

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 offer complete modularity throughout its complete vent product line.

Maintains Accurate Settings. Minimum setting available is $\frac{1}{2}$ oz/in² for both pressure and vacuum. Maximum setting upwards to 2.5 psig for pressure and 1 psig for vacuum. 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 center stabilizing stem to provide self alignment and tight seating.

Sizes - Connections. Available in Sizes 2" thru 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 TABLE 1 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
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: All non-corrosion resistant portions to be painted with corrosion resistant epoxy paint per Cashco Spec #S-1747.

Diaphragm FEP-TFE:
Temperature -400° to 400° F (-240° to 204°C)
Limits: Fluorocarbon Elastomer – (FKM):
 0° to 400° F (0° to 204°C)
 Buna-N (Nitrile-NBR):
 -30° to 200° F (-34° to 93°C)
 EPDM (Ethylene propylene):
 -40° to 225° F (-40° to 107°C)

Alternate: See Opt-95OS.

OPTION SPECIFICATIONS

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

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

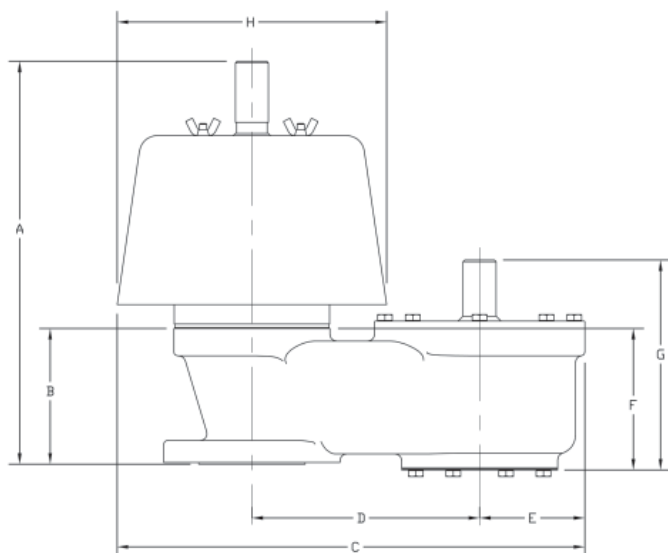
ELECTRIC TRACE - Electric heat tape is wrapped around external surface of the vent body. A thermal insulation jacket is secured over the tape and vent body to minimize heat loss. Commonly used to prevent the formation of ice during freezing conditions. See STEAM JACKETING if elevated process temperatures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

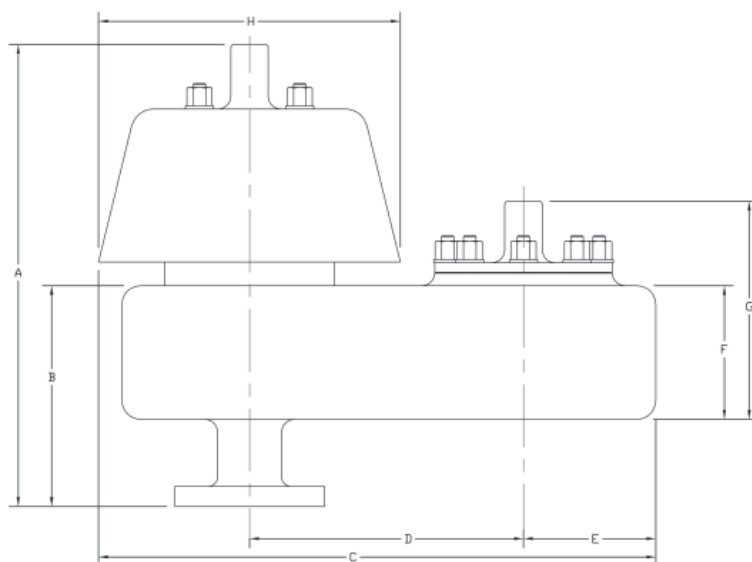
STEAM JACKETING - Cast aluminum jacket with integrated carbon steel steam chambers are bolted around the vent body. Vent valve and jacket are shipped unassembled as vent valve must first be installed. Commonly used to prevent stored media vapors from crystallizing at ambient temperatures.

Option -95OS: **EPOXY PAINT.** Special epoxy painting of all non-corrosion resistant external surfaces per Cashco Spec #S-1687 for OFFSHORE installations.

DIMENSIONS



Standard Construction for Alum, CS & SST Body



Standard Construction for FRP Body

ENGLISH Units – in								
Aluminum, Carbon Steel & Stainless Steel Body								
SIZE	A	B	C	D	E (rad.)	F	G	H (diam.)
2"	13.95"	4.62"	15.92"	7.75"	3.58"	4.82"	7.17"	9.17"
3"	16.83"	5.72"	17.12"	8.31"	4.00"	5.76"	8.60"	9.62"
4"	19.93"	6.65"	22.88"	11.00"	5.38"	6.65"	10.51"	13.00"
6"	22.19"	7.23"	28.00"	12.81"	7.19"	7.10"	11.84"	16.00"
8"	26.51"	9.12"	32.34"	15.34"	7.50"	9.48"	15.59"	19.00"
10"	27.92"	9.41"	40.13"	19.00"	9.13"	9.48"	15.41"	24.00"
12"	29.71"	10.78"	42.25"	20.00"	9.50"	10.84"	17.18"	25.50"
Corrosion Resistant Fiberglass (FRP) Body								
2"	18.56"	8.87"	22.37"	11.00"	5.31"	5.37"	8.76"	12.12"
3"	18.56"	8.87"	22.37"	11.00"	5.31"	5.37"	8.76"	12.12"
4"	22.52"	10.25"	30.37"	15.03"	7.12"	6.75"	10.90"	16.43"
6"	24.51"	10.25"	30.65"	15.03"	7.12"	6.75"	11.56"	17.00"
8"	29.76"	12.72"	41.91"	20.75"	9.50"	8.22"	13.88"	23.32"
10"	30.50"	12.72"	42.13"	20.75"	9.50"	8.22"	14.56"	23.75"
12"	31.47"	13.41"	46.44"	23.00"	10.00"	8.64"	15.45"	26.88"

METRIC Units - mm								
Aluminum, Carbon Steel & Stainless Steel Body								
SIZE (DN)	A	B	C	D	E (rad.)	F	G	H (diam.)
(50)	354.3	117.3	404.4	196.9	90.9	122.4	182.1	232.9
(80)	427.5	145.3	434.8	211.1	101.6	146.3	218.4	244.3
(100)	506.2	168.9	581.2	279.4	136.7	168.9	266.9	330.2
(150)	563.6	183.6	711.2	325.4	182.6	180.3	300.7	406.4
(200)	673.3	231.6	821.4	389.6	190.5	240.8	396.0	482.6
(250)	709.2	239.0	1019.3	482.6	231.9	240.8	391.4	609.6
(300)	754.6	273.8	1073.1	508.0	241.3	275.3	436.4	647.7
Corrosion Resistant Fiberglass (FRP) Body								
(50)	471.4	225.3	568.2	279.4	134.9	136.4	222.5	307.8
(80)	471.4	225.3	568.2	279.4	134.9	136.4	222.5	307.8
(100)	572.0	260.4	771.4	381.8	180.8	171.5	276.9	417.3
(150)	622.6	260.4	778.5	381.8	180.8	171.5	293.6	431.8
(200)	755.9	323.1	1064.5	527.1	241.3	208.8	352.6	592.3
(250)	774.7	323.1	1070.1	527.1	241.3	208.8	369.8	603.3
(300)	799.4	340.6	1179.6	584.2	254.0	219.5	392.4	682.8

3100 Series PRODUCT CODE

05/13/13

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

3 **1** **0** **Table 1** **Table 2** **B** **Table 3** **0** **Table 4** **Table 5** **Table 6** **Table 7** **0** **0** **0** **0** **0** **0**

TABLE 1 - 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

TABLE 2 - BODY / TRIM / WEATHERHOOD MATERIALS			
MATERIAL	Std. W/O Flamescreen	W/ Flame Screen	W/ Bug Screen
	CODE	CODE	CODE
ALUM/ALUM/ALUM	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	-	-

TABLE 3 - DIAPHRAGM MATERIALS	
DIAPHRAGM	CODE
FEP TFE (Std)	A
Buna-N	B
EPDM	D
FKM	F

TABLE 4 - SIGHT GLASS			
None (Std)	CODE		
	0		
Location	Vacuum Side Only	Pressure Side Only	Press & Vacuum Side
	1	2	3

TABLE 5 - WEIGHT MATERIAL	
Material	CODE
STD *	0
ALL SST	S
Encapsulated weight Option For FRP Body Material ONLY	E
* Lead or Lead / SST combination	

TABLE 6 - OPTION		
DESCRIPTION	OPTION	CODE
No Option	-	0
Epoxy Painted	-95OS	Y

TABLE 7 - 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 97/23/EC. Contact Cashco for Assistance.			