

ORION-2C Pneumatic Pressure Controller

Part #55283, Patent No. 4.698.998

SPECIAL FEATURES:

- Orion-2C is a variable volume pressure controller with an operating pressure from vacuum to 3000 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 .0005 psi. Very low torque is required to turn the vernier... FINGERTIP ADJUSTMENT EVEN AT 3000 psi!!!!!!

SPECIFICATIONS:

- Pressure Range: 0-3000 psi and vacuum
 - Proof Pressure: 3500 psi
 - Pressure & Vent Valve Orifice: 0.032
 - CV: 0.007
 - Mechanical Rotation: 3 1/2 turns (nom.)
 - Vernier Volume: 1/2 cubic inch (nom.)
 - Mechanical Rotation: 16 turns (nom.)
 - Adjustable sensitivity: 0.0005 psi
 - Torque: Fingertip adjust (even at 3000 psi)
 - Construction: Aluminum body clear anodize aluminum knobs, black anodize all other parts 300 series stainless O-rings Buna-N standard, others available. (All stainless steel construction available for use with corrosive gases and/or high pressure up to 10,000 psi. Refer to model: Orion 3A pressure controller.)
 - Weight: 3.0 Lbs.
 - O-ring repair kits: Buna-N (standard) (part #58499); Ethylene-Propylene (part #58506); Silicone (part #58509); Neoprene (part #58515); Fluorocarbon "Viton" (part #55277).
- Note: Various O-ring materials may be installed in Orion-2C by special order.



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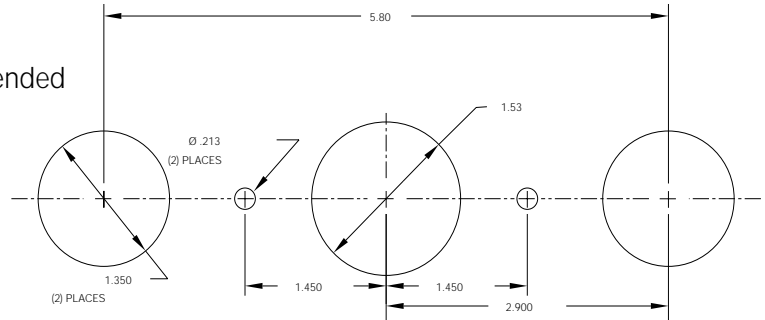
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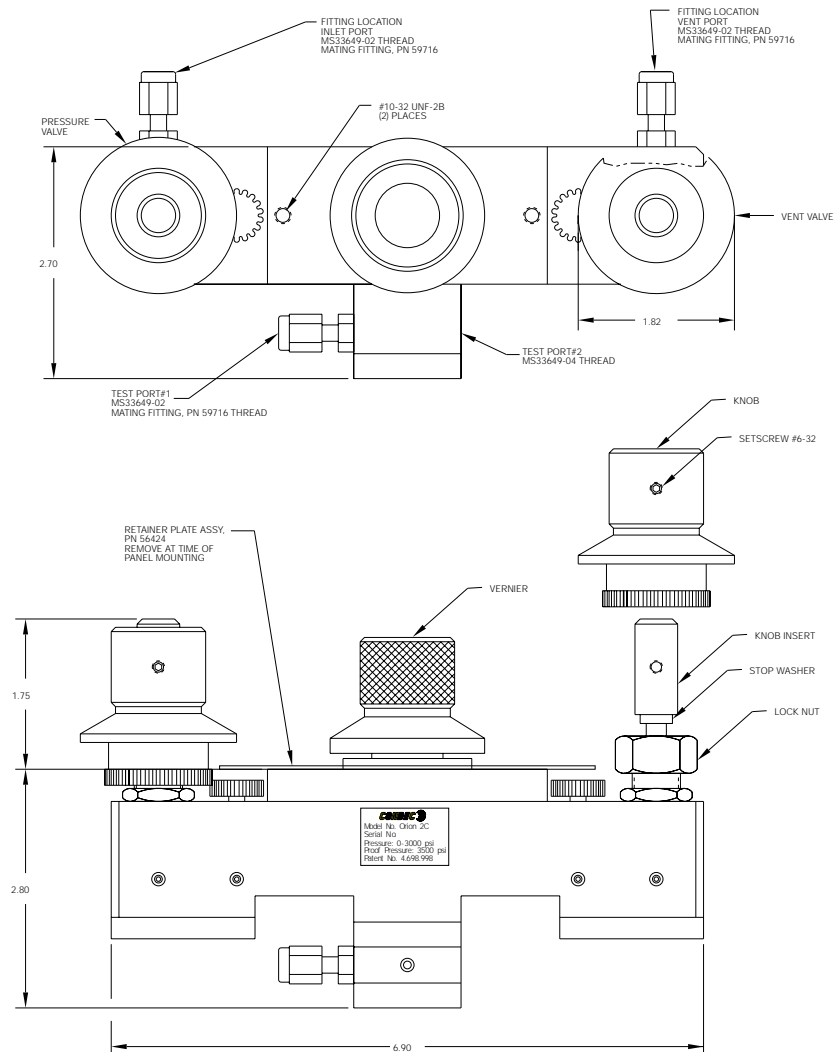
INSTALLATION:

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.



RECECOMMENDED HOLE PATTERN FOR ORION 2



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Bill of Material

Ref #	Part #	Description	Qty.
1	57482	Nut, Valve Needle Housing 9/16-18, width across flats: 0.75, thickness: 0.12	2
2	54401	Locknut	2
3	58079	Knob	2
4	57889	Knob, Insert	2
5	57256	Gear, Spur 40 Teeth	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	57906	Bushing, End	1
13	59378	Cap, End	1
14	59495	Shaft	1
15	59241	Piston	1
16	55714	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	59845	Plug, Expansion, 0.1562 + 0.0000/-0.0012 hole diameter	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, 6-32NC x 1/4 SST	6
26	59326	Setscrew, 2-56NC x 1/8, alloy steel	4
27	55554	O-ring, AS568A dash no. 010, Buna-N (Nitrile) 70 durometer color black	5
28	55536	O-ring, AS568A dash no. 002, Buna-N (Nitrile) 70 durometer color black	4
29	55573	Shaft O-ring, AS568A Dash No 117, Buna-N (Nitrile) 70 durometer color black	1
30	60633	Retainer, Packing Backup, single turn tetrafluoroethylene	4
31	55570	Washer, Backing 0.04 thick, tetrafluoroethylene resin	4
32	55577	O-ring, AS568A dash No 111, Buna-N (Nitrile) 70 durometer color black	1
33	59245	Washer, #8 Screw Size 0.187, 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 stainless steel	2
36	58976	Screw, Self Sealing, 8-32 x 5/8 modified to print	1
38	53308	Label Roll, 1.25 x 1.25, polytrans 3000 void, 3" Core, 8" OD	1
41	59878	Spacer, 0.005 thick mylar	2
42	59880	Spacer, 0.007 thick mylar	2

