

## Vent-Tech Model SDG - Series C

145 psi (10 Bar) - Combination Air Valve for Wastewater



### TECHNICAL SPECIFICATION

- Optimized for Low Pressure Sealing. Less than 1 psi
- Compact Design— 23-inch installed height.
- 30% shorter than Model SWG
- Rapid Anti-Surge Activation—0.25 psi
- Vacuum Relief Capacity—500 scfm
- Patented technology designed for Vent-Tech Z-Valves™



**02 SDG 10 TCS**

- Stainless Steel 316L Body and Flanges
- Made in the U.S.A.
- ISO 9001: 2015 QMS
- UL Inspected Facility
- 10-Year Warranty
- 50-Year Design Life

## Model SDG Standard Wastewater Valve—Overview

The **Vent-Tech Model SDG** is our best compact, low pressure sealing CARV. It is essentially a shorter version of the Model SZG air/vacuum relief valve with improved flow performance, less weight and better self-cleaning. In applications where clearance height is ample, valve weight is not a factor and you require 0 psi sealing pressure, specify the “Z-Valve™” and for 3 psi applications, use Model SWG. For less than 1 psi applications and where height is limited, we recommend specifying the Model SDG.

### APPLICATION

- Waste Water Systems
- Force Mains
- High Points
- Lift Stations

### FUNCTION

	Market Usage	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	

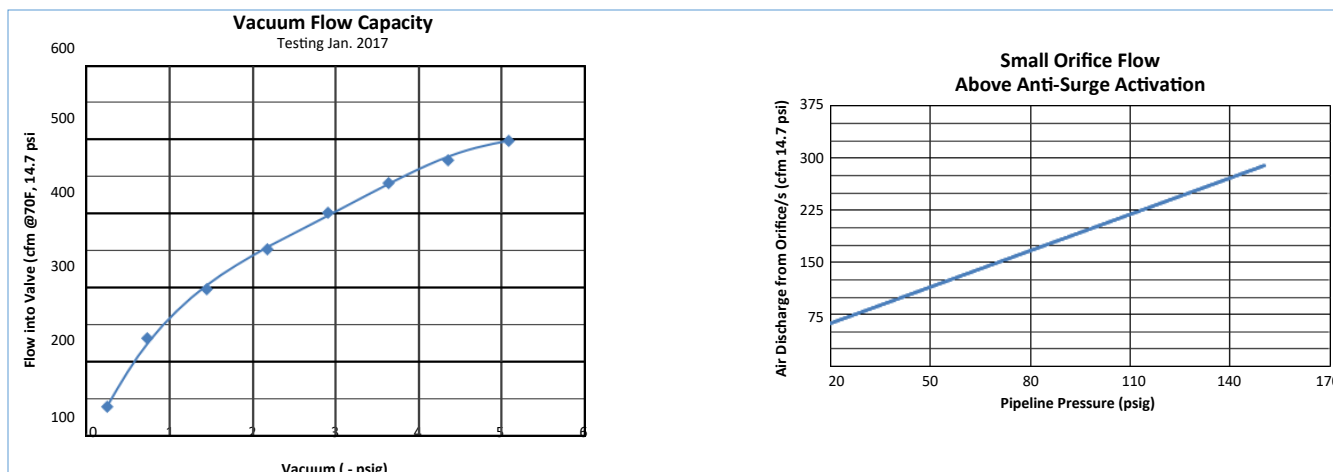
### PURPOSE

- 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

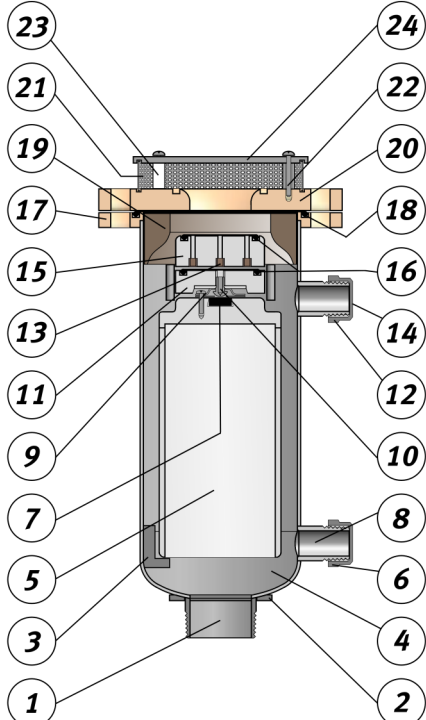
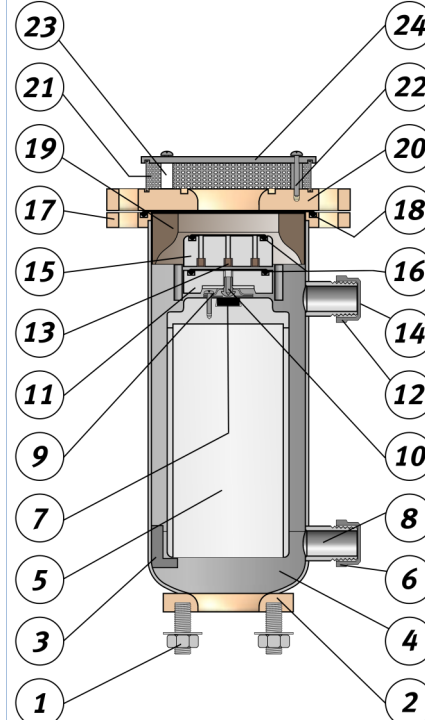
- Reduced height versus full height flat float designs (e.g. 02SDG is 23-inches tall installed; 02SWG is 32-inches tall).
- Recommended minimum sealing pressure at < one (1) psi.
- Rated for working pressures of 10 bar (145psi). Max ASME burst pressure rating of 2,400 psi.
- Inlets, outlets, and internal clearances have a cross-sectional area at least equal to that of the valve’s nominal size.
- Wear-protected multi-orifice anti-shock/surge floats provide customizable surge orifice characteristics
- Manufactured in 316 Stainless Steel.
- Tubular design with direct acting floats and two side ports
- Self-flushing at pump shut-down and valve emptying.
- High efficiency screens prevent ingress of airborne debris and bugs.
- Valve flanges are designed to minimize energy losses.
- Inter-changeability of valve inlet components allows for efficient conversion between valve and connection to ancillary pipework.
- Flow verification by independent testing facility.

# Made in USA



**Model SDG: Series C—Materials of Construction**

145 psi (10 Bar)

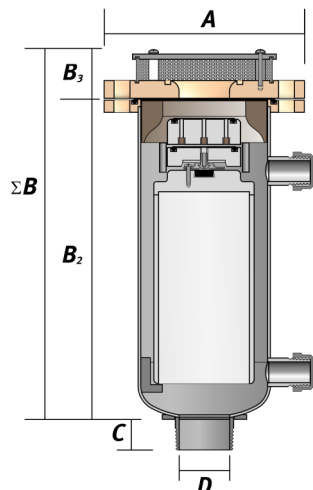
NPT Threaded Nipple		ANSI B16.5 Stud Pattern		No.	Description	Standard 316L SS -6		
								
				1	Male NPT Nipple	316 SS		
				2	ANSI B16.5 Stud Pattern	316 SS		
				2	Wrenching Hex NPT Connections	316 SS		
				2	Streamlined Base Flange Studded Connections	316 SS		
				3	Control Float Stand-Offs	316 SS		
				4	Tubular Valve Body	316 SS		
				5	Control Float	UHMW-PE		
				6	Side Port Cap	316 SS		
				7	Nozzle Seat	EPDM Rubber		
				8	Lower Side Port	316 SS		
				9	Nozzle Assembly	316 SS		
				10	Air Release Nozzle	316 SS		
				11	Nozzle Float	UHMW-PE		
				12	Upper Side Port	316 SS		
				13	Protected Orifice Insert	316 SS		
				14	Upper Side Port Cap	Plastic (Temporary)		
				15	Anti-Surge Float	UHMW-PE		
				16	Dynamic O-Ring Seal	Viton		
				17	Body Flange	316 SS		
				18	Static O-Ring Seal	Viton, Buna N		
				19	Air Spacer	Nylon, UHMW-PE		
				20	Toroidal Sealing Flange	316 SS		
				21	Punched Screen Guard	316 SS		
				22	Screen Lid Fasteners	316 SS		
				23	Screen Standoff Spacers	Polypropylene		
				24	Screen Lid	UHMW-PE, HDPE		
<b>Information Subject to Change without Notice</b>								

<b>Body</b>	Tubular, single chamber, short body capable of accepting a smooth bonded low density lining to minimize adhesion of fats and debris and manufactured of Type 316L (or optionally Type 304L) Stainless Steel. The valve body shall be internally constructed to provide an unobstructed circular space between the UHMW floats and inner valve body wall. Valves shall include an upper gauge port and lower flushing port and these ports shall be of the same material as the valve body. Designed with a minimum 6x safety factor per			
<b>Operating Pressure</b>	<b>Minimum</b>	< 1 psi (< 0.1 Bar)		
	<b>Design</b>	145 psi (10 Bar)		
	<b>Test</b>	150 %		
<b>Maximum Temps</b>	<b>Operating</b>	Exceeds 145° F (62° C)		
	<b>Intermittent</b>	180° F (82° C)		
<b>Connections</b>	<b>Inlet (Upper)</b>	Streamlined sealing flange with perforated Screen Guard 2-inch with optional adapter for customized discharge configurations		
	<b>Inlet (Lower)</b>	2-inch with Male NPT threaded connection Other connection types available on request including studded flange, trophy and cam/groove		
		Streamlined air flow design		
<b>Orifices</b>	<b>Large</b>	At minimum, equal to the nominal diameter of the valve		
	<b>Anti-Surge</b>	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		
	<b>Nozzle</b>	1.2 mm to 2.0 mm to match operating pressures		
<b>Side Port Connections</b>	Full port ball valves recommended. (Available on request.)			
<b>Isolation Valve</b>	Supplied by others (Full port ball valve recommended and available on request)			
<b>Certifications / Registrations</b>	ISO 9001: 2015 Registered Management System			
<b>AIS Compliant</b>	When specified, raw material is controlled for USA Country of Origin Machining, fabrication, assembly, and coating always in USA			
<b>Options</b>	Side Port Ball Valve (S)—Code N (NN)	Custom Orifices—Code X		
	Full Port Isolation Valve—Code B	AIS Compliant—Code A	304L SS—Code 4 (12 units minimum)	
	Basic valve body can be pressure rated to 235 psi without changing the valve dimensions. Modified internal components may be required.			
<b>Valve Tests</b>	<b>Each Unit</b>	Leak test to 1.5x rated pressure	Pressurized air release (Drop Test)	Low Pressure Seal test
		Certified — Air Release	Certified - Pressurized Air-Release	Certified - Vacuum Relief
	<b>Each Design</b>	Nozzle Orifice Flow Tested	Anti-Surge Activation (Switch Point)	CFD & Physically Flow Tested
<b>Material Specs</b>	AISI 316L SS, HDPE, UHMW-PE, Viton, Buna-N			

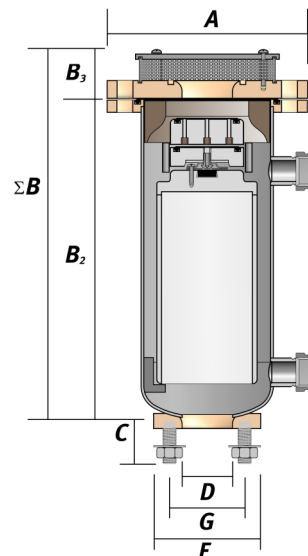
**Model SDG: Series C—Dimensions**

145 psi (10 Bar)

**Male NPT Threaded**



**ANSI B16.5 Stud Pattern**



Base Part Number	Valve Size D inch	Pressure Rating psi	Top Flange Dia. A inch	Valve Height					Nipple or Stud Length C inch	Base Flange Dia. F inch	Stud Circle Dia. G inch	# of Studs	Stud Size inch	Weight lbs.
				B <sup>1</sup> inch	B <sup>2</sup> inch	B <sup>3</sup> inch	ΣB inch	H inch						

**Male NPT Threaded**

02SDG10TCS	2	145	9 1/2	—	20	1 3/4	21 3/4	—	2	—	—	—	—	44
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**ANSI B16.5 ANSI Class 150 Stud Pattern**

02SDG10SCS	2	145	9 1/2	—	20 3/4	1 3/4	22 1/2	—	2	5	4 3/4	4	5/8	46
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**Model SDG: Series C—Flow Data**

145 psi (10 Bar)

Valve Code	Pipe Connection *			Nominal Valve Size inch	Operating Pressure Range psi	Small Nozzle Orifice Dia. mm	Anti-Surge Orifices <sup>†</sup>			Controlled Air Release thru Anti-Surge Orifices <sup>‡</sup> max. cfm	Vacuum Relief Capacity <sup>§</sup> min. cfm
	code						Count	Size mm	Single Hole Equivalent mm		
02SDG	T	S	R	2	< 1.0 - 145	1.5	4	4.5	9.0	271	610

\* T = Male NPT Thread, S = Studded Flange, R = Trophy Connection

† Quantity and sizes of orifices are customizable. Please contact factory for additional information

‡ At pressure of 145 psig

§ Cubic feet per minute (ft<sup>3</sup>/min) at 70° Fahrenheit, 14.7 psi absolute and 5.08 psi differential

**Low Pressure Exhaust from 2" CARV with Cd=0.607**  
e.g. 02SDG10: Switch Point 0.25 psig and Cd=0.607

Predicted using orifice equation for non-choked flow at pressure differentials < 0.5 psig.  
This equation closely approximates both pressure and vacuum flow characteristics

