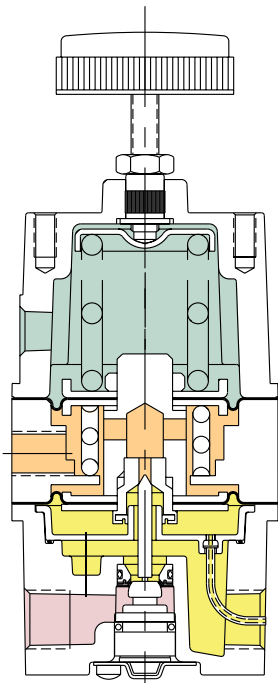


# Type 77

## Vacuum Regulator Series

### Features

- Single-unit control of pressures from 29" Hg vacuum to 150 PSI
- Flow capacity up to 40 SCFM
- Dampening action of aspirator tube maintains stable output pressure
- Output virtually unaffected by changes in supply pressure
- Can be disassembled and serviced without removing from line



■ Vacuum Input   
 ■ Atmosphere   
 ■ Supply Pressure   
 ■ Regulated Pressure

### Description

Bellofram's Type 77 Vacuum Regulator incorporates a fixed negative 15 PSIG bias spring to maintain vacuum outputs up to 29" Hg. An adjustable opposing range spring increases controlled pressure outputs up to 150 PSIG.

Output pressure droop under varying downstream flow conditions is minimized by use of an aspirator tube which adjusts the air supply valve opening in accordance with flow velocity. A balanced supply valve, utilizing a reinforced rolling diaphragm, keeps regulator output virtually immune to changes in supply pressure. Stack-up construction makes the Type 77 easily serviceable, without removing it from the air line.

### Applications

The Type 77 provides precise control in sub-atmospheric pressure applications. Specific uses include sample collecting systems, air quality monitoring, parts coating operations, and other industrial functions requiring controlled system pressure from 29" Hg vacuum to 150 PSIG.

The regulator may be installed either upstream or downstream from the vacuum pump. Upstream installation (Figure 1) is preferred when rapid evacuation of a vessel or system is required, because the exhaust capacity of the pump is normally greater than that of the regulator. In all other applications, the regulator can be located between the pump and the vessel. (Figure 2)



### Sensitivity

1/2" (1.3 cm) Water Column

### Flow Capacity

2.5 SCFM (71 L/M) @ 29" Hg  
(740 mm Hg) Vacuum

40 SCFM (1130 L/M) @ 100 PSIG  
(6.9 BAR) supply, 20 PSIG (1.4 BAR) output

### Effect of Supply Pressure variation (25 psig/1.7 BAR) on Outlet Pressure

Less than 0.1 PSIG (0.01 BAR)

### Exhaust Capacity@ 5 psig (0.34 BAR) above setpoint

4 SCFM (113 LPM)

### Maximum Supply Pressure

250 PSIG (17.2 BAR)

### Ambient Temperature Limits

-40 to 200 °F (-40 to 93 °C)

### Output Pressure Ranges

Vacuum to 2 PSIG (0.1 BAR)  
 Vacuum to 10 PSIG (0.7 BAR)  
 Vacuum to 30 PSIG (2.1 BAR)  
 Vacuum to 100 PSIG (6.9 BAR)  
 Vacuum to 150 PSIG (10.3 BAR)

### Total Air Consumption @ Maximum Output

6 SCFH (2.8 LPM)

### Port Size

1/4 NPT, 3/8 NPT, 1/4 BSPT, 3/8 BSPT

### Materials of Construction

Body: Diecast Aluminum with Vinyl Paint  
 Trim: Stainless steel, Brass, Plated steel, Acetal and Buna-N  
 Diaphragm: Buna-N with Polyester Fabric  
 Knob: Phenolic Plastic  
 Spring: Music wire

### Mounting Options

Pipe, Panel or Bracket

### Type 77 Ordering Information

T70	Range		Part Number	
	BAR	PSIG	1/4 NPT Port	3/8 NPT Port
Vac. to	0.1	2	960-500-000	960-505-000
Vac. to	0.7	10	960-501-000	960-506-000
Vac. to	2.1	30	960-502-000	960-507-000
Vac. to	6.9	100	960-503-000	960-508-000
Vac. to	10.3	150	960-504-000	960-509-000

### Type 77 Option Ordering Matrix

Replace last three digits of part number with digits from table below.

Option		5	7	8
5	Epoxy Finish	005	075	085
7	Mounting Bracket		007	087
8	Pressure Gauge			008

To order BSPT threads (including the gauge port) add "BSPT" to end of part number.

### Regulator Options and Accessories

#### Corrosive Resistant Epoxy Finish

An epoxy paint applied to the body and bonnet of the regulator exterior surfaces to provide increased corrosion resistance.

#### Mounting Bracket

Steel (dichromate finish) bracket for side mounting.

#### Pressure Gauge

Dual scale 2.5 in. (63 mm) gauges. Ranges include 30" Hg - 15 PSIG (-100 to 100 kPa), 30" Hg - 60 PSIG (-100 to 400 kPa), and 30" Hg - 150 PSIG (-100 to 1100 kPa). When specified with regulator, the correct range will be supplied. For NPT versions only.

Figure 1

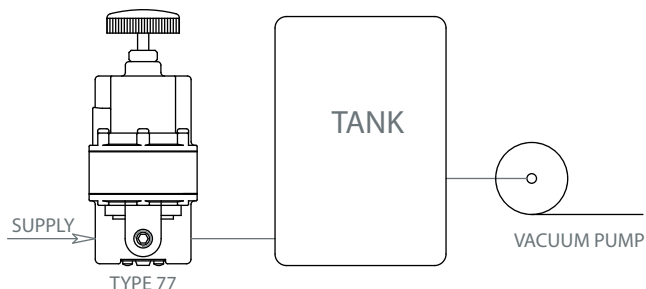
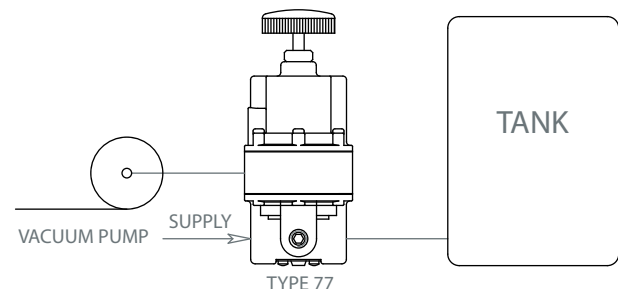


Figure 2



### Type 77 Dimensional Drawing

