

Masoneilan™ 37/38 Series

Pneumatic Spring Diaphragm Actuator

The 37/38 Series actuator is designed to provide high performance, reliability and long service life.



Features

Baker Hughes Masoneilan Type 37 direct acting and Type 38 reverse acting pneumatic spring diaphragm actuators are designed to provide high performance. Their features include:

Heavy One-piece Yoke

Provides maximum strength and rigidity.

Diaphragm Cases

Pressed steel upper and lower cases combine lightness, high mechanical strength and adequate protection in the event of severe over-pressurization.

Thrust Capability

Two actuator types and seven sizes provide a wide range of applications.

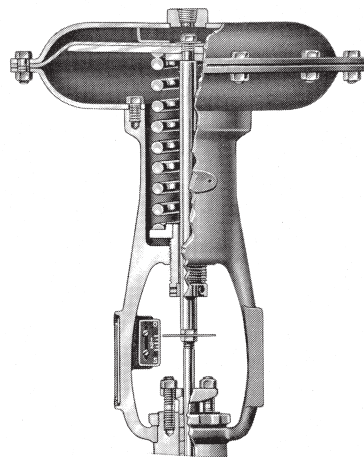
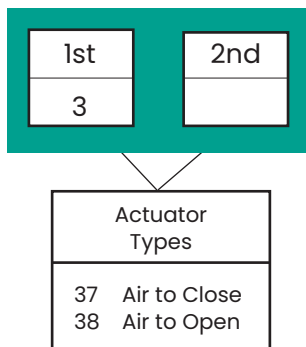
Diaphragm

Molded elastomer with fabric insert for strength, long life and high sensitivity.

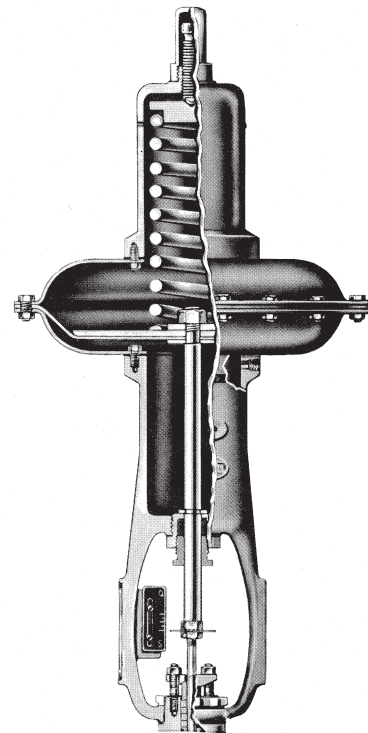
Linearity

The molded diaphragm and deep cases minimize area change and produce a linear relationship between travel and air pressure.

Numbering System



Direct: air to extend stem
Type 37



Reverse: air to retract stem
Type 38

Specifications

Actuator Size	Nominal Diaphragm Effective Area (sq. in.)	Max. Travel (in.)	Bench Range psi	Max. Supply psi
11	71	1.0	3-15 6-30	60
13	105	1.5	3-15 6-30	60
15	145	2.0	3-15 6-30	60
18	200	2.5	3-15 6-30	60
18 (16")	200	4.0	3-15 6-30	60
18 (20") Rev. only	200	4.0	6-30	60
24	330	4.0	3-15 6-30	55

Note: Additional travels and spring ranges available.

Travel Time – Typical Bench Values

Actuator Size	Travel (inches)	Time (seconds) ¹	
		8012 Electro-pneumatic Positioner	7400 Pneumatic Positioner
11	1.0	3.3	7
13	1.0	4.9	11
	1.5	6.3	13
15	1.5	9.4	17
	2.0	11.4	20
18	2.0	19	30
	2.5	21	34
18 (16")	3.5	29	44
	4.0	32	48

1. 3-15 psi bench range and 20 psi supply. For 6-30 psi bench range, increase travel time by 15%.

Weights (lbs.)

Actuator

Size	Direct Type 37	Reverse Type 38
11	45	55
13	70	87
15	120	140
18	180	250
18 (16")	190	370
18 (20")	N/A	450
24	325	540

Side Mounted Handwheel Case Mounted Handwheel

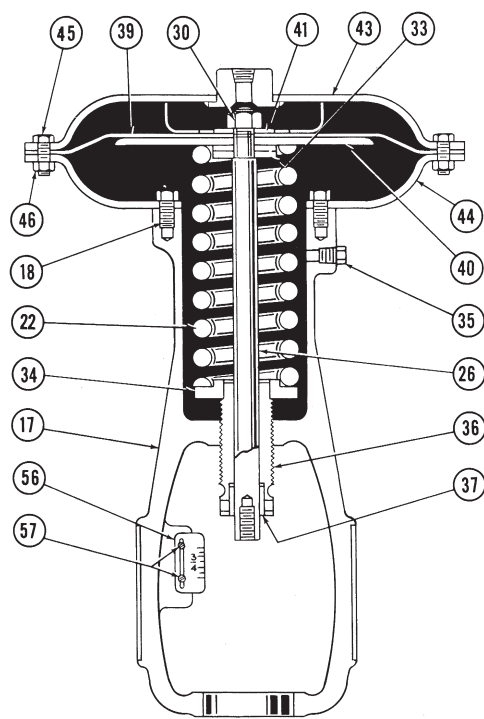
Type	Weight	Type	Actuator Size	Weight
6A1	19	Direct Actuator		
6A2	45	2-11	11	25
6A3	75	2-13	13	25
8A	40	3-15	15	40
8A	70	4-18	18	
		6-18	18 (16")	45
Reverse Actuator				
		9-11	11	20
		9-13	13	25

Temperature

Standard Temperature Range

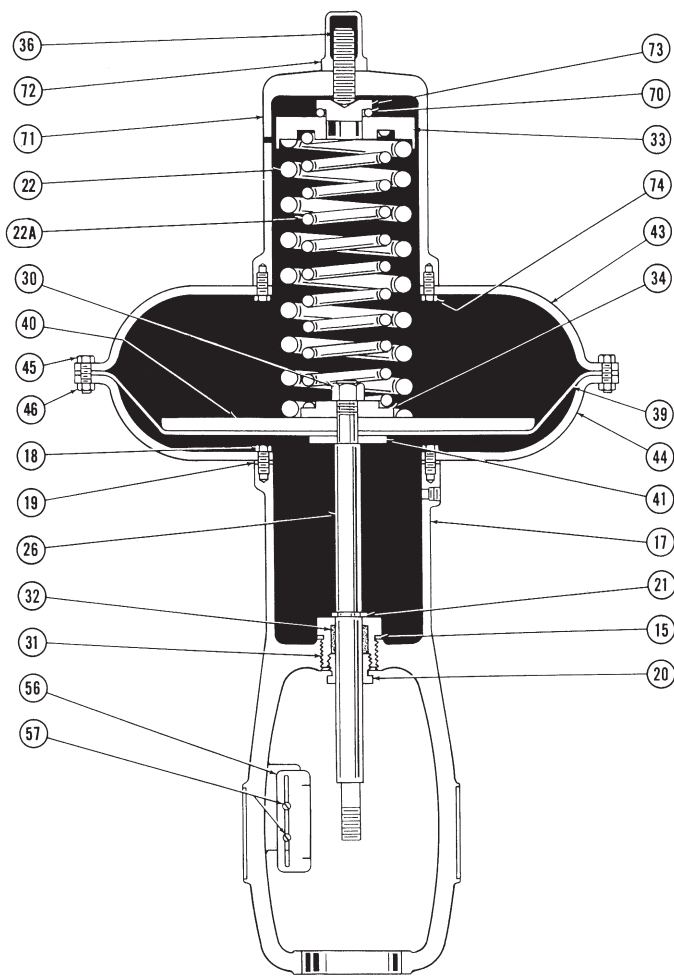
Min Temp		Max Temp	
°C	°F	°C	°F
-30	-22	80	176

Materials of Construction



Type 37 Actuator¹
Direct: air to extend stem

1. Size 11 view shown



Type 38 Actuator
Reverse: air to retract stem

Materials of Construction

Direct – Type 37

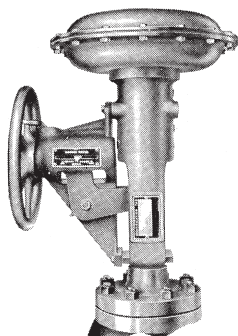
Ref. No.	Description	Materials
17	Yoke	Cast Iron
18	Cap Screw	Carbon Steel
22	Actuator Spring	Spring Steel
26	Actuator Stem	Steel
30	Hex Nut	Carbon Steel
33	Spring Guide	Carbon Steel
34	Spring Button	Nickel Copper Alloy
35	Pipe Plug	Plastic
36	Spring Adjuster	Steel
37	Bushing	Steel
39	Diaphragm	Elastomer w/Fabric Insert
40	Diaphragm Plate	Carbon Steel
41	Diaphragm Washer	Carbon Steel
43	Diaphragm Case	Carbon Steel
44	Diaphragm Case	Carbon Steel
45	Cap Screw	Carbon Steel
46	Hex Nut	Carbon Steel
56	Travel Indicator Scale	Aluminum
57	Machine Screw	Stainless Steel
70	Ball & Retainer ¹	Stainless Steel

1. Size 13, 15, 18 and 24 only.

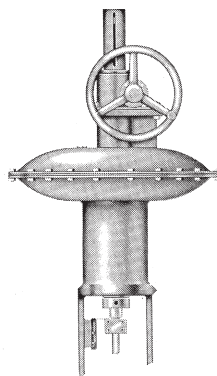
Reverse – Type 38

Ref. No.	Description	Materials
15	Gasket (Packing Box)	Copper
17	Yoke	Cast Iron
18	Cap Screw	Carbon Steel
19	Gasket	Acrylic Fiber
20	Packing Nut	Brass
21	Snap Ring	Carbon Steel
22	Actuator Spring	Spring Steel
22A	Actuator Spring	Spring Steel
26	Actuator Stem	Stainless Steel
30	Hex Nut	Carbon Steel
31	Packing Box	Brass
32	Yoke Packing	Braided PTFE
33	Spring Guide	Carbon Steel
34	Spring Button	Nickel Copper Alloy
36	Spring Adjuster	Carbon Steel
39	Diaphragm	Elastomer w/Fabric Insert
40	Diaphragm Plate	Carbon Steel
41	Diaphragm Washer	Carbon Steel
43	Diaphragm Case	Carbon Steel
44	Diaphragm Case	Carbon Steel
45	Cap Screw	Carbon Steel
46	Hex Nut	Carbon Steel
56	Travel Indicator Scale	Aluminum
57	Machine Screw	Stainless Steel
70	Ball & Retainer	Stainless Steel
71	Spring Barrel	Cast Iron
72	Spring Barrel Cap	Cast Iron
73	Ball Bearing Race	Steel
74	Cap Screw	Carbon Steel

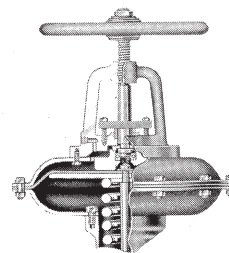
Handwheels



6A Series Side Mounted



8A Series Side Mounted



Case Mounted

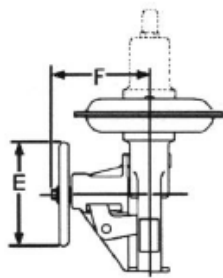
Side Mounted

Handwheel Type	Actuator Size	Action	Max. Travel (in.)	Max. Air Supply psi
6A1	11	Direct & Reverse	1.0	60
6A2	13	Direct & Reverse	1.5	60
6A3	15	Direct & Reverse	2.0	60
	18	Direct & Reverse	2.0	40
		Direct & Reverse	2.5	35
	18 (16")	Reverse	2.5	35
	18 (20")	Reverse	2.5	35
8A	18	Direct & Reverse	2.5	60
	18 (16")	Direct & Reverse	4.0	60
	18 (20")	Reverse	4.0	60
	24	Direct & Reverse	4.0	55

Case Mounted

Handwheel Type	Actuator Size	Max. Travel (in.)	Turns for Rated Travel
Direct Actuator			
2-11	11	1.0	14.0
2-13	13	1.5	28.0
3-15	15	2.0	16.0
4-18	18	2.5	20.0
6-18	18 (16")	4.0	32.0
7-24	24	4.0	32.0
Reverse Actuator			
9-11	11	1.0	14.0
9-13	13	1.5	21.0

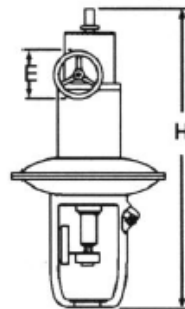
Dimensions (in.)



Type 6A
Side Mounted

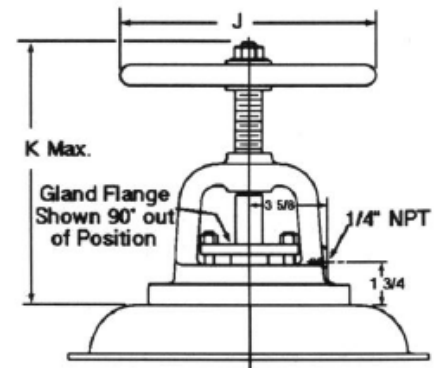


Direct (37)
Air to close

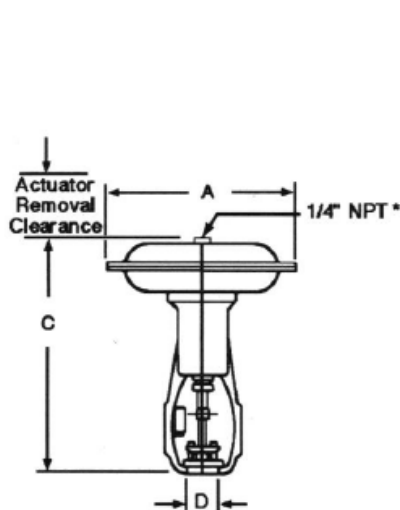


Reverse (38)
Air to open

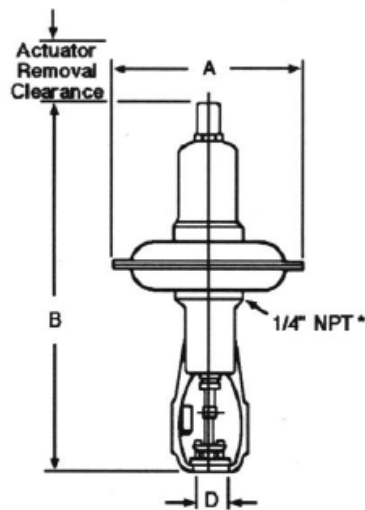
Type 8A
Side Mounted



**Types 3-15,
4-18, 6-18,**
Case Mounted



Direct (Type 37)
Air to close



Reverse (Type 38)
Air to open

*1/2" for No. 24 Actuators

Case Mounted Handwheel

Type	J	K
Direct Actuator		
2-11	9.00	9.50
2-13	9.00	9.50
3-15	12.00	12.75
4-18	18.00	12.75
6-18	18.00	15.50
Reverse Actuator		
9-11	9.00	13.00
9-13	9.00	16.25

Actuator

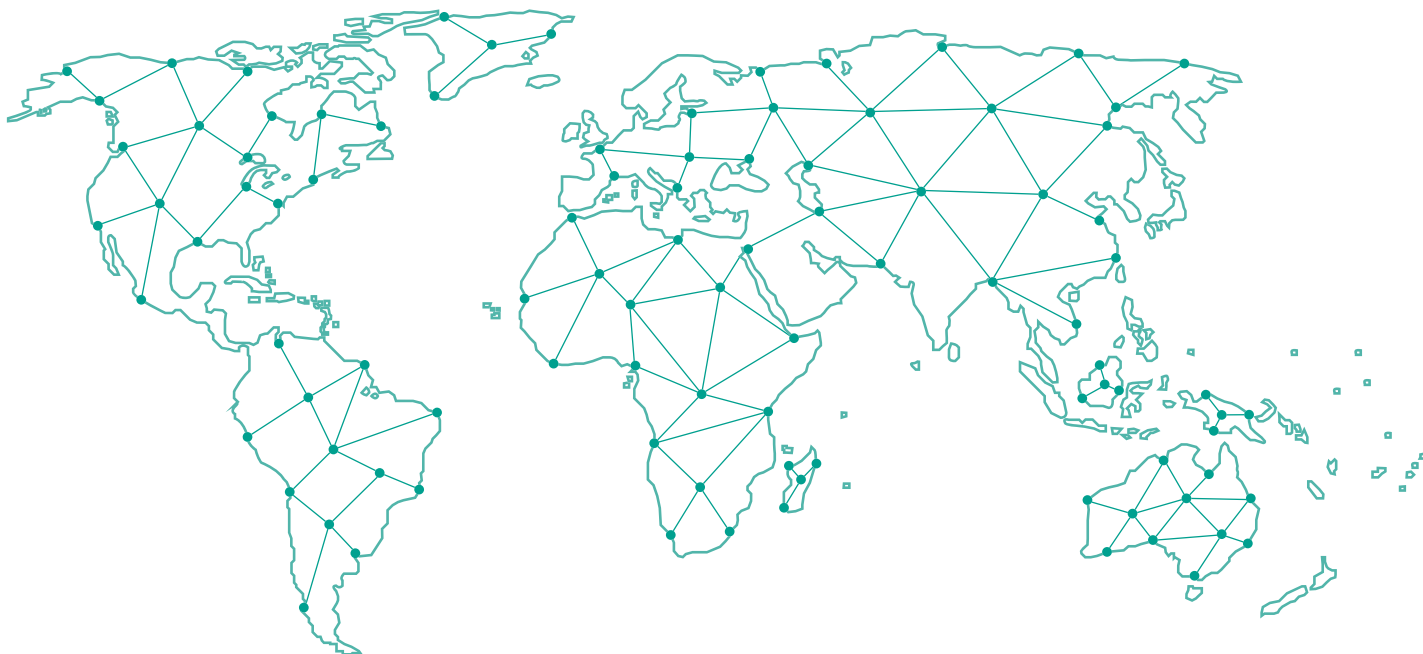
Actuator Size	Actuator Removal Clearance	A	B	C	Spud Dia. D
11	5.6	13.00	24.1	16.4	2.25
13	5.6	15.00	29.6	20.1	2.25
15	5.6	17.50	35.3	25.4	3.31
18	5.6	20.75	36.8	26.8	3.31
18 (16")	5.6	20.75	42.1	33.2	3.75
18 (20")	5.6	20.75	52.0	N/A	3.75
24	5.0	20.50	45.5	34.7	3.75

Side Mounted Handwheel

Type	E	F	G Dir.	H Rev.
6A1	9	8.75	-	-
6A2	12	10.88	-	-
6A3	18	15.00	-	-
8A	8	-	53	53
8A	8	-	N/A	53
8A	12	-	53	58

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