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Test & Drain Valve (TADV) User Manual



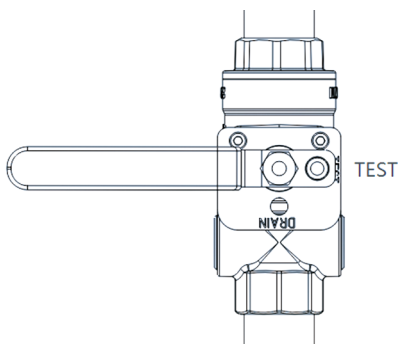
Product Review

The Test & Drain Valve (TADV) is a valve that provides testing and draining functions in wet sprinkler systems. It consists of a single handle ball valve with three working positions and a sight glass at the end.

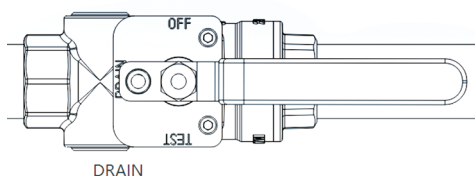
Working Principle

The test & drain valve is installed at the end of the automatic sprinkler system, and is in the closed state when it is in the ready condition.

For system test, rotate the handle of the test & drain valve to the test position. In this position, the water flow goes through the ball hole orifice, and the flow coefficient is equivalent to that of the minimum diameter sprinkler located at the zonal when burst, and the automatic sprinkler system should then start to work, to signal alarm and start the system operation, etc.



For system maintenance, close the control valve on the water supply side of the automatic sprinkler system and rotate the handle of the test & drain valve to the drain position. The test & drain valve is then fully open for quick draining of water in the system.



Product Feature

- The test & drain valve integrates the functions of test and drain, and complies with the requirements of NFPA-13, NFPA-13D and NFPA-13R.
- Test-Drain-Off, 3 locking positions design.
- Precise set flow coefficient, with deviation < 5%.
- Available with NPT and BSPT thread options.
- Sight glass at the end for water flow observation.
- Low operation torque.
- Compact structure and light weight.
- Brass body, chrome plated brass ball, PTFE seat, with high wear and corrosion resistance performance, and service life over 1000 times.

Specification & Standard

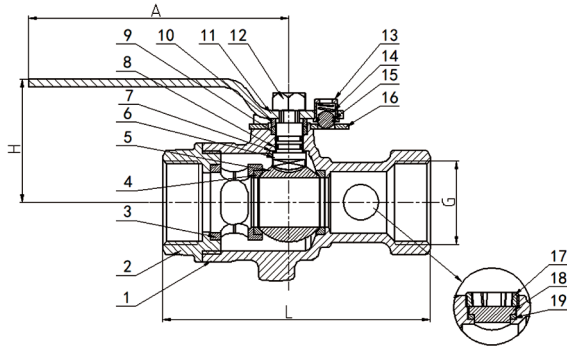
Application	Wet Automatic Sprinkler System
Connection Standard	ASME B1.20.1/BS EN 10226-2
Nominal Pressure	300PSI
Nominal Diameter	1"-1 1/4"-1 1/2"-2"
Working Temperature	0 ~ 80°C
Medium	Water

Valve Size	Orifice Size	Flow Coefficient
1"-2"	3/8"	K2.8(40)
	7/16"	K4.2(60)
	1/2"	K5.6(80)
	17/32"	K8.0(115)
	5/8"	K11.2(160)

Standard

- Standard for installation of automatic sprinkler system: NFPA-13.
- One- and two-family dwellings and manufactured homes installation of sprinkler systems: NFPA-13D.
- Standard for installation of automatic sprinkler systems in low-rise residential occupancies: NFPA-13R.

Design & Dimensions



Material Specification

Part NO.	Part	Material
1	Body	CW617N
2	Bonnet	CW617N
3	Bonnet Extension	CW617N
4	Valve Seat	PTFE
5	Ball	CW617N
6	Stem	CW612N
7	Stem Seal	PTFE
8	O-Ring	NBR
9	Stem Seal	PTFE
10	Ring	CW612N
11	Lever	AISI 304
12	Nut With Fiber	/
13	Bearing Ball Centering	CW612N
14	Spring	AISI 304
15	Bearing Ball	AISI 304
16	Label Plate	AISI 304
17	Sight Glass Gasket	CW612N
18	Sight Glass	PMMA
19	Sight Glass Seal	EPDM

Dimensions

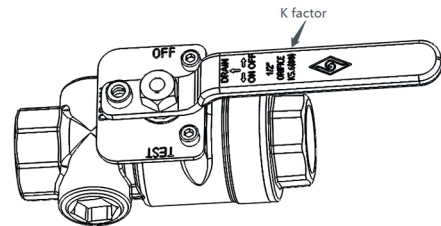
SIZE		Dimensions			
Inch	DN	L(mm)	H(mm)	A(mm)	G
1"	25	135	64	130	NPT/BSPT 1"
1 1/4"	32	135	65	133	NPT/BSPT 1 1/4"
1 1/2"	40	164	79	152	NPT/BSPT 1 1/2"
2"	50	181	79	152	NPT/BSPT 2"

Remarks : For continuous product performance optimization, there might be discrepancies between the actual product and the structure diagram. Please refer to the actual product for details.

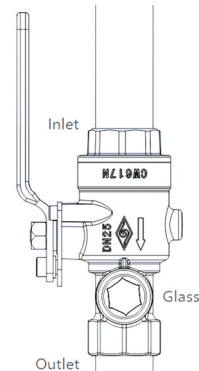
Installation & Application

1. Installation Precautions

- 1.1 The test and drain valve can be applied horizontally or vertically in the line
- 1.2 Before installation, the piping must be cleaned from foreign materials.
- 1.3 Before installation, carefully check the valve marking to make sure that it meets the requirements for use, such as whether the size of the valve body is consistent with the pipe specification, if the K factor meets the requirements, etc.



- 1.4 Make sure that the flow direction marked on the test & drain valve is the same as the pipeline flow, and the sight glass is located at the downstream end; In case of special working conditions, e.g. high-salt, high-humidity, corrosive environment, etc., please state it clearly for customized supply.

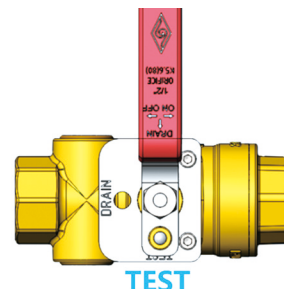


- 1.5 Check the valve passage and sealing surface before installation, and do the necessary cleaning to make sure that it's free from dirt or impurities etc.
- 1.6 Sealing tapes are recommended at the connection position of the inlet and outlet steel pipes.

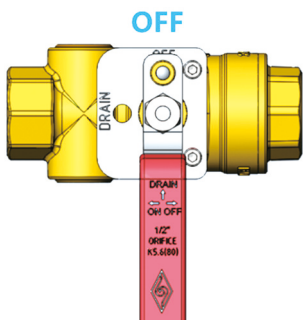
2. Operation Instructions

2.1 Test

- 2.1.1 Rotate the handle of the test & drain valve to make the bearing ball points to the test position. In this position, the water flow goes through the ball hole orifice, and the flow coefficient is equivalent to that of the minimum diameter sprinkler located at the zonal when burst.

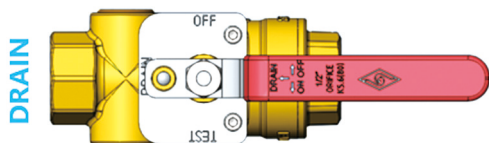


2.1.2 After the test, close the valve, and the bearing ball points to the OFF position.

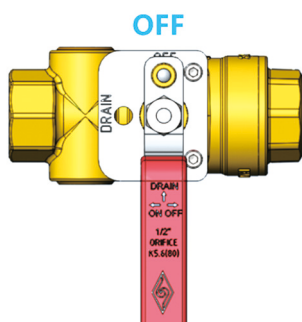


2.2 Draining

2.2.1 Rotate the handle of the test & drain valve to make the bearing ball points to the drain position. The test & drain valve is then fully open for quick draining of water in the system.



2.2.2 After the draining, close the valve, and the bearing ball points to the OFF position.



Trouble Shooting

Problem	Cause	Solution
Leakage of seat	Ball sealing surface damage; Valve seat wearing	Replace the ball; Replace the seat
Leakage of stem	Stem seal damage	Tighten the Nut with fiber, if it still cannot be solved, replace the Stem seal
Leakage of sight glass	Sight glass seal damage	Replace the sight glass seal

Maintenance & Service

- After the test and drain valve is put to use, regular online inspection should be carried out.
- Check the seat sealing surface and the stem seal, and replace or repair promptly in case of damage or wearing. Inspection is recommended every three months or as specified by local regulations.
- After inspection and repair or replacement, shell strength test and sealing test shall be carried out according to the test standard.
- For repair and maintenance, the parts or accessories of the same dimension and material should be used.

Transportation & Storage

- During transportation, take care to prevent violent vibration, throwing, collision, etc., and with proper protection from rain or chemical erosion.
- The valve should be stored in a clean, dry, well-ventilated place with non-corrosive environment. Two ends of the valve should be well protected with cover.
- In case the valves stay in storage for long time, inspection should be performed first before use. Remove the dirt, check and clean the sealing surface with special care to make sure there is no damage and do pressure testing according to standard.