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DWN		<b>MAINTENANCE INSTRUCTIONS FOR          PILOT OPERATED SAFETY RELIEF VENT          WITH NON-FLOWING MODULATING PILOT          SERIES 9200</b>		
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APPR				
APPR		SIZE	REPORT NUMBER	REV
APPR		A	05.9040.171	E
APPR		PAGE 1 OF 31		

REVISIONS		
REV.	DESCRIPTION	APPROVALS / DATE
E	ECN #01-1106	S.WILLIS 8-02-01 S.CONNALLY 8-02-01 E.TEZZO 8-06-01

## **INSTRUCTIONS – MAINTENANCE FOR TYPE 9200 POSRV WITH NON-FLOWING MODULATING PILOT**

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.**

### **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 Crosby 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 Crosby Procedures and Instructions as well as applicable National and International Codes and Standards.

### **SAFETY PRECAUTIONS**

When the pressure/vacuum relief 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 pressure/vacuum relief valve from a system that is pressurized.

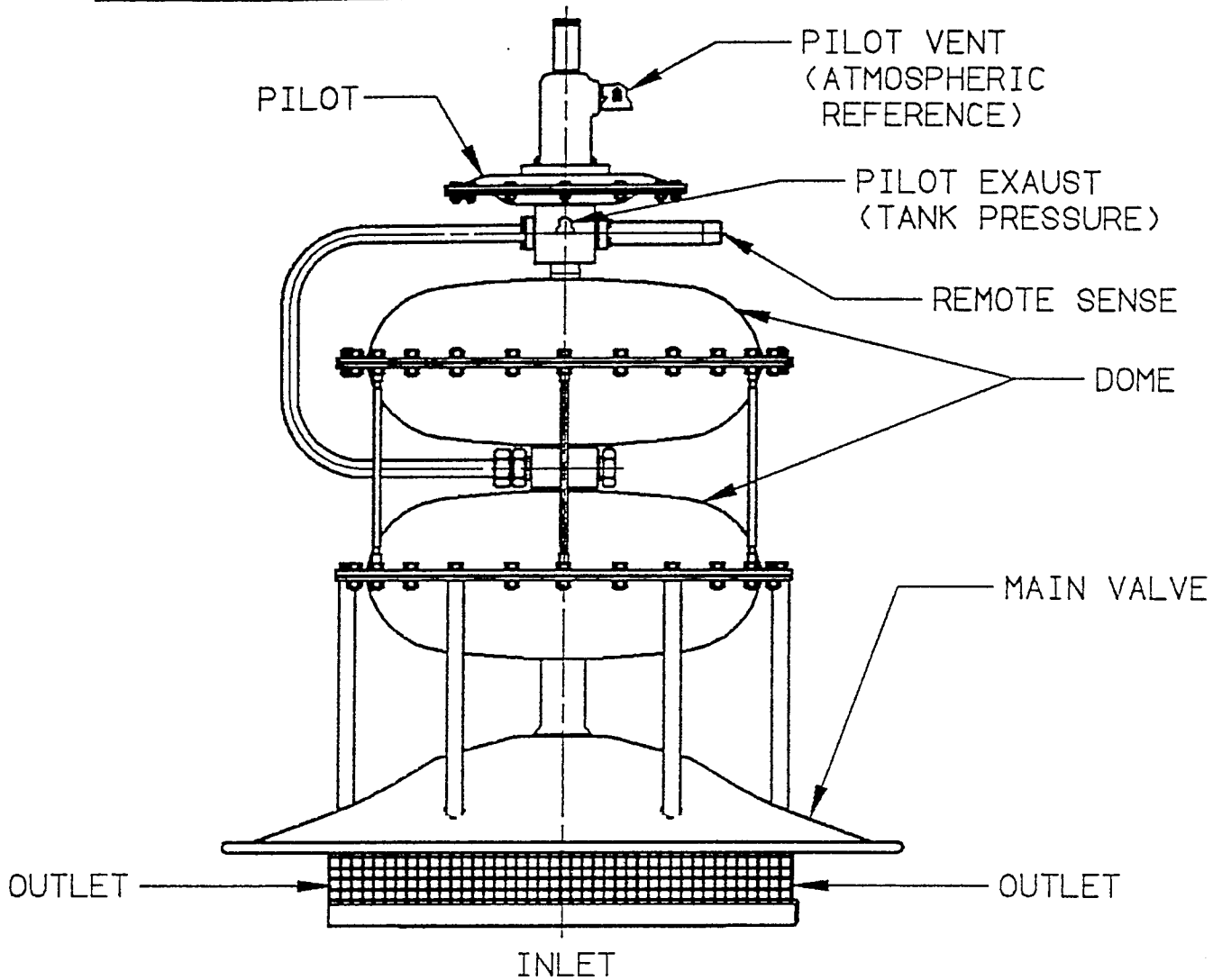
Never make adjustments to or perform maintenance on the pressure/vacuum relief valve while in service unless the valve is isolated from the system pressure. If not properly isolated from the system pressure, the pressure/vacuum relief valve may inadvertently open resulting in serious injury.

Remove the pressure relief valve prior to performing any pressure testing of the system.

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

### **STORAGE AND HANDLING**

Pressure/vacuum relief 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.

1.0 GENERAL VALVE DESCRIPTION1.1 Operation

The 9200 Pilot Operated Safety Relief Valve uses the principle of pressurizing a large diaphragm area, referred to as dome, with tank pressure to hold the main valve seat closed up to set pressure. At set pressure the pilot actuates to partially reduce the pressure in the dome, and the downward force acting on the main seat. The seat then lifts to relieve tank pressure. When the tank pressure is reduced, the pilot actuates to repressure the dome with tank pressure to close the main valve.

## 1.2 Installation

Inlet flanges are designed for use with 150 class ANSI flanges. Installation of studs is required in the base of the vent. Remote pressure pickup is mandatory on all pressure/vacuum or vacuum only units. Internal sense is standard on pressure only units.

## 1.3 Start-Up

There must be pressure at the vent inlet to establish a closing force across the main vent element. Pressure must pass through the pilot supply tube and pilot and exert force on the main diaphragm. On normal plant start-up the vent loads itself without incident as tank pressure increases. It is not uncommon that slight leakage past the seat occurs until system pressure reaches the dome chamber.

If block valves are used under the safety vent, be sure all block valves are open. If block valves are opened after system start-up the safety vents briefly vent to the atmosphere past the main seat before the dome gets pressurized. It will close off positively once dome pressure has been established. Open the block valve slowly to minimize venting.

## 2.0 MAIN VALVE MAINTENANCE (Refer to Figure 1)

### 2.1 General

Since the Series 9200 vent can be either a pressure only, a vacuum only, or a pressure/vacuum relieving device, it is built in a modular fashion. The standard single diaphragm unit will function on pressure and vacuum, however opening under very low vacuum requires use of the auxiliary diaphragm chamber. The vent can also be repaired in a modular fashion. The seat can be replaced without complete disassembly of the diaphragm cases. Selective repair can be performed as required.

### 2.2 Main Seat Replacement

- Remove bolts (41) that connect the main diaphragm case to the vertical column supports (38).
- Remove the operational assembly including diaphragm cases (1)(23), shield (26), and seat plate assembly (Details "D" & "E") as a single unit. NOTE: Use a hoist on large sizes.

- While holding the shield (26) up, unscrew the seat plate assembly from the shaft (18). This is normally a hand operation, however a 9/16" (14.3 mm) wrenching flat is provided on the seat hub (52) if required. The connecting thread will run free then tighten and run free again as it disengages from a locking helicoil in the vertical shaft (18).
- Refer to Figures 3, 4 and 5, Details D and E for the appropriate valve seat plate size, material and pressure range. Remove the seat jam nut (50) and screws (31) and nuts (28) or seat band clamp (56). Remove the seat retainer (37). Remove seat film (29).
- Install new seat film (29) and reassemble hub (52) in accordance with Detail "D". NOTE: On reassembly pay special attention to the stack-up sequence to make sure the parts are assembled properly.
- Install seat retainer (37) over new film per Detail "E" and cross tighten seat screws (31) and nuts (28) until secure.
- On the stainless steel seat plate with band clamp (56), tighten clamp before tightening seat jam nut (50).
- Reinstall seat plate assembly to main shaft (18). NOTE: Shield (26), tube (22), and seal (30) must be in place before installation of seat assembly.
- The thread on the seat plate assembly will at first run free then tighten then run free again. The seat plate assembly is then in place and will swivel to assure good seat contact on the nozzle (33). NOTE: Seat hub (52) must not be tightened to shoulder tightly on the shaft (18).

## 2.3 Diaphragm Replacement

### 2.3.1 All Dual Diaphragm 9240C Models (Refer to Figure 2)

- Remove the pilot and tubing from the auxiliary diaphragm case.
- Remove the upper auxiliary diaphragm case (1).
- Install a small retaining wire in the lift rod (17) as shown in Figure 6, Detail "C" to retain the lift rod.
- Lift the auxiliary and main diaphragm assemblies to the full open position using the auxiliary vacuum plate (5). The open dome port can be temporarily capped to hold the main diaphragm assembly up.
- Remove nut (3) and O-Ring (4), Figure 6, Detail A.
- The lift rod (17) is attached to the auxiliary plate bushing (46) with threads. See Figure 6, Detail "A". Unscrew the lift rod (17) from the plate bushing (46) by rotating the rod. The rod will unscrew from the bottom of the assembly. An extension on the upper end of the rod has been provided if wrenching is required. The Auxiliary diaphragm assembly can now be removed to replace the auxiliary diaphragm (6). NOTE: On 2" and 3" valves with aluminum internals or low pressure stainless steel internals, a diaphragm reinforcement (63) is used under the auxiliary diaphragm and should also be replaced.
- Remove the jam nut (42) on the auxiliary diaphragm assembly and replace diaphragm (6) and diaphragm reinforcement (63), where used. NOTE: See Figure 6, Detail "A" and pay special attention to the stack-up sequence on reassembly.

- Remove the main diaphragm case bolts (41). Remove the studs (13) from the column supports (38). Remove the lower auxiliary diaphragm case (12) and the upper main diaphragm case (14) as a unit, assembled to the diaphragm case adapter (11). Allow the lift rod (17) to slip from the center hole and lift items (12), (14) and (11) upwards as one unit.
- Remove the main diaphragm assembly, lower main diaphragm case (23) and seat plate assembly from the base. NOTE: On the 2" and 3" valves a reinforcement diaphragm (62) is used between the main diaphragm (15) and the lower main diaphragm case (23). It should be replaced also.
- See Figure 6, Detail C. Remove jam nut (42) and disassemble. Replace main diaphragm (15) and diaphragm reinforcement (62), where used. NOTE: Pay special attention to stack sequence shown.
- Remove the O-Ring (58) from the upper end of the adapter bore (11). Lubricate O-Ring with Dow Corning FS3451 or equivalent when the new one is installed. NOTE: For oxygen service valves, use only lubricants suitable for this service, such as Krytox 240AC.
- If cap gaskets (16) are to be replaced, apply Teflon gasketing to upper diaphragm cases (1, 14) only as shown in Figure 7.
- Reassemble in reverse order. Apply a light film of Dow Corning No. 33 silicone grease or equivalent to all threaded parts. NOTE: For oxygen service valves, use only lubricants suitable for this service, such as Fluorolube LG-160.

2.3.2 All Single Diaphragm 9240P Series (Refer to Figure 1)

- Remove pilot and tubing from the diaphragm case.
- Remove the upper main diaphragm case (14).
- Remove the main diaphragm assembly, lower main diaphragm case (23) and seat plate assembly from the base (34). NOTE: On the 2" and 3" valves, a reinforcement diaphragm (62) is used between the main diaphragm (15) and the lower main diaphragm case (23).
- See Figure 6, Detail C. Remove jam nut (42) and disassemble. Replace main diaphragm (15) and diaphragm reinforcement (62), where used. NOTE: Pay special attention to stack sequence shown.
- Remove remaining internal assembly as a unit including lower diaphragm case (23), and internal assembly.
- If cap gasket (16) is to be replaced, apply Teflon gasketing to upper diaphragm case (14) as shown in Figure 7.
- Reassemble in reverse order. Apply a light film of Dow Corning No. 33 silicone grease or equivalent to all threaded parts. NOTE: For oxygen service valves, use only lubricants suitable for this service, such as Fluorolube LG-160.

2.4 Nozzle Replacement (Refer to Figure 1 or 2)

- Remove nozzle retaining screws (36) and gently tap nozzle (33) with soft face mallet.
- NOTE: Inspect nozzle seating surface for nicks or scratches. If they cannot be removed with crocus cloth or fine sandpaper, the nozzle must be remachined.

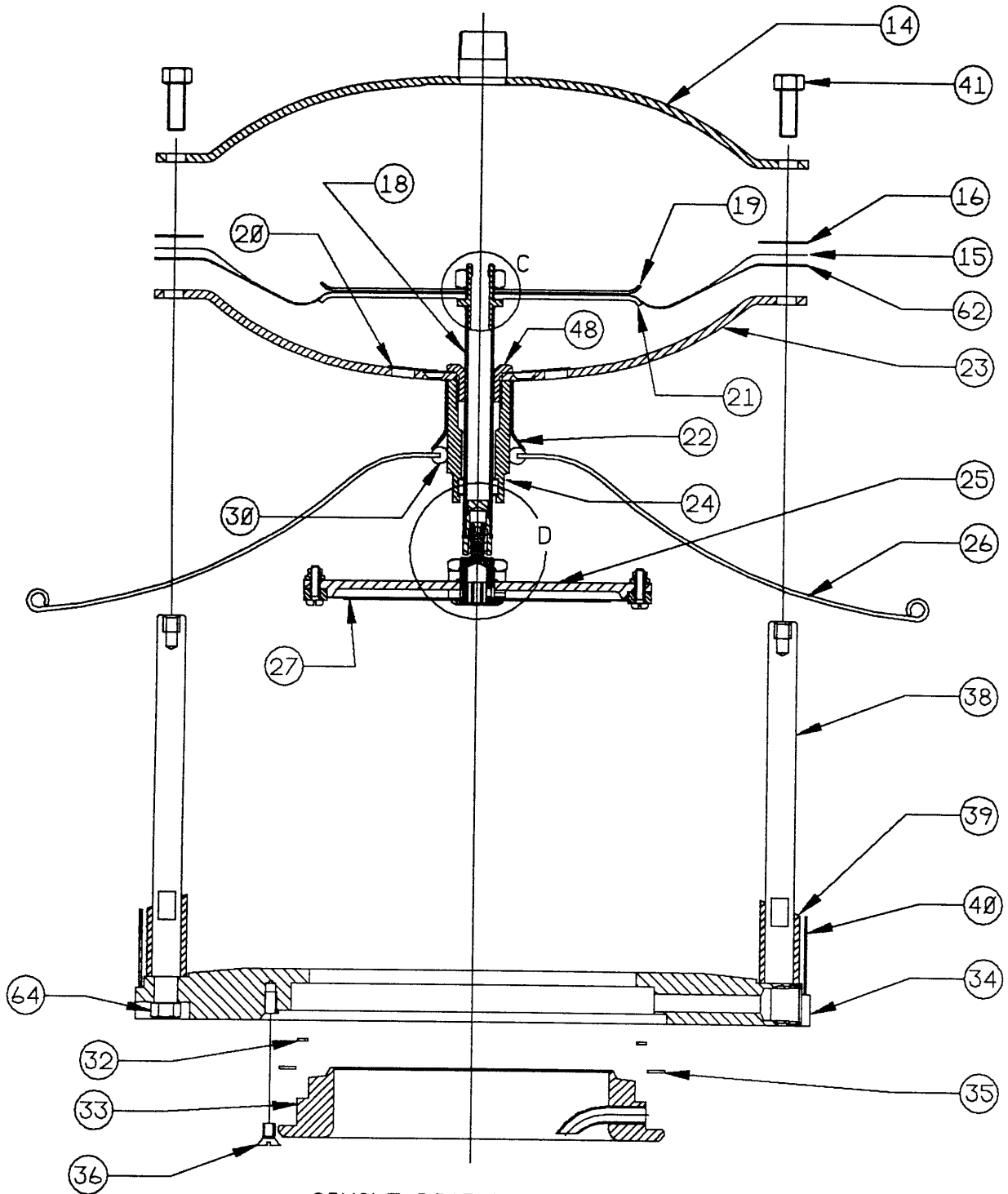
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- Nozzle face can be remachined. Do not remove more than .060" (1.52 mm) of material.
- If nozzle gaskets (32, 35) are to be replaced, install Teflon gasketing as shown in Figure 7.
- Reinstall nozzle and retaining screws.

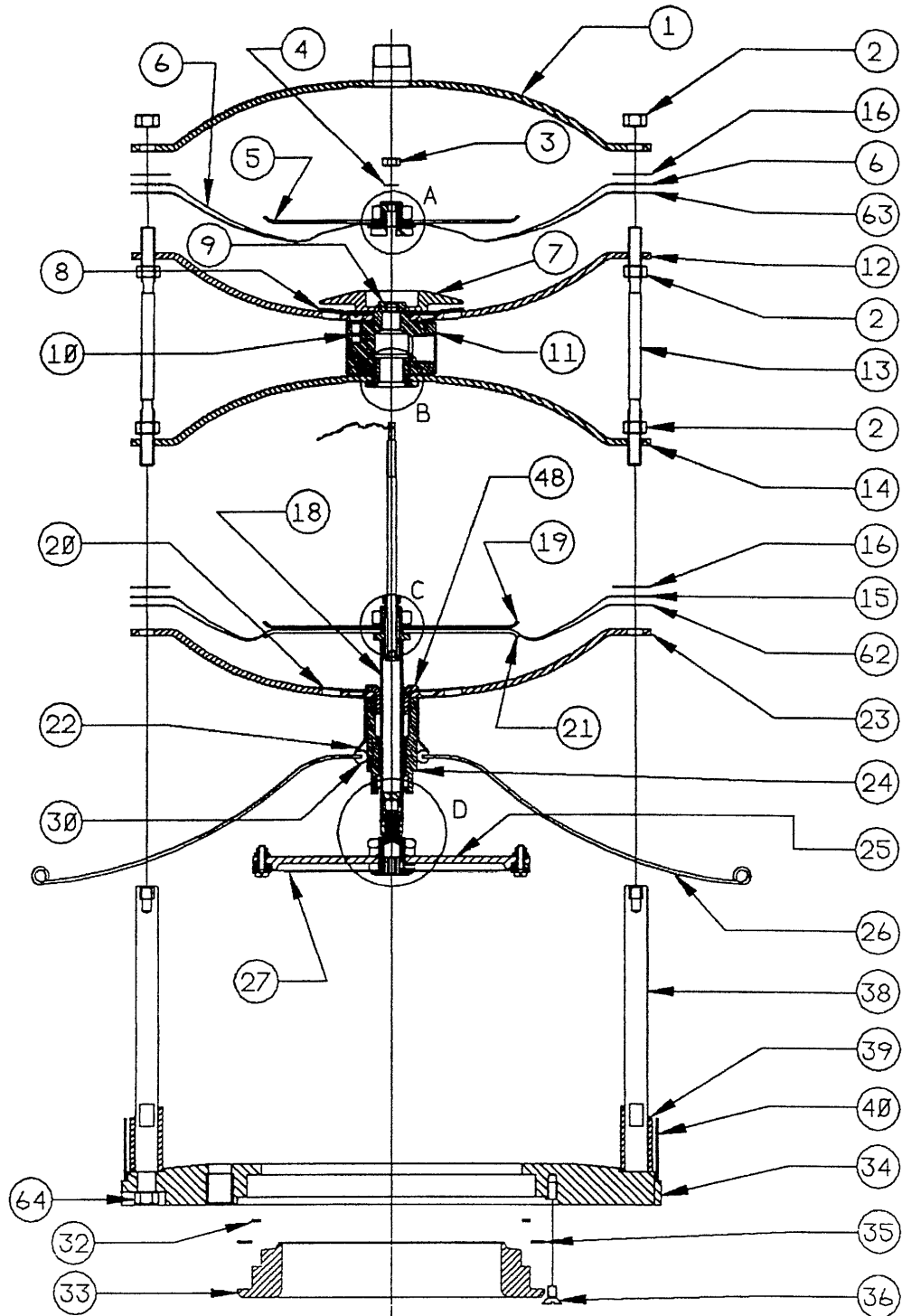
**PARTS LIST  
MAIN VALVE**

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	CASE-UPPER,AUXILIARY DIAPHRAGM	34	BASE-FLANGE
2	NUT	35	GASKET-NOZZLE, LOWER
3	NUT	36	SCREW-NOZZLE RETAINER
4	O-RING/TEFLON	37	RETAINER-SEAT
5	PLATE-AUXILIARY VACUUM	38	COLUMN-SUPPORT
6	DIAPHRAGM-AUXILIARY	39	BUSHING SUPPORT
7	PLATE-AUXILIARY PRESSURE	40	SCREEN-SEAT
8	SCREEN-LOWER AUXILIARY CASE	41	BOLT-CASE
9	RING-SNAP	42	NUT-JAM
10	SCREW	43	WASHER
11	ADAPTER	44	WASHER
12	CASE-LOWER, AUXILIARY DIAPHRAGM	45	GASKET-PLATE
13	STUD	46	BUSHING-AUXILIARY DIAPHRAGM
14	CASE-UPPER, MAIN DIAPHRAGM	47	GASKET-ADAPTER
15	DIAPHRAGM-MAIN	48	BUSHING-GUIDE
16	GASKET-DIAPHRAGM CASE	49	BUSHING-ROD RETAINING
17	ROD, LIFT	50	NUT-JAM, SEAT
18	SHAFT, SEAT PLATE ASSEMBLY	51	BUSHING-SEAT
19	PLATE-MAIN VACUUM	52	HUB-SEAT
20	SCREEN, LOWER MAIN CASE	53	O-RING-SEAT
21	PLATE-MAIN PRESSURE	54	SPACER-SEAT
22	TUBE THRUST	55	GASKET-PLATE
23	CASE-LOWER, MAIN DIAPHRAGM	56	CLAMP-BAND, SEAT
24	SLEEVE-GUIDE	57	WASHER-SEAT (PRIOR TO 1990 ONLY)
25	PLATE-SEAT	58	O-RING, LIFT ROD
26	SHIELD	59	BUSHING, ADAPTER
27	PROTECTOR-PLATE	62	DIAPHRAGM, REINFORCEMENT, MAIN (LOW PRESSURE 2" & 3" VALVE SIZE)
28	NUT-LOCK	63	DIAPHRAGM, REINFORCEMENT, AUXILIARY (LOW PRESSURE 2" & 3" VALVE SIZE)
29	SEAT-FILM	64	NUT-COLUMN RETAINING
30	SEAL-WEATHER		
31	SCREW-SEAT		
32	GASKET-NOZZLE, UPPER		
33	NOZZLE		



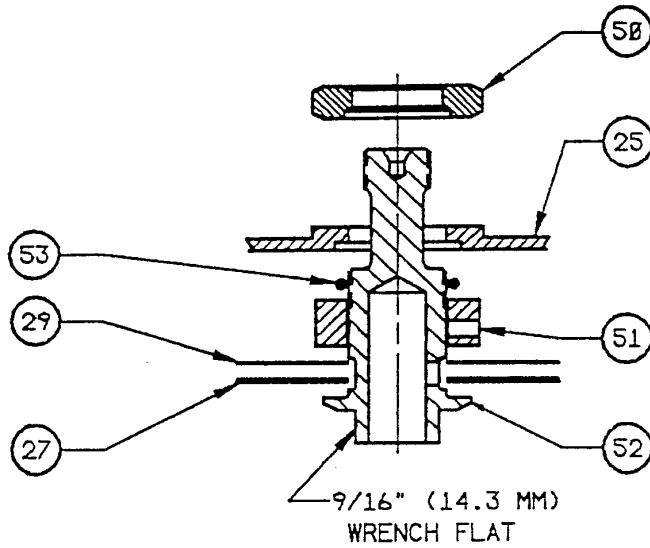
SINGLE DIAPHRAGM ASSEMBLY  
FIGURE 1

DWG: D\_059040171\_P010  
DB: 8ER9000883  
LIB: 8ER90LIB

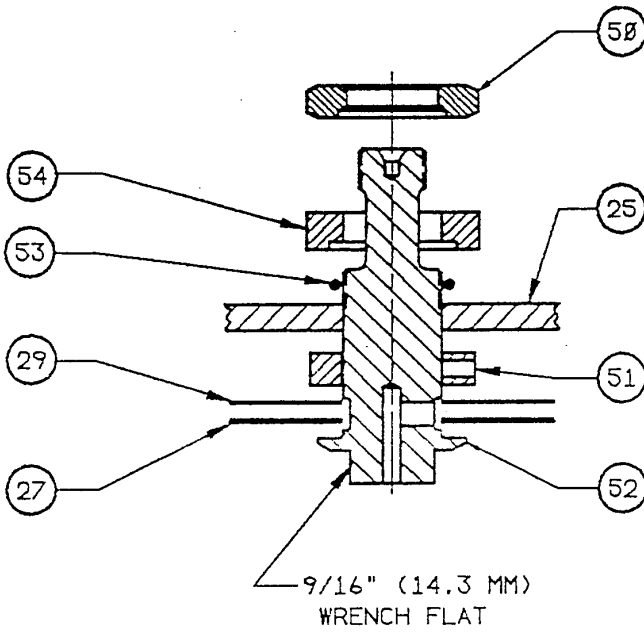


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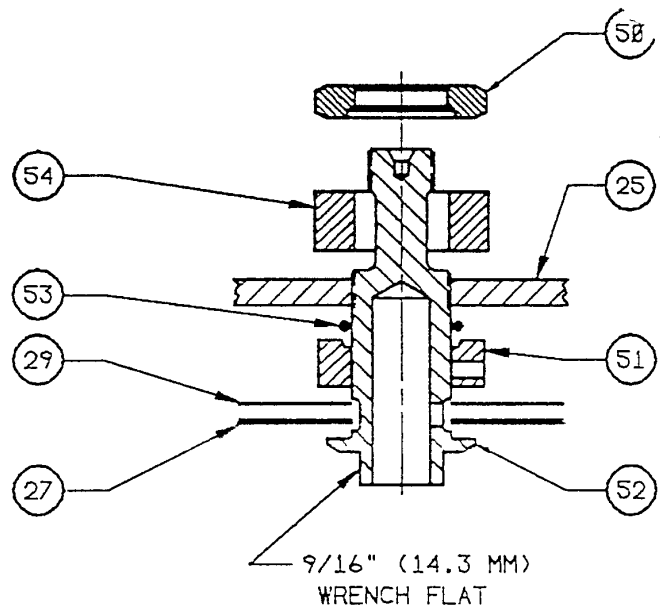
DUAL DIAPHRAGM ASSEMBLY  
FIGURE 2



2" THRU 4" VALVE INLET SIZE



6" VALVE INLET SIZE

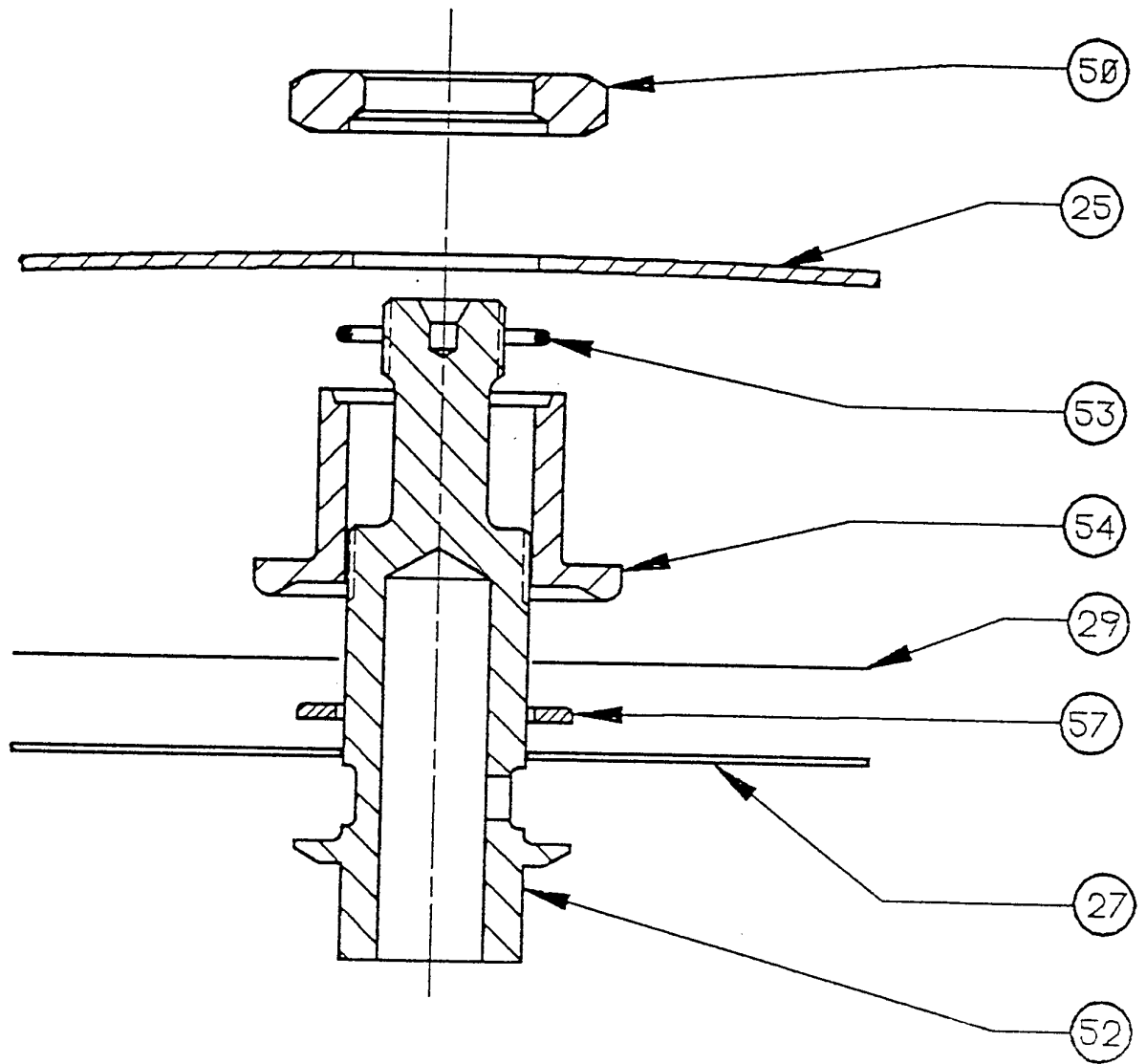


8" THRU 12" VALVE INLET SIZE

MAIN VALVE SEAT PLATE HUB ASSEMBLY  
(ALUMINUM)

DETAIL D  
FIGURE 3

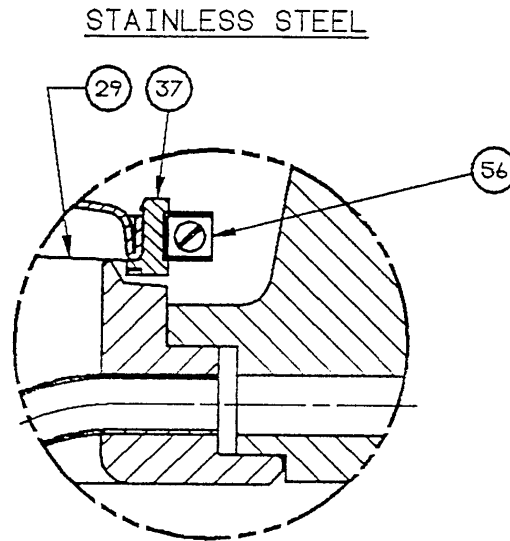
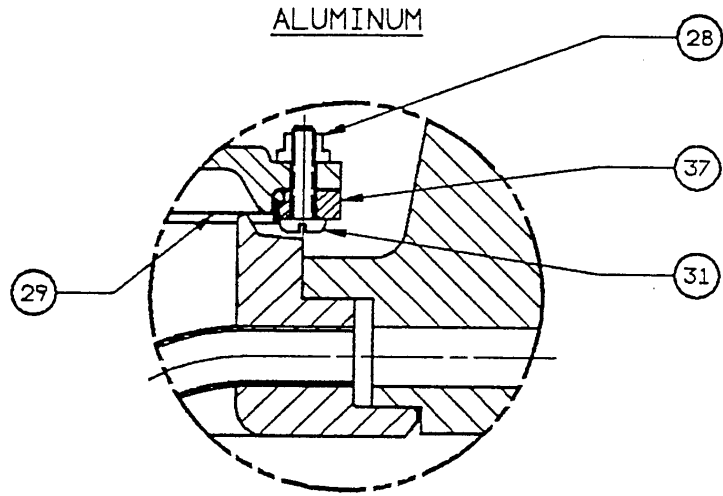
DWG: D\_059040171\_P612  
DB: SER9000SB3  
\_IB: SER90LIB



MAIN VALVE SEAT PLATE HUB ASSEMBLY  
(STAINLESS STEEL)

DETAIL D

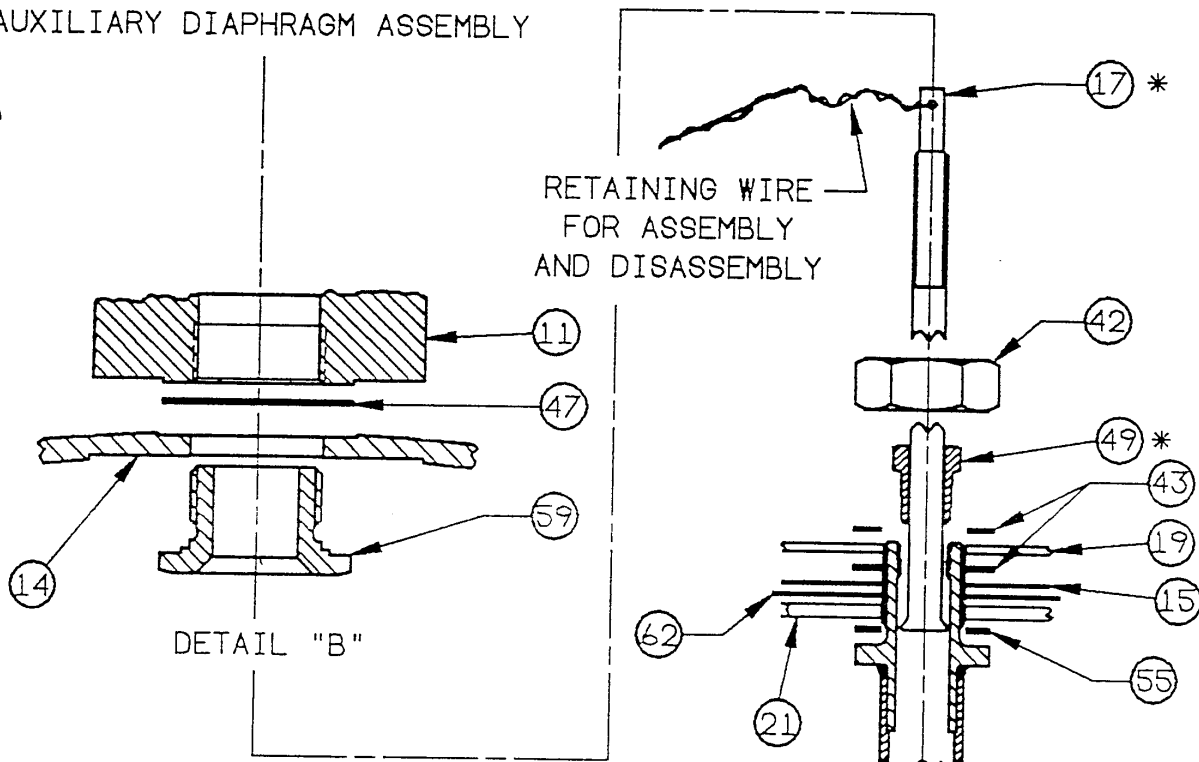
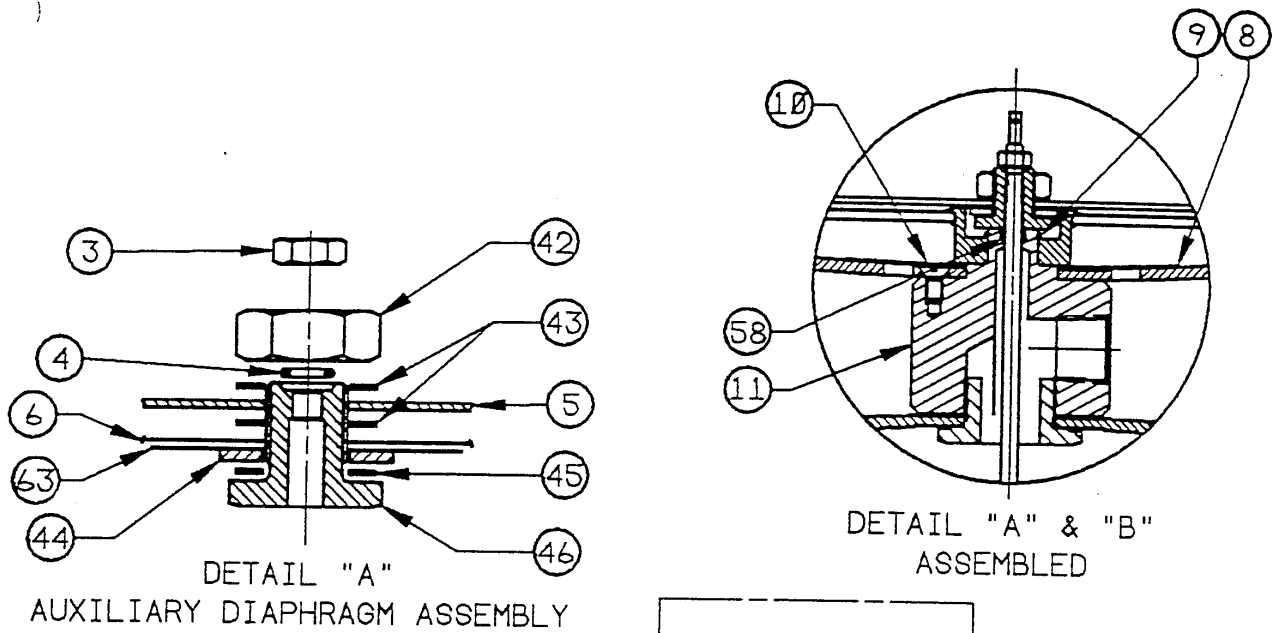
FIGURE 4



MAIN VALVE SEAT PLATE ASSEMBLY  
(INTERNAL PRESSURE SENSE SHOWN)

DETAIL E  
FIGURE 5

DWG: D\_059040171\_PG14  
DB: SER9000SB3  
LIB: SER90LIB



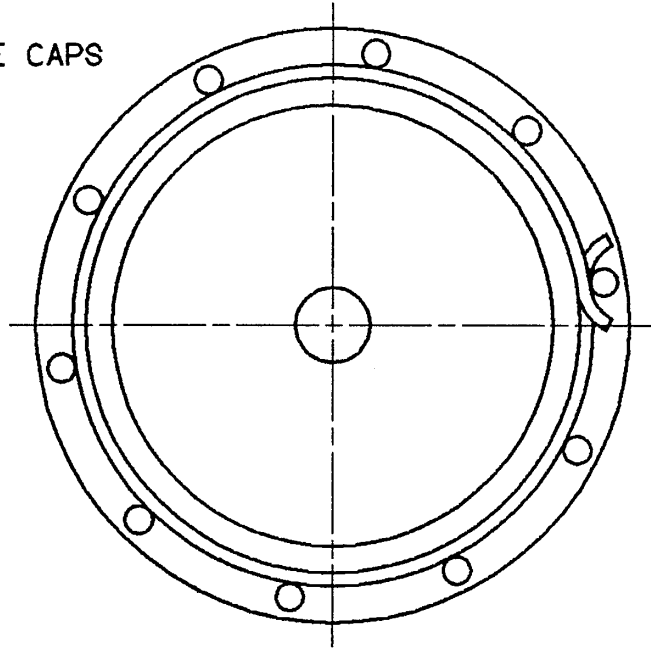
\* USED ONLY WITH DUAL DIAPHRAGM MODEL  
MAIN DIAPHRAGM ASSEMBLY

DWG: D\_059040171\_PG15  
DB: SER9000SB3  
LIB: SER90LIB

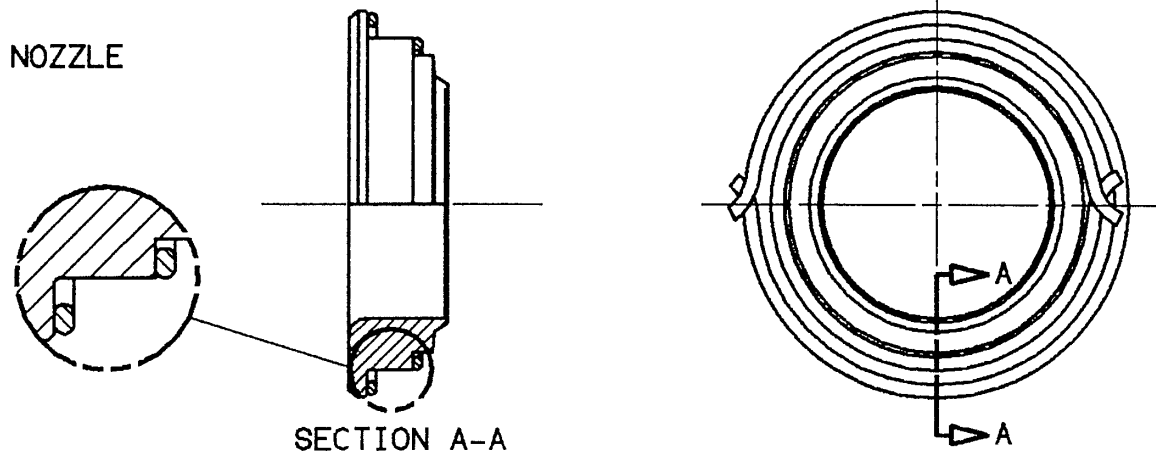
FIGURE 6

1. THE CONTACT SURFACES MUST BE CLEAN, FREE FROM GREASE, AND DRY.
2. REMOVE THE PROTECTIVE STRIP ON THE ADHESIVE TAPE.
3. LIGHTLY PRESS IN PLACE AS SHOWN BELOW.

UPPER MAIN VALVE CAPS



PUT TAPE JUST INSIDE OF BOLT HOLES, OVERLAPING ENDS AT A BOLT HOLE  
 PUT TAPE ON TOP CAP ONLY. DO NOT PUT ON LOWER CAP OF MATING PAIR.



PLACE TAPE TOWARD OUTER EDGE OF EACH GASKET LEDGE. PUT OVERLAPS ON  
 OPPOSITE SIDES. USE 1/8" TAPE ON 3" AND 4" NOZZLES. 3/16" TAPE ON  
 ALL CAPS AND LARGER NOZZLES.

### 3.0 PILOT MAINTENANCE (Refer to Figure 8)

The pilots used for the 9240P Positive Relief Valve, for the 9240C Positive and Negative Pressure Relief Valve and the 9204V Negative Pressure Relief Valve are shown in Figures 8 and 9. Both pilots have the same construction, except for the location of the connections to the main valve diaphragm actuators, or the connections for the pressure sense. For either the positive or positive and negative pressure relief valve, the pilot controls only the positive pressure relief. The negative pressure relief is controlled by the weight of the parts that move in the main valve when it opens. For the negative pressure relief valve, the pilot controls the negative pressure relief.

#### 3.1 Disassembly

- Remove cap (5), loosen lock nut (7), back out adjusting screw (6) to relieve spring tension, remove nuts (11) and bonnet (4).

NOTE: To make it easier to reassemble the pilot, arrange parts in an orderly sequence on a work table when disassembling.

- Push down on spool retaining nut (30) to engage spool anti-rotation pin (21) and remove nut. Remove spindle spring (31), case bolts (13) and nuts (17) and upper case (3). Internals are now accessible for removal.
- Remove the internals and disassemble the sense diaphragm (34) and feedback diaphragm (19), spindle (24) and lantern ring (35) from the spool (36). The outlet seat (the lower O-Ring, 32) must be removed from spindle before the spindle can be removed from the spool.
- Remove the lower case (2) from the body (1).
- Remove the inlet connector (27) and screen (41).
- Clean all metal parts. Throw away all gaskets, diaphragms and seals.

**3.2 Assembly**

- Assembly is done in the reverse order of disassembly. Lubricate all O-rings, sliding surfaces, screw threads and spring washer pivot points with Dow Corning No. 33 silicone grease or equivalent. NOTE: For oxygen service valves use only lubricants suitable for this service, such as Krytox 240 AC.
- The spindle O-ring (23) and bearing surface should be lubricated with Dow Corning FS 3451 or equivalent.
- Assemble the lower case (2) to the body (1). NOTE: Pilots with Kalrez O-rings use two Teflon Gaskets between the case and body.
- Assemble the inlet screen (41) to the inlet connector (27) and the inlet connector to the body (1).
- Assemble the inlet seat (upper O-ring, 32) and the spindle O-ring (23) to the spindle.
- Assemble the spindle to the spool and install the outlet seat (lower O-ring, 32) to the spindle.
- Install the spool (36) with spindle (24) in the body. Position the spool to engage the anti-rotation pin (21).
- Install a diaphragm case gasket (15) on the lower diaphragm case (2) and the feedback diaphragm support plate (14). NOTE: Install the support plate (14) with the rounded edge up towards the feedback diaphragm (19).
- Install a diaphragm case gasket (15) on the feedback diaphragm support plate (14).

- Install the following parts in the order listed on the spool.
1. Feedback diaphragm slipper (38)
  2. Feedback diaphragm (19)
  3. Lantern ring (35)
  4. Sense diaphragm (34)
  5. Sense plate (33)
- NOTE: Install the sense plate with the round edge towards the sense diaphragm (34).
- Install the upper diaphragm case (3) and case bolts (13), washers (16) and nuts (17).
- Install the spindle spring (31) and spool retainer nut (30). Push down on the retainer nut to engage the anti-rotation nut and tighten to 10 foot-pounds. Do not overtighten, the diaphragms may be damaged.
- Pretest pilot function by depressing spindle/diaphragm assembly stack downward. The spindle spring (31) should return the stack assembly to the upward position.

PARTS LIST  
PILOT

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	BODY	27	CONNECTOR-INLET
2	CASE-DIAPHRAGM, LOWER	28	BOLT
3	CASE-DIAPHRAGM, UPPER	29	VENT SCREEN
4	BONNET ASSEMBLY	30	NUT-SPOOL RETAINER
5	CAP-BONNET	31	SPRING-SPINDLE
6	SCREW-PRESSURE ADJUSTMENT	32	O-RING-(-014)
7	NUT-LOCK	33	PLATE-SENSE
8	WASHER-SPRING	34	DIAPHRAGM-SENSE
9	SPRING	35	RING-LANTERN
10	WASHER-PLAIN	36	SPOOL
11	NUT	37	GASKET-BODY
12	GASKET-BONNET	38	SLIPPER-FEEDBACK DIAPHRAGM
13	BOLT	39	FERRULE-TUBING
14	PLATE-DIAPHRAGM SUPPORT	40	RETAINER-DOME TUBING
15	GASKET-DIAPHRAGM CASE	41	SCREEN-INLET
16	WASHER-LOCK	42	PLUG-PIPE
17	NUT	43	STUD-BONNET
18	O-RING (-022)	44	BUSHING
19	DIAPHRAGM-FEEDBACK	51	PLUG
20	BOLT	52	INSERT
21	PIN-GROOVE	53	O-RING
22	BUSHING-GUIDE	54	SEAL-THREAD
23	O-RING (-013)		
24	SPINDLE		
25	FERRULE-TUBING		
26	RETAINER-INLET CONNECTION		

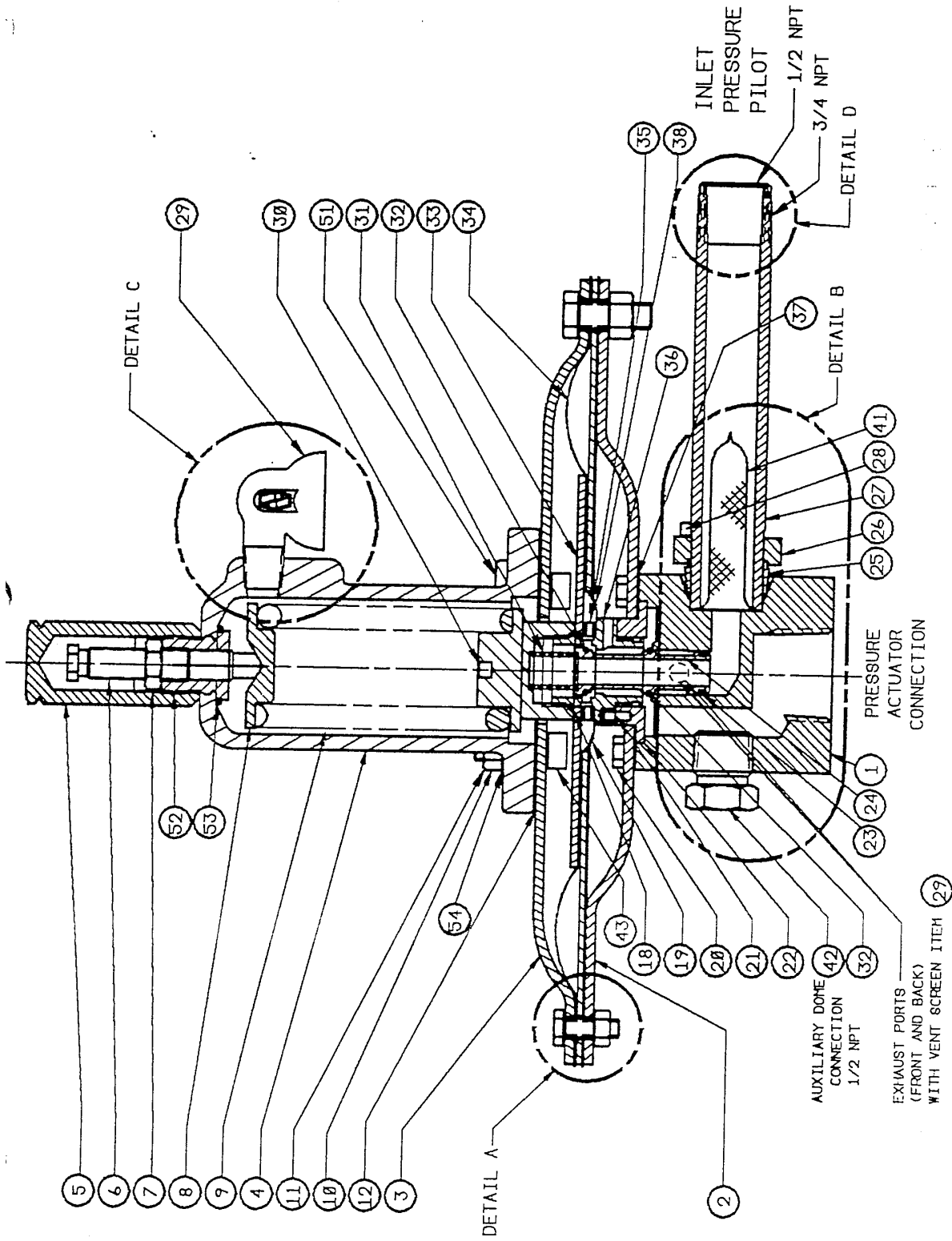


FIGURE 8

DWG: 0\_059040171\_P021  
DB: 6ER9000003  
LIB: 6ER90LIB

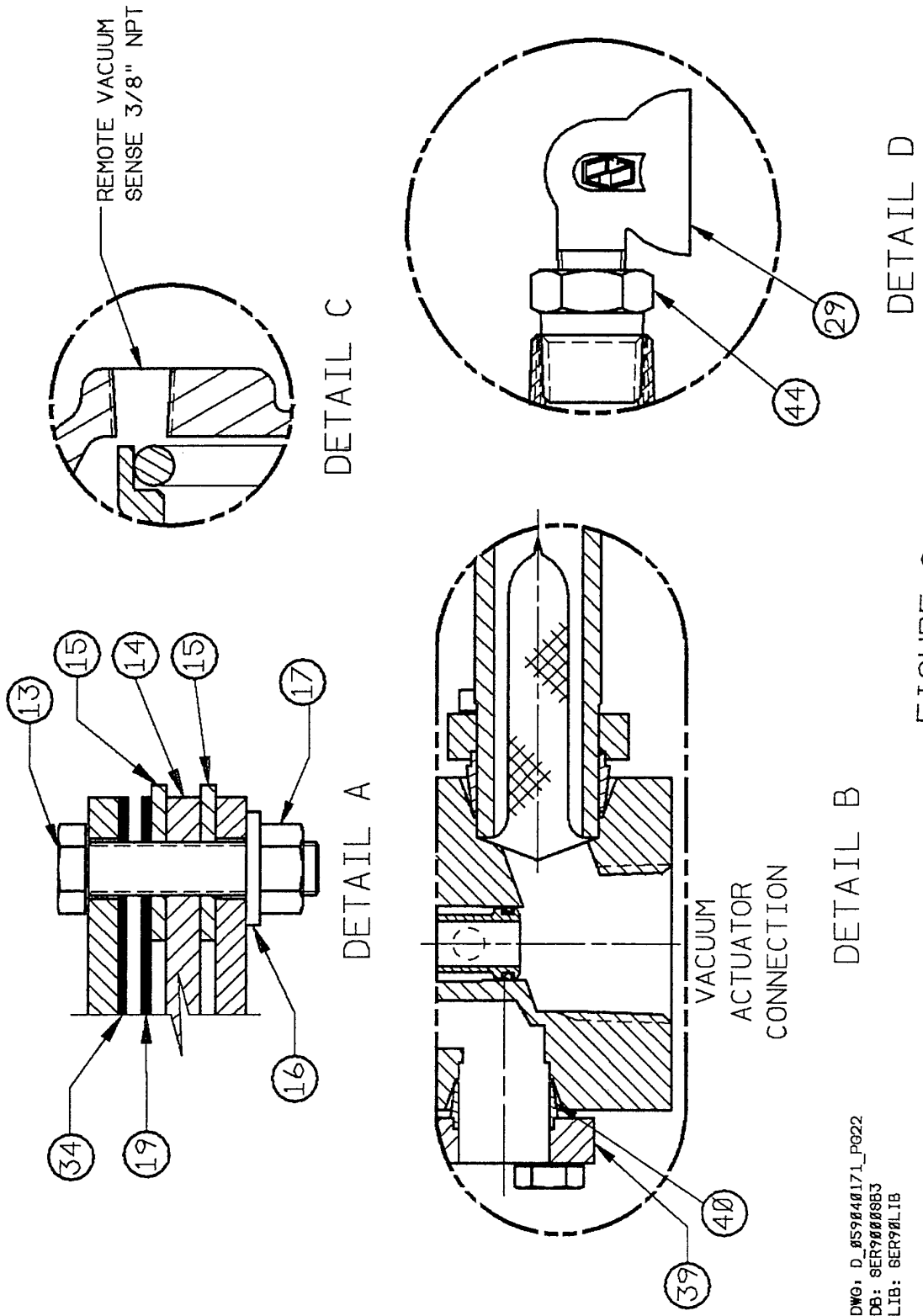


FIGURE 9

DWG: D\_059040171\_PG22  
DB: 6ER90008B3  
LIB: 6ER90LIB

#### 4.0 PILOT ADJUSTMENT

##### 4.1 Set Pressure

To adjust the set pressure, a test set-up similar to that shown in Figure 10 should be used. The set pressure adjustment screw (6) should be turned IN most of the way. Increase the supply pressure to nameplate setting and slowly back this adjustment screw out until flow through the pilot exhaust begins. Continue to back screw out until the dome pressure is 70% of the supply pressure.

##### 4.2 Range of Adjustment

All pilots can be adjusted +/- 10% of the set pressure value stamped on the nameplate with the spring supplied with the pilot. Consult the factory to determine if the spring in the pilot can be adjusted more.

##### 4.3 Adjustment Tolerances

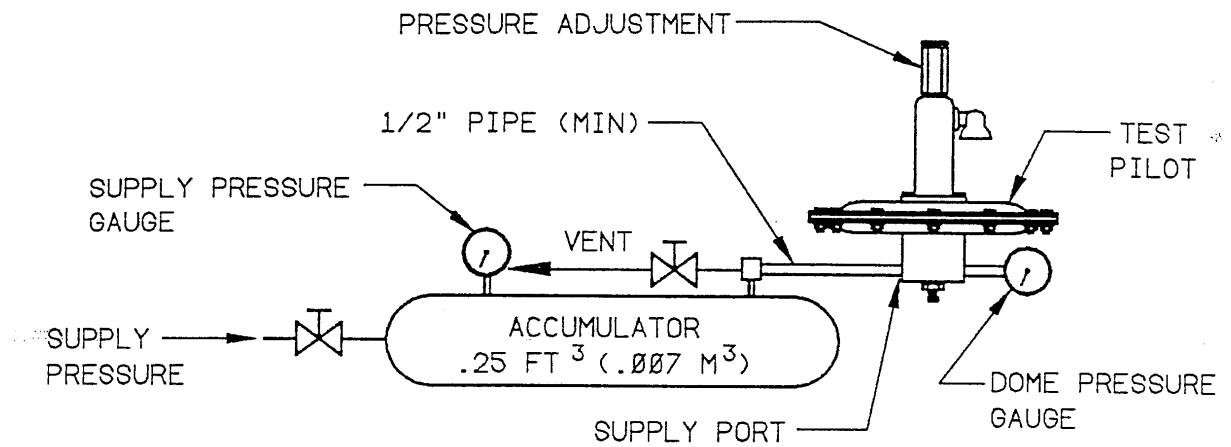
Set Pressure  $\pm$  3%  
Crack Pressure 98% of set  
Reseat Pressure 96% of set

##### 4.4 Definitions

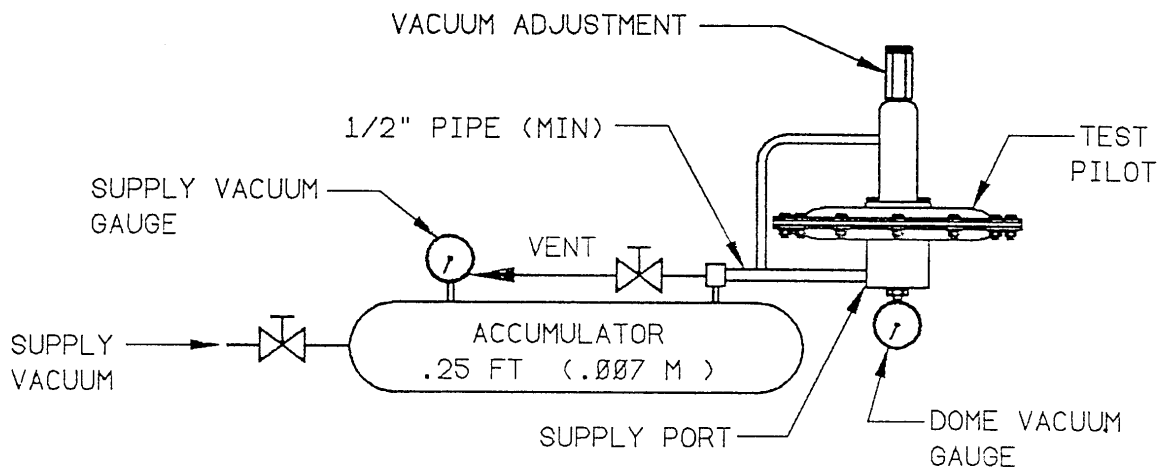
Set Pressure is defined as that supply pressure when the dome pressure is 70% of the supply pressure.

Crack Pressure is defined as the supply pressure where gas flow begins at the pilot outlet.

Reseat Pressure is defined as that supply pressure when the dome pressure is 75% of the supply pressure.



POSITIVE PRESSURE PILOT



NEGATIVE PRESSURE PILOT

DWG: D\_059040171\_P024  
DB: SER7000883  
LIB: 6ER90LI6

FIGURE 10

**5.0 LEAK TESTING THE ASSEMBLY****5.1 General**

The complete valve assembly should be leak tested for internal and external leaks using a pressure equal to 30% and 90% of set.

**5.2 Internal Leak Test**

Spray leak test solution around nozzle/seat area to locate a leak. Seat leakage may be caused by a damaged nozzle seat or seat film. Pilot internal leakage may be checked by blocking one pilot exhaust vent and using a leak test bubble bottle on the other.

**5.3 External Leak Test**

Apply leak test solution to all joints and seals. Tighten bolts or fittings as required.

**6.0 FIELD TEST INSTRUCTIONS-POSITIVE PRESSURE PILOT**

An optional field test accessory is available for checking the positive set pressure without removing the valve from service. The field test accessory consists of a 3-way ball valve to allow the pilot to sense pressure from either the process or from the test gas source.

A standard bottle of nitrogen equipped with a pressure regulator, block valve, pressure gage, and convenient length of high pressure flexible hose is recommended for testing. A set-up similar to that shown in Figure 11 should be used. Such a test kit is available from Anderson, Greenwood & Co. under the part number 04-4812-001 plus additional dash numbers for the pressure gages required.

**PROCEDURE**

- A. Connect gas bottle as shown in Figure 11.
- B. Close vent valve "C".
- C. Open block valve "B" to supply regulator (regulator pressure should be set at zero).
- D. Connect bubble tester bottle to pilot exhaust vent and block the second pilot vent if the pilot is equipped with one.
- E. Increase pressure at field test port to slightly above tank pressure by slowly increasing regulated pressure.
- F. Open field test valve "A" and slowly increase regulator pressure until bubbles are seen in the bottle. That pressure will be within 3 percent of the set pressure.
- G. To remove the test set-up, close valves "A" & "B" and open valve "C".

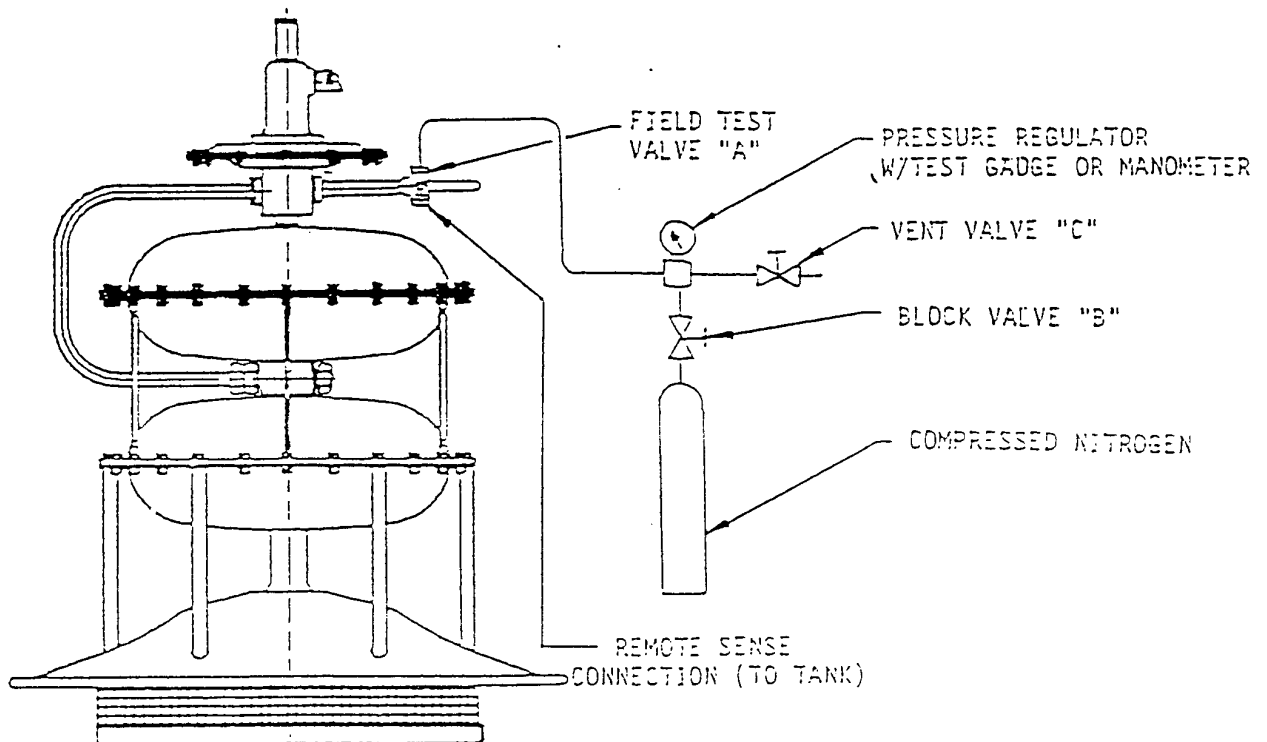


FIGURE 11

7.0 REPAIR KITS

Soft goods repair kits contain all the diaphragms, seals, and seats to repair a valve. To order a kit, specify the base number and select the last three digits from the following tables. To ensure the purchase of the correct repair kit, the order should specify the valve model and serial number. For chloride rich environments, the bolts in the main valve and pilot exposed to the environment should be replaced during routine maintenance or at least every five years.

PILOT REPAIR KITS

KIT BASE NUMBER 06.0235.XXX

DESCRIPTION			DASH NUMBER	
KIT TYPE	PRESSURE OR VACUUM	MATERIAL	PRESSURE	VACUUM
SOFT GOODS	4" WC	BUNA (1)	127	149
	THRU	VITON (1)	128	150
	10" WC	EPR (1)	129	151
		KALREZ (1)	455	456
SOFT GOODS	10" WC	BUNA (1)	558	562
	THRU	VITON (1)	559	563
	5 PSIG	EPR (1)	560	564
		KALREZ (1)	561	565
BOLT	4" WC-5 PSIG	SST	409	409

(1) TEFLON DIAPHRAGMS

ACCESSORY REPAIR KIT

KIT BASE NUMBER 06.0235.XXX

ACCESSORY	KIT TYPE	MATERIAL	DASH NO.
SHUTTLE CHECK	SOFT GOODS	TEFLON	140
	BOLT	SST	410

MAIN VALVE REPAIR KITS

KIT BASE NUMBER 06.0235.XXX

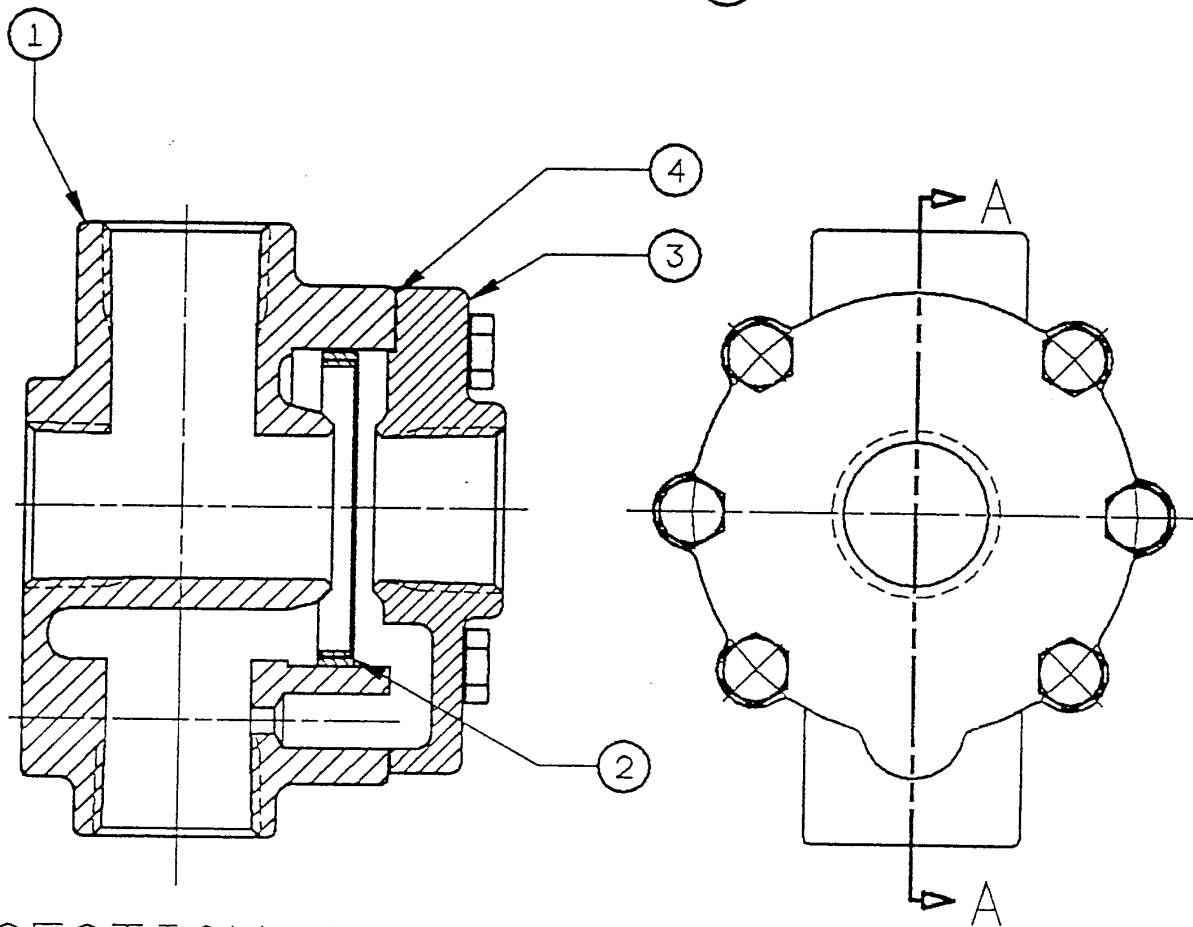
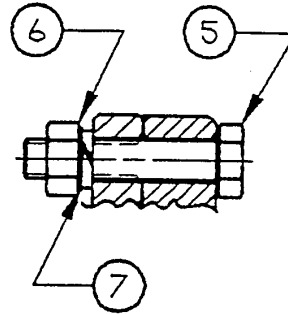
TYPE 9240P OR 9204V  
SINGLE CHAMBER

KIT TYPE	INTERNALS	MATERIALS	2"	3"	4"	6"	8"	10"	12"
SOFT GOODS	ALUM	TEFLON	305	307	309	311	313	315	317
	SST	TEFLON	482	484	486	488	490	492	494
BOLT	ALUM	SST	280	281	282	283	284	285	286
	SST	SST	431	432	433	434	435	436	437

TYPE 9240C  
DUAL CHAMBER

KIT TYPE	INTERNALS	MATERIALS	2"	3"	4"	6"	8"	10"	12"
SOFT GOODS	ALUM	TEF/KALREZ	291	293	295	297	299	301	303
	SST	TEF/KALREZ	468	470	472	474	476	478	480
BOLT	ALUM	SST	273	274	275	276	277	278	279
	SST	SST	417	418	419	420	421	422	423

ITEM	DESCRIPTION
1	BODY-SHUTTLE
2	SHUTTLE ASSY
3	CAP-SHUTTLE
4	GASKET-SHUTTLE
5	BOLT-
6	NUT-
7	WASHER-LOCK



SECTION A-A

DWG: D\_859848171\_PG29  
 DB: 8ER988883  
 LIB: 8ER98LIB

SHUTTLE CHECK VALVE  
 FIGURE 12