Valve Concepts, Inc.
ISO Registered Company

TECHNICAL BULLETIN

3700 - TB
02-20

Model 3700

Bottom Guided
Emergency Relief Manhole Cover

OBJECTIVE

The Model 3700 manhole and emergency pressure vents provide emergency pressure relief beyond that furnished by the normal pressure vent for atmospheric and low pressure tanks, as well as providing a convenient access for tank cleaning, inspection and repair. Emergency relief valves provide relief from excessive internal pressure which may be caused by an abnormal condition, such as ruptured internal heating coils or an external fire. The Model 3700 does not provide vacuum relief and therefore vacuum relief must be supplied by the normal operating vent. For vacuum relief see Valve Concepts Models 3100, 3200, 3300 and 3600 series vents.

TECHNIQUE

The manhole/emergency vent pallet provides an effective vapor-tight seal when the tank is not under emergency conditions. If the tank outbreathing requirements exceeds the capability of the normal pressure relief vent, under emergency conditions, the pallet will raise to allow vapor to escape, preventing damage to the tank due to excess pressure. The manhole/emergency vent pallet is bottom guided so that when the excess pressure is relieved the pallet will reseat to again provide a vapor-tight seal.

FEATURES:

Easy Inspection and Maintenance: The Model 3700 vent is a rugged design and made to last. It is light weight for easy handling, inspection and maintenance. The easy removal of the pallet assembly allows unobstructed access into the tank for inspection and repairs.

Set Point Pressure: Ranges between 0.79 and 21.81 oz/in^2, depending on pallet material and line size. See TABLE 1.

Air Cushion Pallet Design: Standard diaphragm material is FEP TFE. The FEP TFE diaphragm, the thickness of which is based on the vent size and the customer specified set point, forms around the seat to provide a tight seal due to the air cushion pallet design. Also available in FKM, EPDM and Buna-N.

Low-Leak Design: All units are tested to Valve Concepts, Inc. high standard for low leakage and set point accuracy prior to shipment. A certified test certificate is included with each vent verifying the set point accuracy and a leakage rate of less than 1 SCFH at 90% of set point.

Available in (4) Sizes. 16", 18", 20" and 24" with Flat Face Flanges to mate with standard ASME, API or DIN bolting specifications.

MATERIALS OF CONSTRUCTION	
Body Flange - Seat	**Pallet**
Aluminum	Aluminum
CS	Aluminum
CS	304 SST
304 SST	304 SST
316 SST	316 SST
Derakane® 470	Derakane® 470
Hetron® 800	Hetron® 800

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 Paste.

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)

Painting: Standard: All non-corrosion resistant parts to be painted with corrosion resistant epoxy paint per Cashco Spec #S-1777.

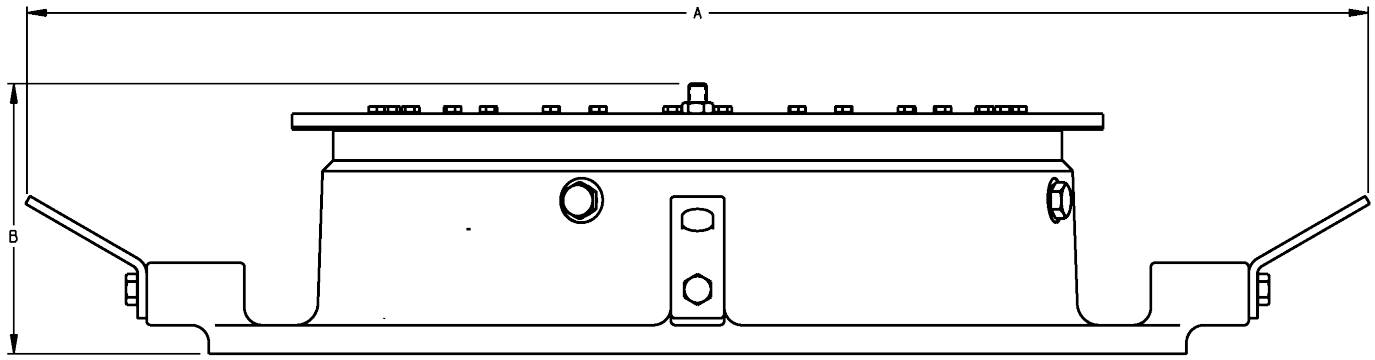
Set Point Pressure Range:

TABLE 1

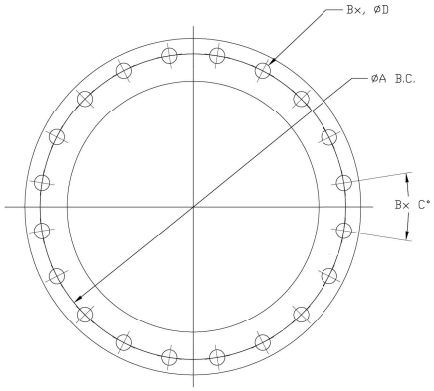
Standard Pressure Settings (oz/in ^{2})

Line Size	Pallet Material			
	Alum		SST	
	Min	Max	Min	Max
16"	1.2	20.23	2.69	21.81
18"	1.09	16.32	2.55	17.78
20"	1.02	16.02	2.42	17.42
24"	0.8	16.29	2.29	17.79

DIMENSIONS



DIMENSIONS - in			Weights lbs *	
ALL MATERIALS				
Size	A	B	CS/SST	ALUM
16"	31.78	7.59	177	65
18"	33.28	7.59	194	71
20"	37.78	7.59	197	72
24"	42.78	7.59	244	89
DN	mm		kgs	
(400)	807	193	80	29
(450)	845	193	88	32
(500)	960	193	89	33
(600)	1087	193	111	40
* At Minimum Set Point				



DIMENSIONS - in					
150# (PN16) FF Flange & Bolting Specification					
SIZE	ØA B.C.	B (Qty)	Cº	ØD	Flange OD
ASME) 16"	21.25	16	22.5°	1.13	23.50
ASME) 18"	22.75	16	22.5°	1.25	25.00
(ASME) 20"	25.0	20	18°	1.25	27.50
(ASME) 24"	29.5	20	18°	1.375	32.00
(API) 20"	23.5	16	22.5°	0.75	26.00
(API) 24"	27.5	20	18°	0.75	30.00
(DIN) DN400	20.67	16	22.5°	1.18	22.83
(DIN) DN450	23.03	20	22.5°	1.18	25.20
(DIN) DN500	25.6	20	18°	1.30	28.15
(DIN) DN600	30.3	20	18°	1.42	33.07

DIMENSIONS - mm					
DN	ØA B.C.	B (Qty)	Cº	ØD	Flange OD
(ASME) 400	540	16	22.5°	28.7	597
(ASME) 450	552	16	22.5°	31.8	635
(ASME) 500	635	20	18°	31.7	698
(ASME) 600	749	20	18°	34.9	813
(API) 500	597	16	22.5°	19.0	660
(API) 600	698	20	18°	19.0	762
(DIN) DN400	525	16	22.5°	30	580
(DIN) DN450	585	20	22.5°	30	640
(DIN) DN500	650	20	18°	33	715
(DIN) DN600	770	20	18°	36	840

3700 Series (Bottom Guided) **PRODUCT CODE** 02/07/20

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

3	7	POS 3	POS 4	POS 5	C	POS 7	0	0	POS 10	0	0	0	0	0	0	0	0

POSITION 3 - FLANGE - BOLTING PATTERN	
To Specification	**CODE**
ASME 150# FF	0
API 650 - 150# FF *	P
DIN PN16 FF	D
* Not Available Sizes 16" or 18"	

POSITION 4 - SIZE		
Inch	**(DN)**	**CODE**
16"	(400)	F
18"	(450)	C
20"	(500)	D
24"	(600)	E

POSITION 5 - BODY FLANGE - SEAT / PALLET MATERIALS	
MATERIAL	**CODE**
ALUM / ALUM	**A**
CS / ALUM	**V**
CS / 304 SST	**W**
304 SST / 304 SST	**C**
316 SST / 316SST	**S**
Derakane 470 (SST Studs)	**F**
Derakane 470 (Hast C Studs)	**H**
Hetron 800 (SST Studs)	**G**
Hetron 800 (Hast C Studs)	**J**

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

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

*** For information on ATEX see pages 12 & 13 on the IOM.**

SEE TABLE 1 (pg 2) for Min and Max Set Point Pressures.

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