

# Model 043-C Service Regulator

## Technical Data



- Valve Body:** High Tensile Strength Cast Iron (ASTM A-126 Class A)
- Orifice:** Aluminum
- Valve Seat/Stem:** One piece molded Buna-N seat and die-cast zinc stem
- Fulcrum Pin:** Stainless Steel (Type 303)
- Lever:** Zinc and Chromate plated steel (AISI C1010)
- Upper Diaphragm Plate:** Zinc and Dichromate plated steel (14 gauge steel)
- Lower Diaphragm Plate:** Isoplast
- Diaphragm:** Buna-N on Dacron reinforcing fabric 12.6 in<sup>2</sup> of area

**Internal Relief Valve:** Set to relieve approximately 7" w.c. above normal outlet pressure setting

**Vent Valve Seat and Screen:** Neoprene threaded 3/4" with Stainless Steel (16 mesh) screen

**Adjustment Ferrule:** Delrin

**Seal Cap:** Fiberglass reinforced polyethylene

**Diaphragm Case:** Die-cast aluminum (ASTM B85-Alloy SC84A)

**Fastener Plating:** Dacromet with Plus Black

**Operating Temperature:** -20°F to 150°F (-28.9°C to -65.5°C)

**Shipping Weight:** 12 per box - 48 lbs.

**Compliances:** Exceeds all AGA/ANSI B109.4 and CSA 6-18 specifications

### Connection Sizes

Inlet	Outlet	90° Angle	Straight
1/2"	1/2"	X	X
3/4"	3/4"	X	X
3/4"	1"	X	X
3/4"	1-1/4"	-	X
1"	1"	X	X
1"	1-1/4"	-	X
1-1/4"	1-1/4"	-	X

### Spring Ranges

	Outlet Pressure Ranges	Spring Color
Std	5" to 7" w.c.	Green
Std	6" to 8" w.c.	Brown
Std	8" to 14" w.c.	Blue
Std	12" to 28" w.c.	Silver
Std	1 to 2 psig	Yellow/Black
Alt	4" to 9" w.c.	Dark Green
Alt	5.5" to 9" w.c.	Orange
HP	2 to 4 psig	Yellow
HP	4 to 5 psig	White

### Orifice and Maximum Inlet Pressure

Size	Pressure	Part Number
1/8"	125 psig	757611
3/16"	125 psig	757619
1/4"	60 psig	757623
5/16"	35 psig	757627
3/8"	20 psig	757631
1/2"	10 psig	757453

### Maximum Emergency Pressures

The maximum pressure the regulator inlet may be subjected under abnormal conditions without causing damage to the regulator is:

Orifice	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"
PSIG	300	200	150	100	75	40

The maximum pressure to which the regulator case may be subjected under abnormal conditions without causing damage to the internal parts is: Set point plus 3 psi.

If the outlet pressure exceeds this pressure, the regulator must be removed from service and carefully inspected. Damaged or otherwise unsatisfactory parts must be replaced before returning the regulator to service.

The maximum outlet pressure that can be safely contained in the diaphragm case is 30 psi, the maximum outlet pressure that can be experienced without damage is 60 psig. (Safely contained means no leakage as well as no bursting.)

### Full Open Capacity

Use the following formula for the full open capacity:

1.  $Q = K\sqrt{P_0(P_1 - P_0)} \dots$  (for  $\frac{P_1}{P_0}$  less than 1.894)
2.  $Q = \frac{KP_1}{2} \dots$  (for  $\frac{P_1}{P_0}$  greater than 1.894)

Q = maximum capacity of the regulator (in SCFH of 0.6 specific gravity natural gas).

K = the "K" factor, the regulator constant from the table below.

P<sub>1</sub> = absolute inlet pressure (psia).

P<sub>0</sub> = absolute outlet pressure (psia).

Orifice	1/2"	3/8"	5/16"	1/4"	3/16"	1/8"
K	520	292	206	132	74	33



### Other Gases

For use on other compatible gases, flow capacities must be adjusted using the following correction factors:

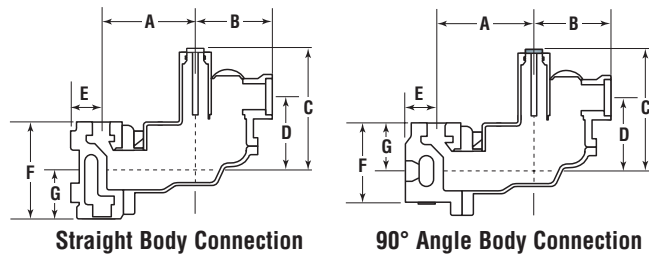
Type Gas	Sp Grav	Corr Factor
Air	1.0	0.77
Propane	1.53	0.63
Propane-air	1.2	0.71
Nitrogen	0.97	0.79
Dry CO <sub>2</sub>	1.52	0.63

For other non-corrosive gases:

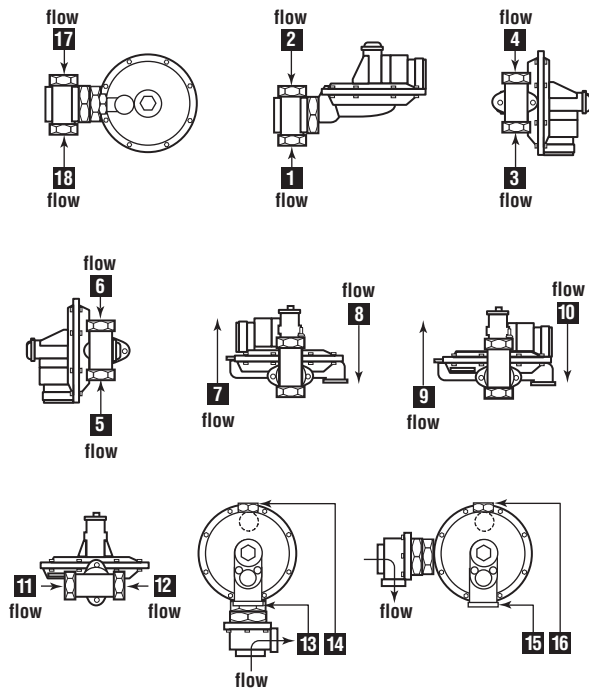
$$\text{Corr Factor} = \sqrt{0.6 / \text{Specific Gravity}}$$

### Dimensions

Body	A	B	C	D	E	F	G
<b>Straight</b>	4.00	3.15	5.10	3.05	1.25	4.00	2.00
<b>Angle</b>	4.00	3.15	5.10	3.05	1.25	3.25	2.00



### Mounting Positions



Outlet Pressure Set Point 7" w.c. @ 50 scfh, and 1.0 w.c. droop with green spring (except for brown spring in dark shaded areas)

#### Body Size Outlet: 1"

Inlet Psig	Orifice					
	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"
.5	65	90	140	175	210	270
1	80	140	200	275	300	400
2	100	225	250	375	425	600
3	170	310	350	500	575	800
5	215	400	500	725	825	1100
10	340	625	850	1100	1300	-
15	425	850	1200	1550	1650	-
20	550	1100	1450	1850	-	-
30	700	1400	2000	-	-	-
40	850	1750	2200	-	-	-
50	1000	2150	2500	-	-	-
60	1150	2300	2500	-	-	-
80	1500	2400	-	-	-	-
100	1800	2500	-	-	-	-
125	2200	2500	-	-	-	-

Outlet Pressure Set Point 2 psig w.c. @ 50 scfh, and 2% droop with yellow/black spring

#### Body Size Outlet: 1"

Inlet Psig	Orifice					
	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"
3	130	240	320	450	490	560
5	180	340	460	680	730	925
10	320	600	850	1240	1280	1540
15	440	850	1150	1600	1600	-
20	530	1040	1420	2000	2000	-
30	710	1430	1920	2400	-	-
40	875	1700	2390	-	-	-
50	1050	2100	2800	-	-	-
60	1200	2400	3130	-	-	-
80	1500	2700	-	-	-	-
100	1850	3000	-	-	-	-
125	2100	3500	-	-	-	-

Outlet Pressure Set Point 5 psig w.c. @ 50 scfh, and 2% droop with white spring

#### Body Size Outlet: 1"

Inlet Psig	Orifice					
	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"
10	175	240	300	355	420	610
15	230	365	430	555	650	-
20	255	445	525	650	770	-
30	370	570	710	950	-	-
40	405	745	940	-	-	-
50	455	855	1160	-	-	-
60	535	925	1450	-	-	-
80	714	1003	-	-	-	-
100	865	1215	-	-	-	-
125	1054	1480	-	-	-	-

Flow capacities in SCFH of 0.60 specific gravity gas @ 60° F and 14.7 psia. For maximum performance, maximum inlet pressure should not exceed maximum capacity rating for any given orifice size.

**Note:** The last capacity figure in each column indicates the maximum capacity for each orifice at recommended pressure within the optimum performance range.



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