

Orion-3A Pneumatic Pressure Controller

Part #55287, Patent No. 4.698.998

SPECIAL FEATURES:

- Orion 3A is a variable volume pressure controller with an operating pressure from vacuum to 10,000 psi. It consists of two low torque, fine micro-metering valves with positive shut-off, adjustable stop and soft seat. The pressure valve controls the inlet pressure and the other valve vents to atmosphere.
- The vernier is located at the center of the controller and allows the operator a very fine pressure adjustment (approx. $\pm 5\%$ point max.) without using the pressure or vent valve.
- Selecting the appropriate O-ring material may extend the wide range of gas applications.
- There is one inlet, one outlet, and two test ports. One test port may be used to connect a pressure transducer or pressure gage standard; the other test port may be used to connect the unit under test.

OPERATION:

The pressure valve will begin to open when it is turned counter clockwise approximately 15 degrees. Full open position of the valves is achieved with a maximum of 3 1/2 turns from the closed position. Use the pressure/vent valves to achieve $\pm 95\%$ of the target pressure. The pressure and vent valves must be closed before operating the vernier. The vernier is a piston and cylinder configuration, which generates $\pm 5\%$ pressure, or vacuum of the indicated pressure. The vernier has a fine adjustment sensitivity of .005 psi. Very low torque is required to turn the vernier... FINGERTIP ADJUSTMENT EVEN AT 10,000 psi!!!!

SPECIFICATIONS:

- **Pressure Range:** 0-10,000 psi and Vacuum
- **Proof Pressure:** 15,000 psi
- **Pressure & Vent Valve Orifice:** .032
- **CV:** .007
- **Mechanical Rotation:** 3 1/2 turns (nom.)
- **Torque:** Fingertip adjust (even at 10,000 psi)
- **Vernier Volume:** .4 cubic inch (nom.)
- **Mechanical Rotation:** 15 turns (nom.)
- **Adjustable sensitivity:** .005 psi
- **Construction:** 300 Series stainless steel body, aluminum knobs, black anodize. All other parts 300 series stainless O-Rings Viton "V" STD, others available. (Aluminum body available for lower pressure ranges up to 2000 psi. Refer to Model: Orion 2C Pressure Controller.)
- **Weight:** 7.0 lbs.
- **O-ring repair kits:** Buna-N (part #58499); Ethylene-Propylene (part #58506); Silicone (part #58509); Neoprene (part #58515); Fluorocarbon "Viton" (standard) (part #55277).

Note: Various O-ring materials may be installed in Orion-3A by special order, but may not be rated for 10,000 psi.



Toll Free: 888-295-8475 • International: 715-234-9171 • FAX: 715-234-6967

WEB SITE: www.4condec.com

ORION-3A Pneumatic Pressure Controller

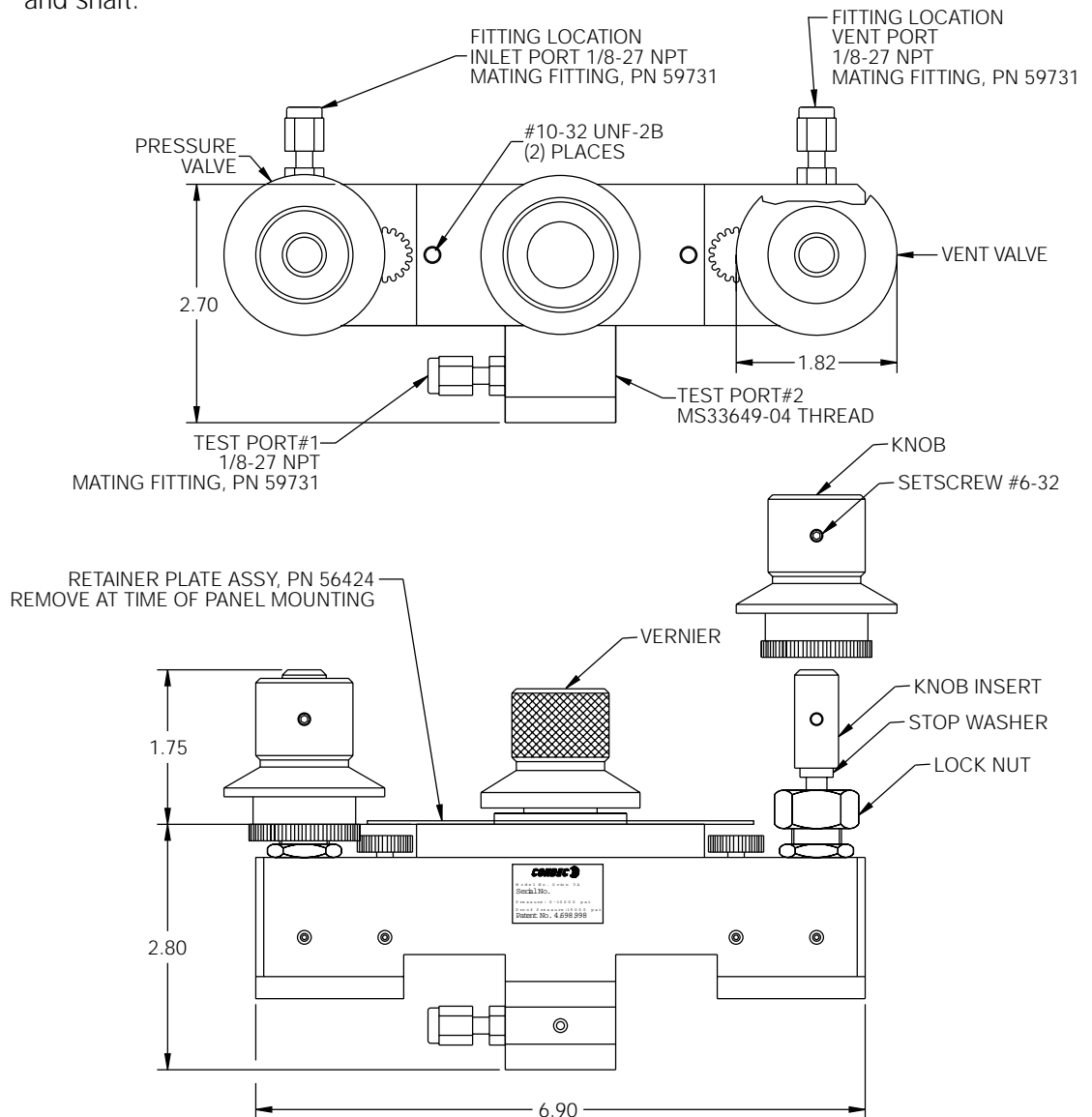
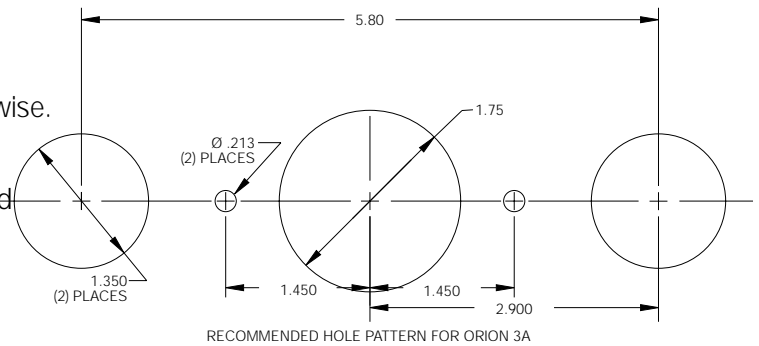
Part #55287, Patent No. 4.698.998

INSTALLATION:

The valve is factory adjusted.

Panel or bracket mounting:

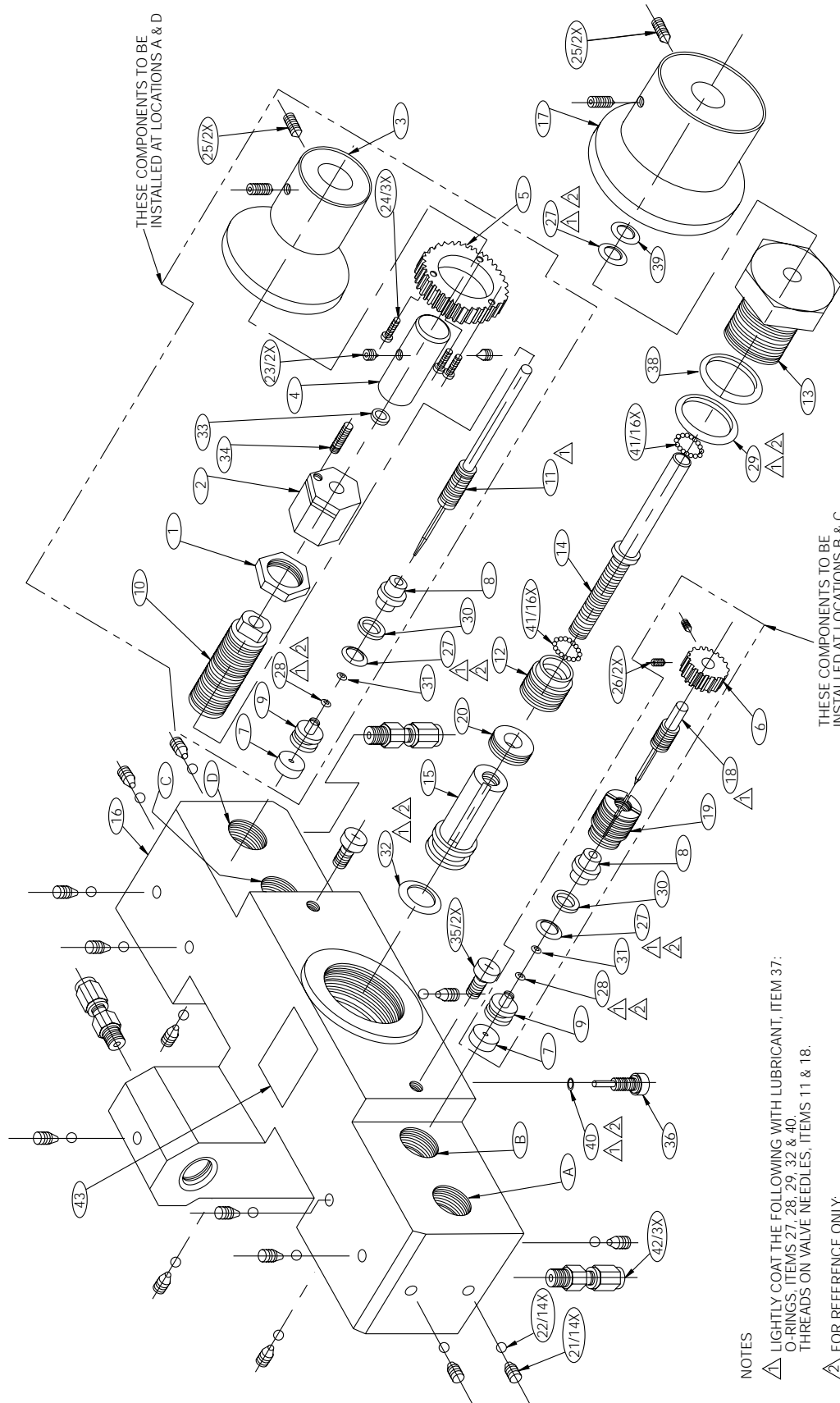
1. Turn the two outside knobs clockwise.
2. Remove all (three) knobs.
3. Install controller into recommended hole pattern with two 10-32 x 1/2" lg. screws.
4. Install knobs, align set screws with both dimples on knob inserts and shaft.



ORION-3A Pneumatic Pressure Controller

Bill of Material

Ref #	Part #	Description	Qty.
1	57482	Nut, Valve Needle Housing 9/16-18, width across flats: .75, thickness: .12	2
2	54401	Locknut	2
3	58079	Knob	2
4	57889	Knob, Insert	2
5	57256	Gear, Spur 40-tooth	2
6	59233	Gear, Spur 18-tooth	2
7	55896	Valve Seat	4
8	59387	Valve Seat, Stem	4
9	59045	Valve, Needle Seat	4
10	54540	Housing, Valve Needle	2
11	59551	Valve Needle	2
12	57600	Bushing, End	1
13	58554	Cap, End	1
14	58699	Shaft	1
15	58597	Piston	1
16	59309	Body, Dual Valve	1
17	57580	Knob	1
18	55533	Valve Needle	2
19	55159	Housing, Valve Needle	2
20	56784	Locknut, 9/16-18UNF-3A, SST	1
21	58464	Setscrew, 12-24NC x 1/4, SST	14
22	58308	Ball, Tungsten carbide	14
23	59383	Setscrew, 6-32NC x 1/8, SST	4
24	58342	Screw, Cap Hex Socket Head, #2-56UNC-3A, purchase per mil spec 16995-2	6
25	59322	Setscrew, 6-32NCx1/4, SST	6
26	59326	Setscrew, 2-56NCx1/8, alloy steel	4
27	55569	O-ring, AS568A dash no. 010, Fluorocarbon (Viton) 90 durometer color black w/white dot	5
28	55552	O-ring, AS568A dash no. 002, Fluorocarbon (Viton) 90 durometer color black w/white dot	4
29	58090	O-ring, AS568A dash no. 117, Fluorocarbon (Viton) 90 durometer color black w/white dot	1
30	60633	Retainer, Packing Backup, single turn tetrafluoroethylene	4
31	55570	Washer, Backing .04 thick, tetrafluoroethylene resin	4
32	58045	O-ring, AS568A dash no. 111, Fluorocarbon (Viton) 90 durometer color black w/ white dot	1
33	59245	Washer, #8 Screw Size .187, ID x .440 OD x .040 thick nylon	2
34	60202	Setscrew, hex	2
35	60837	Screw, MACH Pan Head #10-32NF x 1/2 phillips head 300 series, SST	2
36	54905	Screw, Self Sealing, 8-32 x 5/8 modified to print	1
38	57027	Washer, Backup	1
39	54448	Retainer, Packing backup, single turn tetrafluoroethylene	1
40	55615	O-ring, AS568A Dash No 007, Fluorocarbon (Viton) 90 durometer color black w/white dot	1
41	58314	Ball, Chrome, steel	32
42	59731	Fitting, Male connector, 1/8 tube x 1/8 NPT, stainless steel	3



RICE LAKE WEIGHING SYSTEMS
 CLAIMS PROPRIETARY RIGHTS TO THE MATERIAL DISCLOSED HEREON.
 THIS DRAWING AND/OR TECHNICAL INFORMATION IS ISSUED IN CONFIDENCE
 FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT BE USED TO
 MANUFACTURE ANYTHING SHOWN OR REFERRED TO HEREON WITHOUT
 DIRECT WRITTEN PERMISSION FROM RICE LAKE WEIGHING SYSTEMS, CONDEC
 PRODUCTS MANAGER