

Masonellan* Products

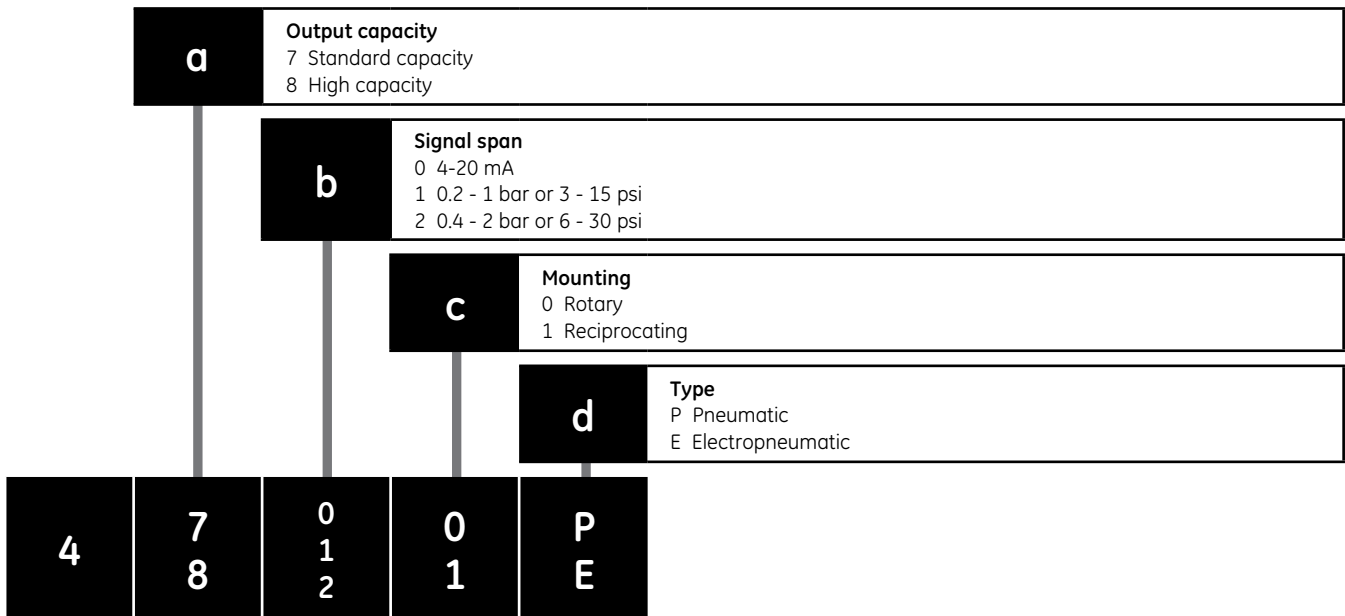
Models 4700P/4700E & 4800P/4800E

Corrosion-resistant Positioners



Numbering System

Series Identification 4abcd



Operation / Features

Masoneilan models 4700P/4700E and 4800P/4800E cam positioners from GE Oil & Gas provide precise positioning, fast response, and customized control characteristics for control valves.

The main features of the models 4700P/4700E and 4800P/4800E are:

Cam Characterization - This cam provides field changeable, linear, split-range linear, and equal percentage control characteristics. Custom characteristics are available on special order.

Zero and Span Adjustments - For ease of installation and maintenance, two simple procedures provide easy adjustment of zero and span. An adjustment nut allows zeroing while span is accomplished by changing the effective length of the feedback spring. All adjustments are fully enclosed for protection from the environment.

NOTE: The electropneumatic (4700E/4800E) positioner has no adjustments in the I/P module.

Simple and Easy to Maintain - The pilot valve is the only moving part in the pilot housing. It is easily removed without disassembling any other part of the positioner. An optional bypass valve module is available for use on the model 4700P pneumatic direct acting positioner. Where operating parameters allow, it permits the positioner to be isolated for maintenance while operating the valve directly with the instrument signal. The bypass module is mounted on the back of the positioner to discourage tampering.

Corrosion-resistant Materials - Premium performance is the standard on the models 4700P/4700E and 4800P/4800E positioners. Internal components are manufactured of corrosion-resistant materials for protection against the harshest environments.

Rotary Valves

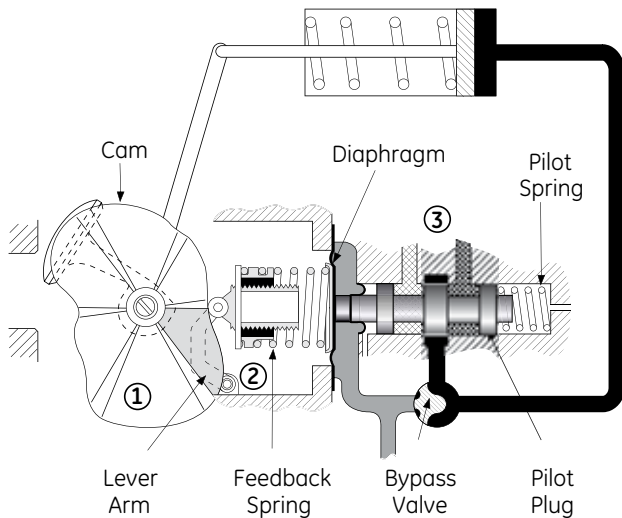
On rotary valves, the cam assembly is attached directly to the end of the shaft, and only one positioner assembly is required. This proven performer eliminates linkage and associated backlash problems.

Reciprocating Valves

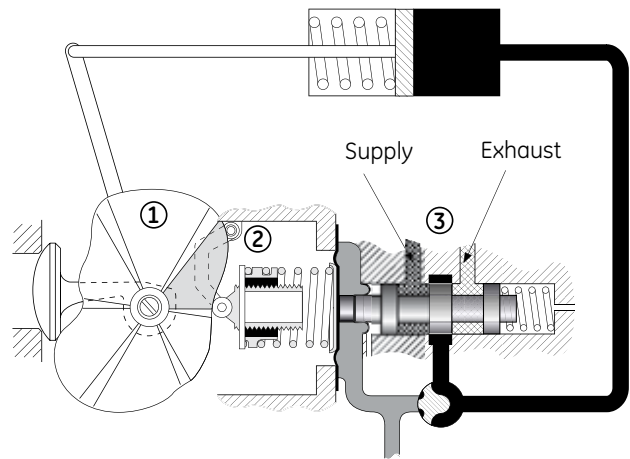
For use with reciprocating valve spring diaphragm actuators, the positioner is fitted with a post hub and shaft on which the cam is mounted. Actuation is transmitted to the cam via a rugged and simple turnbuckle and lever assembly

Operation / Features

Direct Positioner Action

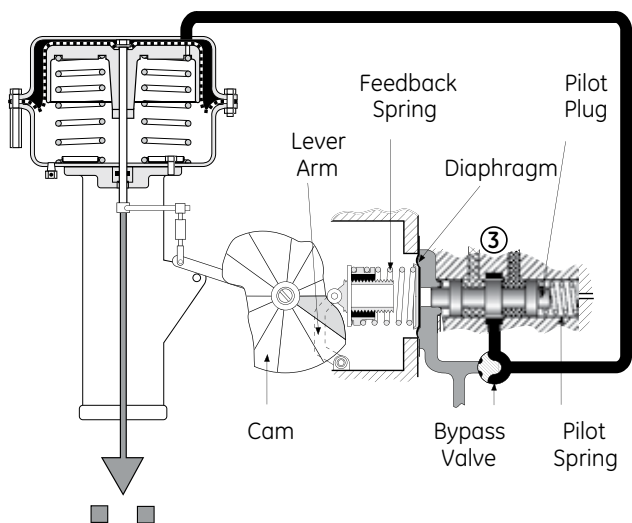


**Reverse Positioner Action
(4700P/4800P Only)**

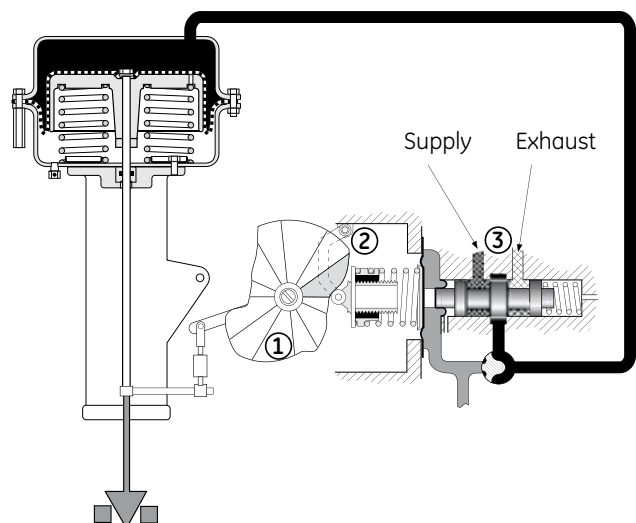


Rotary

Direct Positioner Action



**Reverse Positioner Action
(4700P/4800P Only)**



Reciprocating



Signal Pressure



Output Pressure



Exhaust Pressure



Supply Pressure

For models 4700P/4800P only, positioner action can be reversed by simply engaging the proper lobe on the cam and reversing the follower arm (numbers 1 and 2 above), and the supply and exhaust ports (number 3 above).

Instrument Signals

Characteristics shown represent final valve characteristic

Models 4700P/4700E and 4800P/4800E (Camflex* II and Varimax*)

| Characteristics | | | |
|-----------------|-----------|------------------|-----------|
| Linear | | Equal Percentage | |
| psi | bar | psi | bar |
| 3 - 9 | 0.2 - 0.6 | 3 - 15 | 0.2 - 1 |
| 3 - 15 | 0.2 - 1 | 3 - 27 | 0.2 - 1.8 |
| 3 - 27 | 0.2 - 1.8 | 6 - 30 | 0.4 - 2 |
| 6 - 18 | 0.4 - 1.2 | | |
| 6 - 30 | 0.4 - 2 | | |
| 9 - 15 | 0.6 - 1 | | |
| 15 - 27 | 1 - 1.8 | | |
| 18 - 30 | 1.2 - 2 | | |

Models 4700P/4700E and 4800P/4800E (87/88 Actuator)

| Characteristics | | | |
|-----------------|-----------|------------------|-----------|
| Linear | | Equal Percentage | |
| psi | bar | psi | bar |
| 3 - 9 | 0.2 - 0.6 | 3 - 15 | 0.2 - 1 |
| 3 - 15 | 0.2 - 1 | 3 - 27 | 0.2 - 1.8 |
| 3 - 27 | 0.2 - 1.8 | 6 - 30 | 0.4 - 2 |
| 6 - 18 | 0.4 - 1.2 | | |
| 6 - 30 | 0.4 - 2 | | |
| 9 - 15 | 0.6 - 1 | | |
| 15 - 27 | 1 - 1.8 | | |
| 18 - 30 | 1.2 - 2 | | |

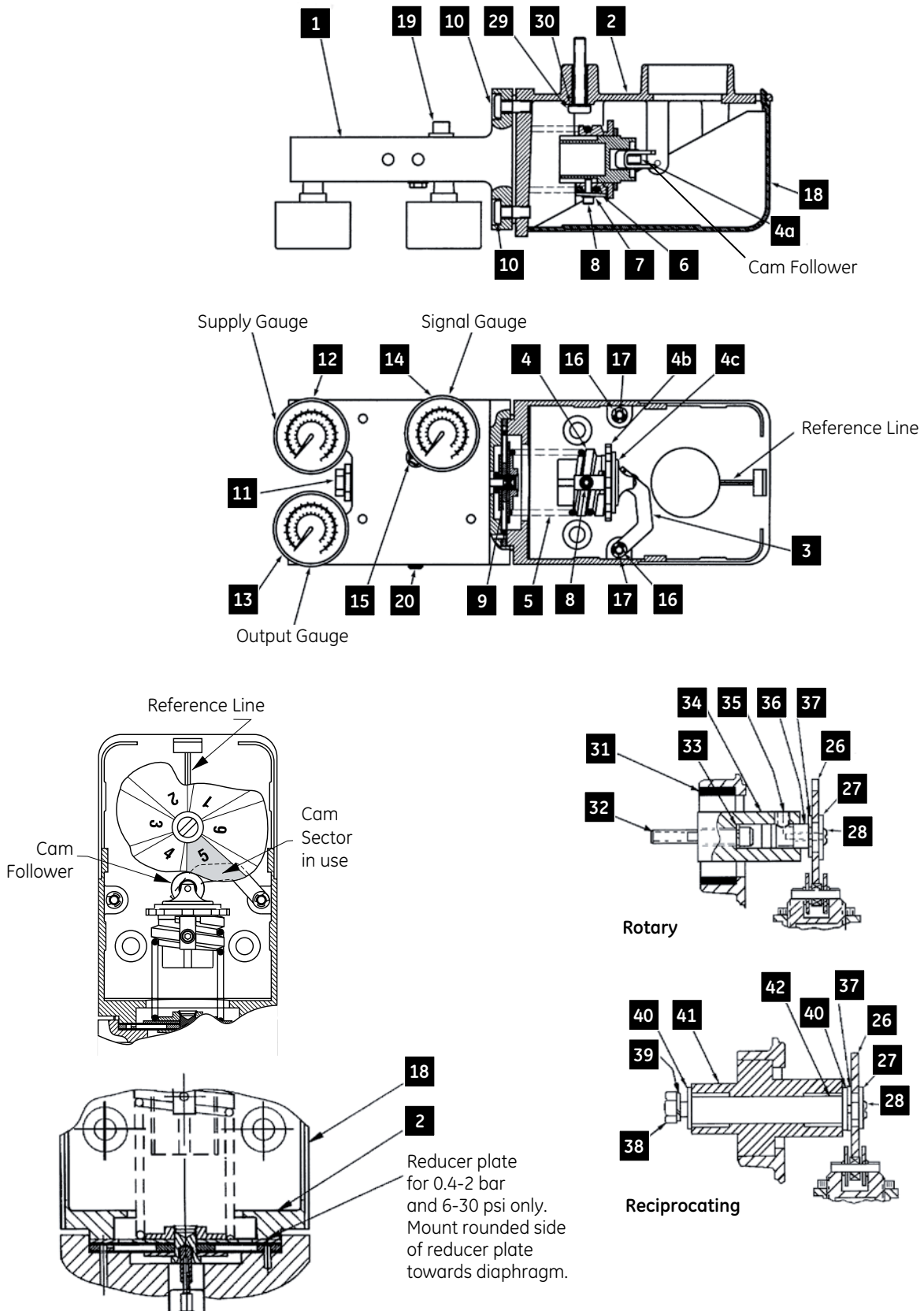
Models 4700P/4700E and 4800P/4800E (MiniTork* II, 38002 TFE-Lined, 39002 HPBV, Paramax* and V-Max*)

| Characteristics | |
|------------------|-----------|
| Equal Percentage | |
| psi | bar |
| 3 - 9 | 0.2 - 0.6 |
| 3 - 15 | 0.2 - 1 |
| 3 - 27 | 0.2 - 1.8 |
| 6 - 18 | 0.4 - 1.2 |
| 6 - 30 | 0.4 - 2 |
| 9 - 15 | 0.6 - 1 |
| 15 - 27 | 1 - 1.8 |
| 18 - 30 | 1.2 - 2 |

Construction and Parts Reference

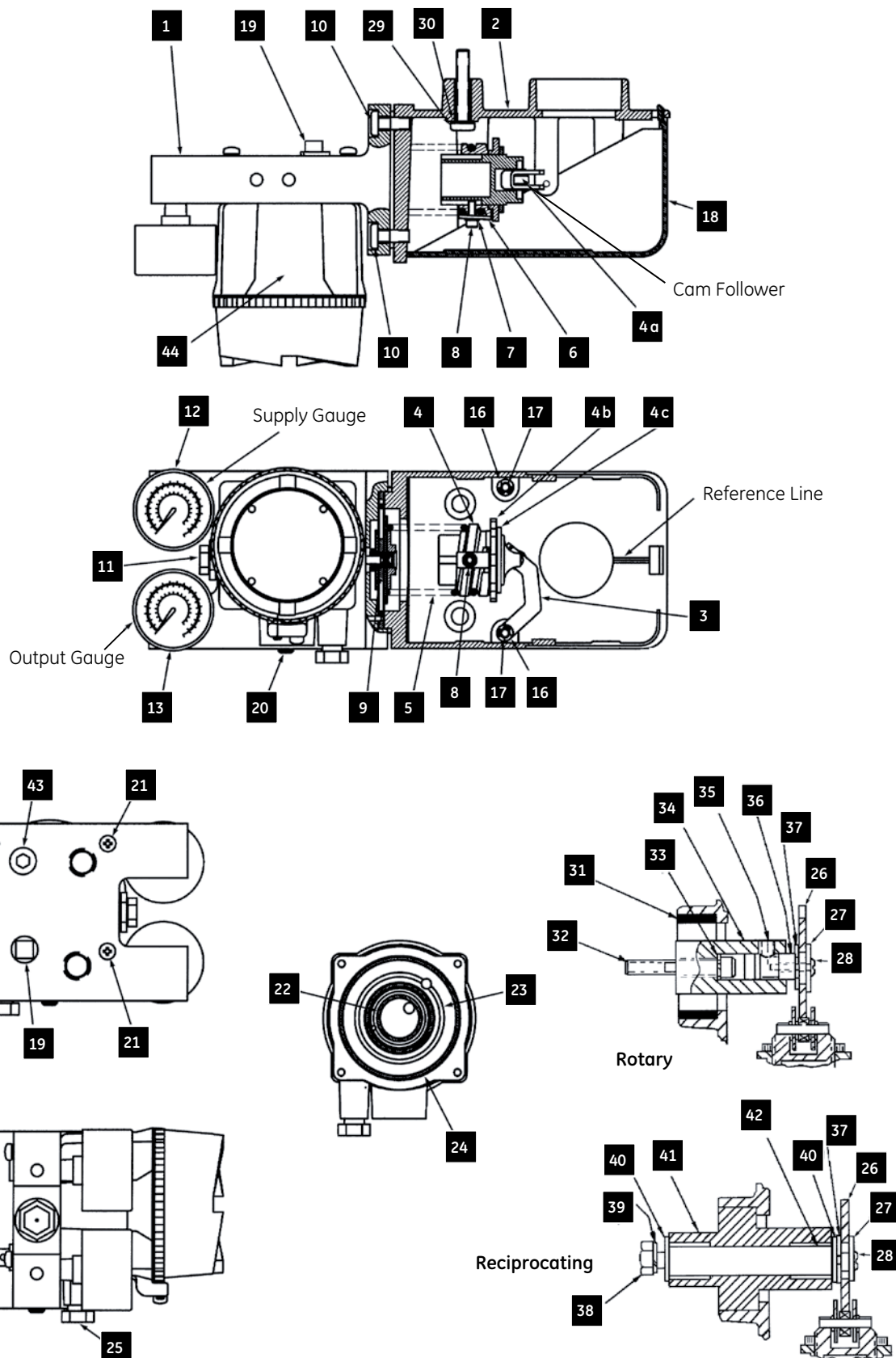
4700P / 4800P

0.2-1 bar or 3-15 psi and 0.4-2 bar or 6-30 psi



0.2-1 bar or 3-15 psi and 0.4-2 bar or 6-30 psi

| Ref. N°. | Description | Ref. N°. | Description |
|----------|----------------------------------|----------|-----------------------|
| 1 | Body S/A | 26 | Cam |
| 2 | Case S/A | 27 | Washer |
| 3 | Lever S/A | 28 | Pan Head Screw |
| 4 | Spring End | 29 | Socket Head Screw |
| 4A | Cam Follower | 30 | Lockwasher |
| 4B | Zero Nut | 31 | Gasket |
| 4C | Zero Locknut | 32 | Socket Head Screw |
| 5 | Spring, Feedback | 33 | Lockwasher |
| 6 | Clamp | 34 | Coupling |
| 7 | Lockwasher | 35 | Socket Head Set Screw |
| 8 | Socket Head Screw | 36 | Cam Holder |
| 9 | Diaphragm S/A | 37 | Truarc Ring |
| 10 | Screw | 38 | Cap Screw |
| 11 | Pilot S/A | 39 | Lockwasher |
| 12 | Supply Gauge | 40 | Washer |
| 13 | Output Gauge | 41 | Post Hub S/A |
| 14 | Instrument Gauge | 42 | Input Shaft |
| 15 | Screw, Washer Head | | |
| 16 | Washer | | |
| 17 | Retaining Clip | | |
| 18 | Cover, Case | | |
| 19 | Vent Plug | | |
| 20 | Screw, Sealing, Set 5/16-24 x .5 | | |



| Ref. N°. | Description | Ref. N°. | Description |
|----------|----------------------------------|----------|-----------------------|
| 1 | Body S/A | 26 | Cam |
| 2 | Case S/A | 27 | Washer |
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| 5 | Spring, Feedback | 33 | Lockwasher |
| 6 | Clamp | 34 | Coupling |
| 7 | Lock Washer | 35 | Socket Head Set Screw |
| 8 | Socket Head Screw | 36 | Cam Holder |
| 9 | 3-15 Diaphragm S/A | 37 | Truarc Ring |
| 10 | Screw | 38 | Cap Screw |
| 11 | Pilot S/A | 39 | Lockwasher |
| 12 | Supply Gauge | 40 | Washer |
| 13 | Output Gauge | 41 | Post Hub S/A |
| 16 | Washer | 42 | Input Shaft |
| 17 | Retaining Clip | 43 | Plug, Pipe 1/4" NPT |
| 18 | Cover, Case | 44 | I/P Module Assembly |
| 19 | Vent Plug | | |
| 20 | Screw, Sealing, Set 5/16-24 x .5 | | |
| 21 | Screw 8-32 x 1.25 | | |
| 22 | O-ring .81" ID | | |
| 23 | O-ring 1.31" ID | | |
| 24 | O-ring 2.38" ID | | |
| 25 | Breather | | |

Hazardous Area Installations

The positioner is available in versions suitable for use in hazardous areas. The labeling on the positioner indicates correct areas of use.

ATEX approved version (94/9/EC Directive)

- Explosionproof: II 2GD
 - Ex d IIC T6 Gb (Tamb.= -40°C to +55°C)
 - Ex d IIC T5 Gb (Tamb.= -40°C to +70°C)
 - Ex d IIC T4 Gb (Tamb.= -40°C to +85°C)
 - Ex t IIIC T90°C Db (Tamb.= -40°C to +55°C)
- Intrinsically Safe: II 1GD
 - Ex ia IIC T6 Ga (Tamb.= -40°C to +55°C, Pi= 0.33 W)
 - Ex ia IIC T4 Ga (Tamb.= -40°C to +80°C, Pi= 1.1 W)
 - Ex ia IIIC Da T90°C (Tamb.= -40°C to +80°C, Pi= 1.1 W)
- Energy Limited: II 3G
 - Ex nA nL IIC T4 Gc (Tamb.= -40°C to +80°C)
- Enclosure rating: IP 66

CSA (Canadian Standards Association) approved version

- Explosionproof: Class I, Groups B, C and D
 - Class II, Groups E, F and G
 - and Class III rated at 30 mA maximum, 28 VDC maximum, with a
 - Temperature Code T6 @ 75°C
 - T5 @ 85°C
- Intrinsically Safe: Class I, Division 1, Groups A, B, C and D
 - Class II, Division 1, Groups E, F and G
 - Class III rated at 30 mA and 28 VDC maximum
 - Temperature code T6 @ 55°C
 - T4A @ 85°C
- Non-Incendive: Class I, Division 2, Groups A, B, C and D
 - 30 mA and 28 VDC maximum
- Enclosure rating: IP 66 and NEMA 4X

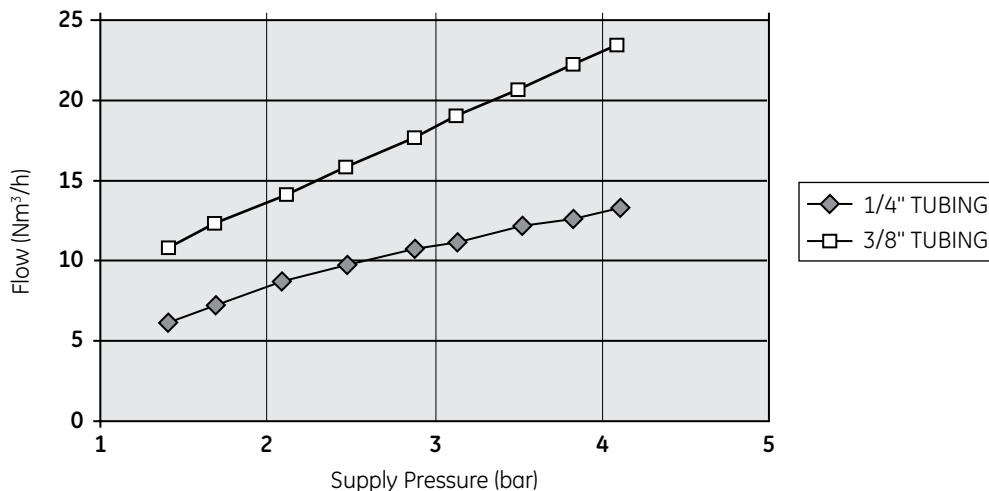
Factory Mutual approved version

- Explosionproof: Class I, Division 1, Groups B, C and D
 - Temperature Classification
 - T6 @ 75°C ambient
 - T5 @ 85°C ambient
- Dust-Ignitionproof: Class II / III, Division 1, Groups E, F and G
- Non-Incendive: Class I, Division 2, Groups A, B, C and D
 - Class II / III, Division 2, Groups F and G
- Intrinsically Safe: Class I / II / III, Division 1, Groups A, B, C, D, E, F and G
 - Temperature Classification
 - T4 @ 40°C ambient
 - T3B @ 70°C ambient
 - T3A @ 85°C ambient
- Enclosure rating: NEMA 4X

Other approval:

KOSHA (South Korea)

Output and Exhaust Capacity 4700 / 4800



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[Formerly Masoneilan CS 4700]