

Summer 2010



Vent-Tech  
Combination Water Air Relief Valve  
**WTR-C Series**



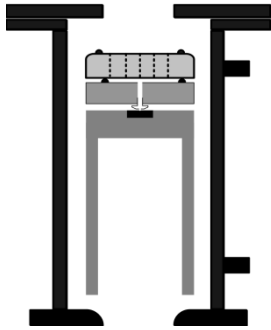
- Air Release
- Vacuum Protection
- Surge Control

**High Air Flow Intake and Discharge  
With Surge Control**

[www.internationalvalve.com](http://www.internationalvalve.com)

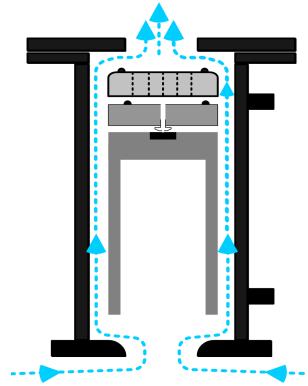
### Operating Description

#### VALVE PRE-OPERATION



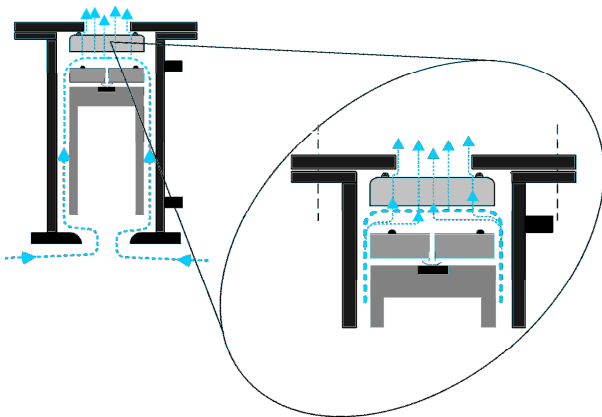
- Floats at rest
- Pumps off

#### 2. PUMP START-UP



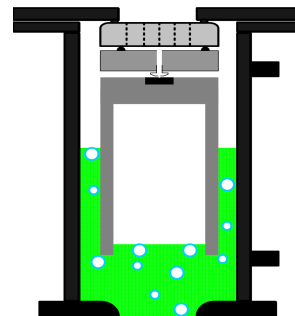
- Air enters valve body
- Floats are at rest
- Air escapes between annulus of Valve Chamber and Floats

#### 3. HIGH FLOW ACTIVATES SURGE FLOAT



- High air flow lifts Surge Float and seats it against the top flange
- Air escapes through multiple orifices in Surge Float
- Partial closure creates backpressure, slows approaching fluid
- Dynamic closure avoided, controls water hammer

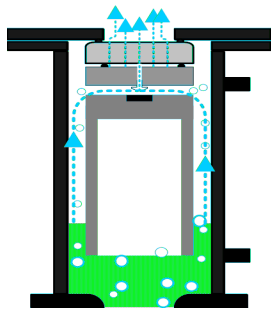
#### 4. FLUID ARRIVAL CLOSURE VALVE



- Buoyancy lifts Control Float
- Seats Control and Nozzle Floats against Anti-Surge Float
- Valve body is now pressurized

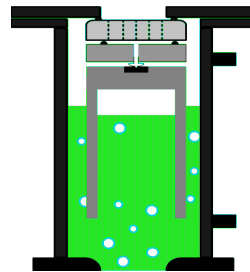
### Operating Description

#### 5. TRAPPED GASES ACTIVATE NOZZLE FLOAT



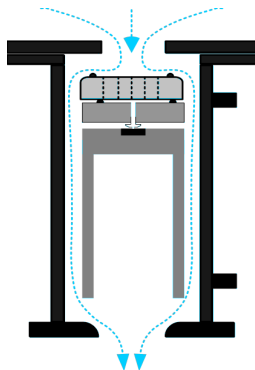
- Entrapped gases accumulate in Valve Chamber
- Control Float loses buoyancy and drops from Nozzle Float
- Accumulated air escapes through Nozzle and Surge Floats

#### 6. AIR EVACUATION CLOSES VALVE



- Fluid replaces escaped air and buoyancy lifts Control Float
- Control Float seats Nozzle Floats against Surge Float
- As more gas accumulates, Control Float loses buoyancy and Steps 4 through 6 repeat

#### 7. PUMP SHUT DOWN

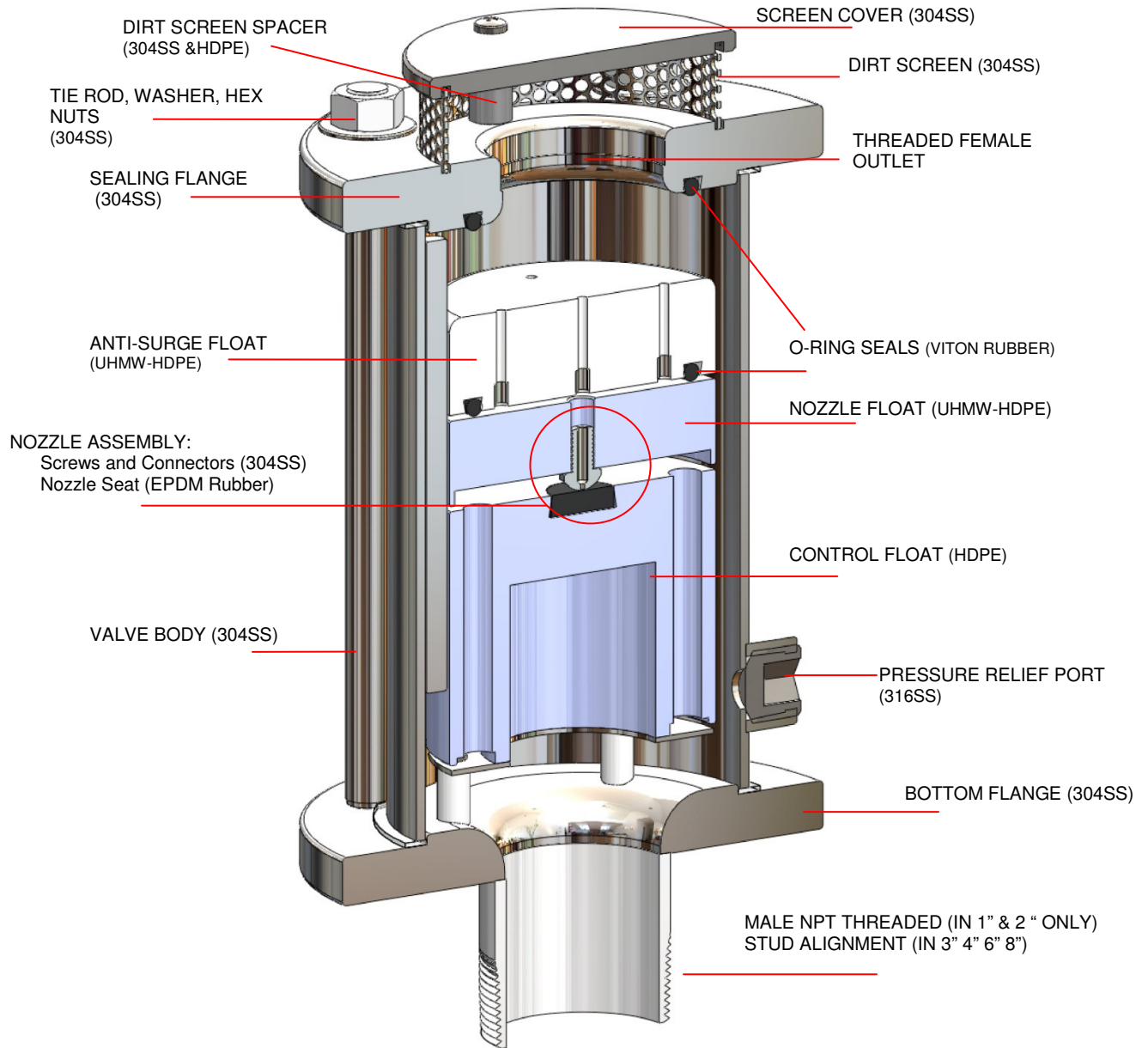


- Fluid evacuates from valve and floats drop
- Vent-Tech improved flow design increases efficiency, yielding greater vacuum protection

#### IMPROVED VENT TECH DESIGN ELEMENTS

- Anti-wear inserts installed in the Surge Float inhibit wear from high temperatures and abrasion
- Critical edges of the Surge Float and Valve Chamber are rounded to increase air flow
- Multiple orifices in the Surge Float enable dynamic surge control
- Valve Chamber is designed to maximize air flow, reducing valve size requirements
- Overall design improves vacuum protection of the pipeline
- Debris evacuation improved through faster and more aggressive air intake

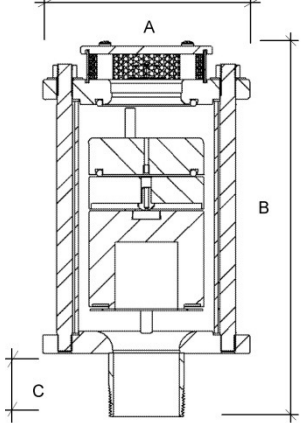
Vent-Tech  
**WTR-C Valve - 1" & 2"**  
**Material Specifications**



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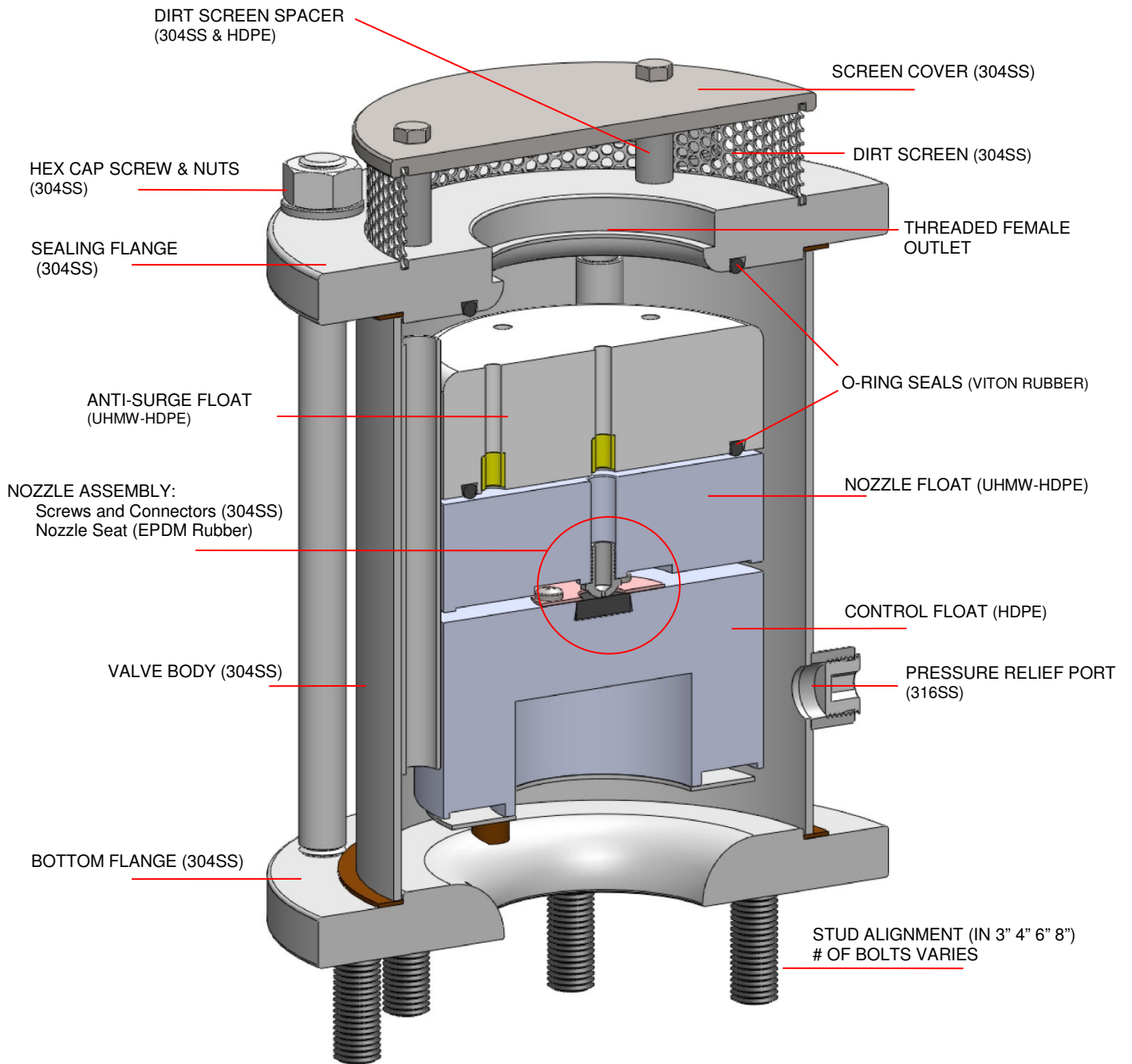
VENT-TECH WATER AIR RELIEF VALVE	
Series:	Size:
<b>WTR-C</b>	<b>1" &amp; 2"</b>
	Date: 6-2010
<b>MATERIAL SPECIFICATIONS</b>	

Vent-Tech  
**WTR-C Valve - 1" & 2"**  
**General Specifications**

<b>VALVE TYPE</b>	<b><u>COMBINATION AIR RELIEF VALVE</u></b> <b><u>STANDARD WTR-C Series</u></b>						
	<b>VALVE OPERATIONS:</b> <ol style="list-style-type: none"> <li>1. High volume air evacuation while pipeline fills</li> <li>2. High volume vacuum relief during pump shutdown</li> <li>3. Discharge of air/gas from pressurized pipeline</li> <li>4. Surge abatement for high velocity start up conditions, column separation and fluid oscillation</li> </ol>						
<b>VALVE SIZES</b>	1&2 (inches)						
<b>MAXIMUM DESIGN OPERATING PRESSURES</b>	Bar 25: 363 psi Bar 40 :580psi						
<b>VALVE CONNECTIONS</b>	INLET:	<ul style="list-style-type: none"> <li>• Male NPT threaded</li> <li>• 1" and 2" only</li> </ul>					
	OUTLET	<ul style="list-style-type: none"> <li>• Swivel flanges available</li> <li>• Female connection</li> </ul>					
<b>MATERIAL SPECIFICATIONS</b>	ANSI B16.5 CLASS 150, EXCEEDS AWWA C 512 304SS, 316SS, HDPE, UHMW-HDPE, Viton, EPDM						
<b>VALVE TESTS</b>	<ul style="list-style-type: none"> <li>• Leak test up to 1.5 valve rated pressure</li> <li>• Pressurized air release</li> <li>• Low pressure leak test</li> </ul>						
<b>DIMENSIONS (INCHES) APPROX. WEIGHTS (LBS)</b>	<b>INLET SIZE (in)</b>	<b>Bar</b>	<b>MODEL</b>	<b>A (in)</b>	<b>B (in)</b>	<b>C NPT (in)</b>	<b>WT. (lb)</b>
	1	25	01WTR25TCS	4.72	10.2	1.7	10
	1	40	01WTR40TCS	4.72	10.2	1.7	11
	2	25	02WTR25TCS	6.5	11.78	2.0	20
	2	40	02WTR40TCS	6.5	11.78	2.0	21

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Special orders are available*

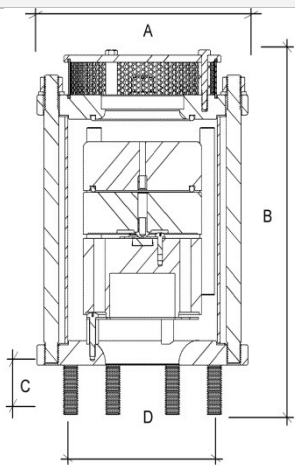
Vent-Tech  
**WTR-C Valve – 3" & 4"**  
**Material Specifications**



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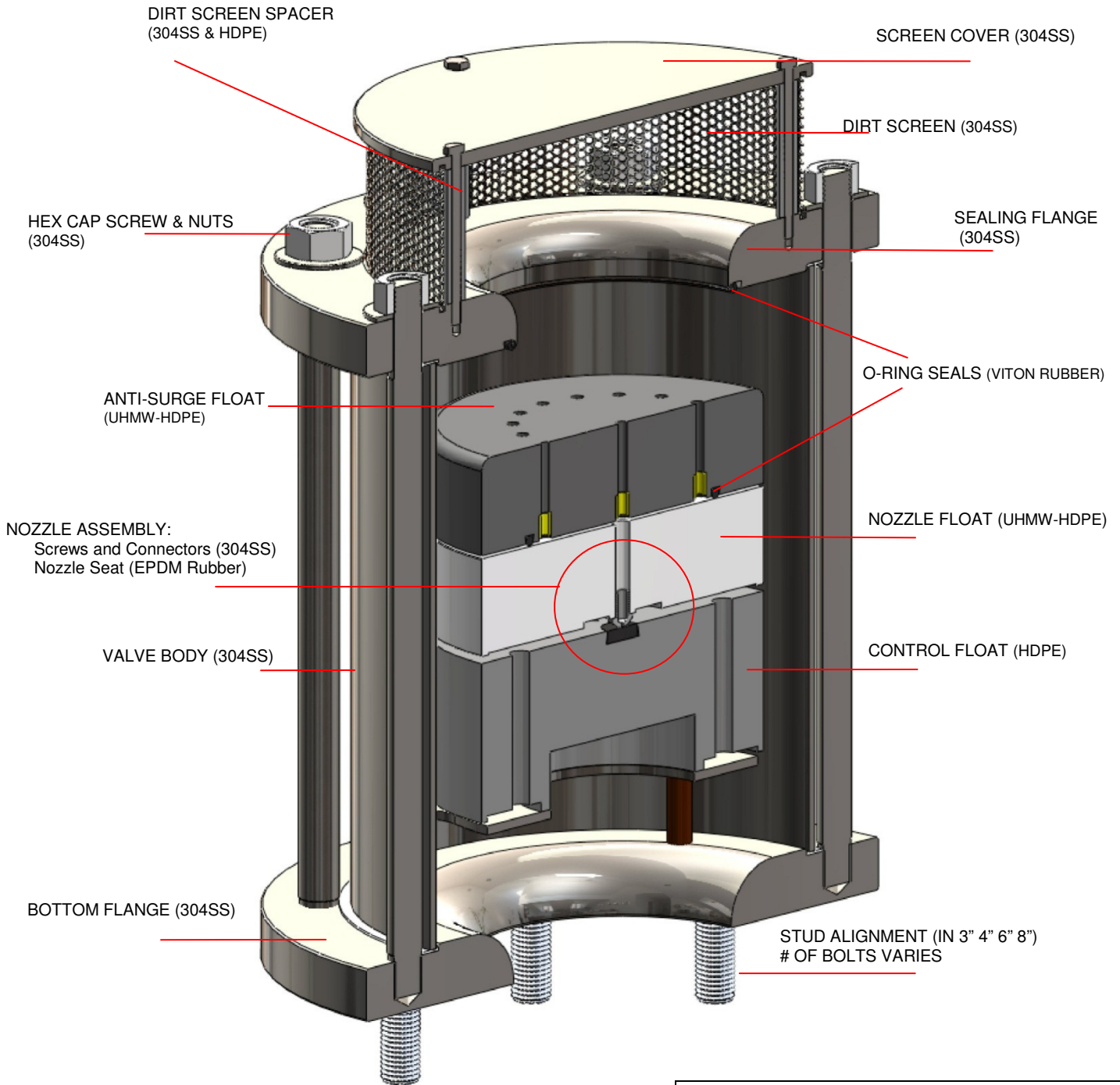
VENT-TECH WATER AIR RELIEF VALVE	
Series:	Size:
<b>WTR-C</b>	3" & 4"
	Date: 6-2010
<b>MATERIAL SPECIFICATIONS</b>	

Vent-Tech  
**WTR-C Valve – 3” & 4”**  
**Material Specifications**

<b>VALVE TYPE</b>	<b><u>COMBINATION AIR RELIEF VALVE</u></b> <b><u>HIGH PRESSURE WTR-C Series</u></b>							
	<b>VALVE OPERATIONS:</b>  <ol style="list-style-type: none"> <li>1. High volume air evacuation while pipeline fills</li> <li>2. High volume vacuum relief during pump shutdown</li> <li>3. Discharge of air/gas from pressurized pipeline</li> <li>4. Surge abatement for high velocity start up conditions, column separation and fluid oscillation</li> </ol>							
<b>VALVE SIZES</b>	3&4 (inches)							
<b>STANDARD OPERATING PRESSURES</b>	25 BAR: 7.25 to 363 psi 40 BAR: 7.25 to 580 psi							
<b>VALVE CONNECTIONS</b>	INLET: BAR 25	<ul style="list-style-type: none"> <li>• 3” Studded ANSI B16.5 Class 150 Flange Screw Studs 4</li> <li>• 4” Studded ANSI B16.5 Class 150 Flange Screw Studs 8</li> </ul>						
	INLET: BAR 40	<ul style="list-style-type: none"> <li>• 3” Studded ANSI B16.5 Class 300 Flange Screw Studs 8</li> <li>• 4” Studded ANSI B16.5 Class 300 Flange Screw Studs 8</li> </ul>						
	OUTLET	<ul style="list-style-type: none"> <li>• Swivel flanges available</li> <li>• Female connection</li> </ul>						
<b>MATERIAL SPECIFICATIONS</b>	ANSI B16.5 CLASS 150 and 300 EXCEEDS AWWA C 512 304SS, 316SS, HDPE, UHMW-HDPE, Viton, EPDM							
<b>VALVE TESTS</b>	<ul style="list-style-type: none"> <li>• Leak test up to 1.5 valve rated pressure</li> <li>• Pressurized air release</li> <li>Low pressure leak test</li> </ul>							
<b>DIMENSIONS (INCHES)</b> <b>APPROX. WEIGHTS (LBS)</b>	<b>INLET SIZE (in)</b>	<b>BAR</b>	<b>MODEL</b>	<b>A (in)</b>	<b>B (in)</b>	<b>C (in)</b>	<b>D (in)</b>	<b>WT. (lb)</b>
	3	25	03WTR25SCS	9.0	13.0	1.8	6.0	51
	3	40	03WTR40SCS	9.0	13.0	1.8	6.625	54
	4	25	04WTR25SCS	10.0	14.5	1.8	7.5	50
	4	40	04WTR40SCS	10.0	14.5	1.8	7.875	53

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Vent-Tech  
**WTR-C Valve – 6" & 8"**  
**Material Specifications**

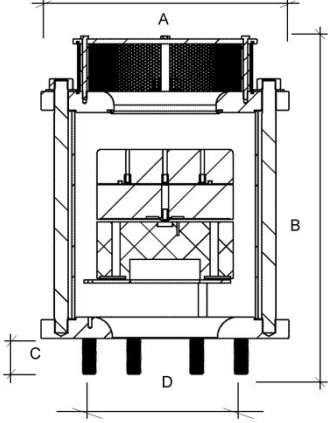


VENT-TECH WATER AIR RELIEF VALVE	
Series:	Size:
<b>WTR-C</b>	6" & 8"
	Date: 6-2010
<b>MATERIAL SPECIFICATIONS</b>	

INFORMATION SUBJECT TO CHANGE WITHOUT NOTICE



Vent-Tech  
**WTR-C Valve – 6” &8”**  
**Material Specifications**

<b>VALVE TYPE</b>	<b><u>COMBINATION AIR RELIEF VALVE</u></b> <b><u>HIGH PRESSURE WTR-C Series</u></b>							
	<b>VALVE OPERATIONS:</b>							
	<ol style="list-style-type: none"> <li>1. High volume air evacuation while pipeline fills</li> <li>2. High volume vacuum relief during pump shutdown</li> <li>3. Discharge of air/gas from pressurized pipeline</li> <li>4. Surge abatement for high velocity start up conditions, column separation and fluid oscillation</li> </ol>							
<b>VALVE SIZES</b>	6 & 8 (inches)							
<b>STANDARD OPERATING PRESSURES</b>	25 BAR: 7.25 to 363 psi 40 BAR: 7.25 to 580 psi							
<b>VALVE CONNECTIONS</b>	INLET: BAR 25	<ul style="list-style-type: none"> <li>• 6” Studded ANSI B16.5 Class 150 Flange Screw Studs 8</li> <li>• 8” Studded ANSI B16.5 Class 150 Flange Screw Studs 8</li> </ul>						
	INLET: BAR 40	<ul style="list-style-type: none"> <li>• 6” Studded ANSI B16.5 Class 300 Flange Screw Studs 12</li> <li>• 8” Studded ANSI B16.5 Class 300 Flange Screw Studs 12</li> </ul>						
	OUTLET	<ul style="list-style-type: none"> <li>• Swivel flanges available</li> <li>• Female connection</li> </ul>						
<b>MATERIAL SPECIFICATIONS</b>	ANSI B16.5 CLASS 150 and 300 EXCEEDS AWWA C 512 304SS, 316SS, HDPE, UHMW-HDPE, Viton, EPDM							
<b>VALVE TESTS</b>	<ul style="list-style-type: none"> <li>• Leak test up to 1.5 valve rated pressure</li> <li>• Pressurized air release</li> </ul> <p style="text-align: center;">Low pressure leak test</p>							
<b>DIMENSIONS (INCHES)</b> <b>APPROX. WEIGHTS (LBS)</b>	<b>INLET SIZE (in)</b>	<b>BAR</b>	<b>MODEL</b>	<b>A (in)</b>	<b>B (in)</b>	<b>C (in)</b>	<b>D (in)</b>	<b>WT. (lb)</b>
	6	25	06WTR25SCS	14.3	19.5	2.1	9.5	152
	6	40	06WTR40SCS	14.3	19.5	2.1	10.625	166
	8	25	08WTR25SCS	16	22.0	2.1	11.75	214
	8	40	08WTR40SCS	16	22.0	2.1	13.0	238

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