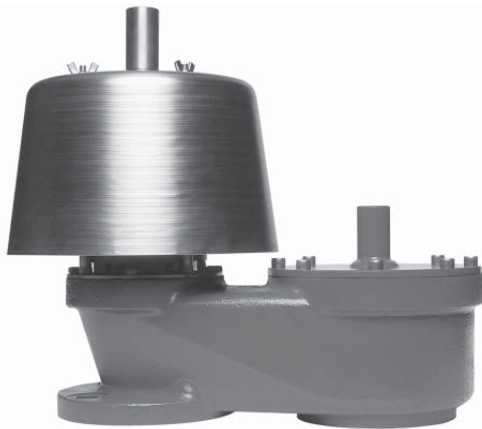




Valve Concepts, Inc.
ISO Registered Company



Model 3100

Pressure / Vacuum Vent – End-of-Line

OBJECTIVE

The Model 3100 end-of-line conservation breather vent is designed for use on atmospheric and low-pressure storage tanks where pressure and vacuum relief is required.

TECHNIQUE

Weight loaded pallets in the vent housing allow the intake of air and the escape of vapors as the tank breathes due to thermal changes and product movement in and out of the tank. The pallets open and close to permit in breathing and out breathing necessary to maintain the tank pressure within permissible limits to avoid damage to the tank.

CONSTRUCTION

Housing Material: The Model 3100 is a rugged design made to last. Available in Aluminum, Carbon Steel, 316 Stainless Steel or Corrosion Resistance Fiberglass.

Trim Material: 316 SST - Standard on all metal vents.
Fiberglass - Standard on all FRP vents.

Pallet Diaphragm Material: FEP TFE - Standard. Also available in FKM, EPDM and Buna-N.

SPECIAL FEATURES

Modular: The Model 3100 end-of-line conservation breather vent is part of the Valve Concepts, Inc. modular vent product line. The Model 3100 can easily be field converted to a vacuum only vent, a pressure/vacuum vent with pipe away and can either be direct acting or pilot operated. Only Valve Concepts offers complete modularity throughout its complete vent product line.

Maintains Accurate Settings. Minimum setting available is down to 0.25 oz/in² for both pressure and vacuum. Maximum setting upwards to 2 psig for pressure and 1 psig for vacuum, See Vent Weight Table. If higher settings are required see Valve Concepts Series 4000 Spring Loaded Vents or Valve Concepts Series 5000 Pilot Operated Vents. All vents are tested to Valve Concepts, Inc. high standards for both leakage and set point prior to shipment. A certified test certificate is included with each vent verifying the accuracy of both the pressure and vacuum setting and leakage. A leakage rate of less than 1 SCFH at 90% of set point is verified for both pressure and vacuum.

Condensate Drainage. Self-draining housing body and drip rings keep condensate away from seating surfaces, preventing freezing, binding and clogging.

Air-Cushioned Seating. Air-cushion seating provides tight sealing to reduce evaporation losses and the release of toxic vapors. The pallets have outer guiding and a center stabilizing stem to provide self alignment and tight seating.

Sizes - Connections. Available in Sizes 2" through 12". CS and SST vents have Raised Face Flange, Aluminum and FRP vents have Flat Face Flange to mate with standard ASME 150# flange connections. Ref to position 4 on coder for selection of DIN flanges.

MATERIALS OF CONSTRUCTION		
Series	Housing	Pallet *
3100CS	CS	316 SST
3100SST	316 SST	316 SST
3100D	Derakane® 470	Derakane® 470
3100F	Hetron® 800	Hetron® 800
3100A	Aluminum	Alum or 316 SST

* For settings below 0.5 oz/in² requires Polycarbonate Pallets; only with CS, SST, and Alum. Derakane, Furan and Hetron are Registered trademarks of Ashland Inc. Hetron is now offered as an equal replacement to Furan.

STANDARD/GENERAL SPECIFICATIONS

Gaskets: Standard: TFE/TFE Rope

Painting: Standard: Exterior coating will be a combination of Cashco Paint Specs #S-1777 epoxy and #S-1743 powder coated. Fasteners, seat surfaces and corrosion resistant parts excluded.

Diaphragm Temperature Limits:
FEP-TFE:
 -400° to 400° F (-240° to 204°C)
Fluorocarbon Elastomer – (FKM):
 -20° to 400° F (-28° to 204°C)
Buna-N (Nitrile-NBR):
 -30° to 200° F (-34° to 93°C)
EPDM (Ethylenepropylene):
 -40° to 225° F (-40° to 107°C)

Alternate Paint: See Opt-95OS.

Size	VENT WEIGHT Set Point Limits oz/in²										
	For Pressure *					For Vacuum *					
	Standard Material		SST Material			Standard Material			SST Material		
	Min	Max	Min	Max	Min	Max	Top Hat Max.	Min	Max	Top Hat Max.	
2"	0.25	30.50	0.25	28.50	0.25	8.50	16.00	0.25	9.00	16.00	
3"	0.25	31.50	0.25	32.00	0.25	11.50	16.00	0.25	12.00	16.00	
4"	0.25	32.50	0.25	33.00	0.25	11.50	16.00	0.25	12.00	16.00	
6"	0.25	30.50	0.25	31.00	0.25	10.00	16.00	0.25	10.00	16.00	
8"	0.25	30.00	0.25	30.50	0.25	16.00	16.00	0.25	16.00	16.00	
10"	0.25	31.00	0.25	31.50	0.25	8.50	16.00	0.25	9.00	16.00	
12"	0.25	29.50	0.25	30.50	0.25	12.50	16.00	0.25	12.50	16.00	

* Differential Pressures greater than 2 psid will limit the minimum vacuum set point to 2 oz/in².

OPTION SPECIFICATIONS

BUG SCREEN - 304 stainless steel, 4x4 welded mesh.

FLAME SCREEN - 304 stainless steel, 30x30 woven mesh.

ELECTRIC TRACE - Electric heat tape is wrapped around external surface of the vent body. A thermal insulation jacket is secured over the tape and vent body to minimize heat loss. Commonly used to prevent the formation of ice during freezing conditions. See STEAM JACKETING if elevated process temperatures are desired.

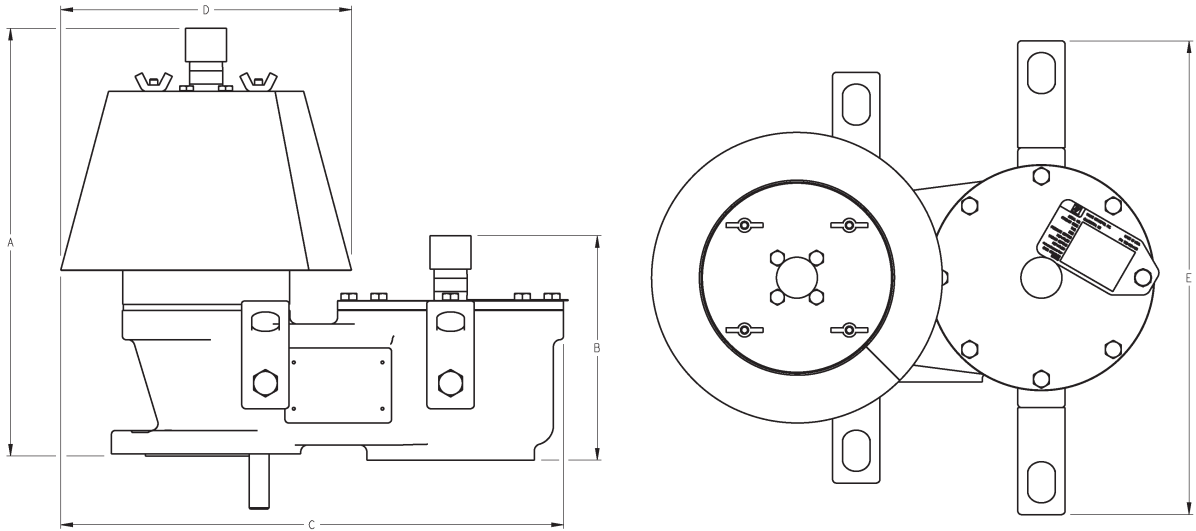
STEAM TRACE - Copper tubing is wrapped around the external surface of the vent body. A thermal insulation jacket is secured over the tubing and vent body to minimize heat loss. Commonly used to prevent the formation of ice during freezing conditions. See STEAM JACKETING if elevated process temperatures are desired.

STEAM JACKETING - Cast aluminum jacket with integrated carbon steel steam chambers are bolted around the vent body. Vent valve and jacket are shipped unassembled as vent valve must first be installed. Commonly used to prevent stored media vapors from crystallizing at ambient temperatures.

Option -40: NACE CONSTRUCTION. Internal wetted portions meet NACE standard MR0175, when exterior of the vent is not directly exposed to a sour gas environment, buried, insulated or otherwise denied direct atmospheric exposure.

Option -95OS: OFFSHORE installations. Coating of all exterior surfaces will be per Cashco Paint Specs #S-1777 epoxy. Fasteners, seat surfaces and corrosion resistant parts excluded. Painting of fasteners optional upon special request.

DIMENSIONS
Aluminum, Carbon Steel & Stainless Steel Body

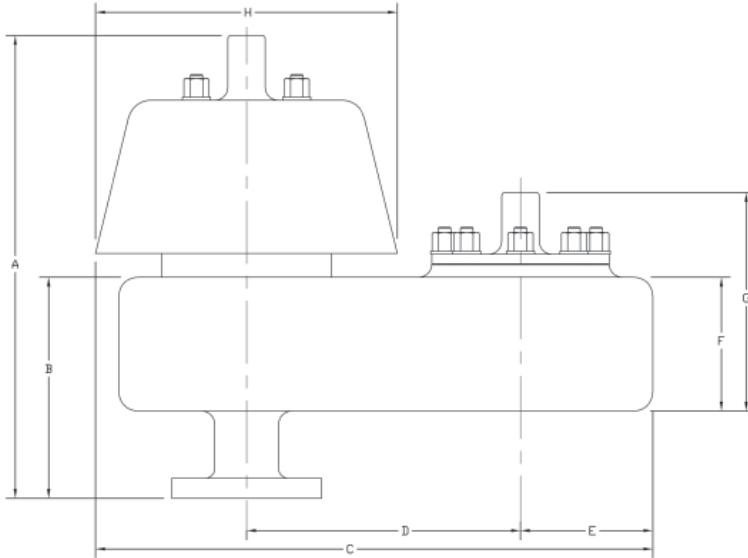


ENGLISH Units – in Aluminum, Carbon Steel & Stainless Steel Body							
SIZE	A	B	C	D	E	Wt. Alum lbs.	Wt. CS/ SST lbs. *
2"	13.56"	7.12"	15.97"	9.22"	14.83"	26	49
3"	15.84"	8.16"	17.19"	9.74"	15.59"	32	65
4"	18.64"	9.59"	22.90"	13.04"	18.23"	51	104
6"	20.71"	10.69"	28.13"	16.05"	22.71"	72	152
8"	26.43"	14.07"	32.34"	19.00"	22.35"	98	209
10"	26.81"	14.60"	40.06"	23.84"	25.15"	150	323
12"	29.71"	17.11"	42.23"	25.50"	26.09"	177	385

METRIC Units - mm Aluminum, Carbon Steel & Stainless Steel Body							
SIZE (DN)	A	B	C	D	E	Wt. Alum lbs.	Wt. CS/ SST Kg. *
(50)	344	181	406	234	377	11	22
(80)	402	207	436	247	396	14	29
(100)	473	244	582	331	463	23	47
(150)	526	272	714	408	577	32	69
(200)	671	357	821	483	568	44	95
(250)	681	371	1018	605	639	68	147
(300)	755	435	1075	648	663	80	175

* Estimated weight at minimum set points.

DIMENSIONS
Corrosion Resistant Fiberglass (FRP) Body



ENGLISH Units – in Corrosion Resistant Fiberglass (FRP) Body									Weight
SIZE	A	B	C	D	E (rad.)	F	G	H (diam.)	lbs *
2"	18.56"	8.87"	26.56"	11.00"	5.31"	5.37"	8.76"	12.12"	17
3"	18.56"	8.87"	26.56"	11.00"	5.31"	5.37"	8.76"	12.12"	18
4"	22.52"	10.25"	36.09"	15.03"	7.12"	6.75"	10.90"	16.43"	30
6"	24.51"	10.25"	35.80"	15.03"	7.12"	6.75"	11.56"	17.00"	33
8"	29.76"	12.72"	48.84"	20.75"	9.50"	8.22"	13.88"	23.32"	57
10"	30.50"	12.72"	48.63"	20.75"	9.50"	8.22"	14.56"	23.75"	61
12"	31.47"	13.41"	52.56"	23.00"	10.00"	8.64"	15.45"	26.88"	72

METRIC Units - mm Corrosion Resistant Fiberglass (FRP) Body									Weight
SIZE (DN)	A	B	C	D	E (rad.)	F	G	H (diam.)	Kgs *
(50)	471	225	675	279	135	136	222	308	8
(80)	471	225	675	279	135	136	222	308	8
(100)	572	260	917	382	181	171	277	417	14
(150)	623	260	909	382	181	171	294	432	15
(200)	756	323	1240	527	241	209	353	592	26
(250)	775	323	1235	527	241	209	370	603	28
(300)	799	341	1335	584	254	219	392	683	33

* Estimated weight at minimum set points.

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3100 Series PRODUCT CODE

04/05/16

Last 6 Characters reserved for SPQ drawing numbers assigned by Cashco Inc.
(Format as - # # # # #)

3 **1** **0** **POS 4** **POS 5** **B** **POS 7** **0** **POS 9** **POS 10** **POS 11** **POS 12** **0** **0** **0** **0** **0** **0**

POSITION 4 - FLANGE - SIZE			
ASME INCH	CODE	DIN FLANGES DN (rating)	CODE
2"	2	50 (PN16)	H
3"	3	80 (PN16)	J
4"	4	100 (PN16)	K
6"	6	150 (PN16)	L
8"	8	200 (PN10)	M
		200 (PN16)	T
10"	A	250 (PN10)	N
		250 (PN16)	V
12"	B	300 (PN10)	P
		300 (PN16)	W

POSITION 5 - BODY / TRIM / WEATHERHOOD MATERIALS			
MATERIAL	Std. W/O Flamescreen	W/ Flame Screen	W/ Bug Screen
	CODE	CODE	CODE
ALUM/ALUM/SST	A	B	M
ALUM/SST/SST	K	L	N
CS/SST/CS *	C	D	P
SST/SST/SST *	S	T	R
Derakane 470 w/ SST Studs	F	-	-
Derakane 470 w/ Hast C Studs	H	-	-
Hetron 800 w/ SST Studs	G	-	-
Hetron 800 w/ Hast C Studs	J	-	-

* Select for NACE Construction.

POSITION 7 - DIAPHRAGM MATERIALS	
DIAPHRAGM	CODE
FEP TFE (Std) *	A
Buna-N	B
EPDM	D
FKM *	F

* Select for NACE Construction.

POSITION 9 - SIGHT GLASS			
None (Std)	CODE		
	0		
Location	Vacuum Side Only	Pressure Side Only	Press & Vacuum Side
	1	2	3

POSITION 10 - WEIGHT MATERIAL	
Material	CODE
STD *	0
ALL SST	S
Encapsulated weight Option For FRP Body Material ONLY	E

See Vent Weight Table (pg.2) for set point limits.
* Steel or Steel / SST combination.
For NACE application must select ALL SST weight material code.

POSITION 11 - OPTION		
DESCRIPTION	OPTION	CODE
No Option	-	0
NACE Constr.	-40	N
Offshore Paint	-95OS	Y
NACE & Offshore	-40 & -95OS	Z

POSITION 12 - ACCESSORY / CERTS			
OPTION	Certification		
	Std	ATEX ***	PED *
	CODE	CODE	CODE
None	0	A	E
Electric Trace	H	B	F
Steam Jacket***	J	C	G
Steam Trace	S	D	K

* Forward Completed "EU" Application Recorder prior to quotation. (Without Recorder- Processing of Purchase Order will be delayed).
"PED" Compliance - Ref to Directive 2014/68/EU. Contact Cashco for Assistance.
** ATEX Cert not available for FRP Construction.
*** Steam pressure should be identified at time of RFQ to ensure the proper pressure rating is applied to the design.

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