



Valve Concepts, Inc.  
ISO Registered Company

## TECHNICAL BULLETIN

3200 - TB

04-16



# Model 3200

## Pressure / Vacuum Vent with Pipe-Away

### OBJECTIVE

The Model 3200 vent provides pressure and vacuum relief in applications that require vapors to be piped away.

### TECHNIQUE

Weight loaded pallets on the pressure and vacuum sides of the vent open and close to allow the discharge of vapors to the outlet piping or the intake of air necessary to maintain the tank pressure within permissible limits to avoid damage to the tank. Virtually eliminates the intake of air and the escape of vapors, except during normal tank breathing, thus reducing product loss.

### CONSTRUCTION

**Housing Material:** The Model 3200 is a rugged design made to last. Available in Aluminum, Carbon Steel, 316 Stainless Steel or Corrosion Resistant 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 3200 pipe-away conservation vent is part of the Valve Concepts, Inc. modular vent product line. The Model 3200 can easily be converted to a vacuum only vent or end-of-line pressure / vacuum vent and can either be direct acting or pilot operated. Only Valve Concepts, Inc. offers complete modularity throughout its complete vent product line.

**Maintains Accurate Settings.** The minimum setting available is down to 0.25 oz/in<sup>2</sup> 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. 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 into the outlet piping, except under normal breathing conditions. The pallets have outer guiding and 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. On sizes 2" through 6", connections are available with the same size inlet and outlet to reduce outlet piping cost. Ref to positions 3 & 4 on coder for selection of DIN flanges.

MATERIALS OF CONSTRUCTION		
Series	Housing	Pallet *
3200CS	CS	316 SST
3200SST	316 SST	316 SST
3200D	Derakane® 470	Derakane® 470
3200F	Hetron® 800	Hetron® 800
3200A	Aluminum	Alum or 316 SST
* For settings below 0.5 oz/in <sup>2</sup> 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**                    FEP-TFE:  
**Temperature**                -400° to 400° F (-240° to 204°C)  
**Limits:**                      Fluorocarbon Elastomer – (FKM):  
                                      -20° to 400° F (-28° to 204°C)  
                                      Buna-N (Nitrile-NBR):  
                                      -30° to 200° F (-34° to 93°C)  
                                      EPDM (Ethlenepropylene):  
                                      -40° to 225° F (-40° to 107°C)

Alternate Paint: See Opt-95OS.

Size	VENT WEIGHT Set Point Limits oz/in <sup>2</sup>									
	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/in <sup>2</sup> .										

## 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.

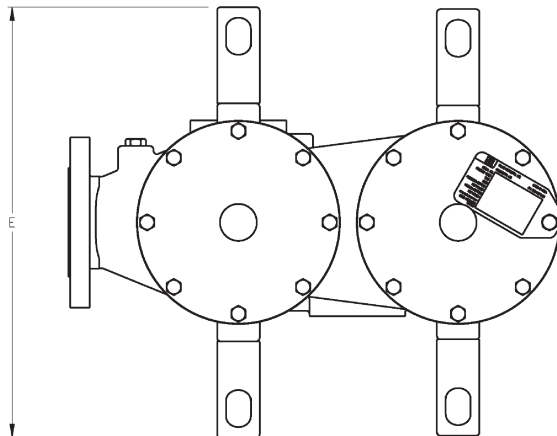
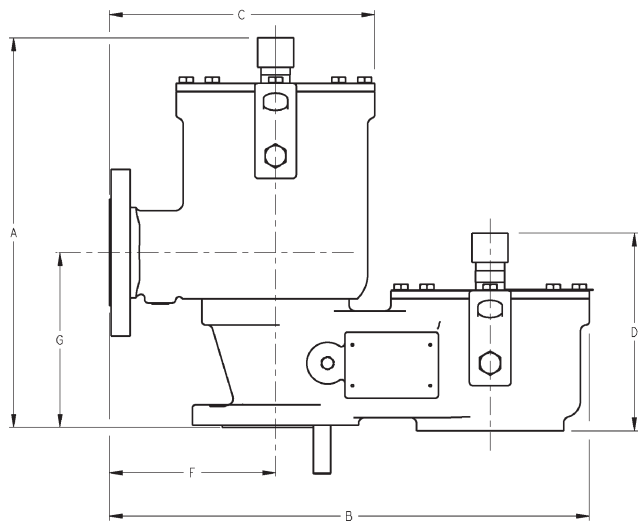
**STEAM JACKETING** - Cast aluminum jacket with integrated carbon steel steam chambers are bolted around the vent body. Vent valve and jacket are shipped unassembled as vent valve must first be installed. Commonly used to prevent stored media vapors from crystallizing at ambient temperatures.

**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 In	A	B	C	D	E	F	G	Weight lbs *	
								Alum	CS / SST
2" x 2"	14.40"	17.33"	9.76"	7.12"	14.79	6.00"	6.29"	38	83
2" x 3"	14.00"	17.33"	9.76"	7.12"	14.78	6.19"	6.85"	40	86
3" x 3"	17.19"	18.80"	10.50"	8.16"	15.77	6.50"	8.03"	50	106
3" x 4"	17.19"	18.81"	10.50"	8.16"	15.80	6.50"	8.53"	49	110
4" x 4"	19.80"	24.38"	13.36"	9.59"	18.23	8.00"	9.52"	75	168
4" x 6"	19.80"	24.38"	13.36"	9.59"	18.23	8.00"	10.52"	77	172
6" x 6"	21.94"	28.00"	15.18"	10.70"	22.67	9.00"	10.98"	103	243
6" x 8"	21.94"	28.00"	15.18"	10.70"	22.67	9.00"	12.17"	107	254
8" x 10"	27.30"	33.57"	18.23"	14.07"	23.78	11.00"	15.50"	157	366
10" x 12"	29.16"	40.38"	21.05"	14.60"	25.39	12.25"	16.41"	222	520
12" x 14"	32.92"	43.57"	23.57"	17.11"	26.59	14.00"	18.37"	267	625

METRIC Units - mm Aluminum Carbon Steel & Stainless Steel Body									
SIZE (DN)	A	B	C	D	E	F	G	Weight kg *	
								Alum	CS / SST
(50) x (50)	356	440	248	181	378	152	160	17	38
(50) x (80)	356	440	248	181	376	157	174	18	39
(80) x (80)	437	478	267	207	401	165	204	22	48
(80) x (100)	437	478	267	207	401	165	217	22	50
(100) x (100)	503	619	339	244	463	203	242	34	76
(100) x (150)	503	619	339	244	463	203	267	35	78
(150) x (150)	557	711	386	272	576	229	279	47	110
(150) x (200)	557	711	386	272	576	229	309	49	115
(200) x (250)	692	853	463	357	604	279	394	72	166
(250) x (300)	741	1026	535	371	645	311	417	101	237
(300) x (350)	836	1107	599	435	675	356	467	121	284

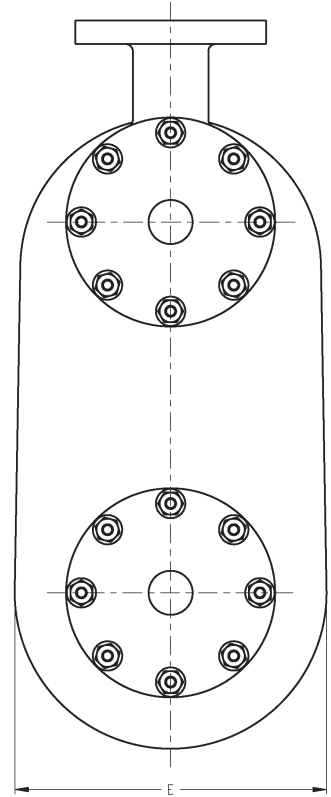
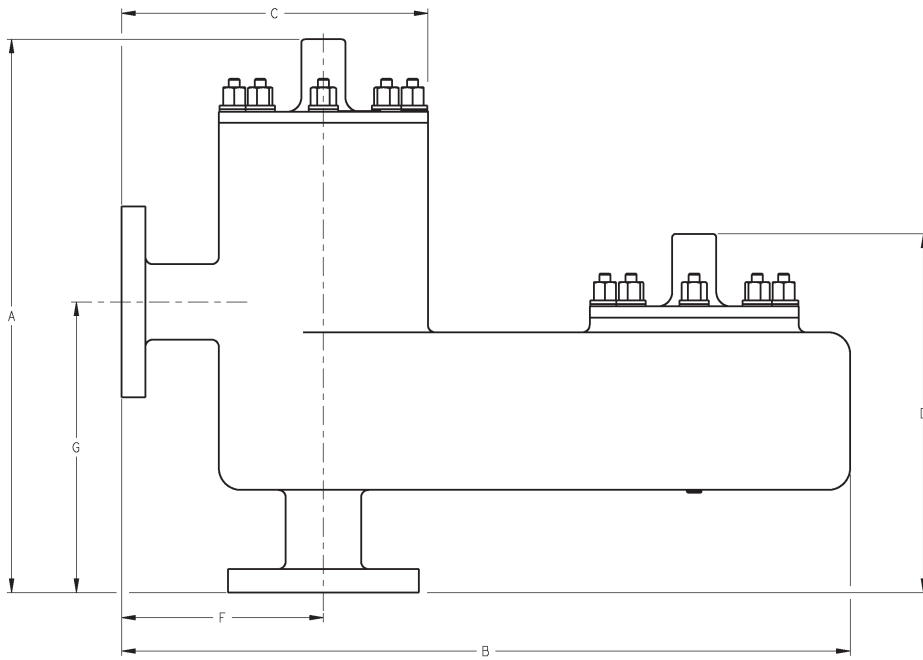
\* Estimated weight at minimum set points.

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## DIMENSIONS

### Corrosion Resistant Fiberglass (FRP) Body



DIMENSIONAL DATA IN/[MM]								WEIGHT LBS/KG
SIZE	"A"	"B"	"C"	"D"	"E"	"F"	"G"	
2" X 2" DN50XDN50	18.91 [480]	24.81 [630]	10.43 [256]	8.72 [221]	10.62 [270]	6.87 [175]	9.91 [252]	21 LBS 10 KG
2" X 3" DN50XDN80	18.91 [480]	24.81 [630]	10.43 [256]	8.72 [221]	10.62 [270]	6.87 [175]	10.41 [264]	21 LBS 10 KG
3" X 3" DN80XDN80	18.91 [480]	24.81 [630]	11.43 [290]	8.72 [221]	10.62 [270]	7.37 [187]	10.41 [264]	24 LBS 11 KG
3" X 4" DN80XDN100	18.91 [480]	24.81 [630]	11.43 [290]	8.72 [221]	10.62 [270]	7.37 [187]	10.89 [277]	24 LBS 11 KG
4" X 4" DN100XDN100	22.77 [578]	31.62 [803]	13.12 [290]	10.86 [276]	14.24 [362]	7.87 [200]	12.27 [312]	38 LBS 17 KG
4" X 6" DN100XDN150	22.77 [578]	31.62 [803]	13.12 [290]	10.86 [276]	14.24 [362]	7.87 [200]	13.29 [338]	38 LBS 17 KG
6" X 6" DN150XDN150	24.91 [633]	31.13 [791]	15.38 [391]	11.52 [293]	14.24 [362]	9.25 [235]	13.29 [338]	43 LBS 19 KG
6" X 8" DN150XDN200	24.91 [633]	31.13 [791]	15.38 [391]	11.52 [293]	14.24 [362]	9.25 [235]	14.25 [362]	43 LBS 19 KG
8" X 10" DN200XDN250	29.81 [757]	43.25 [1099]	18.13 [461]	13.75 [249]	19.00 [483]	10.88 [276]	17.51 [445]	63 LBS 28 KG
10" X 12" DN250XDN300	31.89 [810]	43.25 [1099]	20.19 [513]	14.64 [372]	19.00 [483]	12.00 [305]	18.50 [470]	77 LBS 34 KG
12" X 14" DN300XDN350	33.94 [862]	46.00 [1168]	22.25 [565]	15.43 [392]	20.00 [508]	13.00 [330]	19.52 [496]	93 LBS 42 KG

Estimated weights based on minimum set points.

# 3200 Series PRODUCT CODE

04/05/16

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

3	2	POS 3	POS 4	POS 5	B	POS 7	0	POS 9	POS 10	POS 11	POS 12	0	0	0	0	0	0
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POSITION 3 - FLANGE - INLET SIZE			
ASME 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

\* 8" inlet only available w/ 10" outlet.

\* 10" inlet only available w/ 12" outlet.

\* 12" inlet only available w/ 14" outlet.

POSITION 4 - FLANGE - OUTLET SIZE			
ASME 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
14" *	C	350 * (PN10)	R
		350 * (PN16)	Y

POSITION 5 - BODY / TRIM MATERIALS			
MATERIAL	Std. W/O Flamescreen	W/ Flame Screen	W/ Bug Screen
	CODE	CODE	CODE
ALUM/ALUM	A	B	M
ALUM/SST	K	L	N
CS/SST *	C	D	P
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.

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