of kinks and bends as the flow rate increases. Continue opening the gate valve until reaching the desired flow rate. When testing and setting adjustable pressure regulating valves, measure the residual outlet pressure at the design flow rate. If the pressure is too low, begin increasing outlet pressure according to the manufacturer's instructions. While adjusting the outlet pressure, monitor the flow rate, and adjust the throttling valve to maintain the design flow rate. Continue adjusting the valve until the residual out pressure and flow meet the design requirements. After recording measurements, begin decreasing the flow by slowly closing the gate valve until the valve is completely closed and there is no water flowing through the VALVETEST2. Verify the static outlet pressure does not exceed the maximum allowable pressure. If the static outlet pressure is too high, open the throttling valve and readjust the valve setting. Repeat this process until the valve is set correctly and measurements are recorded.

9.Before removing the VALVETEST2, fully close the test connection valve and open the throttling valve to drop the pressure and drain the device. A vacuum effect may be present from draining the water, which may also collapse the test hose. Begin VALVETEST2 removal by slowly loosening the swivel at the test connection. Be careful of water trapped in the VALVETEST2 as the swivel becomes loose. It is often prudent to have a bucket to catch this water. Disconnect the test hose from the throttling valve. Replace any test connection caps

Maintenance:

•Condensation and moisture can create calcium deposits, potentially causing blockages in gauges and restricted orifices over time. Flush the unit and gauge assemblies after each use. Open the gate valve and tilt the unit at a 45° angle for ten seconds to drain water from the unit. Disconnect the gauge assembly and tilt it at a 45° angle for ten seconds on each end to drain any trapped water. Reconnect the gauge assembly and wipe down the entire unit with a cloth to remove any dirt. Do not subject the gauge assembly to freezing temperatures, especially when wet.

•Keep the unit in the upright position when not in use, especially when storing for long periods. We recommend storing the unit in the optional case to protect the gauges from damage.

•Inspect the 1/4" quick disconnect gauge ports monthly for any loose pieces of Teflon tap, rust, scale, etc., and remove if found.

•Periodically inspect the gauges for damage, and replace them if necessary.



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Gauge Calibration

All gauges are tested and calibrated with test standards traceable to N.I.S.T. as specified in the American National Standards ASME B40. 100-1998, PP6.1. and test procedures as specified in ASME B40.100-1998. Each shipment includes an N.I.S.T Traceable Certificate. Each gauge is marked with a certification ID number, and a corresponding certification form is included with each shipment. The certification form can be duplicated upon request. Replacement gauges and gauge assemblies are available. We recommend replacing the gauges on an annual basis.

Warranty

All products sold by American Fire Supply are guaranteed under intended and normal use for one year from the date of shipment. This warranty is limited to the original purchaser and applies to products deemed inoperable or unusable due to defects in the original material or quality. Any field modifications made by the purchaser may negate this warranty. This warranty does not cover or apply to any personal injury, labor charges, or apply to products that have been damaged in transit, subject to abuse, neglect, accident, or improper use or installation.

Disclaimer

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