VENT-TECH
MODEL WTR
BY INTERNATIONAL VALVE

OICOMP

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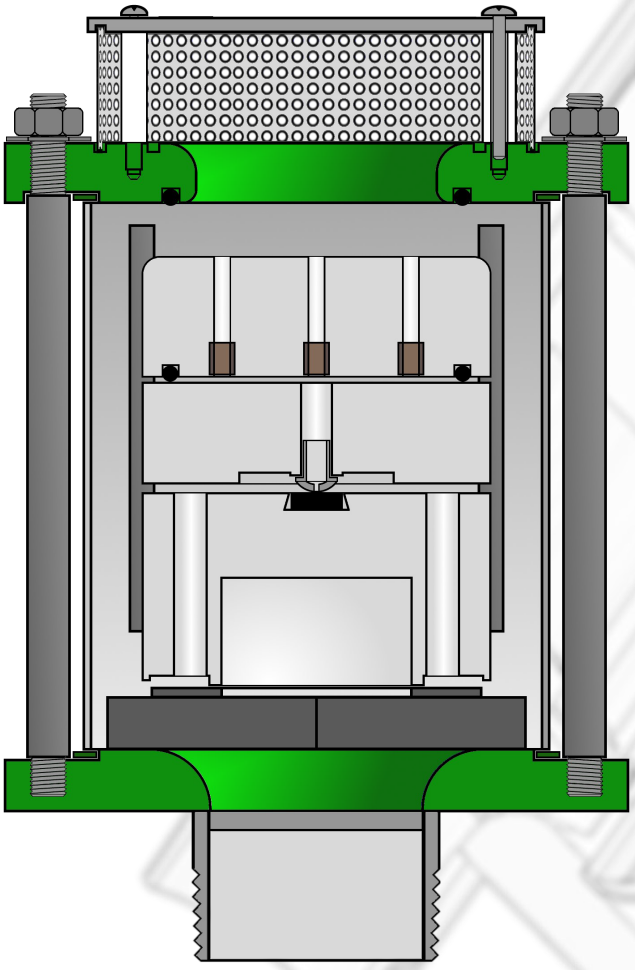
COMBINATION AIR RELEASE / VACUUM RELIEF VALVE

MODEL WTR: SERIES C

SUBMITTAL

2-INCH WATER VALVE, 363 PSI (25 BAR)
COMBINATION ARV WITH A SCREENED INLET

304L STAINLESS STEEL
2-IN. MALE NPT CONNECTION



- VACUUM PROTECTION
- HIGH VOLUME AIR RELEASE
- PRESSURIZED AIR RELEASE
- SURGE CONTROL

ISO 9001: 2015 CERTIFIED

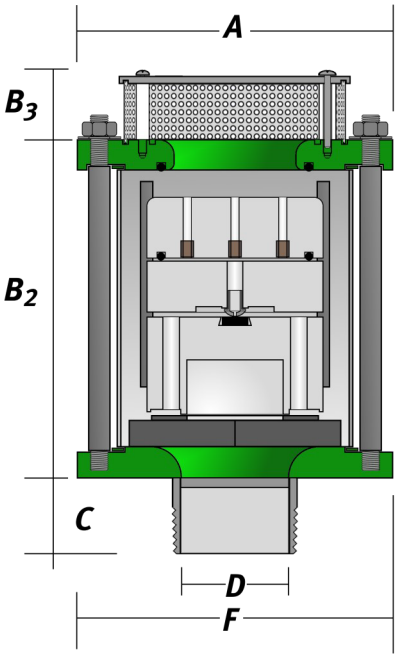
CLASSIFIED C UL US WATER QUALITY

VALVES
ANSI/NSF 61

ALSO CLASSIFIED
IN ACCORDANCE WITH
ANSI/NSF 372

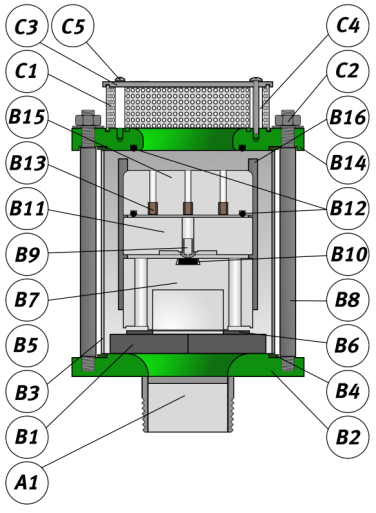
MH61807

HIGH VOLUME AIR INTAKE, HIGH VOLUME AIR DISCHARGE
PRESSURIZED AIR RELEASE AND SURGE CONTROL

Valve Type		**Combination Air Relief Valve - Standard WTR: Series C with Perforated Screen Guard**	
	**Manufacturing Location**		International Valve Marketing, LLC 483 Heartland Drive, Unit C, Sugar Grove, IL 60554 (630) 466-0300
	Brand-Model-Series		Vent-Tech—Model WTR—Series C
	Valve Operations		• 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
	Valve Part Number		**02WTR25TCS**
	Project Name		
	Valve Station(s)		
	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)
		Maximum	363 psi (25 Bar)
		Test Pressure	1.5 x Rated Pressure
	Maximum Temps	**Operating**	Exceeds 145° F (62° C)
		Intermittent	180° F (82° C)
	Connections	**Upper**	Fitted with 02WTR-CS Perforated Screen Guard 2-in. Female NPT Connection with Top Hat Attachment Option
		Lower	2-in. Streamlined Toroidal Base Flange 2-in. Male NPT Threaded Connection
	Orifices	**Large**	2-in. Streamlined Toroidal Transition to Valve Body
		Anti-Surge	4 ea. at 4.5 mm. Protected with 316 SS Wear-Resistant Inserts
		Nozzle	1.2 mm
	Bleed Port Connection		1 ea. 1/2-inch Female NPT Fitted with 1/2-inch NPT Plug
	Isolation Valve		Supplied by others (Full port ball valve available on request)
	Certifications / Registrations		ANSI/NSF 61, ANSI/NSF 372, ISO9001:2015 Registered Mgmt. System
	AIS Compliant		When specified, raw material is controlled for USA Country of Origin Machining, fabrication, assembly, and coating always performed in USA
Options		Bleed Port Ball Valve—Code N	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		304L SS, Klingersil 4430, UHMW-PE, 316L SS, EPDM, Nylon		

Base Part Number	Nom. Valve Size	Pressure Rating	Top Flange Dia.	Valve Height					Nipple 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		inch	lbs.
02WTR25TCS	2	363	6 1/2	-	8 3/4	1 1/8	9 7/8	-	2	6 1/2	-	-	-	20

No.	Description	Material	No.	Description	Material
A1	Male NPT Threaded Nipple	304L SS	B15	Anti-Surge Float	UHMW-PE
B1	Control Float Stand-Offs	304L SS	B16	Guide Rail	304L SS
B2	Streamlined Base Flange	304L SS	C1	Perforated Screen Guard	304L SS
B3	Tubular Valve Body	304L SS	C2	Tie Rod Fasteners	304L SS
B4	Fiber Gasket (x2)	Klingersil 4430	C3	Screen Lid	UHMW-PE
B5	Bleed Port (Not Shown)	304L SS	C4	Screen Lid Standoff	Nylon
B6	Baffle Plate	304L SS	C5	Screen Lid Fasteners	304L SS
B7	Control Float	UHMW-PE			
B8	Tie Rods	304L SS			
B9	Air Release Nozzle	316L SS			
B10	Nozzle Button	EPDM			
B11	Nozzle Float	UHMW-PE			
B12	Dynamic O-Ring Seal	EPDM			
B13	Protected Orifice Insert	316L SS			
B14	Streamlined Sealing Flange	304L SS			



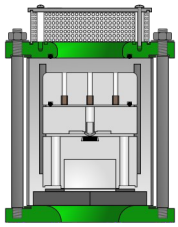
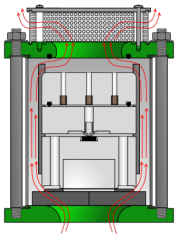
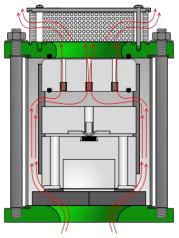
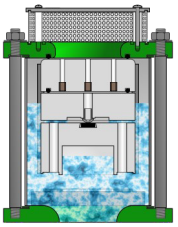
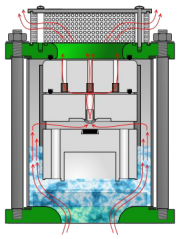
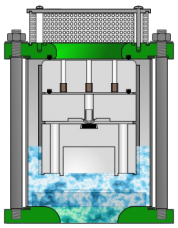
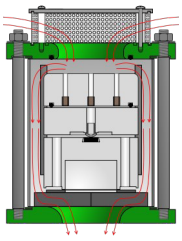
Series C—Principles of Operation					
Step	**Operating Description**	**Step 1**	**Step 2**	**Step 3**	**Step 4**
1: Valve Pre-Operation	• Floats are at rest • Pumps are off				
2: Pump Start-Up	• Air enters valve body • Floats are at rest • Air escapes between annulus of valve chamber and floats				
3: High Flow Activates Anti-Surge Float	• High air flow lifts surge float • Air escapes through multi-orifice surge float • Partial closure slows approaching fluid • Water hammer avoided				
4: Fluid Arrival Closes Valve	• Buoyancy lifts control float • Control float an nozzle float seat against surge float • Valve body is now pressurized				
		Step 5	**Step 6**	**Step 7**	
5: Trapped Gases Activate Nozzle Float	• Entrapped gases accumulate in valve chamber • Control float loses buoyancy and drops away from nozzle float • Accumulated air escapes through nozzle and surge floats				
6: Air Evacuation Closes Valve	• Fluid replaces escaped air and buoyancy lifts control float • Control and nozzle float seat against surge float as gas accumulates • Step 4 through 6 repeat				
7: Pump Shut-Down	• Fluid evacuates from valve and floats drop • Full Port Vacuum Relief • Vent -Tech 's improved flow design increases efficiency yielding greater vacuum protection				
Notes:					

Table 2: 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. cfm	min. cfm
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	< 3.0 - 363	2.4	7	12.7	33.6	3,854	7,826
10WTR-C		S	R	10	< 3.0 - 363	3	5	19.05	42.6	6,177	11,248
12WTR-C		S	R	12	< 3.0 - 363	3	4	25.4	50.8	8,822	17,308

* T = Male NPT Thread, S = Studded Flange, R = Trophy Connection
† Quantity and sizes of orifices are customizable. Please contact factory for additional information. Not applicable to Series N valves.
‡ At pressure of 145 psig. Not applicable to Series N valves.
§ Cubic feet per minute (ft3/min) at 70° Fahrenheit,14.7 psi absolute and 5.08 psi differential. Not applicable to Series V valves.

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