



Valve Concepts, Inc.
ISO Registered Company



Model 5100

PILOT OPERATED

Pressure / Vacuum Vent – End-of-Line

OBJECTIVE

The Model 5100 end-of-line conservation breather vent is intended for use on atmospheric and low-pressure storage tanks where pressure and vacuum relief is required.

TECHNIQUE

The Model 5100 has a pilot operated pressure side which permits tank operating pressures closer to the maximum allowable operating pressure. This provides a more positive control over vapor generation inherent in fluids with higher vapor pressures. The vacuum side of the vent is weight loaded and allows intake of air when necessary to remain within the vacuum design rating of the tank.

CONSTRUCTION

Body & Weather Hood Material: Available in Aluminum, Carbon Steel or 316 SST.

Numerous Sizes. Available in Sizes 2" through 12". CS & SST vents have Raised Face Flange, Aluminum vents have Flat Face Flange to mate with ASME150# flange connections.

Diaphragm Case Material: Available in Carbon Steel or Stainless Steel.

Pallet Diaphragm Material: FKM - Standard; also available Buna-N, EPDM or FEP-TFE.

Pilot Body Material: 316SST.

Pilot Seat (o-ring): FKM - Standard; also available Buna-N, EPDM, FFKM 1 or FFKM 2.

Pilot (Sensing) Diaphragm: FEP-TFE.

SPECIAL FEATURES

Modular: The Pilot Operated Model 5100 end-of-line conservation breather vent is part of the Valve Concepts, Inc. modular vent product line. The Model 5100 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.

Maintains Accurate Settings. The Pilot Operated Model 5100 provides bubble tight (no leakage) up to 95% of set pressure or 0.5" WC, whichever is greater and less than 1 SCFH at 90% of setting on the vacuum side of the vent. A certified test certificate is included with each vent verifying the accuracy of both the pressure and vacuum setting and leakage.

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. The pallets have outer guiding and center stabilizing stem to provide self alignment and tight seating.

MATERIALS OF CONSTRUCTION				
Series	Housing	Trim	Diaphragm Cases	Tube & Fittings
5100CS	CS	316 SST	CS	CS
5100SST	316 SST	316 SST	SST	SST
5100A	Aluminum	Aluminum	CS	CS

STANDARD/GENERAL SPECIFICATIONS

Spring Ranges:

PRESSURE RANGE	
in WC	(mbar)
1.2" to 2.0" *	(2.9 to 4.9) *
2.1" to 12.0"	(4.9 to 29.9)
12.1" to 18.0"	(30.0 to 44.8)
18.1" to 36.0"	(44.9 to 89.4)
36.1" to 41.7"	(89.5 to 103.5)
41.8" to 86.0"	(103.6 to 214)
PSIG	(Barg)
3.2 to 15.0 psig	(0.22 to 1.03 bar)

* Pressure range 1.2" to 4.0" WC require external air assist to the pilot.

VACUUM RANGE	
Weight Loaded	
oz/in ² -psig	mbar-barg
0.5 - 0.5	2.15 - .03
Spring Ranges	
psig	Barg
> 0.5 - 4	.03 - .27
> 4 - 6	.27 - .41
> 6 - 8	.41 - .55
> 8 - 10	.55 - .68
> 10 - 12	.68 - .83
> 12 - 13	.83 - .89
> 13 - 15	.89 - 1.03

* Steel or Steel / SST combination

Diaphragm Temperature Limits:

FEP-TFE:
-400° to 400° F (-240° to 204°C)

FKM (Fluorocarbon Elastomer):
-20° to 400° F (-28° 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)

Seat & Seal Materials Temperature Limits:

FKM (Fluorocarbon Elastomer):
-15° to 300° F (-26° to 149° C)

Buna-N (Nitrile-NBR):
-40° F to 212° F (-40° C to 100° C)

EPDM (Ethylene Propylene):
-55° F to 212° F (-48° C to 100° C)

FFKM 1 (Perfluoroelastomer):
-22° F to 400° F (-30° C to 204° C)

FFKM 2 (Perfluoroelastomer):
-40° F to 400° F (-40° C to 204° C)

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

Alternate Paint: See Opt-95OS.

Pressure & Vacuum Ranges: See Position 8 and 10 on the coder. 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

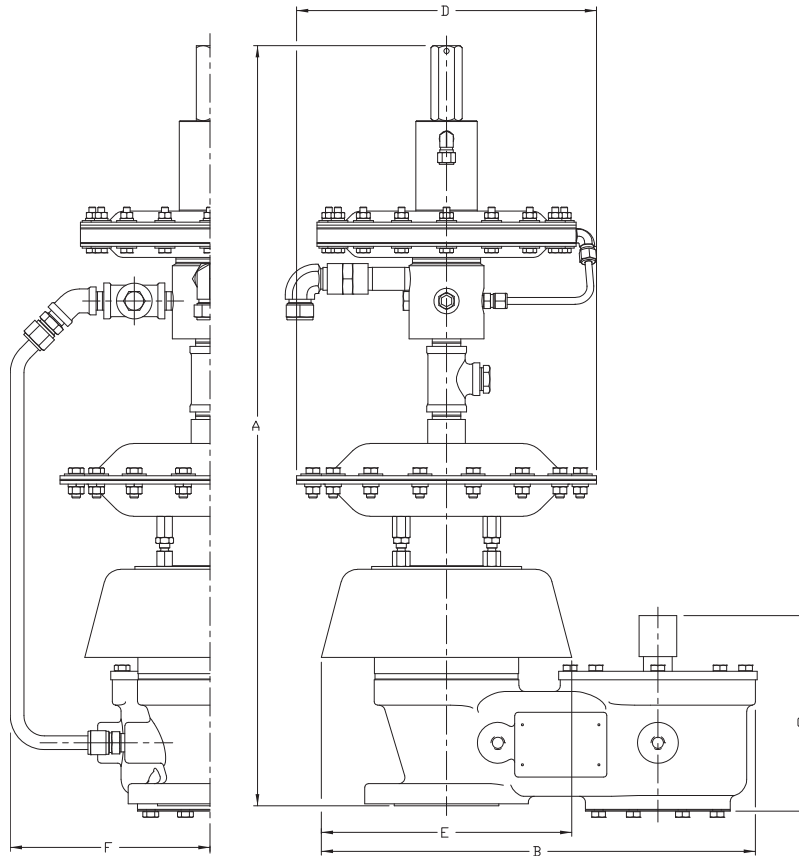
ELECTRIC TRACE - Electric heat tape is wrapped around external surface of the vent body. A thermal insulation jacket is secured over the tape and vent body to minimize heat loss. Commonly used to prevent the formation of ice during freezing conditions.

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.

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. Tubing, fasteners, seat surfaces - corrosion resistant parts excluded. Painting of tubing and fasteners optional upon special request.

DIMENSIONS



ENGLISH Units - in Aluminum, Carbon Steel & Stainless Steel							Weight - lbs.	
SIZE In	A	B	C	D (diam)	E	F	Alum	CS / SST
2"	28.00	15.92	7.17	11.00	9.18	7.75	58	97
3"	29.12	17.12	8.60	11.00	9.63	7.75	69	112
4"	35.88	22.88	10.56	16.50	13.00	9.25	119	187
6"	36.50	28.00	11.84	16.50	16.00	9.25	171	263
8"	40.75	32.38	15.59	23.81	19.00	12.94	271	418
10"	42.25	40.12	15.44	23.81	24.00	13.25	368	565
12"	43.50	42.25	17.18	23.81	25.50	13.75	428	652

METRIC Units - mm Aluminum, Carbon Steel & Stainless Steel							Weight - kg.	
SIZE (DN)	A	B	C	D (diam)	E	F	Alum	CS / SST
(50)	711	404	182	279	233	197	27	44
(80)	740	435	218	279	245	197	32	51
(100)	911	581	268	419	330	235	54	85
(150)	927	711	301	419	406	235	78	120
(200)	1035	822	396	605	483	329	123	190
(250)	1073	1019	392	605	610	336	167	257
(300)	1105	1073	436	605	648	349	194	296

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5100 Series PRODUCT CODE 02/15/16

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



POSITION 4 - SIZE			
INCH	CODE	DIN FLANGE 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

* Alum vents have Flat Face flange, CS & SST vents have Raised Face flange

POSITION 8 - PRESSURE RANGES	Std. Constr.	W/ AIR ASSIST
Spring Range	CODE	CODE
1.2" - 2.0" WC (2.9 - 4.9 mbar)	--	L
2.1" - 12.0" WC (4.9 - 29.9 mbar)	3	C
12.1" - 18.0" WC (30.0 - 44.8 mbar)	6	D
18.1" - 36" WC (44.9 - 89.4 mbar)	7	E
36.1" - 41.7" WC (89.5 - 103.5 mbar)	8	F
41.8" - 86.0" WC (103.6 - 214 mbar)	9	J
3.2 - 15.0 psig (0.22 - 1.03 bar)	H	K

POSITION 9 - PILOT SEAT / PALLET DIAPH. / ACT. DIAPH.	
Materials	CODE
Buna-N / Buna-N / Buna-N	B
FFKM 1 / FEP / FEP	C
EPDM / EPDM / EPDM *	E
Buna-N / FEP / FEP **	J
FFKM 2 / FEP / FEP	K
FKM / FKM / FKM	V

* Not recommended for NACE Service
** Recommended for Air Assist Construction

POSITION 10 - VACUUM RANGES			
Weight Loaded		WEIGHT MATERIAL	
oz/in ² -psig	mbar-barg	STD *	SST
		CODE	CODE
0.5 - 0.5	2.15 - .03	1	A
Spring Ranges		CODE	
psig	Barg		
> 0.5 - 4	.03 - .27	2	
> 4 - 6	.27 - .41	3	
> 6 - 8	.41 - .55	4	
> 8 - 10	.55 - .68	5	
> 10 - 12	.68 - .83	6	
> 12 - 13	.83 - .89	7	
> 13 - 15	.89 - 1.03	8	

* Steel or Steel / SST combination

POSITION 11 - SENSING / PAINT OPTIONS			
Sensing Configuration & Accessory Options With Backflow Preventer Pilot Exhaust to Atmosphere		Std Paint	Offshore Paint Opt.-950S
		CODE	CODE
Standard	Internal Sensing	0	W
Option 2:	Remote Sensing	2	T
Option 3:	Internal Sensing with Manual Blowdown Valve	3	S
Option 5:	Internal Sensing with Field Test Connection	5	R
Option 6:	Internal Sensing with Rotometer to Purge Pilot Sense Line	6	P

POSITION 12 - ACCESSORY / CERTS				
OPTION	Certification			
	Std	ATEX *	PED *	NACE
		CODE	CODE	CODE
None	0	A	E	1
Electric Trace	H	B	F	---
Steam Trace	S	D	K	---

* Forward Completed "EU" Application Recorder prior to quotation. (Without Recorder- Processing of Purchase Order will be delayed).
PED includes both ("SEP" & "CE") Compliance - Ref to Directive 2014/68/EU. Contact Cashco for Assistance.

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