



Pneumatic-Pneumatic Positioner

IP300/IP3100

Pneumatic Positioning of Actuators



Single or double acting models

Lever or Rotary Models

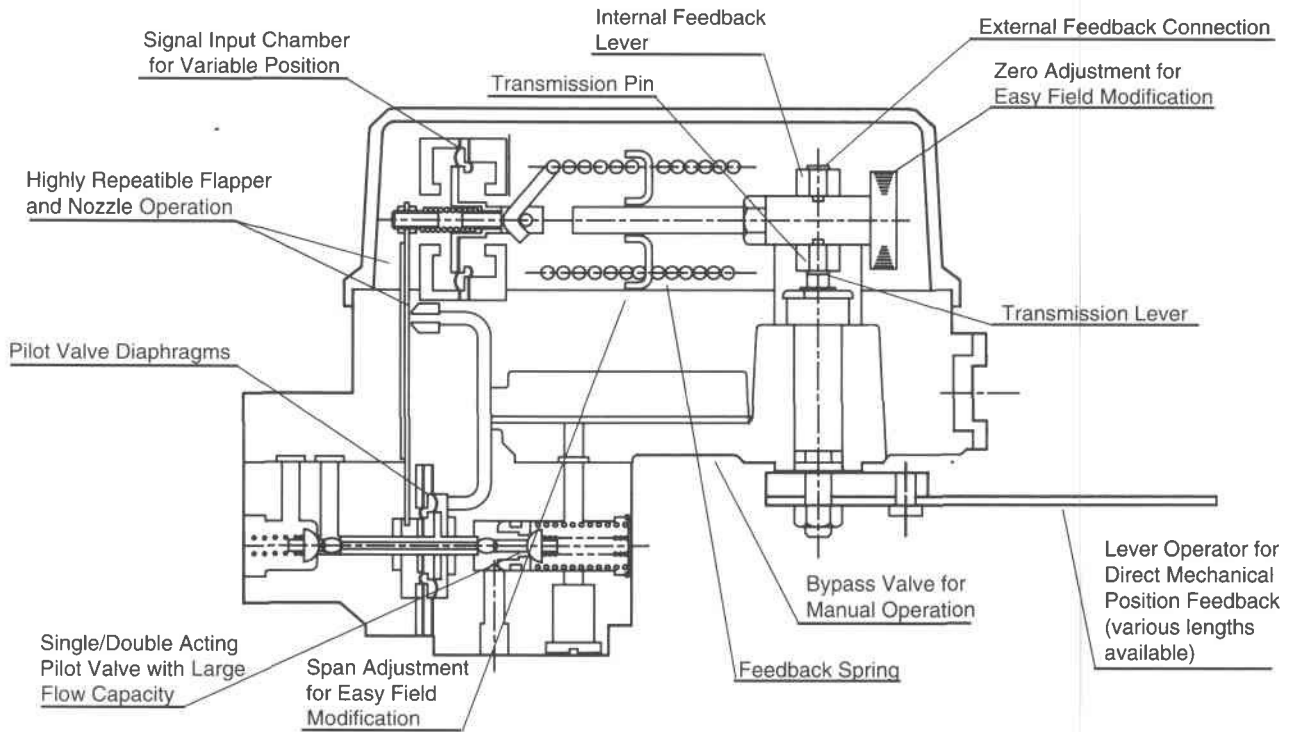
Linearity $\pm 2\%$ or less

Hysteresis within 1% or less

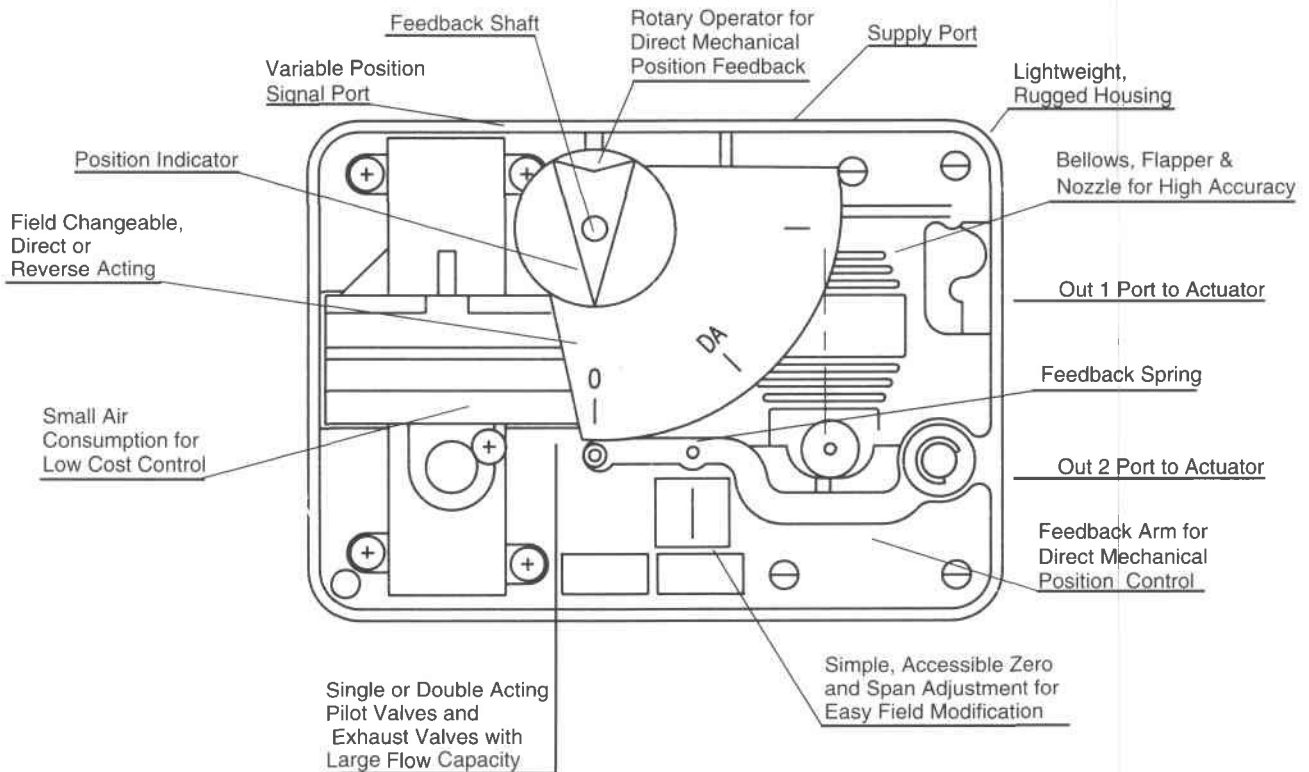
Repeatability within 1% or less

FEATURES AND BENEFITS

Model IP300 (Lever Type)



Model IP3100 (Rotary Type)



SPECIFICATIONS

Characteristic	Standard Temperature 20° F To 140° F		High Temperature 20° F To 212° F		Low Temperature -20° F To 140° F	
	Single Acting	Double Acting	Single Acting	Double Acting	Single Acting	Double Acting
Supply Pressure	20 to 100 psi					
Signal Pressure ♦	3 to 15 psi (split ranging possible)					
Rotary Angle (stroke)	10° to 28° (10-85mm) (0.3" to 3.4" std.) (5.9" max.)					
Linearity*	Within ± 1%		Within ± 2%			
Hysteresis*	Within 1%					
Repeatability*	Within 0.5%		Within 1%			
Sensitivity	Within 0.1%	Within 0.5%	Within 0.2%	Within 1%	Within 0.2%	Within 1%
Air Consumption (Max.) less than	0.25 SCFM @ 20 psi	0.7 SCFM @ 70 psi	0.25 SCFM @ 20 psi	0.7 SCFM @ 70 psi	0.25 SCFM @ 20 psi	0.7 SCFM @ 70 psi
Supply Pressure Variation Effect (Max.)	Within 0.3% for each 1.5 psi	Within 0.5% for each 7.5 psi	Within 0.5% for each 1.5 psi	Within 1% for each 1.5 psi	Within 0.5% for each 1.5 psi	Within 1% for each 7.5 psi
Flow Capacity	12.5 SCFM @ 70 psi and 9.0 SCFM @ 50 psi					
Port Sizes	gauge port 1/8" NPT supply/output ports 1/4" NPT					
Weight	4.9 lbs.					

NOTES: ♦ - Split ranging allows position control using 3 to 9 psi or 9 to 15 psi as signal pressure

* - For 1/2 split range add 1.5% to these values

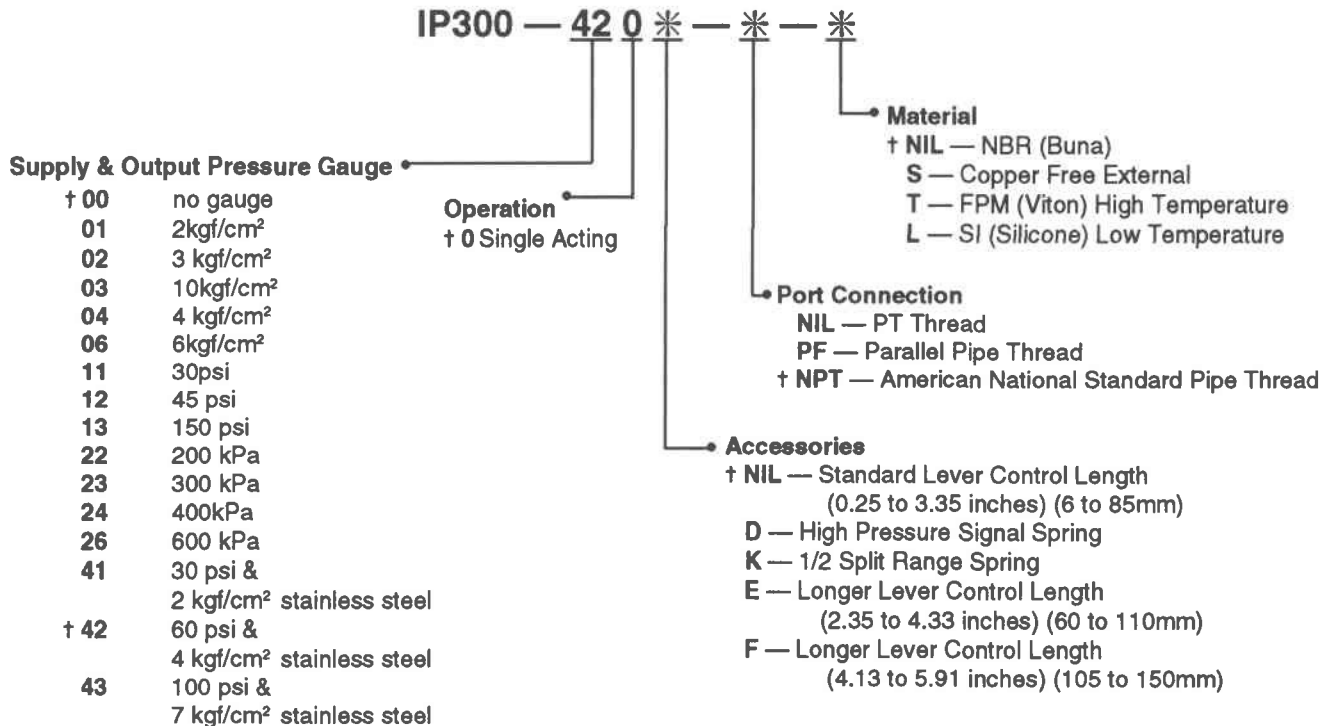
- Use clean, dry, oil free air

Recommended for air preparation: NAC 2030-N02 or NAC 2040-N02 filter, coalescer, regulator combination

Ref. catalog N5-G1 Modular type FRL Combination

Recommended for control of pilot signal: NIT 200 - OO 2G Electro-pneumatic regulator

Ref. catalog N8-01

HOW TO ORDER


† Options 00, 42, 44, 0, 1, NPT, or NIL available for standard delivery. For all other options, allow extra delivery time.

SPECIFICATIONS

Unit acts as a 3-way or 4-way proportional position control valve (single or double acting)	
Supply Pressure	20 ~ 100 psi (1.4 ~ 7.0 kgf/cm ²)
Signal Pressure	3 ~ 15 psi (0.2 ~ 1.0 kgf/cm ²)
Sensitivity	Less Than 0.3%
Linearity	Within ±2% FS.
Hysteresis	Less Than 1% FS.
Repeatability	Within ±0.5% FS.
Air Consumption (max.) Less Than	0.64 SCFM (18 NI/min) at 70 psi (5 kgf/cm ²) Supply
Output Flow Rate	8.8 SCFM (250 NI/min) at 70 psi (5 kgf/cm ²) Supply
Ambient Temperature and Temperature of Working Air	14° ~ 140°F (-10 ~ 60°C)
Range of Angular Adjustment	0°-90° CW or 0°-90° CCW (adjustable range 0°-60° to 0°-95°)
Port Size	1/4" (all ports)
Raw Material of Main Parts	Aluminum Die-cast, Stainless Steel, Brass, Nitrile Rubber
Weight	2.2 lbs. (1 kgf) Without Gauges
Dimension	4.9" x 3.6" x 3.2" (125mm x 92mm x 80mm) Without Gauge

NOTES - Use clean, dry, oil free air
 Recommended for air preparation: NAC 2030-NO2 or NAC 2040-NO2 filter, coalescer, regulator combination
 Ref. catalog N5-G1 Modular type FRL combination
 Recommended for control of pilot signal: NIT200 - OO 2G Electro-pneumatic regulator
 Ref. catalog N8-01

HOW TO ORDER

IP3100 — 0 1 0 * — *

Travel Angle Indicator

- 0 not included
- 1 included

Thread Size

- Nil Rc(pt) 1/4
- N female 1/4 NPT

Accessories

Nil	No Accessories	
C	Long, Splined Shaft Fitting Assembly (21050-31)	
P	Short, Splined Shaft Fitting Assembly (P305010-20)	
Option Pkgs.	Contents Of Option Package	QTY
Option W (Std.)	Gauge Adaptor (W) Straight Fitting	3
	Pressure Gauge G43-P2-NO1	1
	Pressure Gauge G43-P10-NO1	2
Option Y (Std.)	Gauge Adaptor (Y) Tee Fitting	3
	Pressure Gauge G43-P2-NO1	1
	Pressure Gauge G43-P10-NO1	2
Option S (St. Steel)	Gauge Adaptor (W) Straight Fitting	3
	Stainless Steel	
	Pressure Gauge KS10B-SD2	1
	Stainless Steel	
Option T (St. Steel)	Pressure Gauge KS10B-AD11	2
	Gauge Adaptor (Y) Tee Fitting	3
	Stainless Steel	
	Pressure Gauge KS10B-SD2	1
Option T (St. Steel)	Stainless Steel	
	Pressure Gauge KS10B-AD11	2

NOTE:

1. When more than 1 accessory is required, the letters should be listed in alphabetical order.
2. Accessories are packaged with the position controller, but are not mounted to it.
3. For further details of accessories, refer to "accessories" on page 6.

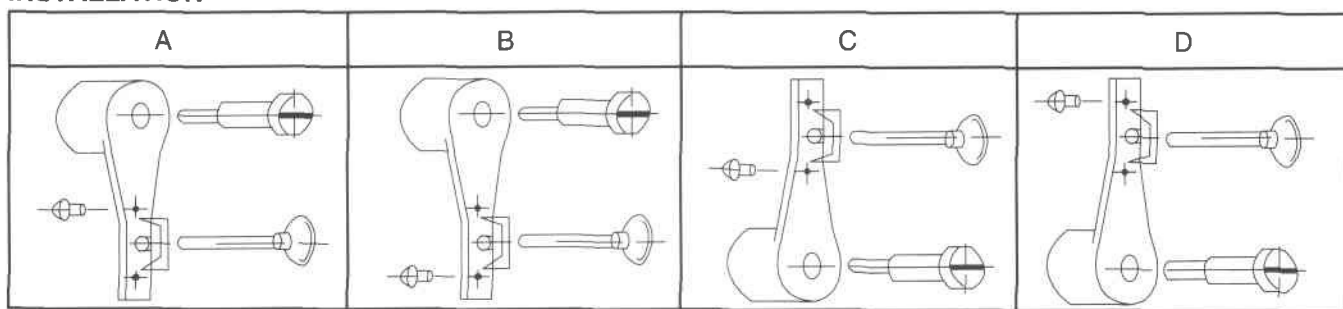
METHOD OF OPERATION

Signal pressure from a controlled pressure source enters the IP300 input chamber and exerts a force on the diaphragms. A pressure differential between the two diaphragms creates a force to open the pilot valve.

Output pressure passes through the pilot valve and the bypass valve, enters the process valve, or linear device to operate it. The movement of the linear actuator is converted into rotary movement by the positioner lever, and further transmitted to the internal feedback lever of the positioner through the transmission lever and pin.

Movement of the feedback lever varies the force of the feedback spring. The linear actuator moves on until the spring force balances with the force of the input chamber. Consequently the linear device is always controlled precisely in proportion to the signal pressure. Reconfiguring the operation mode, as well as the zero and span adjustments, are easy to do in the field.

INSTALLATION



Installation - Transmission pin & Feed-back lever

Fig. 1

SINGLE-ACTING ACTUATOR

OPERATION	ACTUATOR	SIGNAL PRESSURE / OUTPUT PRESSURE	SIGNAL RANGE	INSTALLATION STYLE (REF. FIG. 1)	OUT 1	OUT 2
Direct		Increase / Increase	3-15 psi	A	used	plugged
		Increase / Decrease	1/2 Split	D	plugged	used
Reverse		Increase / Increase	3-15 psi	C	used	plugged
		Increase / Decrease	1/2 Split	B	plugged	used

Fig. 2

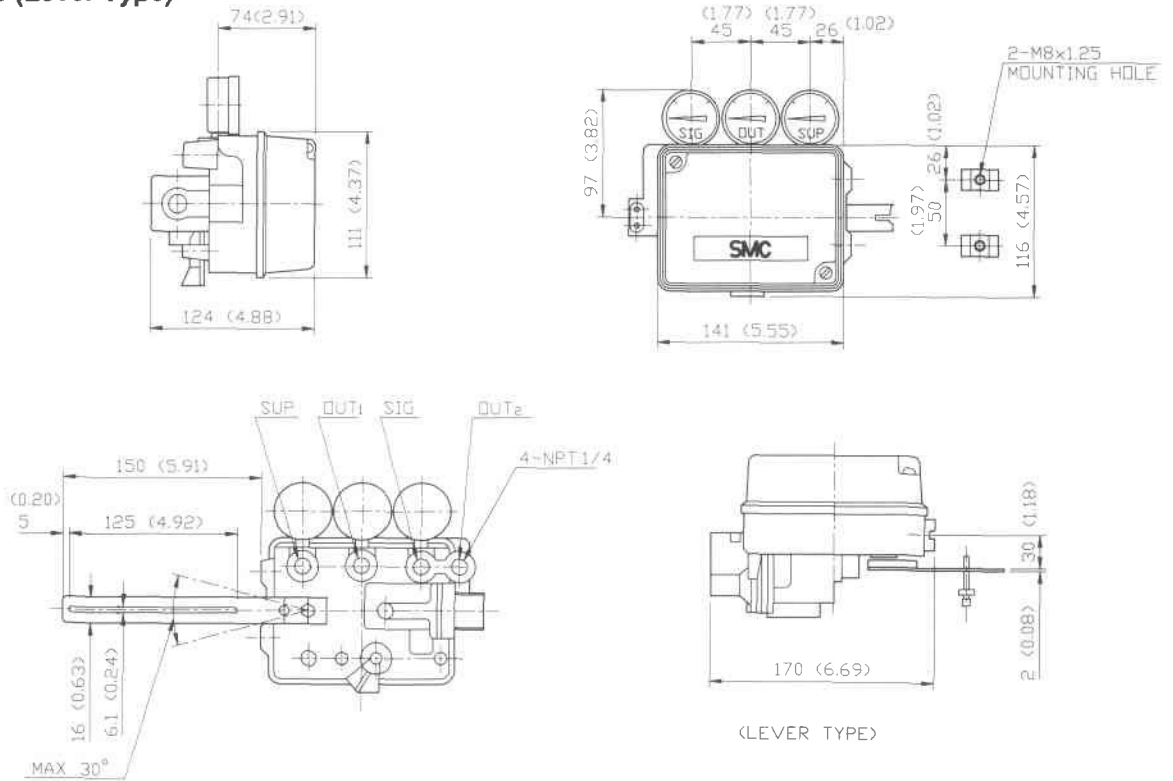
DOUBLE-ACTING ACTUATOR

OPERATION	SIGNAL RANGE	INSTALLATION STYLE (REF. FIG. 1)	
Direct	3-15 psi	A	
	1/2 Split	D	
Reverse	3-15 psi	C	
	1/2 Split	B	

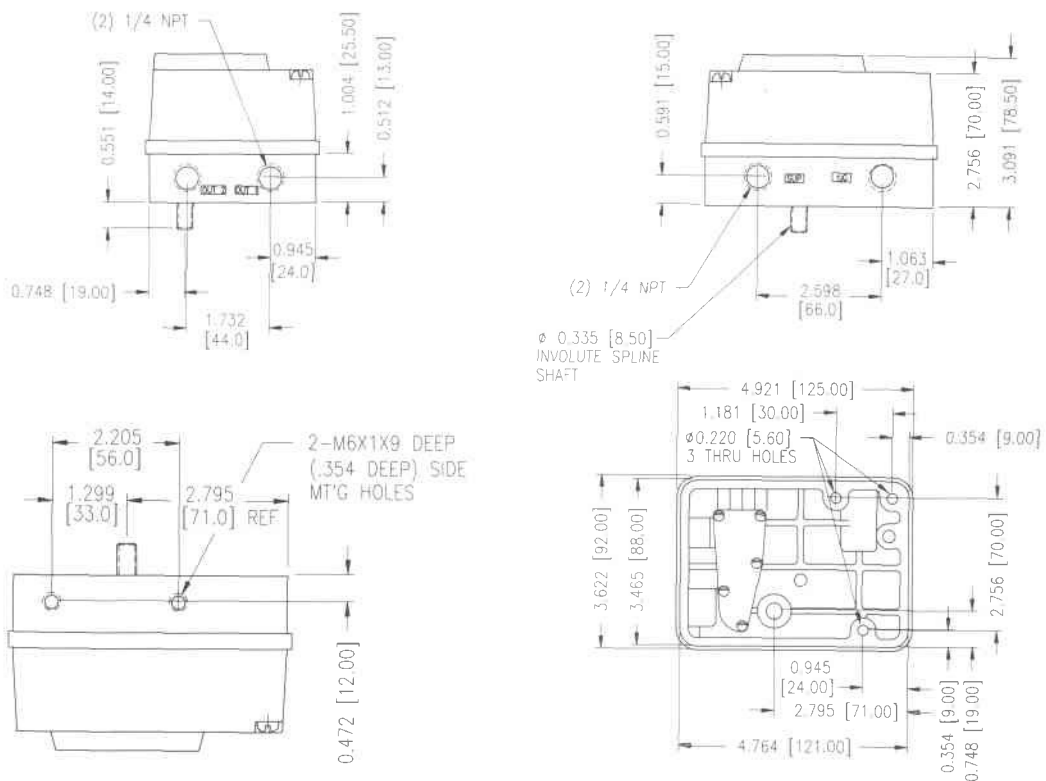
Fig. 3

DIMENSIONS

MODEL IP300 (Lever Type)



MODEL IP3100 (Rotary Type)



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