



# Model 4300

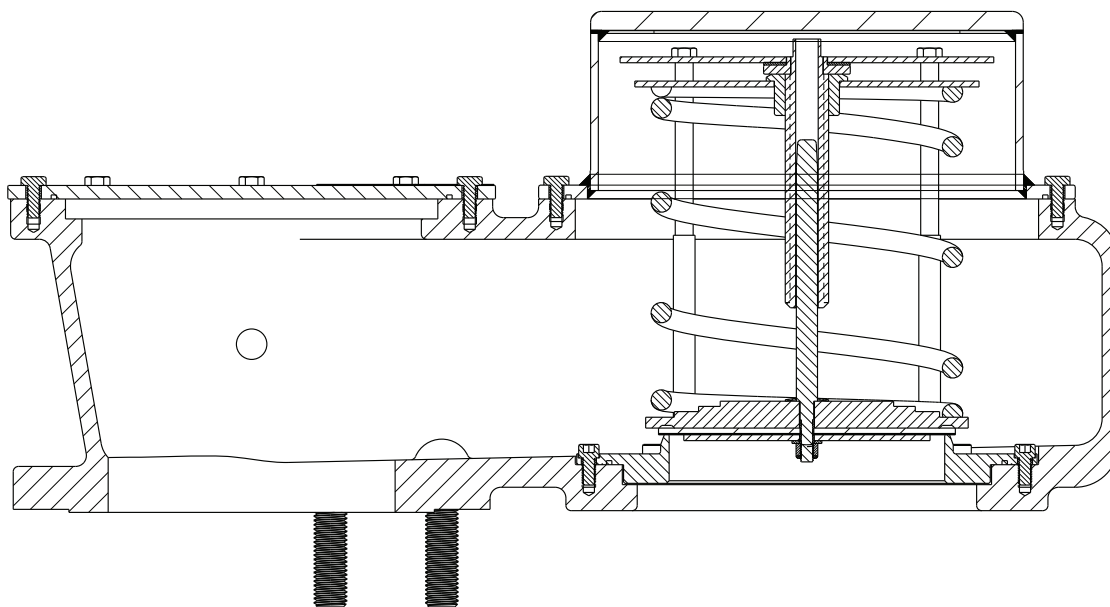
## Spring Loaded Vacuum Vent End-of-Line

### SECTION I

Model 4300 vent is used for the normal venting requirements. Normal venting is defined as venting required because of operational requirements (i.e. filling and emptying the tank) or atmospheric changes.

All of these devices are sized in accordance with API Standard 2000. Improperly specified relief vents may result in structural damage to the tank or system and can cause severe personal injury or death.

**Figure 1** illustrates the operation of the Vacuum Relief Vent under vacuum conditions. As the tank pressure decreases as a result of product being pumped out of the tank and/or because of thermal contraction of the product and vapors, the vacuum pallet remains closed until the set vacuum of the vent is reached. When the tank vacuum reaches the vacuum setting of the vent, the vacuum pallet lifts allowing air to be drawn into the tank.



**Figure 1- Vacuum Relief**

## SECTION II

### II. SAFETY WARNINGS

Tank or system protection is the primary function of the spring loaded Vacuum Relief Vent. It must be selected to meet the total vacuum flow requirements within the Maximum Allowable Working Vacuum of the system on which it is installed. Consult API 2000 Standard for tank protection sizing procedures. Improperly specified relief vents may result in structural damage to the tank or system and can cause severe personal injury or death.



#### CAUTION

**DO NOT attempt to remove the vent from the tank or process vessel without first bleeding all pressure from the system. ALTERNATIVE MEANS OF VACUUM RELIEF MUST BE PROVIDED WHEN THE VENT IS OUT OF SERVICE.**



#### CAUTION

**DO NOT change vacuum setpoint without consulting Cashco Inc. or your VCI representative.**

## SECTION III

### III. INSPECTION AND STORAGE

The vacuum relief vent is carefully packaged to prevent damage or contamination during shipping. Inspect the equipment when it is received and report any damage to the carrier immediately. The vent should be stored with all the protective flange covers in place.

## SECTION IV

### IV. INSTALLATION

Aluminum body 4300 vents are designed to mate with flat face flanges. Consult factory if the aluminum body must mate with raised face flanges. Carbon steel and stainless steel bodies are to mate with raised face flanges. 4300 vents are **NOT** rated for full flange pressure. Follow flange bolting torque specifications on Table 1.

Before installing the model 4300; remove vacuum packing materials from inside and outside the vent. Inspect the gasket seating surface of the tank nozzle flange. It must be flat, clean, free of scratches, corrosion, and tool marks. Make sure the gasket is suitable for the application.



#### WARNING

**The vent must be installed in a vertical position as shown in Figure 1. The tank nozzle on which the vent is mounted should have the same nominal diameter as the venting device. It is recommended that the tank nozzle flange face be within 1 degree of horizontal for best performance of the venting device.**

**WARNING**

**Minimum clearance between tank roof and vacuum inlet port must be at least equal to the vents' nominal flange bore.**

Center the gasket within the bolt circle of the tank flange, align the bolt holes and carefully set the vent on the flange nozzle.

**NOTE:** At installation, the vent valve should be carefully lifted into position using the lifting brackets on the body.

**CAUTION**

**The lifting brackets should only be used for lifting the vent valve into place and should NOT be used for any other purpose.**

All stud threads must be lubricated to obtain proper torque results.

Install the studs, washers and nuts and tighten nuts hand tight. Check proper alignment of flange faces. Misalignment of flange faces will cause bending stresses at the flange and flange joint and damage may result. Correct any misalignment prior to applying torque to nuts.

All nuts must be tightened in proper sequence and equal increments. Proceed through the tightening sequence until the recommended torque is attained.

Recheck the torque on each bolt in the same

**TABLE 1**  
**All Torque Requirements Are Dependant On Gasket Material**  
**Bolt Torque and Stud Specifications - ASME #150 Flange Connections**

MOUNTING FLANGE	BOLT TORQUE - Ft. lbs.	NUMBER BOLTS TOTAL	STUD SPECIFICATIONS		
			THREAD UNC	STUD LENGTH	QUANTITY
2"	47	4	5/8" - 11	2.50"	2
3"		4	5/8" - 11	2.75"	2
4"		8	5/8" - 11	2.75"	4
6"	83	8	3/4" - 10	3.00"	4

## SECTION V

### V. MAINTENANCE

Tank or system protection is the primary function of the weight loaded Vacuum Relief Vent. As a safety device, it is very important that maintenance/inspection be done on a regular interval. Maintenance should only be done by a qualified technician. Valve Concepts recommends that all service be performed at the factory or a factory authorized repair center. For information on repair centers in your area, please contact the factory.

**Maintenance procedures hereinafter are based upon removal of the relief vent unit from the tank where installed.**

**General Disassembly:** Remove hex cap screws (10), cover assembly (100), and pressure cover (12).

Count revolutions of adjusting screw, back off adjusting screw assembly (123), to minimize spring force. Remove hex cap screw (113) carefully as spring may have small compression applied. Remove top plate (108), soft seal (107), adjusting screw assembly (123), spring button (120), spring (102), and pallet assembly.

Remove socket head cap screw (15), pallet guides (109), seat ring (114), and gaskets (34 and 35).

**Pallet Disassembly:** Secure stem assembly (118) in a smooth-jawed vise with the short, threaded end up. Remove hex lock nut (14) flat washer (16), and retainer (115). Clean stem assembly and retainer with a suitable solvent. \* Seat disc 10 MIL (126.1) \*seat disc 20 MIL (126.2), and \*backup diaphragm (126.3).

*\* 126.1 - 126.3 apply to FEP seat discs only. BUNA-N, EPDM, and FKM seat discs will be item 126.*

**Pallet Assembly:** Inspect seat discs (126.1 - 126.3), verify they are clean and have no imperfections; secure stem in smooth-jawed vise. **NOTE:** (Apply TFE paste to threads on stem and pallet hole.) Install beleville washer (65), pallet (117), backup diaphragm (126.3), seat disc 20 mil (126.2), seat disc 10 mil (126.1), retainer (115), flat washer (16), and hex lock nut (14) in respective order. Torque hex lock nut to 7 ft. lbs.

**General Assembly:** Remove backing from adhesive gaskets (34 & 35) and apply to cleaned surfaces on the body. Apply loctite 242 (blue) to all fastener threads. Install seat ring (114), socket head cap screws (15), and pallet guides (109). Torque socket head cap screws and pallet guides to 117 in-lbs.

Install pallet assembly, spring (102), spring button (120), adjusting screw assembly (123), soft seal (107), top plate (108), and hex cap screws (113). Torque hex cap screws to 125 in-lbs.

Turn adjusting screw clockwise to the number of recorded revolutions to apply the proper spring force.

Install cover assembly (100), pressure cover (12), and hex cap screws (10). Torque hex cap screws to 117 in-lbs.

## SECTION VI

### VI. ORDERING INFORMATION

#### NEW REPLACEMENT UNIT vs PARTS "KIT" FOR FIELD REPAIR

To obtain a quotation or place an order, please retrieve the Serial Number and Product Code that was stamped on the metal name plate and attached to the unit. This information can also be found on the Bill of Material ("BOM"), a parts list that was provided when unit was originally shipped. (Serial Number typically 6 digits).

##### **NEW REPLACEMENT UNIT:**

Contact your local Cashco, Inc., Sales Representative with the Serial Number, Product code and the vacuum setting. With this information they can provide a quotation for a new unit including a complete description, price and availability.

##### **PARTS "KIT" for FIELD REPAIR:**

Contact your local Cashco, Inc., Sales Representative with the Serial Number and Product code. Identify the parts and the quantity required to repair the unit from the "BOM" sheet that was provided when unit was originally shipped.



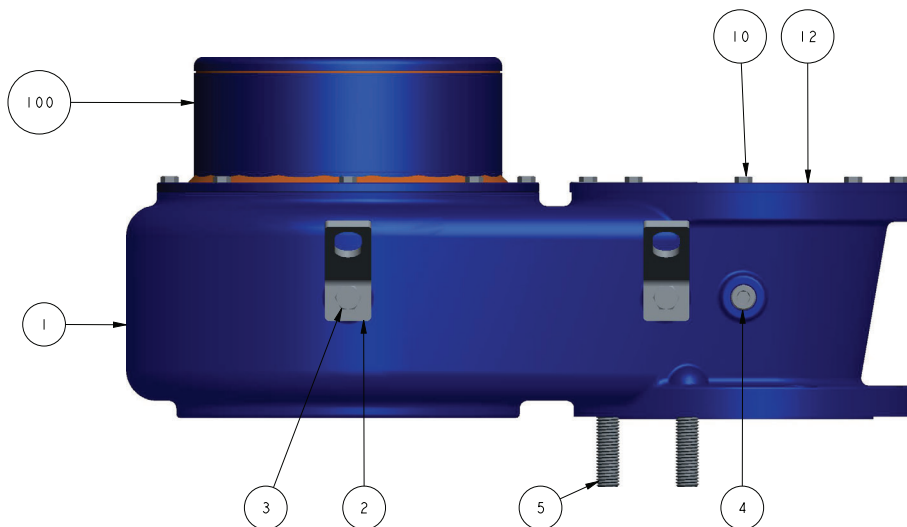
#### **CAUTION**

**Do not attempt to alter the original construction of any unit without assistance and approval from the factory. All proposed changes will require a new name plate with appropriate ratings and new product code to accommodate the recommended part(s) changes.**

**NOTE:** If the "BOM" is not available, refer to the cross-sectional drawings included in this manual for part identification and selection.

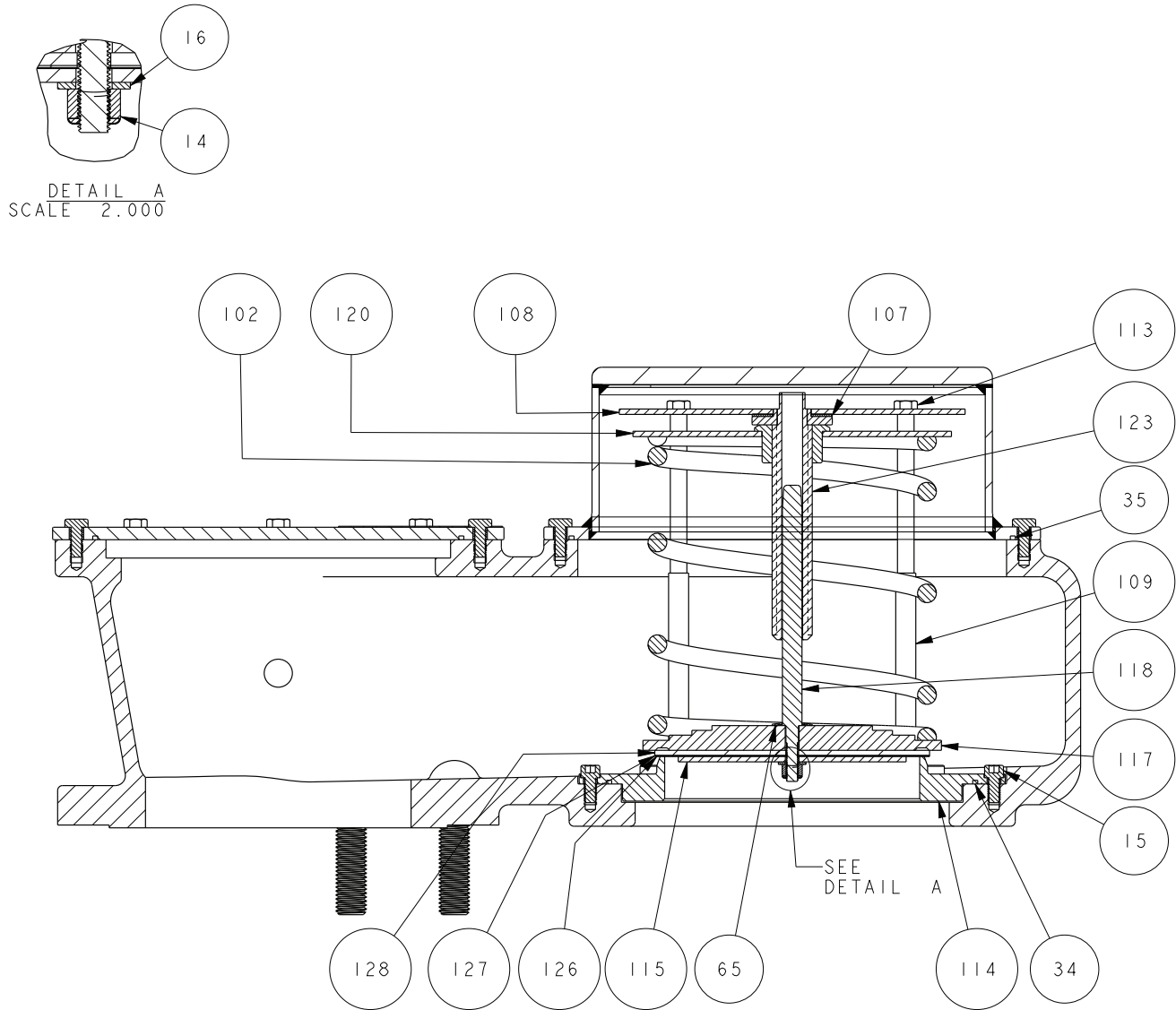
A Local Sales Representative will provide quotation for appropriate Kit Number, Price and Availability.

**Figure 2 - 4300 External View**



<b><u>ITEM NO.</u></b>	<b><u>DESCRIPTION</u></b>
1	Lower Body
2	Lift Lug
3	Hex Cap Screw 1/2"
4	Plug
5	Studs
10	Hex Cap Screw 5/16"
12	Pressure Cover
100	Cover Assembly

**Figure 3 - 4300 Internal View**



ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
1	Lower Body	108	Top Plate
2	Lift Lug	109	Pallet Guide
3	Hex Cap Screw 1/2"	110	Locking Plate
4	Plug	111	Machine Screw-Pan Head
5	Studs	112	Washer
9	Name Plate (Not Shown)	113	Hex Cap Screw
10	Hex Cap Screw 5/16"	114	Seat Ring
12	Pressure Cover	115	Retainer
14	Hex Lock Nut	117	Pallet
15	Socket Head Cap Screw	118	Pallet Stem
16	Flat Washer	120	Spring Button
34	Gasket	123	Adjusting Screw Assembly
35	Gasket	126.1	Seat Disc; 10 MIL
65	Belleville Washer	126.2	Seat Disc; 20 MIL
100	Cover Assembly	126.3	Backup Diaphragm
102	Spring	997	Tag
107	Soft Seal		