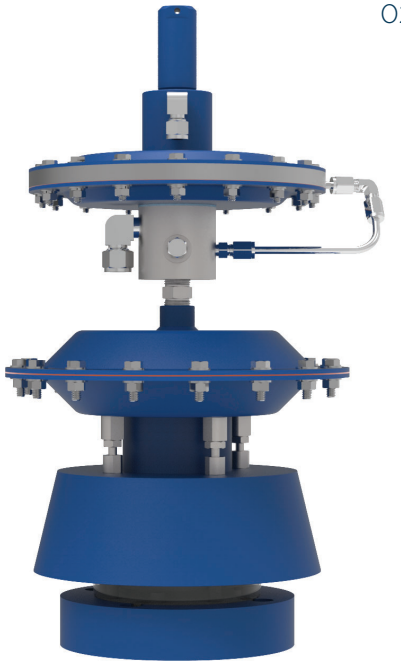
Valve Concepts
ISO Registered Company

TECHNICAL BULLETIN

5400-TB
02-20

MODEL 5400

PILOT OPERATED
PRESSURE ONLY
VENT TO ATMOSPHERE



MODEL 5400

OVERVIEW

The Model 5400 is designed for use on atmospheric and low-pressure tanks to reduce environmental emissions and product losses, when operating close to the set point.

SPECIAL FEATURES

Easy Inspection: The Model 5400 incorporates the same rugged design found in all of Valve Concepts venting devices - they're made to last. The main valve seat can easily be inspected without affecting the set point. The pilot assembly uses standard o-rings. No special seal diaphragm or proprietary molded elastomers. Maintenance is easy and less expensive.

Maintains Accurate Settings: The standard minimum setting is 2 inches WC, (1.2" WC with Air Assist). Maximum pressure setting is 15 psig. A certified test certificate is included with each vent verifying the accuracy.

Air-Cushioned Seating: Vent pallet assembly incorporates a flat, smooth film of FEP Teflon to form a floating air seal. All units are tested to Valve Concepts high standards to insure low leakage rates.

TECHNIQUE

Under normal operating conditions, the pallet assembly is closed providing a tight seal. In the event the tank pressure increases due to product movement into the tank or thermal expansion of the product and vapors, the downward force on the pallet assembly increases providing a tighter seal. When the tank pressure reaches the set pressure of the pilot, the pilot assembly opens eliminating the additional downward force on the pallet assembly. The "full" tank pressure pushing upward on the pallet assembly will cause the main valve to open. Full flow will be achieved at no more than 10% overpressure. Once the overpressure is relieved the pallet assembly will reset providing a tight seal.

LINE SIZES AVAILABLE
2" (DN50), 3" (DN80), 4" (DN100), 6" (DN150), 8" (DN200), 10" (DN250), 12" (DN300), 16" (DN400), 18" (DN450), 20" (DN500), 24" (DN600)

END CONNECTIONS
FLANGED

COMMON APPLICATIONS
ATMOSPHERIC & LOW-PRESSURE TANKS

DESIGN PRESSURE
MULTIPLE SET PRESSURE RANGES AVAILABLE

CONSTRUCTION

Flange and Weather Hood Material: Available in Aluminum, Carbon Steel or 316 Stainless Steel.

Numerous Sizes: Available in Sizes 2" through 24". CS & SST vents have Raised Face Flange, Aluminum vents have Flat Face Flange to mate with ASME150# flange connections.

Trim Material: 316SST - Standard on all vents.

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

Diaphragm Material: FKM - Standard; also available EPDM or FEP-TFE.

Pilot Body Material: 316SST.

Pilot Seat & Seals (o-rings): FKM - Standard; also available EPDM, FFKM 1 or FFKM 2.

Pilot (Sensing) Diaphragm: FEP-TFE.

TABLE 1

MATERIALS OF CONSTRUCTION				
Series	**Housing**	**Trim**	**Diaphragm Cases**	**Tube & Fittings**
5400CS	CS	316 SST	CS	CS
5400SST	316 SST	316 SST	SST	SST
5400A	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.	

Diaphragm Temperature Limits:

FEP-TFE:
-400° to 400° F (-240° to 204°C)
FKM (Fluorocarbon Elastomer):
-20° to 400° F (-28° to 204°C)
EPDM (Ethylenepropylene):
-40° to 225° F (-40° to 107°C)

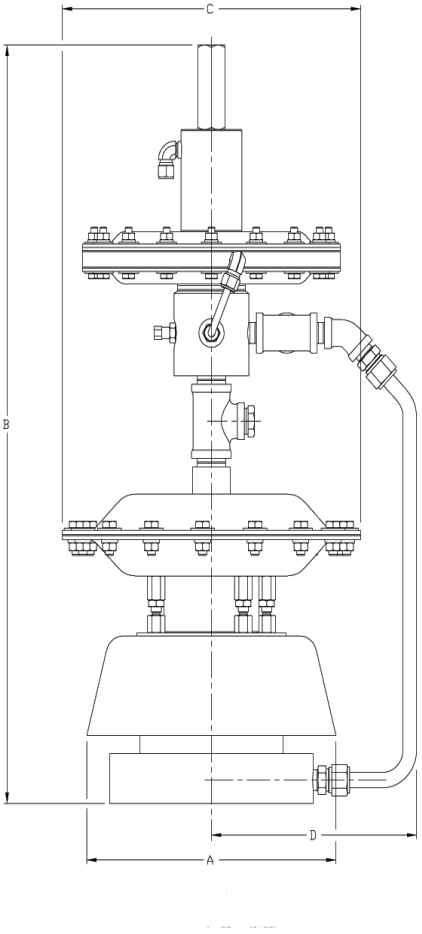
Seat & Seal Materials Temperature Limits:

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

DIMENSIONS



ENGLISH UNITS - in Aluminum, Carbon Steel & Stainless Steel					Weight - lbs.	
SIZE	A (diam)	B	C (diam)	D	Alum	CS / SST
2"	9.18	24.75	11.00	7.75	45	53
3"	9.18	24.75	11.00	7.75	49	60
4"	9.63	24.75	11.00	7.75	51	66
6"	13.00	30.50	16.50	9.25	72	92
8"	16.00	30.50	16.50	10.00	80	107
10"	19.00	33.00	23.81	12.75	153	188
12"	24.00	34.25	23.81	13.25	168	222
16" - 24"	Contact Factory				Contact Factory	

METRIC UNITS - mm Aluminum, Carbon Steel & Stainless Steel					Weight - kg.	
SIZE (DN)	A	B	C (diam)	D	Alum	CS / SST
(50)	233	629	279	197	20	24
(80)	233	629	279	197	22	27
(100)	245	629	279	197	23	30
(150)	330	775	419	235	33	42
(200)	406	775	419	254	36	49
(250)	483	838	605	324	69	86
(300)	610	870	605	336	76	101
(400) - (600)	Contact Factory				Contact Factory	

5400 Series PRODUCT CODE

02/07/20

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

5	4	0	POS 4	POS 5	C	0	POS 8	POS 9	0	POS 11	0	0	0	0	0	0	0

POSITION 4 - 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
16"	F	400 (PN16)	1
18"	C	450 (PN16)	5
20"	D	500 (PN16)	7
24"	E	600 (PN16)	9
API Flange Specification			
20"	S	-----	----
24"	Z	-----	----

POSITION 5 - BODY / TRIM / WEATHERHOOD MATERIALS	
Material	CODE
ALUM/ALUM /ALUM *	A
ALUM/SST/SST *	K
CS/SST/CS	C
SST/SST/SST	S
* 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 / MAIN VALVE SEALS / DIAPHRAGM	
Materials	CODE
FFKM 1 / FEP / FEP	C
EPDM / EPDM / EPDM	E
FFKM 2 / FEP / FEP	K
FKM / FKM / FKM	V

POSITION 11 - SENSING / PAINT OPTIONS			
Sensing Configuration & Accessory Options Pilot Exhaust to Atmosphere		Std Paint	Offshore Paint Opt.-95OS
		CODE	CODE
Standard:	Internal Sensing	0	W
Option 2:	Remote Sensing	2	T
Option 3:	Internal Sensing with Manual Blowdown Valve	3	S
Option 4	Internal Sensing with Backflow Preventer	4	N
Option 5:	Internal Sensing with Backflow Preventer & Field Test Connection	5	R
Option 6:	Internal Sensing with Rotometer to Purge Pilot Sense Line	6	P

*** For information on ATEX see pages 17 & 18 on the IOM.**

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