

# Orion 2C/Orion 3A Precision Pneumatic Controllers



Orion 2C cased version 89216 shown with DPDG Gauge and optional adapters 55394 and 120422



Orion 2C cased version 89216 shown with optional quick-disconnect adjustable adapter, 120422



Orion 2C/Orion 3A Cased Controller Literature sheet available - 121189



"120462 - HANDS FREE VIEWING"



"120422 - HANDS FREE VIEWING"

## STANDARD FEATURES

- System working pressure:  
Orion 2C, non-cased/cased versions:  
Up to 3000 psi  
Orion 3A, non-cased version: Up to 10,000 psi  
Orion 3A, cased version: Up to 10,000 psi based on model
- Orion 2C: Aluminum body, Buna-N o-rings standard  
Orion 3A: Stainless steel body, Viton o-rings standard
- Precision patented vernier to precisely "dial in" a selected pressure
- Fingertip closed system pressure adjustment to better than 0.0005 psi
- Soft seat construction and adjustable stop - immune to over tightening
- Two low-torque, fine micro-metering valves with positive shut off
- Two test ports allow for multiple applications:
- Non-cased models (see below for optional seal plug)
- Cased models, # of test ports based on version

## APPLICATIONS

- Gas applications
- Operation to 10,000 psi, based on model
- Test stands
- OEM pressure control applications

## SPECIFICATIONS ORION 2C

### Pressure Range:

0-3000 psi and vacuum

### Proof Pressure:

4000 psi

### Pressure and Vent Valve Orifice:

0.032

### Cv Factor:

0.007

### Mechanical Rotation:

3.5 turns, nominal

### Torque:

Finger tip adjust

### Vernier Volume:

0.5 cubic inch, nominal

### Vernier Mechanical Rotation:

16 turns, nominal

### Adjustable Sensitivity:

0.0005 psi, minimum

### Vernier Torque:

Finger tip adjust to 3000 psi

### Construction:

Body: Aluminum, clear anodize

Knobs: Aluminum, black anodize

O-rings: Buna-N standard, others available

Ports:

Orion 2C (uncased version, 55283):

Test port #1, input port and output port -fitting (59716) for 1/8" OD tube

Test port #2, 7/16-20 UNF female (MS33649-04) straight thread. Optional: use one each 68862 & 61035 to plug

Orion 2C (cased version, 89216):

Input port, two test ports and vent port - male 7/16-20 AN-4, stainless steel

All other parts 300 series stainless steel

### Case Material

16 gauge painted steel

## SPECIFICATIONS ORION 3A

### Pressure Range:

0-10,000 psi and vacuum (uncased version, 55287)

0-6000 psi and vacuum (cased version, 159874)

0-10,000 psi and vacuum (cased version, 113949)

### Proof Pressure:

15,000 psi (uncased version, 55287)

9000 psi (cased version, 159874)

11,000 psi (cased version, 113949)

### Pressure and Vent Valve Orifice:

0.032

### Cv Factor:

0.007

### Mechanical Rotation:

3.5 turns, nominal

### Torque:

Finger tip adjust

### Vernier Volume:

0.4 cubic inch, nominal

### Vernier Mechanical Rotation:

15 turns, nominal

### Adjustable Sensitivity:

0.005 psi, minimum

### Vernier Torque:

Finger tip adjust to 10,000 psi

### Construction:

Body: 300 series stainless steel

Knobs: Aluminum, black anodize

O-rings: Viton standard, others available

Ports:

Orion 3A (uncased version, 55287)

Test port #1, input port and output port - stainless steel fitting (59731) for 1/8 in. OD tubing

Test port #2, 7/16-20 UNF female (MS33649-04) straight thread. Optional: use one each 68862 & 54854 to permanently plug

Orion 3A (cased version, 159874):

Input port, two test ports and vent port - 7/16-20 AN-4 males, stainless steel

Orion 3A (cased version, 113949):

Input port and two test ports - stainless steel fitting for 1/4 in. OD tubing

Vent port - stainless steel fitting for 1/8 in. OD tubing

All other parts 300 series stainless steel

### Case Material

16 gauge painted steel

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## MODEL/PRICE

PART #	DESCRIPTION	EST. SHIP WEIGHT	PRICE
55283	Orion 2C, vacuum-3K PSI (with Buna-N O-rings) NOTE: to seal test port #2 order 1 ea. 68862 & 61035 or for 1/8 tube fitting order 1 ea. 54854 & 59982	6 lb	Consult
55287	Orion 3A, vacuum-10K PSI (with Viton O-rings) NOTE: to seal test port #2 order 1 ea. 68862 & 54854 or for 1/8 tube fitting order 65485	10 lb	Consult
89216	Cased Orion 2C, vacuum-3K PSI (with Buna-N O-rings) Ports; 2 outputs (1 each front and rear), 1 input, 1 vent, all ports 7/16-20 AN-4 male NOTE: Cheat Seal 54854 used for all ports.	8 lb	Consult
159874	Cased Orion 3A, vacuum-6K PSI (with Viton O-rings) Ports; 2 outputs (1 each front and rear), 1 input, 1 vent NOTE: Cheat Seal 54854 used for all ports.	12 lb	Consult
159875	Cased Orion 3A, vacuum-7500 PSI (with Viton O-rings) Ports; 2 outputs (1 each front & rear 1/8 NPT male), 1 input 1/8 NPT male, 1 vent 7/16-20 AN-4 male	12 lb	Consult
159876	Cased Orion 3A, vacuum-7500 PSI (with Viton O-rings) Ports; 2 outputs (1 each front & rear 1/4 NPT male), 1 input 1/4 NPT male, 1 vent 7/16-20 AN-4 male	12 lb	Consult
113949	Cased Orion 3A, vacuum-10K (with Viton O-rings) Ports; 2 outputs (1 each front & rear) & 1 input for 1/4 tube, 1 vent for 1/8 tube - Note: Replacement Nut/Ferrule Kit order 159958 for output or input port, 160142 for vent port.	12 lb	Consult

## OPTIONS/ACCESSORIES

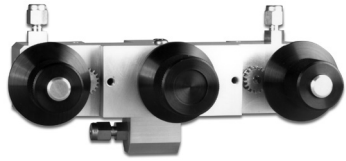
PART #	DESCRIPTION	PRICE
68859	Additional adjustment and maintenance manual	Consult
68862	Seal plug for Orion test port #2 (non-cased Orion 2C requires O-ring 61035 Buna-N (STD) or 55596 Viton, non-cased Orion 3A requires one Cheat Seal 54854)	Consult
55596	O-ring, Viton (used with non-cased Orion 2C and seal plug 68862)	Consult
61035	O-ring, Buna-N (used with non-cased Orion 2C and seal plug 68862)	Consult
54854	Cheat Seal (used with non-cased Orion 3A, seal plug 68862, Cased Orion 3A 159874, adapters 120422 and 120462)	Consult
58499	Replacement Orion 2C, Buna-N O-ring kit	Consult
55277	Replacement Orion 3A, Viton O-ring kit	Consult
120422	Test port quick-disconnect adjustable adapter assembly, Female Quick-Disconnect to 7/16-20, 37 degree AN-4 swivel other end, 3000 PSI (for hands-free display reading when used between Orion 2C cased unit test port and CONDEC DPDG gauge, see pictorial on previous page, requires one Cheat Seal 54854)	Consult
120462	Test port quick-disconnect adjustable adapter assembly, 1/8 NPT swivel to 7/16-20, 37 degree AN-4 swivel other end, 5000 psig working pressure (for hands-free display reading when used between Orion 2C cased unit test port and CONDEC 3030, see pictorial on previous page, requires one Cheat Seal 54854)	Consult

Please consult factory for availability of these non-standard O-ring materials:

Ethylene-propylene Neoprene Silicone

Consult factory for Orion 3A (cased or non-cased version) dimensions.

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Orion 2C

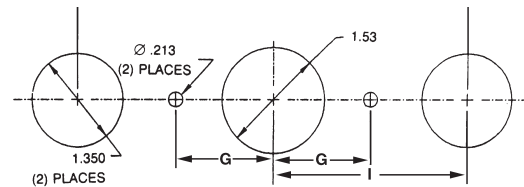
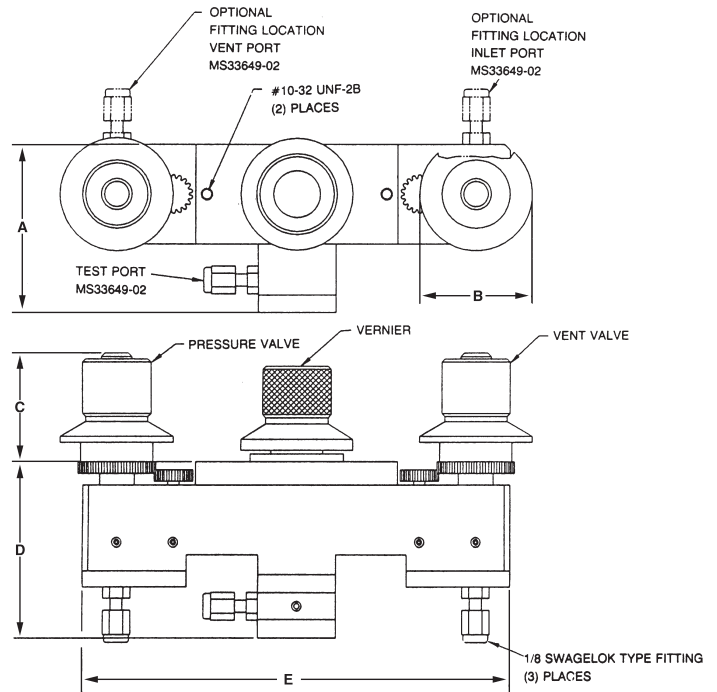


Orion 3A

Test Port #2, see  
Options/Accessories

Test Port #2, see  
Options/Accessories

ORION 2C NON-CASED VERSION  
PN 55283



RECOMMENDED HOLE PATTERN  
FOR ORION 2C

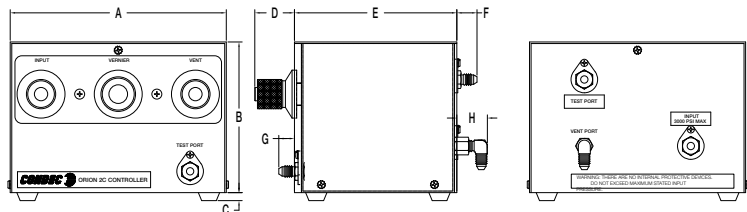
## ORION 2C NON-CASED DIMENSIONS

A	2.70 in. (68.58 mm)
B	1.82 in. (46.22 mm)
C	1.75 in. (44.45 mm)
D	2.80 in. (71.12 mm)
E	6.90 in. (175.26 mm)
F	5.80 in. (147.32 mm)
G	1.45 in. (36.83 mm)
I	2.90 in. (73.66 mm)

## ORION 2C CASED DIMENSIONS

A	8.14 in. (206.75 mm)
B	5.70 in. (144.78 mm)
C	0.30 in. (7.62 mm)
D	1.50 in. (38.10 mm)
E	6.10 in. (154.94 mm)
F	0.80 in. (20.32 mm)
G	0.60 in. (15.24 mm)
H	1.15 in. (29.21 mm)

ORION 2C CASED VERSION  
PN 89216



Consult factory for Orion 3A (cased or non-cased version) dimensions.