

INSTALLATION AND MAINTENANCE INSTRUCTIONS

Before installation these instructions must be fully read and understood



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The intent of these instructions is to acquaint the user with the storage, installation and operation of this product. Please read these instructions carefully before installation.

SAFETY PRECAUTIONS

When the valve is under pressure, never place any part of your body near the pilot exhaust nor the outlet of the main valve.

The main valve outlet should be piped or vented to a safe location.

Always wear proper safety gear to protect head, eyes, ears, etc. anytime you are near pressurized valves.

Never attempt to remove the valve from a system that is pressurized.

Never make adjustments to or perform maintenance on the valve while in service unless the valve is isolated from the system pressure. If not properly isolated from the system pressure, the valve may inadvertently open resulting in serious injury. Remove the valve prior to performing any pressure testing of the system.

The safety of lives and property often depends on the proper operation of the valve. The valve must be maintained according to appropriate instructions and must be periodically tested and reconditioned to ensure correct function.

WARNING

Removal of the seal wires in an attempt to adjust and/or repair this product by unauthorized or unqualified persons voids the product warranty and may cause damage to equipment and serious injury or death to persons.

The product is a safety related component intended for use in critical applications. The improper application, installation or maintenance of the product or the use of parts or components not manufactured by Anderson Greenwood may result in a failure of the product.

Any installation, maintenance, adjustment, test, etc. performed on the product must be done in accordance with the requirements of all applicable Anderson Greenwood procedures and instructions as well as applicable National and International Codes and Standards.

STORAGE AND HANDLING

Valve performance may be adversely affected if the valve is stored for an extended period without proper protection. Rough handling and dirt may damage, deform, or cause misalignment of valve parts and may alter the pressure setting and adversely affect valve performance and seat tightness. It is recommended that the valve be stored in the original shipping container in a warehouse or as a minimum on a dry surface with a protective covering until installation. Inlet and outlet protectors should remain in place until the valve is ready to be installed in the system.

1 GENERAL VALVE DESCRIPTION AND INSTRUCTIONS

The Anderson Greenwood tank blanketing valve is a pilot operated piston type valve and uses only system pressure for operation and control. It consists of a main valve with an integral pilot. The BV-1 tank blanketing valve is designed to reduce inlet pressures of 15 psi to 200 psi to regulated tank pressures from 0.5" WC to 6.0 psig.

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2 BV-1 PILOT

Reference Figures 1 and 2

2.1 Disassembly

- 2.1.1 Depressurize the unit and back off the adjusting screw (490) on the spring bonnet (450) to relieve spring compression. Remove the case bolts (270 and 300) to access the sense diaphragm (360).
- 2.1.2 Loosen the plug (120) from the bottom of the body (10) and slowly remove it.

 There is a spring (140) pushing against it.

 The remainder of the pilot internal parts should be free to fall out once the spring is removed. To disassemble the sleeve (150) from the nozzle (130), remove the spindle (180) and crossbar (210). To remove the O-ring seat (220), push the nozzle retainer (230) toward the small end of the nozzle (130) to expose the O-ring for removal.
- 2.1.3 If there is tubing on the side of the valve opposite the port identification, the BV-1 has the internal purge option. The purge orifice may be inspected by removing the tube fitting (510) at the pilot end of the valve body. The orifice is in the 1/8 NPT socket head pipe plug (590) behind the tube fitting. An additional orifice is located inside the sense port at the back. (Refer to Figure 4)

WARNING

These orifices must be in place or replaced by plugs for the BV-1 to operate properly. If they are omitted, the valve will flow full open.

2.2 Assembly

Assemble in the reverse order of disassembly. All static O-ring seals, screw threads, and spring washer pivot points should be lightly greased with Dow Corning No. 33 Silicone grease or its equivalent. Pipe threads should be wrapped with PTFE tape or sparingly coated with an appropriate thread sealing compound. Observe the following when assembling the BV-1 pilot.

- 2.2.1 The nozzle retainer (230), seat o-ring (220), nozzle (130), sleeve (150), cross bar (210), and spindle (180) must be preassembled before installation into the body. Refer to Figure 2.
- 2.2.2 Place the pilot nozzle seal 0-ring (240) into the base of the pilot cavity in the body (10). Put the pilot sleeve spring (140), pilot 0-ring retainer (160), sleeve seal 0-ring (170), nozzle retainer spring (200), and the nozzle/sleeve subassembly into the body plug (120). Insert this assembly carefully into the pilot cavity, taking care to put the spindle (180) through the hole in the body before tightening the plug into place.

- 2.2.3 Insert the diaphragm case seal O-ring (260) into the groove in the body flange before replacing the lower diaphragm case (350). Check that the O-rings (380) are in place on the seal bolts (390) before fastening the diaphragm case to the body flange.
- 2.2.4 Preassemble the diaphragm (360) between the diaphragm plates (370) with the bolt (430), lock washer (320), spring washer (410), actuator seal (610), and actuator (250), and place it into the lower case.
- 2.2.5 Install the PTFE strip gasket (340) in position on the lower diaphragm case (350), placing adhesive side against the lower diaphragm case. Begin at the large bolt hole in the case and work around the case keeping the gasket inside the bolt holes, approximately 1/8", and end by crossing the gasket over its own start point with approximately 1/2" overlap.

3 BV-1 MAIN VALVE

3.1 Disassembly

The inlet piping must be removed to disassemble the main valve in the field, otherwise remove the valve and disassemble it in the shop.

- 3.1.1 Place the body in a vise and loosen the nozzle bushing (40). If the nozzle bushing has an inlet flange (110) installed, it does not need to be removed to maintain the main valve. Unscrew the bushing slowly as the piston spring (60) is pushing the piston (20) against it. Inspect the inside corner of the nozzle face. It is a sealing face and nicks or scratches may cause leaks from the main valve seal.
- 3.1.2 Remove the piston seal 0-ring (100).

 Unscrew the seat retainer/flow cage (30) from the piston (20). The seat 0-ring (90) can then be removed.

WARNING

Clamp the piston only on the larger outside diameter adjacent to the seat retainer/flow cage. Avoid clamping or scratches anywhere along the piston's outside diameter surfaces either side of the O-ring groove. Scratches anywhere on these surfaces may create gall points on the sliding surface.

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3.1.3 The screen filter (50) is permanently swaged into the seat retainer/flow cage and cannot be removed without destroying it. This stainless steel mesh screen protects the pilot orifice in the piston. If the screen is so clogged that it affects the operation of the blanketing valve and cannot be adequately cleaned with solvent or by other means, it may be pried out and replaced. After the screen is removed from the seat retainer/flow cage, the swaged in dents around the recess must be removed to accept a new screen. This may be done by placing the seat retainer/flow cage on a cushioned surface and tapping a rod sideways to bend them out or cutting them out in a lathe. Take care not to enlarge the recess or the new screen may not be properly retained. After seating a new filter in place, hold it permanently against closing impacts by swaging at least 4 dimples around the edge with a center punch. To prevent reoccurrence of this problem, an after market in-line filter in the supply line just before the valve will keep the piston filter from becoming clogged.

3.2 Assembly

Assemble in reverse order of disassembly. Lightly lubricate O-rings, screw threads (except for the threads on the seat retainer/flow cage), and the coated body bore with Dow Corning No. 33 Silicone grease or its equivalent. Pipe threads should be wrapped with PTFE tape or coated sparingly with an appropriate thread sealing compound.

Observe the following when assembling the main valve.

- 3.2.1 Place the O-ring seat (90) into the end of the piston (20). Thread the seat retainer/ flow cage (30) into the piston, while observing the clamping WARNING from paragraph 3.1.2. Install the piston seal (100) into the O-ring groove.
- 3.2.2 Insert the seat retainer/flow cage (with the holes) of the piston/seal assembly into the nozzle bushing (40), place the piston spring (60) into rear skirt of the piston and guide the combination into the valve body compressing the spring. Screw the bushing tightly into the body to prevent its loosening.

NOTE

If a scratch is detected anywhere on the outside diameter surfaces along the piston on either side of the 0-ring (see WARNING in paragraph 3.1.2) orient the scratch so that it is up (opposite of the outlet). This position can be maintained during bushing installation by pushing the piston while screwing the bushing.

4 ADJUSTMENTS

There are no adjustments required on the BV-1 main valve. Only one adjustment is required on the BV-1 pilot.

4.1 Set pressure adjustment

The set pressure adjustment screw (490) is accessible when the protective cap (500) is removed. Clockwise rotation of the screw increases the set pressure. All pressure adjustments should be made slowly to prevent overshooting the desired pressure. The Tank Blanketing Valve can be closed by turning the adjustment screw counterclockwise until pressure set spring (440) is fully relaxed.

CAUTION

The recommended set pressure range of the spring is stamped on the pilot nameplate (550) adjustment below the lower limit will result in poor performance. Adjustment above the upper limit may compress the spring to solid height, forcing the pilot open, resulting in uncontrolled flow from the main valve.

5 BV-1 PERFORMANCE TEST PROCEDURE

Connect the valve to a test drum as shown in Figure 3 and test for the following:

5.1 Tight shutoff

Back the set pressure adjusting screw out until the spring is relaxed. Apply approximately 30 psig to the inlet port. There should be no leaking at the sense or outlet ports as determined by a zero reading on the sense pressure gage when the vent is closed.

NOTE

If the BV-1 has the optional purge installed, there will be leakage unless the purge orifices are temporarily replaced with pipe plugs to prevent all flow.

Repeat the test with 100 psig applied to the inlet port. There should be no leakage at the sense or outlet ports or any gasketed joint as determined using leak test solution.

5.2 Performance test

With 100 psig still on the inlet, raise the pressure in the sense drum to approximately the middle of the spring range.

- 5.2.1 Turn the adjusting screw in until audible flow is detected. Turn the screw in further until the main valve opens. Then back the screw out to close the valve.
- 5.2.2 With the pilot and main valve closed, recheck for seat leakage at the valve outlet and for external leakage. No observable seat leakage shall occur for a minimum of 10 seconds and there shall be no external leakage.

WARNING

If the purge orifices have been replaced by plugs to check leakage, replace them before putting the valve in service. The valve will not be internally protected from corrosive tank vapors.

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6 SOFT GOODS REPAIR KIT AND CONVERSION KIT

The kits listed below are available from stock. To order, specify the part number for the appropriate kit.

BV-1 Soft goods5"WC to 6 psig		
Fluorosilicone/FKM (std.)	06.2991.001	
NBR	06.2991.002	
EPR/EPDM	06.2991.003	
All BV-1 Tank valves Field addition of purge option	06.2991.010	

7 SPRING RANGE

The kits listed below are available from stock. To order, specify the part number for the appropriate kit.

Part number	Pressure range	Material	Rate (#/in)
03.1841.002	0.5" - 1.4"WC	316 Stainless steel	5
03.1842.002	1.2" - 4.0"WC	316 Stainless steel	9
03.1843.002	3.5" - 10"WC	316 Stainless steel	19
03.1844.002	8" - 18"WC	316 Stainless steel	32
03.1845.002	15" - 29"WC	316 Stainless steel	63
03.1846.002	0.6 - 1.4 psig	316 Stainless steel	125
03.1847.002	1.3 - 3.1 psig	316 Stainless steel	275
03.1848.002	2.3 - 3.5 psig	316 Stainless steel	550
03.1849.002	3.0 - 6.0 psig	316 Stainless steel	1000

^{1.} Part no. also denotes material: .001 = CS, .002 = SS, .003 = Inconel® (when available)

8 MAIN VALVE PISTON ASSEMBLIES

Main valve pistons and seat retainer/flow cages are available in the sizes shown. The number and size of the holes in the seat retainer/flow cage skirt determines the percent of maximum flow each will permit.

Part description	Part number	Number of holes
10% cage	06.3769.010	1
30% cage	06.3769.030	2
50% cage	06.3769.050	3
70% cage	06.3769.070	4
100% cage	06.3769.100	6
110% cage	06.3769.110	6
Piston	06.3679.003	N/A

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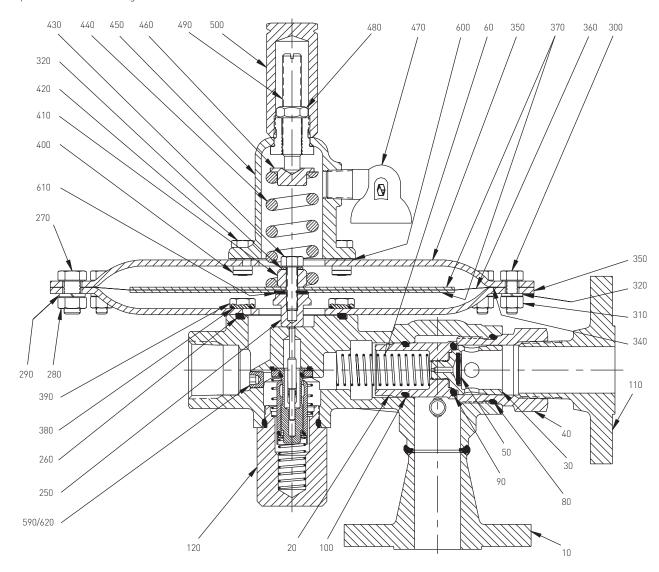
BV-1 TANK BLANKETING VALVE MATERIALS

Body Banger ¹⁰	Item no.	Description	CS	SST and NACE
Paten		•		
90 Retainer-sea/thow cage SST AA/79-316/316L SST AA/79-316/316L 40 Bishing-norable SST SA/79-316/316L SST SA/79-316/316L 50 Screen-filter SST-316 SST-316 60 Spring-piston SST-316 SST-316 90 Sout-man wolve (213) FMM* FMM* 100 Seal-piston (101) Fluoresistone** FMM* 110 Flang-einlet ST SA/19-316/316L SST AA/9-316/316L 110 Plug-body ST AL/10-1018 SST AA/9-316/316L 120 Nozate-pist SST AA/9-316/316L SST AA/9-316/316L 130 Nozate-pist SST AA/9-316/316L SST AA/9-316/316L 140 Spring-pilot alleve SST A2/9-316/316L SST AA/9-316/316L 150 Retainer-polit SST AA/9-316/316L SST AA/9-316/316L 170 Spring-pilot alleve SST AA/9-316/316L SST AA/9-316/316L 170 Spring-pilot alleve SST AA/9-316/316L SST AA/9-316/316L 170 Spring-pilot SST AA/9-316/316L SST AA/9-316/316L				
59 Screen-filter \$51.316 \$57.316 <				
60 Spring-piston SST-216 SST-216 SST-216 SST-216 PKM²¹ PKM²² PKM²² <td></td> <td>· ·</td> <td></td> <td></td>		· ·		
80 Seal-main valve [213] FKM ^(P) FKM ^(P) FKM ^(P) 100 Seal-main valve [213] FKM ^(P) FKM ^(P) FKM ^(P) 110 Flange-infet STL SA-105 SST SAPS-316716. 110 Plug-body STL A0P-316/314. SST AAPS-316/316. 130 Nazzle-plot SST A0P-316/314. SST AAPS-316/316. 130 Spring-plot slewe SST-302 SST-302 150 Slewe-plot SST A4PS-316/316. SST A4PS-316/316. 160 Retainer-D-ring pilot SST A2PS-316/316. SST A2PS-316/316. 161 Retainer-D-ring pilot SST A2PS-316/316. SST A2PS-316/316. 160 Retainer-D-ring pilot SST A2PS-316/316. SST A2PS-316/316. 160 Sprind-polity Plug-mailcome ^(P) Fluoresilicome ^(P) 160 Seal-pilot piloty SST A2PS-316/316. SST A2PS-316/316. 200 Spring-pozzle retainer SST-316 SST A2PS-316/316. 210 Base-cross SST A2PS-316/316. SST A4PS-316/316. 220 Spring				
90 Seat-main value [213] FKM ^{MI} FMM ^{III} 110 Seat-main value [213] Fluorositione ¹⁰¹ Fluorositione ¹⁰¹ 110 Flange-infet STI. A-105 SST SA182-F316 120 Pfug-hody STI. A108-1018 SST A479-314/314. 130 Nozde-pitet SST A479-314/314. SST A479-314/314. 140 Spring-pitet steeve SST A279-314/314. SST A479-314/314. 150 Sleeve-pitet SST A279-314/314. SST A279-314/314. 160 Retamer-O-ring pitet SST A278-314/314. SST A278-314/314. 170 Seab-pited steeve (014) Fluorositicone ²⁰¹ Fluorositicone ²⁰¹ 180 Sprindle-pited SST A278-314/314. SST A278-314/314. 190 Seat-pited viewer SST A278-304. SST A278-314/314. 201 Seat-pited (012) FKM ²¹ FKM ²¹ FKM ²¹ 210 Seat-pited (012) FKM ²² FKM ²² FKM ²³ FKM ²³ 220 Seat-pited (012) FLUOrositicone ²⁰¹ FLUORositicone ²⁰¹ FLUOROSITICONE				
100 Seab-piston (120) Fluoresilicene™ Fluoresilicene™ 110 Flange-inlet STL A-10S SSTA192-7314 120 Plug-body STL A10B-1018 SST A479-7314/316L 130 Nozzle-pilot SST-02 SST-02 150 Slewe-pilot slewe SST-02 SST-02 150 Slewe-pilot SST A479-314/316L SST A479-314/316L 170 Seal-pilot slewe (014) Fluoresilicone™ Fluoresilicone™ 170 Seal-pilot pilot SST A278-314/316L SST A276-314/318L 170 Seal-pilot pilot SST A278-314/316L SST A276-314/318L 170 Seal-pilot pilot SST A278-314/316L SST A276-314/318L 170 Spring-nozzle retainer SST -14B SST -136 200 Spring-nozzle retainer SST -14B SST -14B 201 Bar-cross SST A278-304/316L SST A278-314/316L 202 Seat-pilot (012) Ruoresilicone™ Fluoresilicone™ 203 Actuator-pilot ST -12L SST A479-314/316L SST A479		· · · · · · · · · · · · · · · · · · ·		
120 Plug-body STL A108-1018 SST A479-316/316L 130 Nozzie-pilot SST 302 SST 302 150 Sleeve-pilot SST A079-316/316L SST A479-316/316L 150 Sleeve-pilot SST A278-316/316L SST A279-316/316L 170 Seal-pilot sleeve (014) Fluorosilicone ⁶¹ Fluorosilicone ⁶¹ 180 Spinde-pilot SST A278-316/316L SST A278-316/316L 180 Spinde-pilot SST A278-316/316L SST A278-316/316L 180 Spinde-pilot SST A278-316/316L SST A278-316/316L 200 Spring-nozzic retainer SST A278-304 SST A278-304 210 Bar-cross SST A278-304 SST A278-304 220 Spat-pilot (013) Fluorosilicone ⁶¹ Fluorosilicone ⁶¹ 230 Retainer-pilot nozzic SST A279-316/316L SST A279-316/316L 240 Seal-pilot nozzic SST A279-316/316L SST A279-316/316L 250 Actuator-pilot ST L224 SST A279-316/316L 250 Actuator-pilot ST L224		•		
130 Nozzle-pilot SST A3/9-316/316L SST A3/9-316/316L 140 Spring-plot sleeve SST -302 SST -302 150 Sleeve-pilot SST A3/9-316/316L SST A3/9-316/316L 160 Retainer-O-ring pilot SST A276-316/316L SST A276-316/316L 170 Seal-pilot sleeve (014) Fluorosilicone ¹⁶¹ Fluorosilicone ¹⁶¹ 180 Spindle-pilot SST A276-316/316L SST A276-316/316L 180 Spindle-pilot SST A276-304/316L SST A276-316/316L 200 Spring-nozzle retainer SST -316 SST -316 210 Bar-cross SST A276-304 SST A276-304 210 Bar-cross SST A276-304 SST A276-316/316L 220 Seat-pilot 1013 Fluorosilicone ¹⁶¹ Fluorosilicone ¹⁶² 230 Retainer-pilot nozzle SST A479-316/316L SST A479-316/316L 240 Seat-pilot 1021 Fluorosilicone ¹⁶² Fluorosilicone ¹⁶³ 250 Actuator-pilot ST -428 SST A479-316/316L 260 Actuator-pilot ST -84 <td></td> <td>•</td> <td></td> <td></td>		•		
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150 Sleeve-pilot SST A479-316/316L SST A479-316/316L 160 Retainer-O-ring pilot SST A276-316/316L SST A276-316/316L 170 Seal-pilot sleeve [014] Fluorositicone ^[16] Fluorositicone ^[16] 180 Spindle-pilot SST A276-316/316L SST A276-316/316L 180 Spindle-pilot SST A276-316/316L SST A276-316/316L 200 Sping-nozele retainer SST A376-304 SST A276-304 210 Bar-cross SST A276-304 SST A276-304 220 Seat-pilot [013] Fluorositicone ^[17] Fluorositicone ^[18] 230 Retainer-pilot nozzle SST A479-316/316L SST A479-316/316L 240 Seat-pilot nozzle [019] Fluorositicone ^[18] Fluorositicone ^[18] 250 Actuator-pilot ST L2814 SST A479-316/316L 260 Seat-diaphragm case [228] FKM ^[18] FKM ^[18] FKM ^[18] 270 Bolt SST 18-8 SST 18-8 SST 18-8 300 Nut SST 18-8 SST 18-8 SST 18-8				
160 Relainer-O-ring pilot SST A276-316/316L SST A276-316/316L 170 Seal-pilot sleeve (014) Fluorosilicone™ 180 Spindle-pilot SST A276-316/316L ST A276-316/316L 190 Seal-body plug (122) FKM™ FKM™ 200 Spring-nozzle retainer SST 316 SST-316 210 Bear-pilot (103) Fluorosilicone™ Fluorosilicone™ 220 Seal-pilot (013) Fluorosilicone™ Fluorosilicone™ 230 Retainer-pilot nozzle (019) Fluorosilicone™ Fluorosilicone™ 240 Seal-pilot nozzle (019) Fluorosilicone™ Fluorosilicone™ 250 Actuator-pilot STL-12L14 SST A379-316/316L 260 Seal-diaphragm case (228) FKM™ FKM™ 270 Bolt SST -18-8 SST -18-8 280 Nut SST -18-8 SST -18-8 300 Bolt SST -18-8 SST -18-8 300 Bolt SST -18-8 SST -18-8 300 Case-diaphragm ST L A36 <td></td> <td></td> <td></td> <td></td>				
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190 Seal-body plug [122] FKM ^[a] FKM ^[a] FKM ^[a] 200 Spring-nozzle retainer SST-316 SST A276-304 SST A276-304 220 Seal-pilot [013] Fluorosilicone ^[10] Fluorosilicone ^[10] 230 Retainer-pilot nozzle SST A479-316/316L SST A479-316/316L 240 Seal-pilot nozzle [019] Fluorosilicone ^[10] Pluorosilicone ^[10] 250 Actuator-pilot ST-12L14 SST A479-316/316L 260 Actuator-pilot ST-12L14 SST A479-316/316L 260 Actuator-pilot ST-18-8 SST-18-8 270 Bolt SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 280 Masher-lock SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 320 Boste-fock SST-18-8 SST-18-8 340 Gasek-daphragm case STL-26 SST-18-8 350 Bost pring STL STL STL 360		•		
200 Spring-nozzle retainer SST-316 SST-306 210 Bar-cross SST A276-304 SSTA076-304 220 Seat-pitot [013] Fluorosilicone ⁶⁰ Fluorosilicone ⁶¹ 230 Retainer-pilot nozzle SST A479-316/316L SST A479-316/316L 240 Seal-pitot nozzle (019) Fluorosilicone ⁶⁰ Fluorosilicone ⁶¹ 250 Actuator-pilot ST-1214 SST A479-316/316L 260 Seal-diaphragm case (228) FKM ⁶² FKM ⁶² FKM ⁶² 270 Bott SST-18-8 SST-18-8 270 Nut SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 300 Bott SST-18-8 SST-18-8 301 Nut SST-18-8 SST-18-8 300 Bott SST-18-8 SST-18-8 301 Nut SST-18-8 SST-18-8 300 Gasel-diaphragm case PTE strip PTE strip 301 Diaphragm STL 336 SST 203-304				
210 Bar-cross SST A276-304 SST A276-304 220 Seat-pilot [013] Fluorositicone ^[01] Fluorositicone ^[01] 230 Retainer-pilot nozzle SST A479-316/3164 SST A479-316/3164 240 Seal-pilot nozzle [019] Fluorositicone ^[01] Fluorositicone ^[01] 250 Actuator-pilot ST-12L14 SST A479-316/3164 260 Seal-diaphragm case [228] FM ²¹ KM ²¹ KM ²¹ 270 Bolt SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 330 Gasket-diaphragm case PTFE strip PTFE strip 350 Case-diaphragm case PTFE strip PTFE strip 350 Case-diaphragm case ST-18-8 SST-18-8 350 Diaphragm PTFE strip				
220 Seat-pilot (013) Fluorosilicone™ Fluorosilicone™ ST A479-316/316L SST A479-316/316L 230 Retainer-pilot nozele SST A479-316/316L SST A479-316/316L 240 Seal-pilot nozele (019) Fluorosilicone™ Fluorosilicone™ 250 Actuator-pilot ST-12L14 SST A479-316/316L 260 Seal-diaphragm case (228) FKM™ FKM™ FKM™ 270 Bolt SST-18-8 SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 SST-18-8 300 Bolt SST-18-8 SST-18-8 SST-18-8 300 Basket-diaphragm case PTFE strip PTFE strip PTFE strip 300 Basket-diaphragm case STL 436 SST-240-0 SST-8-8 300 Biotheritation STL 400 <td< td=""><td></td><td></td><td></td><td></td></td<>				
230 Retainer-pilot nozzle SST A479-316/316L SST A479-316/316L 240 Seal-pilot nozzle (D19) Fluorosilicone ⁽²⁾ Pluorosilicone ⁽²⁾ 250 Actuator-pilot ST L-12L14 SST A479-316/316L 260 Seal-diaphragm case (228) FKM ⁽²⁾ FKM ⁽²⁾ FKM ⁽²⁾ 270 Bolt SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 300 Bolt SST-18-8 SST-18-8 300 Bolt SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 340 Gasket-diaphragm case PTFE strip PTFE strip 350 Qasket-diaphragm case PTFE strip PTFE strip 360 Diaphragm PTFE PTFE 370 Plate-pressure sense ST-1010 SST 302/304 380 Seal-body bolt (010) FKM ⁽²⁾ FKM ⁽²⁾ <tr< td=""><td></td><td></td><td></td><td></td></tr<>				
240 Seal-pilot nozzle (019) Fluorosilicone (019) Fluorosilicone (019) Fluorosilicone (019) Fluorosilicone (019) 250 Actuator-pilot STL-12L14 SST A479-316/316L 260 Seal-diaphragm case (228) FKMIPI FKMIPI FKMIPI 270 Bolt SST-18-8 SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 SST-18-8 300 Bolt SST-18-8 SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 SST-18-8 320 Diaphragm PTEE strip PTEE strip PTEE prip 320 Case-diaphragm STL-103 SST A240-304 320 Diaphragm PTEE strip PTEE 370 Pate-pressure sense STL-1010 SST A240-304				
250 Actualor-pilot STL-12L14 SST A479-316/316L 260 Seal-diaphragm case (228) FKMPI FKMPI PKMPI 270 Bolt SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 300 Bolt SST-18-8 SST-18-8 300 Bolt SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 340 Gasket-diaphragm case PTEE strip PTEE strip 350 Case-diaphragm case PTEE strip PTEE strip 360 Diaphragm PTEE PTE 370 Plate-pressure sense STL-1010 SST 302/304 380 Seal-body bolt (I010) FKMPI FKMPI 390 Bolt-seal SST-18-8 SST-18-8 400 Nut-swage SST 18-8 SST-18-8 401 Washer-spring S		•		
260 Sel-diaphragm case (228) FKM® FKM® 270 Bolt SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 290 Washer-lock SST-18-8 SST-18-8 310 Bolt SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 340 Gasket-diaphragm case PTE strip PTE strip 350 Case-diaphragm STL A36 SST A240-304 360 Diaphragm PTE PTE 370 Diaphragm PTE PTE 380 Sel-body bolt (010) STM® STM® 380 Sel-body bolt (010) STM® STM® 400 Nut-swage ST Leaded AX ST A26-316/316L 401 Washer-spring ST-18-8 ST-18-8 402 Bolt ST A27-316/316 ST A28-316/316		·		
270 Bolt SST-18-8 SST-18-8 280 Nut SST-18-8 SST-18-8 290 Washer-lock SST-18-8 SST-18-8 310 Bolt SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 340 Gasket-diaphragm case PTFE strip PTEE strip 350 Case-diaphragm STL A36 SST A240-304 360 Diaphragm PTFE PTFE 370 Plate-pressure sense STL-1010 SST 302/304 380 Seal-body bolt (010) FKM ²¹ FKM ²² 390 Bolt-seal SST-18-8 SST-18-8 410 Nut-swage SST SST 410 Washer-spring STL Leaded AX SST A276-316/316L 420 Bolt SST SST-18-8 SST-18-8 430 Bont SST SST-316 SST-316 450 Bont SST		•		
280 Nut SST-18-8 SST-18-8 290 Washer-lock SST-18-8 SST-18-8 300 Bolt SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 340 Gasket-diaphragm case PTFE strip PTFE strip 350 Case-diaphragm STL A36 SST A240-304 360 Diaphragm PTFE PTFE 370 Plate-pressure sense STL-1010 SST 302/304 380 Seal-body bolt (010) FKM ^[2] FKM ^[2] 390 Bolt-seal SST -18-8 SST-18-8 400 Nut-swage SST Leaded AX SST A276-316/316L 410 Washer-spring STL Leaded AX SST A276-316/316L 420 Bolt SST -18-8 SST -18-8 430 Bolt SST -18-8 SST -18-8 450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring <				
290 Washer-lock SST-18-8 SST-18-8 300 Bolt SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 340 Gasket-diaphragm case PTEE strip PTEE strip 350 Case-diaphragm STL A36 SST A240-304 360 Diaphragm PTEE PTEE 370 Plate-pressure sense STL 1010 SST 302/304 380 Seal-body bolt (1010 FKM ¹²¹ FKM ¹²¹ 370 Blott-seal SST -18-8 SST -18-8 400 Nut-swage SST -18-8 SST -18-8 400 Nut-swage SST -18-8 SST -18-8 400 Bolt SST -18-8 SST -18-8 400 Bolt SST -18-8 SST -18-8 400 Both SST -18-8 SST -18-8 400 Both SST -18-8 SST -18-8 400 Bonnet assy. SST -316 SST -316				
300 Bolt SST-18-8 SST-18-8 310 Nut SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 340 Gasket-diaphragm case PTEE strip PTEE strip 350 Case-diaphragm STL A36 SST A240-304 360 Diaphragm PTEE PTEE 370 Plate-pressure sense STL-1010 SST 302/304 380 Sel-body bolt (010) FKM ^[2] FKM ^[2] 390 Bolt-seal SST-18-8 SST-18-8 400 Nut-swage STL 18-8 SST-318-8 400 Washer-spring STL 18-8 SST 276-316/316L 420 Bolt SST 31-8-8 SST-18-8 430 Bolt SST 31-8-8 SST-18-8 440 Spring SST-316 SST-316 450 Spring SST-316 SST-316 450 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent SST A49-316/316L				
310 Nut SST-18-8 SST-18-8 320 Washer-lock SST-18-8 SST-18-8 340 Gasket-diaphragm case PTEE strip PTEE strip 350 Case-diaphragm STL A36 SST A240-304 360 Diaphragm PTEE PTEE 370 Pdte-pressure sense STL-1010 SST 302/304 380 Seal-body bolt (010) FKM ^[27] FKM ^[27] 390 Sel-body bolt (010) FKM ^[27] SST-18-8 400 Nut-swage SST-18-8 SST-18-8 400 Nut-swage SST Leaded AX SST A276-316/316L 420 Bolt SST-18-8 SST-18-8 430 Bolt SST-18-8 SST-18-8 440 Spring SST-31-8 SST-316-8 440 Spring SST-316 SST-316-8 450 Spring SST-316-8 SST-316-8 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent ST A27-316/				
320 Washer-lock SST-18-8 SST-18-8 340 Gasket-diaphragm case PTE strip PTE strip 350 Case-diaphragm STL A36 SST A240-304 360 Diaphragm PTE PTE 370 Plate-pressure sense STL-1010 SST 302/304 380 Seal-body bolt (010) FKM ^[2] FKM ^[2] 390 Bolt-seal SST 18-8 SST 18-8 400 Nut-swage SST SST 410 Washer-spring STL Leaded AX SST 278-8 420 Bolt SST 18-8 SST-18-8 430 Bolt SST 316-8 SST-18-8 440 Spring SST-18-8 SST-18-8 440 Spring SST-316 SST-316 450 Bonnet assy. SST SA51-CF8M SST 351-CF8M 460 Washer-spring ST A49-316/316L ST A49-316/316L 470 Vent Zyel Zyel 480 Nut-lock SST A49-316/316L SST A49-316/316L 480 Nut-lock SST A49-316/316L <td< td=""><td></td><td></td><td></td><td></td></td<>				
340 Gasket-diaphragm case PTFE strip PTFE strip 350 Case-diaphragm STL A36 SST A240-304 360 Diaphragm PTFE PTFE 370 Plate-pressure sense STL-1010 SST 302/304 380 Seal-body bolt (1010) FKMI ²¹ FKMI ²² 390 Bolt-seal SST-18-8 ST-18-8 400 Nut-swage ST ST 410 Washer-spring STL Leaded AX SST 4276-316/316L 420 Bolt ST-18-8 SST-18-8 430 Bolt SST-18-8 SST-18-8 440 Bolt SST-18-8 SST-18-8 440 Bolt SST-18-8 SST-18-8 450 Bolt SST-18-8 SST-18-8 450 Bolt SST-18-8 SST-18-8 450 Bolt SST-316 SST-316 450 Washer-spring ST A316 SST-3479-316/316L 470 Vent Zylet Zylet				
350 Case-diaphragm STL A36 SST A240-304 360 Diaphragm PTFE PTFE 370 Plate-pressure sense STL-1010 SST 302/304 380 Seal-body bolt (010) FKM ^[2] FKM ^[2] 390 Bolt-seal SST-18-8 SST-18-8 400 Nut-swage SST SST 410 Washer-spring STL Leaded AX SST 276-316/316L 420 Bolt SST-18-8 SST-18-8 430 Bolt SST-316-8 SST-18-8 440 Spring SST-316 SST-18-8 440 Spring SST-316 SST-316 450 Spring SST-316 SST-316 460 Washer-spring ST A351-CF8M SST SA351-CF8M 460 Washer-spring ST A479-316/316L ST A479-316/316L 470 Vent Zytel Zytel 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet ST-16eded				
360 Diaphragm PTFE PTFE 370 Plate-pressure sense STL-1010 SST 302/304 380 Seal-body bolt (010) FKM ^[2] FKM ^[2] 390 Bolt-seal SST-18-8 SST-18-8 400 Nut-swage SST SST 410 Washer-spring STL Leaded AX SST A276-316/316L 420 Bolt SST-18-8 SST-18-8 430 Bolt SST-18-8 SST-18-8 440 Spring SST-316 SST-316 450 Bonnet assy. SST SA351-CF8M SST-316 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel SST A479-316/316L 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316			·	·
370 Plate-pressure sense STL-1010 SST 302/304 380 Seal-body bolt (010) FKMI ²¹ FKMI ²² 390 Bolt-seal SST-18-8 SST-18-8 400 Nut-swage SST SST 410 Washer-spring STL Leaded AX SST A276-316/316L 420 Bolt SST-18-8 SST-18-8 430 Bolt SST-316-8 SST-18-8 440 Spring SST-316 SST-316 450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet ST-leaded A582-303 510 Fitting-1/4 NPT SST-316 SST-316				
380 Seal-body bolt (010) FKM ^[2] FKM ^[2] 390 Bolt-seal SST-18-8 SST-18-8 400 Nut-swage SST SST 410 Washer-spring STL Leaded AX SST A276-316/316L 420 Bolt SST-18-8 SST-18-8 430 Bolt SST-18-8 SST-18-8 440 Spring SST-316 SST-316 450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-1/4 NPT SST-316 SST-316				
390 Bolt-seal SST-18-8 SST-18-8 400 Nut-swage SST SST 410 Washer-spring STL Leaded AX SST A276-316/316L 420 Bolt SST-18-8 SST-18-8 430 Bolt SST-18-8 SST-18-8 440 Spring SST-316 SST-316 450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316		·		
400 Nut-swage SST SST 410 Washer-spring STL Leaded AX SST A276-316/316L 420 Bolt SST-18-8 SST-18-8 430 Bolt SST-18-8 SST-18-8 440 Spring SST-316 SST-316 450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316		•		
410 Washer-spring STL Leaded AX SST A276-316/316L 420 Bolt SST-18-8 SST-18-8 430 Bolt SST-18-8 SST-18-8 440 Spring SST-316 SST-316 450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316				
420 Bolt SST-18-8 SST-18-8 430 Bolt SST-18-8 SST-18-8 440 Spring SST-316 SST-316 450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316		•		
430 Bolt SST-18-8 SST-18-8 440 Spring SST-316 SST-316 450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316		. 3		
440 Spring SST-316 SST-316 450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316				
450 Bonnet assy. SST SA351-CF8M SST SA351-CF8M 460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet ST-a16 A582-303 510 Fitting-¼ NPT SST-316 SST-316				
460 Washer-spring STL A108-1213 SST A479-316/316L 470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet ST-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316				
470 Vent Zytel Zytel 480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet ST-216 A582-303 510 Fitting-¼ NPT SST-316 SST-316		-		
480 Nut-lock SST A479-316/316L SST A479-316/316L 490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316		, ,		
490 Screw-press. adjust. SST-304 SST-304 500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316			-	
500 Cap-pilot bonnet STL-leaded A582-303 510 Fitting-¼ NPT SST-316 SST-316				
510 Fitting-1/4 NPT SST-316 SST-316				
y				
52U Tubing-% UD SST A269-1P316 SST A269-1P316		3		
	520	Tubing-% UD	551 A267-1P316	551 AZ69-1P316

NOTES

- Inconel® is a registered trademark of International Nickel Company.
- 1. Threaded bodies are SA351-CF8M as standard.
- 2. Standard Fluorosilicone/FKM soft goods.

FIGURE 1 Low pressure tank blanketing valve



BV-1 TANK BLANKETING VALVE MATERIALS

DV-1 TANK BLANKETING VALVE MATERIALS				
Item no.	Description	CS	SST and NACE	
530	Nameplate-main valve	SST-304	SST-304	
540	Screw-drive	SST-18-8	SST-18-8	
550	Nameplate-pilot	SST-304	SST-304	
560	Nut	SST-18-8	SST-18-8	
570	Washer-lock	SST-316	SST-316	
580	Tag-warning	Paper w/wire	Paper w/wire	
590	Orifice-purge	SST-316	SST-316	
600	Gasket-bonnet	FKM ^[2]	FKM ^[2]	
610	Seal-actuator	PTFE	PTFE	
620	Plug 1/8" NPT	SST-A479-316/316L	SST-A479-316/316L	
630	Plua ¼" NPT	SST-A479-316/316L	SST-A479-316/316L	

NOTES

- 1. Threaded bodies are SA351-CF8M as standard.
- 2. Standard Fluorosilicone/FKM soft goods.

FIGURE 2 Tank blanketing valve pilot internals

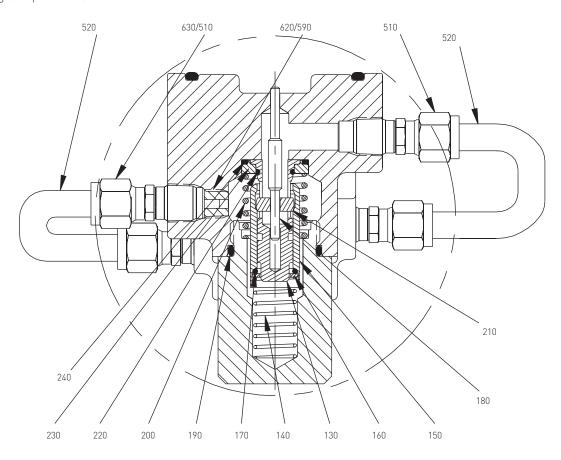


FIGURE 3
Test setup for tank blanketing valve

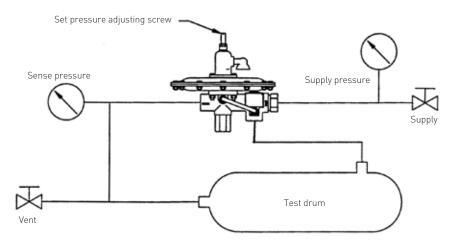
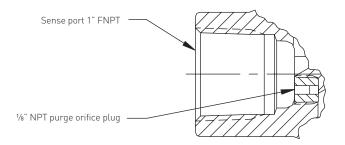
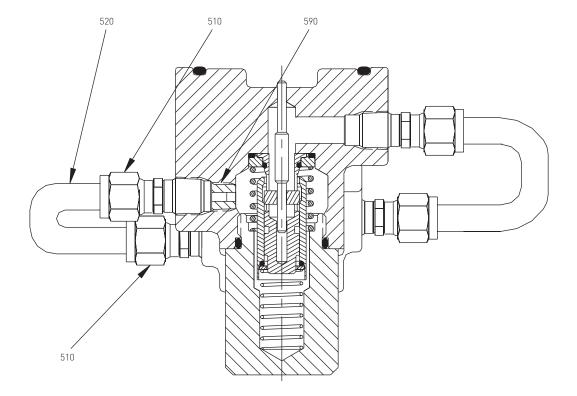


FIGURE 4 Purge option details





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