International Valve Marketing, LLC
483 Heartland Drive, Unit C
Sugar Grove, IL 60554
Telephone: (630)-466-0300
Facsimile: (630)-466-0302
Website: www.internationalvalve.com

Vent-Tech Model WTR—363 psi (25 Bar)

Series C—Combination Air Valve for Potable Water

WATER

GENERAL SPECIFICATION

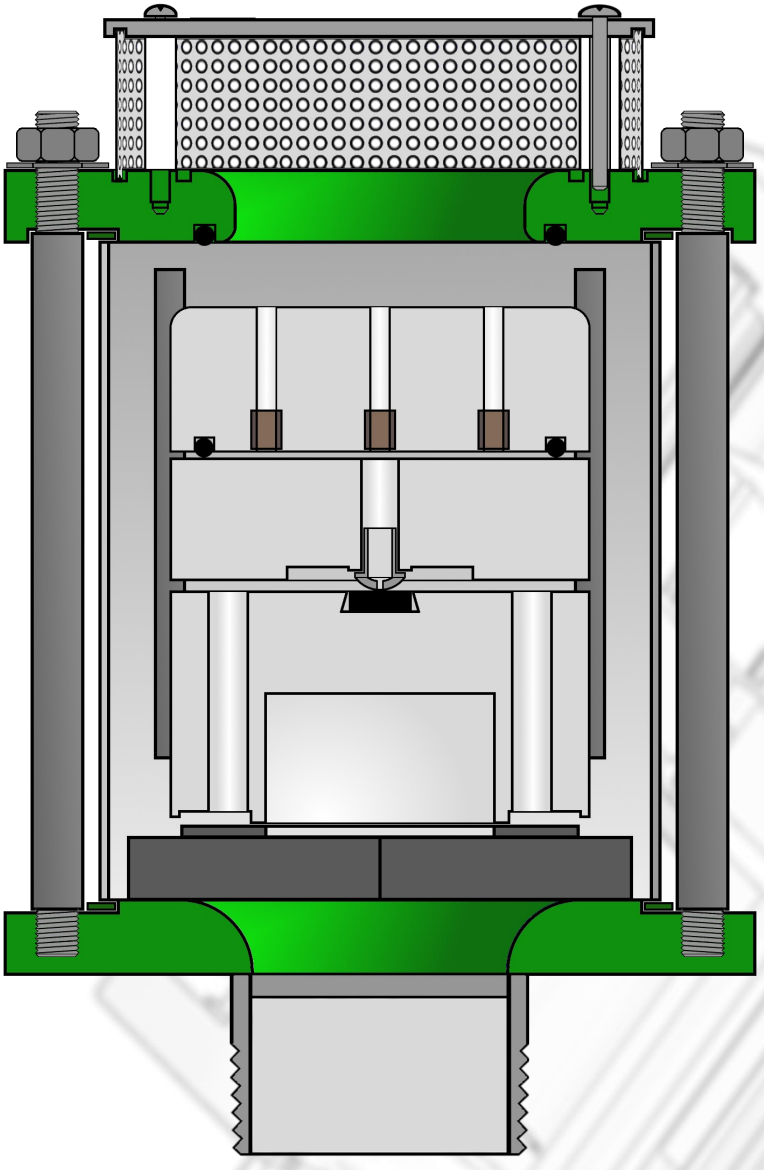
- The Original Flat Float Design—with over 30 improvements.
- Integral protection from water hammer and surge.
- Optimized for Low Pressure Sealing. Less than 3 psi.
- Full Port Vacuum Relief.
- Pressurized Air Release

ISO 9001: 2015 CERTIFIED

CLASSIFIED C UL US WATER QUALITY

VALVES ANSI/NSF 61 ALSO CLASSIFIED IN ACCORDANCE WITH ANSI/NSF 372 MH61807

NSF



- Stainless Steel Body and Flanges
- Made in the U.S.A.
- ISO 9001: 2015 Certified QMS
- UL Inspected Facility
- 10-Year Warranty
- 50-Year Targeted Design Life

Model WTR Standard Water Valve—Overview

The Vent-Tech Model WTR clean water valve combines thirteen years of manufacturing experience with advanced Patent Pending flow designs. The Model WTR was engineered to expand and improve the technological advances of the flat float air/vacuum valve. Further advancements are incorporated in the Vent-Tech Model WTW providing improved functional valve area in the same or smaller valve footprint. For valve sizes 3-inch and larger, we recommend using the Model WTW.

APPLICATION

- Municipal Water Systems
- Water Mains
- High Points
- Pump Stations
- Wells

FUNCTION

	Market Application	Large Air Release at Start-Up	Controlled Air Release at Start-Up	Air Release Under Pressure	Full Port Vacuum Relief	Surge Control
Series C	**95%**	**X**		**X**	**X**	**X**
Series B	**5%**		**X**	**X**	**X**	**X**
Series V	**< 1%**	**X**		**X**		**X**
Series N	**< 1%**				**X**	
Series P	**< 1%**			**X**		

PURPOSE

- Minimize pumping energy by removing air plugs
- Protect from pipeline collapse due to vacuum
- Control water hammer velocity
- Manage water column rejoining transients
- Internal anti-surge device

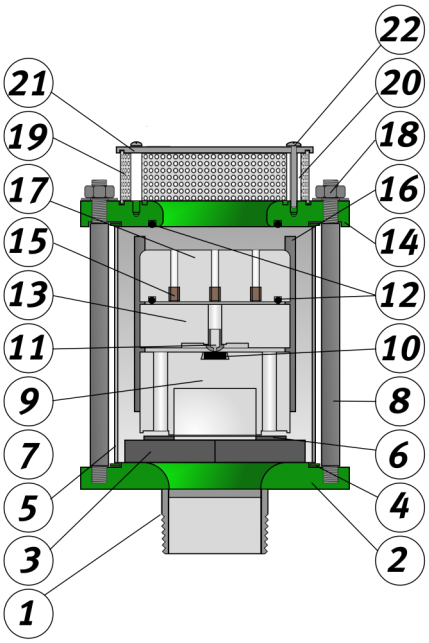
FEATURES

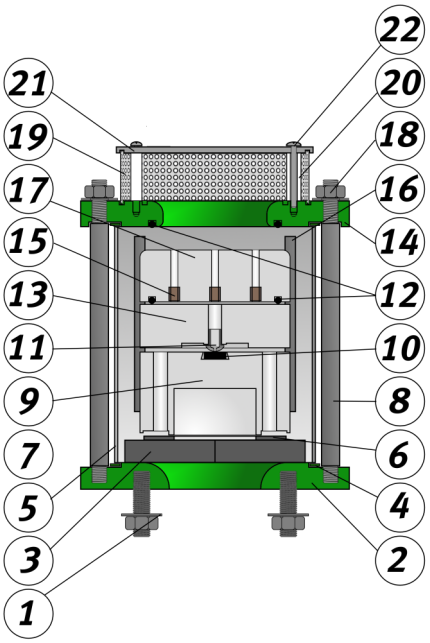
- Integral anti-shock/surge floats limit surge pressure.
- Recommended minimum sealing pressure at 3 psi.
- Rated for working pressures of 363 psi (25 bar). Optionally 232 or 580 psi.
- Inlets, outlets, and internal clearances have a cross-sectional area at least equal to that of the valve's nominal size.
- Orifices fitted with inserts protect from heat softening and abrasive wear.
- Multi-orifice anti-shock/surge floats to increase durability.
- Floats respond directly to negative pressure by fully opening the large orifice of the valve.
- Valve flanges are designed to minimize air flow energy losses.
- 304 and 316 Stainless Steel models.
- Tubular design with direct acting floats and two side ports
- Self-flushing at pump shut-down and valve emptying.
- High efficiency screens prevent ingression of airborne debris and bugs.
- Inter-changeability of valve inlet components allows for efficient conversion between valve and connection to ancillary pipework.
- Flow verification by independent testing facility.

Model WTR: Series C—Materials of Construction

363 psi (25 Bar)

Male NPT Threaded	ANSI B16.5 Stud Pattern





No.	Description	Standard AISI 304L SS -4	Upgraded AISI 316L SS -6
1	Male NPT Nipple	304L SS	316 SS
	ANSI B16.5 Stud Pattern	304L SS	316 SS
2	Toroidal Base Flange	304L SS	316 SS
3	Control Float Stand-Offs	304L SS	316 SS
4	Fiber Gasket	Klingersil 4430	Klingersil 4430
5	Tubular Valve Body	304L SS	304L SS
6	Baffle Plate	304L SS	316 SS
7	Bleed Port (Not Shown)	304L SS	316 SS
8	Tie Rods	304L SS	316 SS
	Control Float (1-4 inch)	UHMW-PE	UHMW-PE
9	Control Float (6-12 inch)	HDPE	HDPE
10	Nozzle Button	EPDM	EPDM
11	Air Release Nozzle	316 SS	316 SS
12	Dynamic O-Ring Seal	EPDM—Peroxide Cured	EPDM—Peroxide Cured
13	Nozzle Float	UHMW-PE	UHMW-PE
14	Toroidal Sealing Flange	304L SS	316 SS
15	Protected Orifice Insert	316 SS	316 SS
16	Guide Rail	304L SS	316 SS
17	Anti-Surge Float	UHMW-PE	UHMW-PE
18	Tie Rod Fasteners	304L SS	316 SS
19	Perforated Screen Guard	304L SS	316 SS
20	Screen Lid Standoff	Nylon	Nylon
21	Screen Lid	UHMW-PE	UHMW-PE
22	Screen Lid Fasteners	304L SS	316 SS

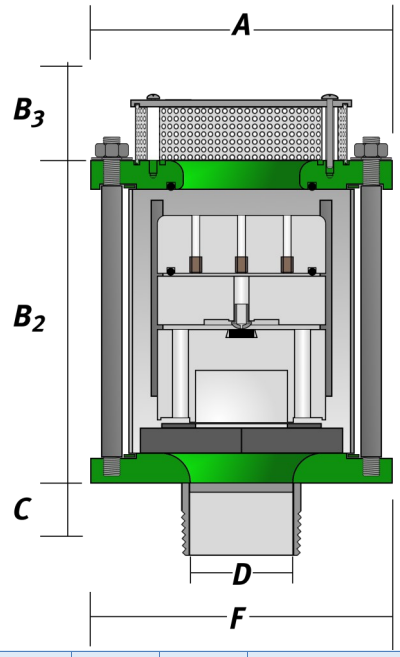
Information Subject to Change without Notice

Valve Operation		High Volume air evacuation while pipeline fills High volume vacuum relief during pump shut down Discharge of air/gas from pressurized pipeline Surge abatement for high velocity start up conditions, column separation and fluid oscillation		
Body		Compact single chamber tubular body consisting of a barrel and flanged ends secured by tie rods and fasteners sized to provide a passageway with a cross sectional area which exceeds that of the valve's inlet and outlet connections for the unobstructed flow of air. Certified to twice the valves rated pressure. Body constructed with 6x safety factor.		
Operating Pressure		**MINIMUM:** < 3 psi (< 0.2 Bar); **DESIGN:** 363 psi (25 Bar); **TEST:** 1.5 x Rated Design Pressure		
Maximum Temps		**OPERATING:** Exceeds 145° F (62° C); **INTERMITTENT:** 180° F (82° C)		
Connections	**Upper**	Streamlined toroidal sealing flange with WTR-CS Perforated Screen Guard 1-inch and 2-inch with female NPT threaded connection 1 thru 6-inch with connection points for 'Top Hat' adapter. 8 thru 16-inch, see Model WTW		
	Lower	Streamlined toroidal base flange transition 1-inch and 2-inch with Female NPT threaded connection 3 thru 6-inch with ANSI B16.5 Class 150 studded flange (Class 300 flange pattern available on request) 8 thru 16-inch, see Model WTW		
Orifices	**Large**	Streamlined toroidal transition to valve body At minimum, equal to the nominal diameter of the valve		
	Ant-Surge	Multiple tubular orifices to evenly distribute pressurized air across the face of the float 316 SS wear-resistant inserts in tubular orifices to protect against heat softening and abrasive wear		
	Nozzle	See Flow Data Table		
Side Port Connections		1/2-inch Female NPT with Male NPT Hex Socket Plug		
Isolation Valve		Supplied by others (Full port ball valve recommended and available on request)		
Certifications / Registrations		ANSI/NSF 61, ANSI/NSF 372, ISO9001:2015 Registered Mgmt. System		
AIS Compliance		When specified, raw material is controlled for USA Country of Origin Machining, fabrication, assembly, and coating always performed in USA		
Options		Port Ball Valve (s)—Code N (NN)	Custom Orifices—Code X	Pressure Gage Assembly
		Full Port Isolation Valve—Code B	AIS Compliant—Code A	All 316L SS—Code 6
		Class 300 Flange Pattern—Code K		
Valve Tests	**Each Unit**	Leak test to 1.5x rated pressure	Pressurized air release (Drop Test)	Low Pressure Seal
	Each Model	Free Air Release	Pressurized Air-Release	Vacuum Relief
		Nozzle Orifice Flow	Anti-Surge Activation (Switch Point)	CFD & Physical Flow
Material Specs		AISI 304L SS, AISI 316L SS, UHMW-PE, EPDM (Peroxide Cured), PVC		

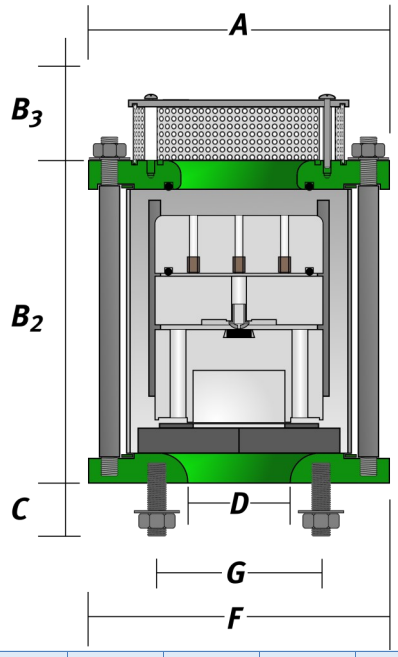
Model WTR: Series C—Dimensions

363 psi (25 Bar)

Male NPT Threaded



ANSI B16.5 Stud Pattern



Valve Part Number	Valve Size	Pressure Rating	Top Flange Dia.	Valve Height					Nipple or Stud Length	Base Flange Dia.	Stud Circle Dia.	# of Studs	Stud Size	Weight
	D		A	B^1	B^2	B^3	ΣB	H	C	F	G			
	inch	psi	inch	inch	inch	inch	inch	inch	inch	inch	inch	each	inch	lbs.
3 to 12-inch Model WTR have been superseded by 3 to 16-inch Model WTW. 3 to 6-inch WTR are available special order.														
NPT Threaded Connection														
01WTR25TCS	1	363	4 3/4	-	7 3/4	7/8	8 5/8	-	1 3/4	4 3/4	-	0	-	11
02WTR25TCS	2	363	6 1/2	-	8 3/4	1 1/8	9 7/8	-	2	6 1/2	-	0	-	20
03WTR25TCS	3	363	9	-	10	1 1/2	11 1/2	-	2 1/4	9	-	0	-	45
04WTR25TCS	4	363	9	-	10 5/8	2 3/8	13	-	2 1/4	9	-	0	-	44
ANSI B16.5 Class 150 Studded Connection														
01WTR25SCS	1	363	4 3/4	-	7 3/4	7/8	8 5/8	-	2 1/4	4 3/4	3 1/8	4	1/2	11
02WTR25SCS	2	363	6 1/2	-	8 3/4	1 1/8	9 7/8	-	2 1/4	6 1/2	4 3/4	4	5/8	20
03WTR25SCS	3	363	9	-	10	1 1/2	11 1/2	-	2 1/4	9	6	4	5/8	45
04WTR25SCS	4	363	9	-	10 5/8	2 3/8	13	-	2 1/4	9	7 1/2	8	5/8	44
06WTR25SCS	6	363	14 3/8	-	14 1/2	3 1/8	17 5/8	-	2 1/2	14 3/8	9 1/2	8	3/4	143
8 to 12-inch Model WTR have been superseded by Model WTW.														
08WTR25SCS	8	**See Model WTW**												
10WTR25SCS	10													
12WTR25SCS	12													

Model WTR Series C—Flow Data

363 psi (25 Bar)

Valve Code	Pipe Connection*			Nom Valve Size	Operating Pressure Range	Nozzle Diameter	Anti-Surge Orifices†			Controlled Air Release Thru Anti-Surge Orifices ‡	Vacuum Relief Capacity §
							Count	Size	Single Hole Equivalent		
	code			inch	psi	mm	each	mm	mm	max. scfm	min. scfm
01WTR-C	T	S	R	1	< 3.0 - 363	1.05	3	2.4	4.2	52	149
02WTR-C	T	S	R	2	< 3.0 - 363	1.2	4	4.5	9	271	676
03WTR-C	T	S	R	3	< 3.0 - 363	1.5	4	6.3	12.6	544	1,408
04WTR-C	T	S	R	4	< 3.0 - 363	1.5	7	6.3	16.7	951	1,887
06WTR-C		S	R	6	< 3.0 - 363	2.4	4	12.7	25.4	2,208	4,741
08WTR-C		S	R	8	**See Model WTW**						
10WTR-C		S	R	10							
12WTR-C		S	R	12							

* T = Male NPT Thread, S = Studded Flange, R = Trophy Connection
† A minimum of 3 separate wear protected orifices. Quantity and sizes of orifices are customizable. Please contact factory for additional information.
‡ At pressure of 145 psig.
§ Cubic feet per minute (ft3/min) at 70° Fahrenheit,14.7 psi absolute and 5.08 psi differential.