

## Installation and Start Up (Continued)

7. On regulators with Internal Relief Valve, there is no adjustment for the internal relief. It is fixed, with relief beginning at approximately 9" w.c. to 20" w.c., above regulator set point, depending on relief spring (11k) used.

Internal Relief Valves must be carefully sized. For information, contact your Sensus Representative.

6. Regulators installed indoors must be vented outside. Run vent pipe from regulator vent connection to safe place outside. Vent piping should be as short and direct as possible.

Vent piping for regulators with internal relief valve (Models 243-12-2 or 243-8-2) must be large enough to vent all relief valve discharge to atmosphere without excessive back pressure and resulting excessive pressure in regulator.

Vent pipe outlet must be protected against nest building animals, bees, insects, etc., and positioned to protect against flooding, drain water, ice formation, etc. but must allow free and unobstructed passage of air or gas.

### CAUTION

Turn gas on very slowly. If an outlet stop valve is used, it should be opened first. Do not overload the diaphragm with a sudden surge of inlet pressure. Monitor the outlet pressure during start-up to prevent an outlet pressure overload.

## Servicing

1. Make sure the regulator is entirely depressured before disassembling.

2. Carefully note location and position of all disassembled parts to be certain reassembly is correct. Inspect each part and replace those that are worn or damaged or otherwise unsatisfactory.

3. For access to valve (21) and orifice (24) loosen union bolts (16) and remove diaphragm case assembly from body.

To remove valve (21), first remove hair pin cotter (20b).

Orifice (24) unscrews from body. Use 1-5/8" hex socket "thinwall" type. When replacing orifice use moderate amount of pipe dope on orifice threads.

4. Before reassembling and tightening union bolts (16), make certain Tetraseal (17) is in position.

5. To replace diaphragm; remove spring (4), remove flange bolts (8) and nuts (9), and disassemble diaphragm assembly. Remove old diaphragm (11a) from diaphragm pan (11b). Remove old adhesive from the diaphragm pan using a solvent such as methyl ethyl ketone (MEK).

To reassemble, apply a thin, even layer of a rubber based adhesive such as 3M Industrial Adhesive #EC-847 to the cleaned, prepared side of the diaphragm pan.

Attach the diaphragm to the adhesive side of the diaphragm pan, being careful to align the center hole of the diaphragm with the corresponding center hole in the diaphragm pan. Make certain all parts are reassembled in their correct order and bolts (8) are tightened to a torque of 150 in-lbs. Bolts must be tight enough to prevent leakage but not too tight that the diaphragm material is crushed or damaged. Diaphragm must not be twisted or pinched.

6. Upon completion of servicing, make certain that regulator installation is entirely free of leaks.

### CAUTION

Regulators are pressure control devices with numerous moving parts subject to wear that is dependent upon particular operating conditions. To assure continuous satisfactory operation, a periodic inspection schedule must be adhered to with the frequency of inspection determined by the severity of service and applicable laws and regulations.

## Condensed Parts List

The following are the parts generally required in maintenance and servicing. For a listing of all parts refer to Parts List RP-1306

ILL. No.	Description	Part Number
1	Cover Cap (IRV)	143-16-005-00
1e	Cover Cap (STD)	143-16-005-08
1d	Tetraseal 1 1/2 x 1 3/8"	906534
2	O-Ring #2-140	951357
2a	O-Ring #2-142	951376
3	Adjustment Spring Button	143-16-009-00
4	Spring (See Table, 1st page)	
5	243-12 Cover Assembly IRV (includes vent valve and spring)	143-16-503-03
	243-12 Cover Assembly STD (includes vent valve and spring)	143-16-503-19
	243-8 Cover Assembly (includes vent valve and spring)	143-82-503-04
8	Flange Bolt, 3/8" x 1" Hex Hd	910030
9	Flange Nut, 3/8" - 18 Hex S.F.	921002
10	243-12 Lower Case	143-16-002-00
	243-12 Lower Case (tapped for external control line)	143-16-002-01
	243-08 Lower Case	143-82-002-00
	243-08 Lower Case (tapped for external control line)	143-82-002-01
11a	243-12 Diaphragm	143-16-150-00
	243-8 Diaphragm	143-82-150-00
	243-8 HP Diaphragm	121-10-150-50
11b	243-12 Diaphragm Pan	143-16-017-00
	243-8 Diaphragm Pan	143-82-017-00
	243-8 HP Diaphragm Pan	121-10-017-50
11d	Seal Washer	143-16-115-00
11e	Emery Cloth Washer (faces against top side of 243-8 HP diaphragm)	143-82-178-00
11f	Spring guide	143-16-018-00
	Spring guide (243-8 HP)	121-10-022-53
11k	Internal Relief Valve Spring, for 243-8-2 only.	143-82-021-03
	(relief begins at approx. 9" w.c. above regulator set point)	
11k	Internal Relief Valve Spring (relief begins at approx. 9" w.c. for 243-12-2, and approx. 20" w.c. for 243-8-2 above regulator set point)	143-16-021-02
11s	243-8 HP Diaphragm Plate	121-10-022-52
13	243-12 Coupling-Lever-Stem Assembly	143-16-530-00
	243-8 Coupling-Lever-Stem Assembly	143-82-530-00
	243-8 (HP) Coupling-Lever-Stem Assembly	143-82-530-02
16	Union Bolts, 3/8" x 1 1/4" Hex	910056
17	Tetraseal (or O-Ring) 2 1/4 x 2 1/2"	904075
18	243-8 Throat Block with O-Ring Seal	143-16-508-00
	243-12 Throat Block with O-Ring Seal	143-16-508-04
20b	Hair Pin Cotter	143-62-118-00
21	Valve Assembly - 10°- Buna N	143-16-511-09
	Valve Assembly - 10°- Viton	143-16-511-11
	Valve Assembly - 30°- Buna N	143-16-511-10
	Valve Assembly - 30°- Viton	143-16-511-12
24	1 1/4" Orifice, Brass	143-16-023-03
	1" Orifice, Brass	143-16-023-02
	3/4" Orifice, Brass	143-16-023-01
	1/2" Orifice, Brass	143-16-023-00
	3/8" Orifice, Brass	143-16-023-04
	1/4" Orifice, Brass	143-16-023-10
	.207" Orifice, Brass	143-16-023-11
25	Travel Stop Stem	143-16-060-02
26	Warning Tag-Travel Stop	143-16-136-05
27	Warning Tag-Body Interchangeability	143-16-136-06
28	Clamping Plate	143-16-102-01

Denotes recommended spare parts