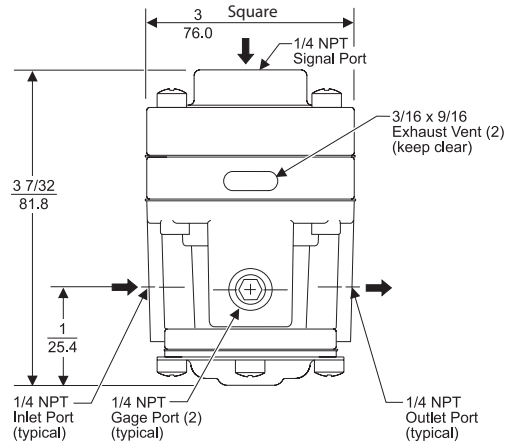
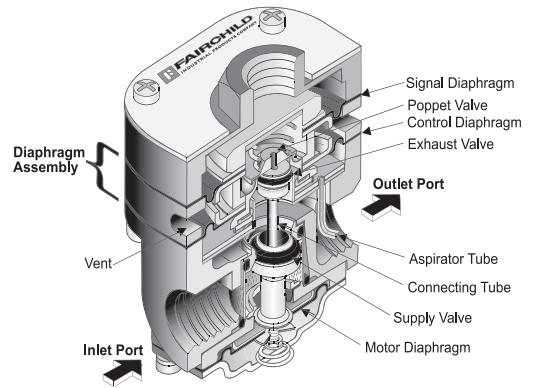


Model 2000 Pneumatic Volume Booster



Features

- The Model 2000 Pneumatic Volume Booster converts a low flow signal to a high flow output. It is ideally suited for a variety of applications including the operation of air systems that require rapid valve or cylinder action.
- A balanced Supply Valve minimizes the effect of supply pressure variation.
- An Aspirator Tube minimizes downstream pressure droop under flow conditions.
- Large Supply and Exhaust Valves provide high forward and exhaust flows.
- Soft Supply and Exhaust Valve Seats minimize air consumption.
- Small signal volume assures rapid response to pressure variation.
- A separate Control Chamber isolates the Diaphragm from the main flow to eliminate hunting and buzzing.
- Unit construction lets you service the unit without removing it from the line.



Operating Principles

When signal pressure on the top of the Signal Diaphragm creates a downward force on the Diaphragm Assembly, the Supply Valve opens.

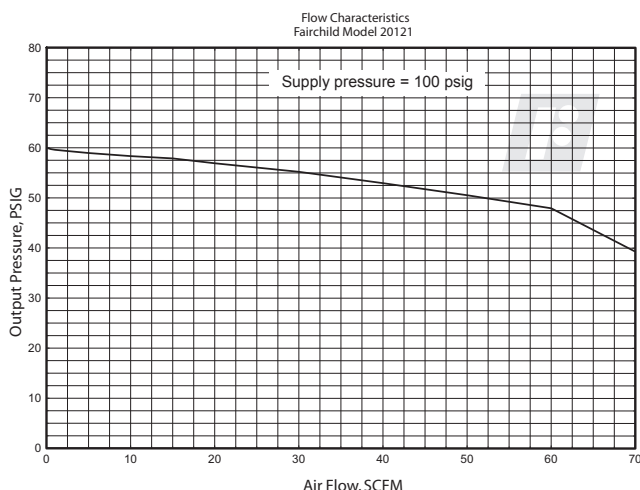
Output pressure flows through the Outlet Port and the Aspirator Tube to the Control Chamber to create an upward force on the bottom of the Control Diaphragm. When the setpoint is reached, the force of the signal pressure that acts on the top of the Signal Diaphragm balances with the force of the output pressure that acts on the bottom of the Control Diaphragm to close the Supply Valve.

When the output pressure increases above the signal pressure, the Diaphragm Assembly moves upward to close the Supply Valve and open the Exhaust Valve. Because the Poppet Valve is closed, pressure flows down the Connecting Tube to the bottom of the Motor Diaphragm. This pressure keeps the Supply Valve tightly closed while in the exhaust mode. The Poppet Valve opens and excess output pressure exhausts through the vent on the side of the unit until it reaches the setpoint.



Model 2000 Pneumatic Volume Booster

Technical Information



Specifications

Maximum Supply Pressure

250 psig, [17.0 BAR], (1700 kPa)

Flow Capacity (SCFM)

40 (68 m³/HR) @ 100 psig, [7.0 BAR], (700 kPa) supply & 20 psig, [1.5 BAR], (150 kPa) setpoint

Exhaust Capacity (SCFM)

16 (27.2 m³/HR) where downstream pressure is 5 psig, [.35 BAR], (35 kPa) above 20 psig, 1.5 BAR], (150 kPa) setpoint

Maximum Signal or Output Pressure

150 psig, [10.0 BAR], (1000 kPa)

Supply Pressure Effect

Less than 0.1 psig, [.007 BAR], (.7 kPa) for 100 psig, [7.0 BAR], (700 kPa) change in supply pressure

Sensitivity

Less than 1" (2.54 cm) Water Column

Ambient Temperature

-40° F to +200° F, (-40° C to +93° C)

Materials of Construction

Body and Housing Zinc
Diaphragms Nitrile on Dacron

Catalog Information

Catalog Number

2 0

Ratio

1:1 1
1:1.6 0

Pipe Size

1/4" 2
3/8" 3

Option

BSPT (Tapered) U

Installation

For installation instructions, refer to the *Fairchild Model 2000 Pneumatic Volume Booster Installation, Operation and Maintenance Instructions*, IS-20002000.

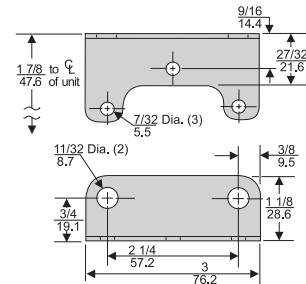
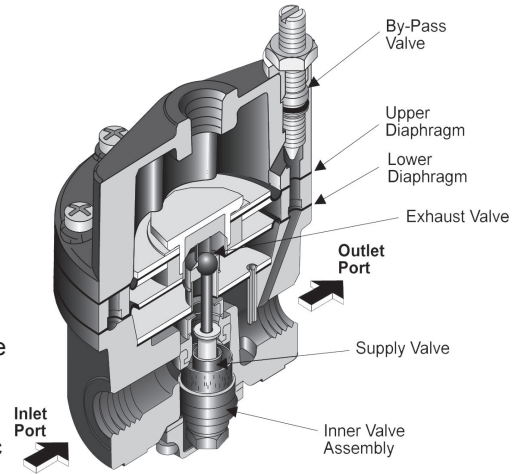


Model 20 Pneumatic Precision Booster



Features

- The Model 20 Pneumatic High Capacity Volume Booster uses a pneumatic input signal to accurately control output pressure
- A balanced Supply Valve minimizes the effects of supply pressure variation
- Aspirator Tube compensates downstream pressure drop under flowing conditions
- Optional Adjustable By-Pass Needle Valve option includes bubble tight exhaust valve allows tuning for optimum dynamic response (1:1 ratio only) and cycle free operation with valve positioners
- Optional Fixed Negative Bias for pneumatic signal devices that cannot be adjusted to zero signal pressure
- A separate Control Chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- Unit construction allows servicing without removal
- Mounting Bracket available
- Canadian Registration Number (CRN) Certification for all territories and provinces

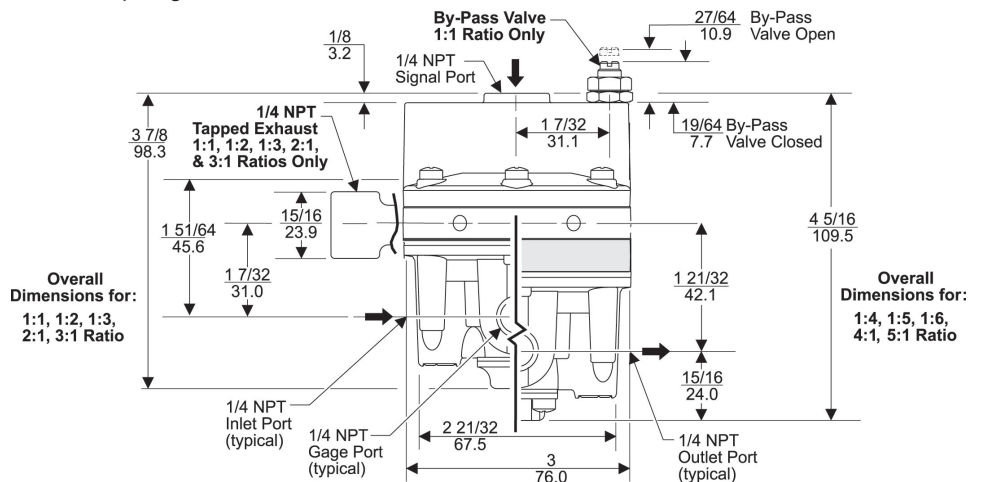


Operating Principles

The Model 20 Booster is a pneumatic device capable of high flow and exhaust capacity. This device uses a force balance system to control the movement of the supply and exhaust valves.

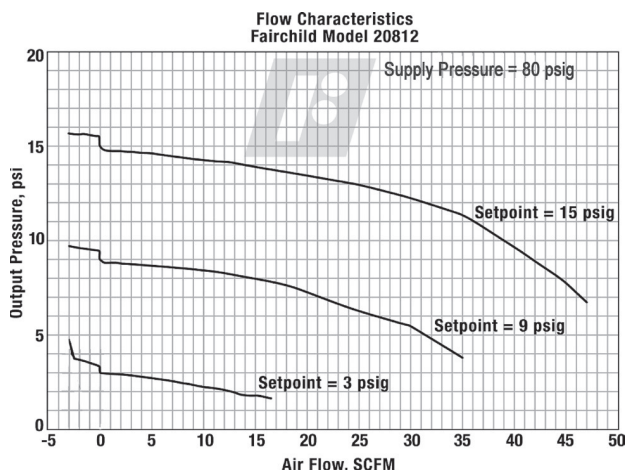
At set point, the force due to signal pressure that acts on the top of the Upper Diaphragm balances with the force due to output pressure acting on the bottom of the Lower Diaphragm.

Model 20 Mounting Bracket Kit
P/N 09921 (Zinc Plated Steel)
(sold separately)



Model 20 Pneumatic Precision Booster

Technical Information



Installation

For installation instructions, refer to the *Fairchild Model 20 High Capacity Volume Booster Installation, Operation and Maintenance Instructions*, IS-20000020.

- ¹ For 1:1, 1:2, 2:1, 1:3 & 3:1 Ratios Only.
- ² Maximum Supply Pressure – 75 psig, [5.0 BAR], (500 kPa). For 1:1 Ratio Only. Not Available with I Option.
- ³ Negative Bias Fixed at 3.5 psig + 0.5 psig.
- ⁴ Not Available with Y Option. For 1:1 Ratio Only.
- ⁵ BSPP Threads in Inlet, Outlet, Bonnet & Exhaust Ports Only. Others BSPT.

Specifications

Ratio		SIGNAL:OUTPUT									
Ratio		1:1	1:2	1:3	1:4	1:5	1:6	2:1	3:1	4:1	5:1
Maximum Output Pressure	psig [BAR] (kPa)	150 [10.0] (1000)	150 [10.0] (1000)	150 [10.0] (1000)	150 [10.0] (1000)	150 [10.0] (1000)	150 [10.0] (1000)	75 [5.0] (500)	50 [3.5] (350)	37.5 [2.6] (260)	30 [2.0] (200)
Maximum Supply Pressure	psig [BAR] (kPa)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)
Flow Capacity SCFM, (m ³ /HR)		45 (76.5)	45 (76.5)	45 (76.5)	45 (76.5)	45 (76.5)	45 (76.5)	45 (76.5)	45 (76.5)	45 (76.5)	45 (76.5)
Exhaust Capacity SCFM, (m ³ /HR)		11 (18.7)	11 (18.7)	11 (18.7)	7.5 (12.8)	7.5 (12.8)	7.5 (12.8)	11 (18.7)	11 (18.7)	7.5 (12.8)	7.5 (12.8)
Sensitivity (water column)		1/4" (6.4 cm)	1/2" (1.27 cm)	3/4" (1.9 cm)	1" (2.54 cm)	1-1/4" (3.18 cm)	1-1/2" (3.8 cm)	1/2" (1.27 cm)	1/2" (1.27 cm)	3/4" (1.9 cm)	3/4" (1.9 cm)
Ratio Accuracy		1.0	1.0	1.0	2.0	2.0	2.0	-	-	-	-
Supply Pressure Effect	psig [BAR] (kPa)	0.10 [0.007] (0.7)	0.20 [0.014] (1.4)	0.30 [0.021] (2.1)	0.40 [0.028] (2.8)	0.50 [0.034] (3.4)	0.60 [0.041] (4.1)	0.10 [0.007] (0.7)	0.10 [0.007] (0.7)	0.10 [0.007] (0.7)	0.10 [0.007] (0.7)
Ambient Temperature	°F	-40 to 200	-40 to 200	-40 to 200	-40 to 200	-40 to 200	-40 to 200	-40 to 200	-40 to 200	-40 to 200	-40 to 200
	°C	-40 to 93.3	-40 to 93.3	-40 to 93.3	-40 to 93.3	-40 to 93.3	-40 to 93.3	-40 to 93.3	-40 to 93.3	-40 to 93.3	-40 to 93.3
Materials of Construction		Body & Housing Aluminum Trim Zinc Plated Steel, Brass Diaphragm Nitrile on Dacron Fabric									
Hazardous Locations		Acceptable for use in Zones 1 and 2 for gas atmosphere; Groups IIA and IIB and Zones 21 and 22 for dust atmospheres									

Catalog Information

Catalog Number 208 -

Ratio

1:1	1
1:2	2
1:3	3
2:1	4
3:1	5
1:4	6
4:1	7
1:5	8
5:1	9
1:6	10

Pipe Size

1/4" NPT	2
3/8" NPT	3
1/2" NPT	4

Options

Silicone Elastomers ²	A
Tapped Exhaust ¹	E
BSPP (Parallel) ⁵	H
By-Pass Valve ⁴	I
Viton Elastomers ¹	J
Non-Relieving ¹	N
BSPT (Tapered)	U
Negative Bias ^{1,3}	Y

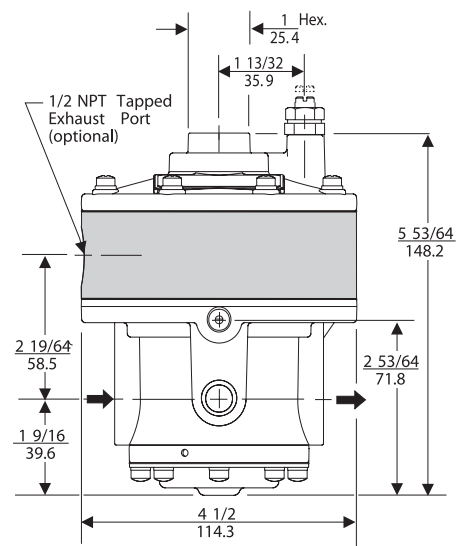
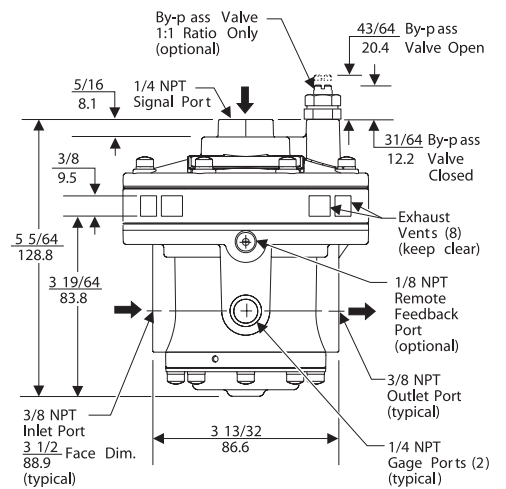
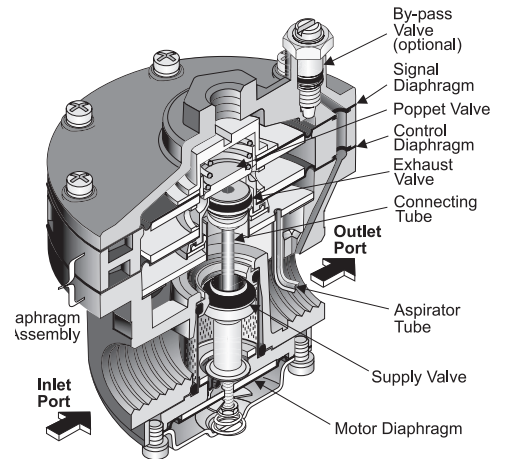


Model 4500A Pneumatic Volume Booster



Features

- Five signal to output ratios meet most control element requirements.
- Control sensitivity of 1" water column allows use in precision applications.
- Large Supply and Exhaust Valves provide high forward and exhaust flows.
- Soft Supply and Exhaust Valve seats minimize air consumption.
- A balanced Supply Valve minimizes the effect of supply pressure variation.
- An Aspirator Tube compensates down stream pressure droop under flow conditions.
- A separate Control Chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing.
- Optional remote feedback port minimizes pressure drop at final control element under flow conditions.
- Optional Adjustable By-Pass Needle Valve option includes bubble tight exhaust valve allows tuning for optimum dynamic response (1:1 ratio only) and cycle free operation with valve positioners
- Unit construction lets you service the Model 4500A without removing it from the line.
- Canadian Registration Number (CRN) certification for all territories and provinces.



Operating Principles

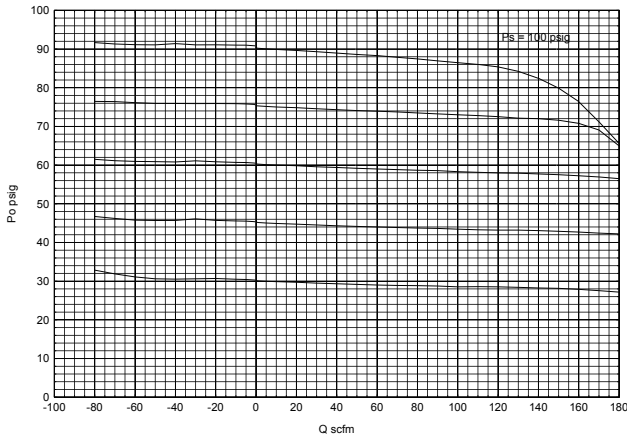
When signal pressure on the top of the Signal Diaphragm creates a downward force on the Diaphragm Assembly, the Supply Valve opens. Output pressure flows through the Outlet Port and the Aspirator Tube to the Control Chamber to create an upward force on the bottom of the Control Diaphragm. When the setpoint is reached, the force of the signal pressure that acts on the top of the Signal Diaphragm balances with the force of the output pressure that acts on the bottom of the Control Diaphragm to close the Supply Valve.

When the output pressure increases above the signal pressure, the Diaphragm Assembly moves upward to close the Supply Valve and open the Exhaust Valve. Because the Poppet Valve is closed, pressure flows down the Connecting Tube to the bottom of the Motor Diaphragm. This pressure keeps the Supply Valve tightly closed while in the exhaust mode. The Poppet Valve opens and excess output pressure exhausts through the vent in the side of the unit until it reaches the setpoint.

Model 4500A Pneumatic Volume Booster

Technical Information

Forward & Exhaust Flow Characteristics
Fairchild Model 4514A



Specifications

	RATIO	1:1	1:2	1:3	2:1	3:1
Maximum Output Pressure	psig [BAR] (kPa)	150 [10.0] (1000)	150 [10.0] (1000)	150 [10.0] (1000)	75 [5.0] (500)	50 [3.5] (350)
Maximum Supply Pressure	psig [BAR] (kPa)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)	250 [17.0] (1700)
Flow Capacity 100 psig, [7.0 BAR], (700 kPa) supply, 20 psig, [1.5 BAR], (150 kPa) setpoint.	SCFM m³/HR	150 (255)	150 (255)	150 (255)	150 (255)	150 (255)
Exhaust Capacity Downstream Pressure 5 psig, [.35 BAR], (35 kPa) above 20 psig, [1.5 BAR], (150 kPa) setpoint.	SCFM m³/HR	40 (65.2)	40 (65.2)	40 (65.2)	40 (65.2)	40 (65.2)
Setpoint Water Column	(cm)	1" (2.54)	2" (5.08)	3" (7.62)	2" (5.08)	2" (5.08)
Ratio Accuracy % of 100 psig, [7.0 BAR], (700 kPa) output span.		3.0	3.0	3.0		
% of output span with 100 psig, [7.0 BAR], (700 kPa) input span					3.0	3.0
Supply Pressure Effect	psig [BAR] (kPa)	0.10 [.007] (0.7)	0.20 [.014] (1.4)	0.30 [.021] (2.1)	0.10 [.007] (0.7)	0.10 [.007] (0.7)

Ambient Temperature

-40°F to 200°F, (-40°C to 93.3°C)

Hazardous Locations

Acceptable for use in Zones 1 and 2 for gas atmosphere; Groups IIA and IIB and Zones 21 and 22 for dust atmospheres

Materials of Construction

Body and Housing Aluminum
Trim Zinc Plated Steel, Brass
Diaphragm Nitrile on Dacron

Catalog Information

Catalog Number

4 5 A

Ratio

1:1 1
1:2 2
1:3 3
2:1 4
3:1 5

Pipe Size

3/8" NPT 3
1/2" NPT 4
3/4" NPT 6

Options

Tapped Exhaust E
By-pass Valve ¹ I
Feedback P
BSPT (Tapered) U
BSPP (Parallel) ² H
Viton Elastomers ³ J
Stainless Steel Trim S

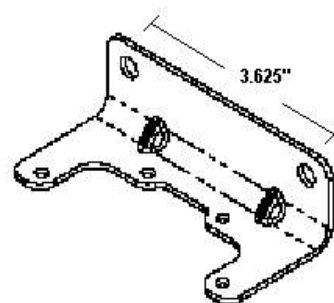
¹ For 1:1 Ratio Only

² BSPP Threads in Inlet, Outlet, Exhaust & Bonnet Ports Only. Others BSPT

³ Available on 1:1, 1:2 and 2:1 Only

Installation

For installations instructions, refer to the corresponding *Fairchild Model 4500A Pneumatic Volume Booster Instruction, Operation and Maintenance Instructions*, IS-2004500A.



Model 4500A Mounting Bracket Kit P/ N 20555-1 zinc plated (sold separately)



Model 4800A Pneumatic Volume Booster



The Fairchild Model 4800 volume booster is specifically designed to be used in conjunction with valve positioners on large control valve actuators to provide faster response than possible with the valve positioner alone. Deadband within the operation of the volume booster allows the positioner to make small incremental valve positioner changes in a highly stable manner without activating the volume booster valves. The integral bypass valve provides a means to control the response of the booster to match variations in valve positioner and actuator sizes.

Features

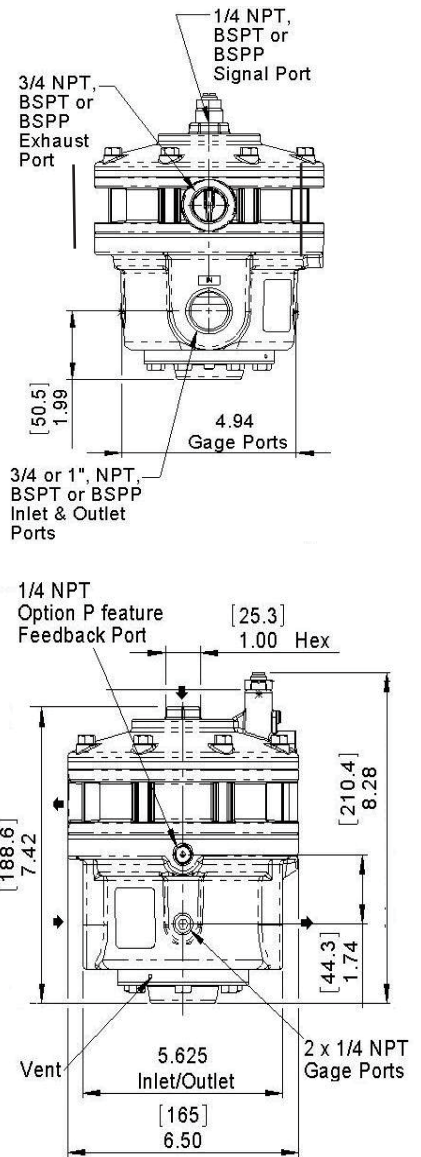
The Model 4800 volume booster is a rugged precision instrument with key features providing reliable, efficient and stable operation. These include:

- Fixed deadband between the operation of the supply valve and exhaust valve for accurate and stable valve positioning.
- Integral bypass needle valve to optimize response time and stability.
- Soft seat supply and exhaust valves for leak free operation and prevent hunting with feed & bleed positioners
- Pressure balanced supply valve maintains deadband specification.
- Damped diaphragm control chamber protects valves from damaging oscillation.
- Two accessory ports connected to the outlet chamber.
- Tapped exhaust port for exhaust air or for incorporation of a silencer.
- Canadian Registration Number (CRN) Certification for all territories and provinces

Operating Principles

When signal pressure on the top of the Signal Diaphragm creates a downward force on the Diaphragm Assembly, the Supply Valve opens. Output pressure flows through the Outlet Port and the Aspirator Tube to the Control Chamber to create an upward force on the bottom of the Control Diaphragm. When the setpoint is reached, the force of the signal pressure that acts on the top of the Signal Diaphragm balances with the force of the output pressure that acts on the bottom of the Control Diaphragm to close the Supply Valve.

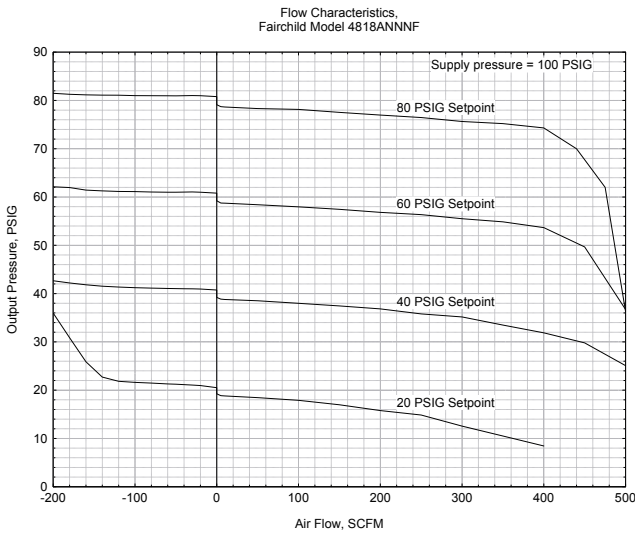
When the output pressure increases above the signal pressure, the Diaphragm Assembly moves upward to close the Supply Valve and open the Exhaust Valve. Because the Poppet Valve is closed, pressure flows down the Connecting Tube to the bottom of the Motor Diaphragm. This pressure keeps the Supply Valve tightly closed while in the exhaust mode. The Poppet Valve opens and excess output pressure exhausts through the vent in the side of the unit until it reaches the setpoint.



Volume Booster
C
Model 4800A

Model 4800A Pneumatic Volume Booster

Technical Information



Specifications (1:1 Ratio)

Maximum Output Pressure 150 psig [10.0 BAR] 1000kPa

Maximum Supply Pressure 250 psig [17.0 BAR] 1700kPa

Flow Coefficient Chart

Flow Option	Port Size	Forward Cv	Exhaust Cv
5	3/4" or 1"	5	5
9	1"	9	9

Flow Capacity @ 100 psig, 500 SCFM 850 m3/hr
(700 kPa) supply, 20 psig,
[1.5 BAR], (150 kPa) setpoint.

Exhaust Capacity 100 SCFM 170 m3/hr
@ Downstream Pressure 5 psig,
[.35 BAR], (35 kPa) above 20
psig, [1.5 BAR], (150 kPa)
setpoint.

Ratio Accuracy 0.5%
% of 100 Psi output pan.

Supply Pressure Effect 0.10 psi [.007 BAR] 0.7 kPa
for 100 psi [7 BAR] 700 kPa
change in supply

Ambient Temperature -40°F to 200°F, (-40°C to 93.3°C)

Hazardous Locations

Acceptable for use in Zones 1 and 2 for gas atmosphere; Groups IIA and IIB and Zones 21 and 22 for dust atmospheres

Materials of Construction

Body and Housing Aluminum
Trim Zinc Plated Steel
Diaphragm Nitrile on Dacron

Mounting Bracket 21363-1

Catalog Information

Catalog Number 48

Flow Capacity
Cv (Forward and Exhaust)

5
9*

Port Size

3/4"
1"

6
8

Port Thread

NPTF
BSPT
BSP

N
U
H

Elastomer

Fluorocarbon
Nitrile

J
N

Remote Pressure Sensor

No Feedback Port
Feedback Port

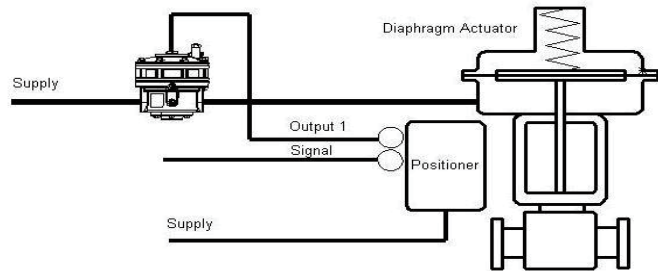
N
P

Trim

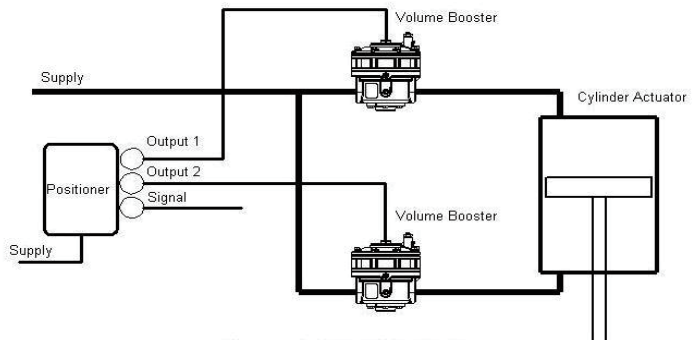
Stainless Steel
Zinc Plated Steel

S
T

* Cv of 9 with 1" ports only; 4896 version will have Cv of 7.



Typical Volume Booster with Single Acting Positioner and Diaphragm Actuator



Typical Volume Booster with Double Acting Positioner and Cylinder Actuator

C
Model 4800A
Volume Booster

Model 4900A Pneumatic Volume Booster



The Fairchild Model 4900A volume booster is a precision pneumatic valve designed for demanding applications requiring the ultimate in sensitivity, accuracy, and flow capacity. The booster is designed with very low deadband between the operation of the supply valve and achieves superb pressure control characteristics between forward flow and exhaust flow conditions. The high capacity exhaust valve is very useful in dynamic dual flow direction applications producing high reverse flow conditions.

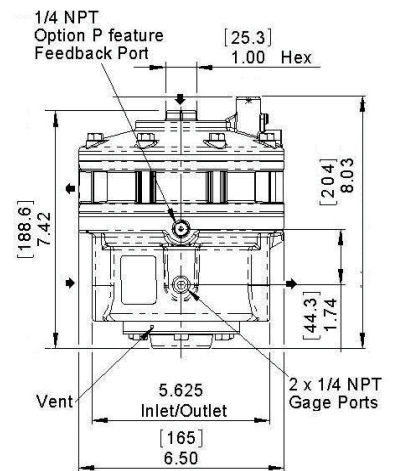
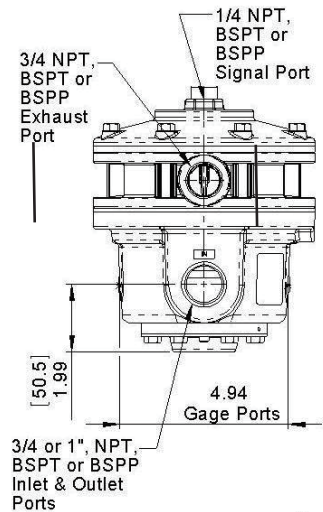
Features

- Very low deadband between the operation of the supply valve and exhaust valve.
- High capacity exhaust valve provides efficient dynamic reverse flow.
- Large area diaphragms provide high accuracy, sensitivity and excellent low pressure performance.
- Soft seat supply and exhaust valves provide efficient leak free operation.
- Pressure balanced supply valve prevents changes in control characteristics.
- Damped diaphragm control chamber provides stable operation and protects valves from damaging oscillation under high flow conditions.
- Two accessory ports connected to the outlet chamber
- Tapped exhaust port for exhaust or for incorporation of a silencer.
- Canadian Registration Number (CRN) Certification for all territories and provinces

Operating Principles

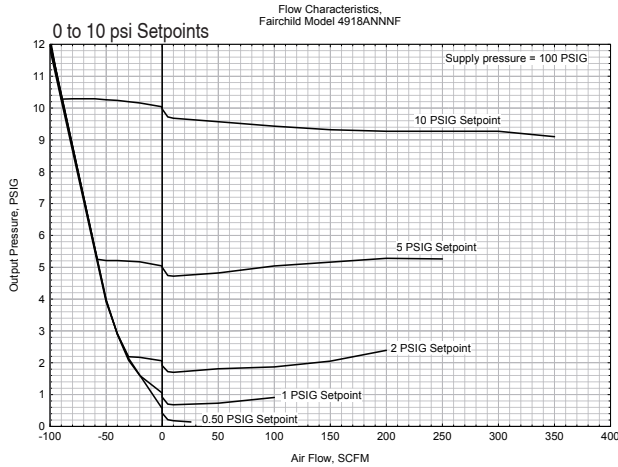
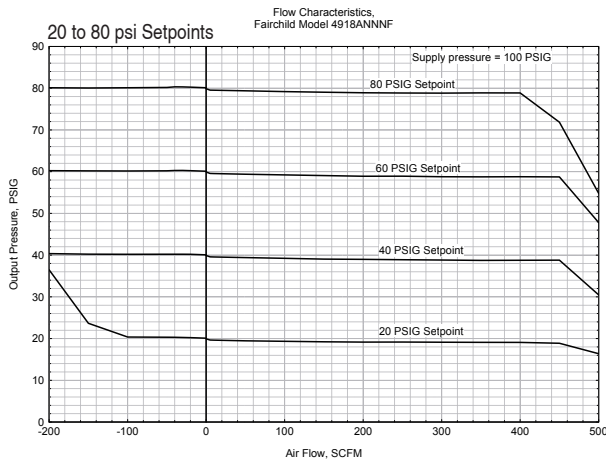
When signal pressure on the top of the Signal Diaphragm creates a downward force on the Diaphragm Assembly, the Supply Valve opens. Output pressure flows through the Outlet Port and the Aspirator Tube to the Control Chamber to create an upward force on the bottom of the Control Diaphragm. When the setpoint is reached, the force of the signal pressure that acts on the top of the Signal Diaphragm balances with the force of the output pressure that acts on the bottom of the Control Diaphragm to close the Supply Valve.

When the output pressure increases above the signal pressure, the Diaphragm Assembly moves upward to close the Supply Valve and open the Exhaust Valve. Because the Poppet Valve is closed, pressure flows down the Connecting Tube to the bottom of the Motor Diaphragm. This pressure keeps the Supply Valve tightly closed while in the exhaust mode. The Poppet Valve opens and excess output pressure exhausts through the vent in the side of the unit until it reaches the setpoint.



Model 4900A Pneumatic Volume Booster

Technical Information



Specifications (1:1 Ratio)

Maximum Output Pressure	150 psig [10.0 BAR] 1000kPa
Maximum Supply Pressure	250 psig [17.0 BAR] 1700kPa
Cv	9 (Forward) 9 (Exhaust)
Flow Capacity @ 100 psig, (700 kPa) supply, 20 psig, (1.5 BAR), (150 kPa) setpoint.	500 SCFM 850 m3/hr
Exhaust Capacity @ Downstream Pressure 5 psig, (.35 BAR), (35 kPa) above 20 psig, (1.5 BAR), (150 kPa) setpoint.	100 SCFM 170 m3/hr
Ratio Accuracy % of 100 Psi output span.	0.5%
Supply Pressure Effect for 100 psi [7 BAR] 700 kPa change in supply	0.10 psi [.007 BAR] 0.7 kPa
Ambient Temperature	-40°F to 200°F, (-40°C to 93.3°C)

Hazardous Locations

Acceptable for use in Zones 1 and 2 for gas atmosphere; Groups IIA and IIB and Zones 21 and 22 for dust atmospheres

Materials of Construction

Body and Housing Aluminum
Trim Zinc Plated Steel
Diaphragm Nitrile on Dacron

Catalog Information

Catalog Number 49

Ratio

1:1

Port Size

3/4"

1"

Port Thread

NPTF

BSPT

BSPF

Elastomer

Fluorocarbon

Nitrile

Remote Pressure Sensor

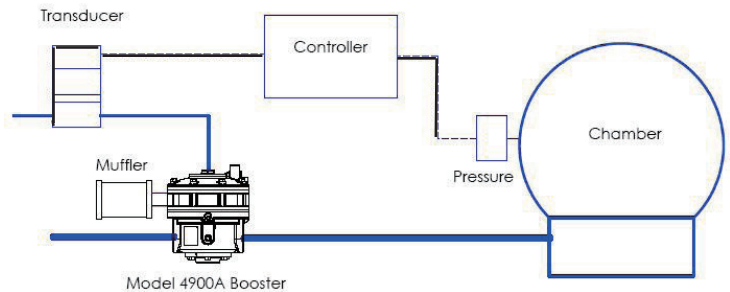
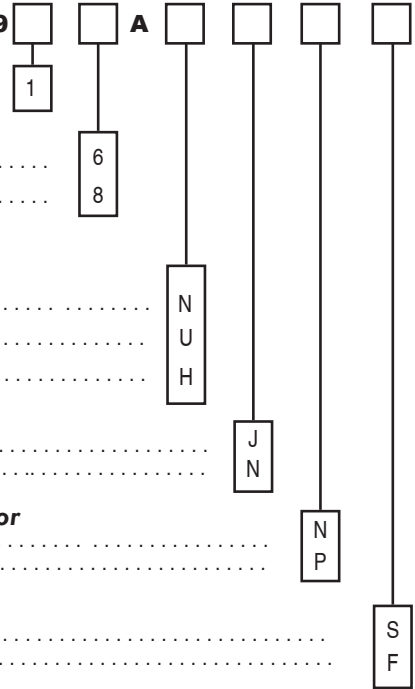
No Feedback Port

Feedback Port

Trim

Stainless Steel

Zinc Plated Steel



Chamber Pressure Control

Installation

For installations instructions, refer to the corresponding *Fairchild Model 4900A Pneumatic Volume Booster Instruction, Operation and Maintenance Instructions, IS-2004900A.*

Mounting Bracket21363-1

Model 200 Pneumatic Volume Booster



The Model 200 Pneumatic Volume Booster reproduces a pneumatic signal in a 1:1 ratio. It is ideally suited for systems that require input isolation or increased forward flow capacity.

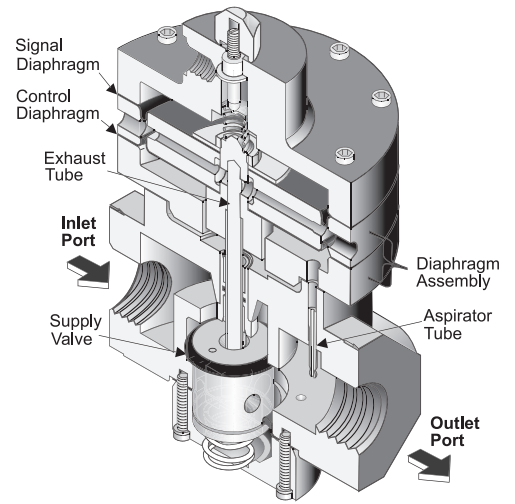
Features

- Control sensitivity to 1" water column variation.
- Large Supply and Exhaust Valves provide high forward and exhaust flows.
- A balanced Supply Valve minimizes the effect of supply pressure variation.
- An Aspirator Tube minimizes downstream pressure drop under flow conditions.
- A separate Control Chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing.
- Optional Increased Sensitivity configuration with larger Control Diaphragm for more precision control at low setpoints.
- Unit construction lets you service the Model 200 without removing it from the line.
- Mounting Bracket is available
- Canadian Registration Number (CRN) Certification for all territories and provinces

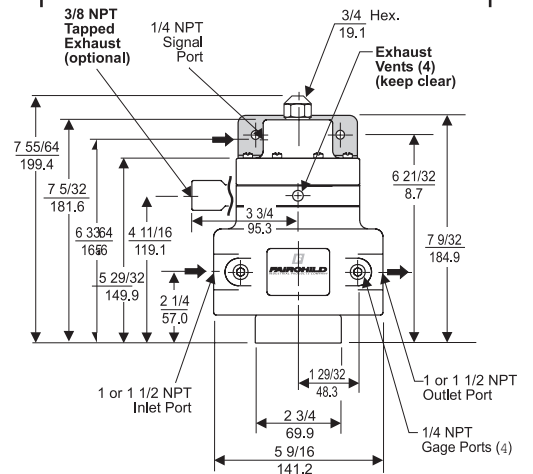
Operating Principles

When signal pressure on the top of the Signal Diaphragm creates a downward force on the Diaphragm Assembly, the Supply Valve opens. Output pressure flows through the Outlet Port and the Aspirator Tube to the Control Chamber to create an upward force on the bottom of the Control Diaphragm. When the setpoint is reached, the downward force of the signal pressure that acts on the top of the Signal Diaphragm balances with the upward force of the output pressure that acts on the bottom of the Control Diaphragm.

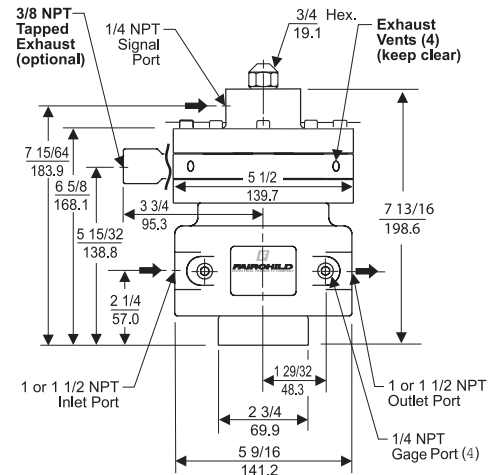
When the output pressure increases above the signal pressure, the Diaphragm Assembly moves upward to close the Supply Valve and open the Exhaust Valve. Excess output pressure exhausts through the Vents in the side of the unit until it reaches the setpoint.



Model 200 Standard Unit

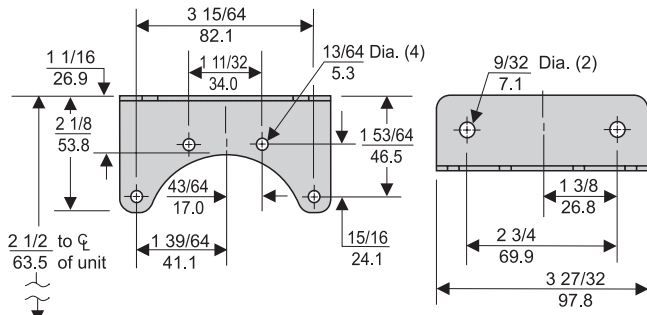


Model 200 with Increased Sensitivity Option (L)



Model 200 Pneumatic Volume Booster

Technical Information



Mounting Bracket: 10311

Model 200 Booster Kits & Accessories

Mounting Bracket Kit 10311 (sold separately).....

Specifications

Maximum Supply Pressure

250 psig, [17.0 BAR], (1700 kPa)

Flow Capacity

1800 SCFM (3058 m³/HR) @ 150 psig, [10.0 BAR], (1000 kPa) supply, 20 psig, [1.5 BAR], (150 kPa) set point

Exhaust Capacity

65 SCFM (110.5 m³/HR) where downstream pressure is 5 psig, [.35 BAR], (35 kPa) above 20 psig, [1.5 BAR], (150 kPa) setpoint

Maximum Signal or Output Pressure

150 psig, [10 BAR], (1000 kPa)

Supply Pressure Effect

Less than 0.5 psig, [.035 BAR], (3.5 kPa) for 100 psig, [7.0 BAR], (700 kPa) change in supply pressure

Sensitivity

1" (2.54 cm) Water Column

Ambient Temperature

-40°F to +200°F, (-40°C to 93.3°C)

Materials of Construction

Body and Housing Aluminum
 Trim Aluminum, Stainless Steel,
 Zinc Plated Steel, Brass
 Diaphragms Nitrile on Dacron

Catalog Information

Catalog Number **2 0 0 1**

Pipe Size

1" NPT 08
 1 1/2" NPT 12

Options

Tapped Exhaust E
 Increased Sensitivity L
 (for more precision control at low setpoints)
 Non-Relieving N
 Viton Elastomers J
 BSPP (Parallel)¹ H

¹ BSPP Threads in Inlet and Outlet Ports Only. Others BSPT.

Service Kit

For installation instructions, refer to the *Fairchild Model 200 Pneumatic Volume Booster Installation, Operation and Maintenance Instructions, IS-20000200*.

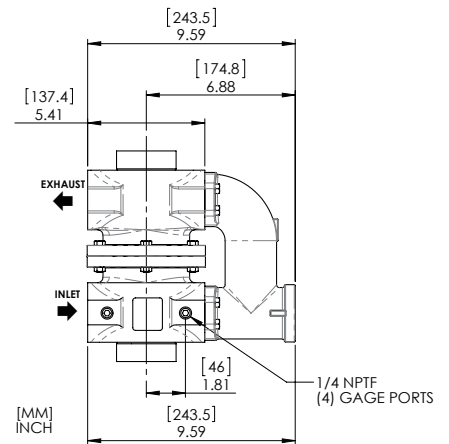
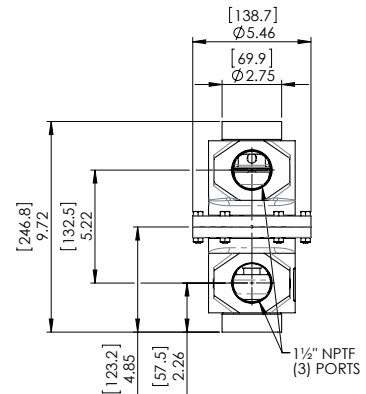
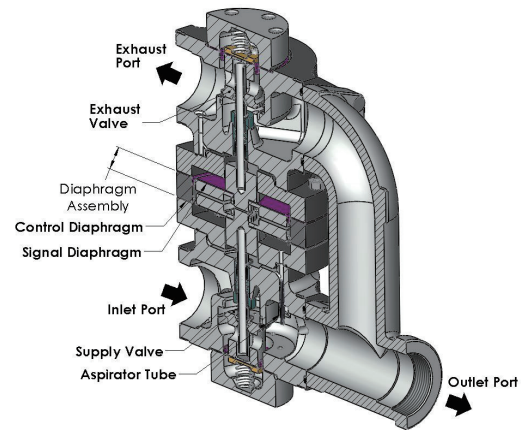


Model 200XLR Pneumatic Volume Booster



Features

- The 200XLR Pneumatic Volume Booster produces a pneumatic signal in a 1:1 ratio, ideally suited for input isolation systems.
- Control sensitivity to 1" water column variation (Increased Sensitivity ("L") option for more precision control at low setpoints.)
- Large supply and Exhaust Valves provide high forward and exhaust flows
- An Aspirator Tube minimizes downstream pressure droop under flow conditions.
- Separate Control Chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- Optional Adjustable By-Pass Needle Valve includes bubble tight exhaust valve allows tuning for optimum dynamic response and cycle free operation with valve positioners
- Canadian Registration Number (CRN) Certification for all territories and provinces

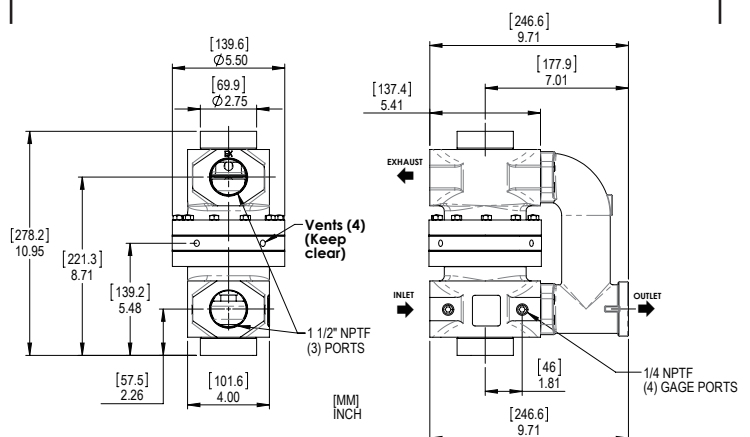


Operating Principles

When signal pressure on the top of the signal Diaphragm creates a downward force on the Diaphragm Assembly, the Supply Valve opens. Output pressure flows through the Outlet Port and the Aspirator Tube to the Control Chamber to create an upward force on the bottom of the Control Diaphragm. When the setpoint is reached, the downward force of the signal pressure that acts on the top of the Signal Diaphragm balances with the upward force of the output pressure that acts on the bottom of the Control Diaphragm.

When the output pressure increases above the signal pressure, the Diaphragm Assembly moves upward to close the Supply Valve and open the Exhaust Valve. Excess output pressure exhausts through the Exhaust Port until it reaches the setpoint.

Shown with Increased Sensitivity Option (L)



Volume Booster
C
 Model
 200
 XLR

Model 200XLR Pneumatic Volume Booster

Specifications

Flow Capacity (SCFM)

In excess of 1500 (2550 m³/hr) @ 100 psig, [7.0 BAR], (700 kPa) supply and 20 psig, [1.5 BAR], (1500 kPa) setpoint

Exhaust Capacity (SCFM)

325 (552.5 m³/hr) where downstream pressure is 5 psig, [.35 BAR], (35 kPa) above 20 psig, [1.5 BAR], (150 kPa) setpoint

Supply Pressure

250 psig, [17.0 BAR], (1700 kPa) Maximum

Supply Pressure Effect

Less than 0.5 psig, [.03 BAR], (3.4 kPa) for 100 psig, [7.0 BAR], (700 kPa) change in supply pressure

Signal or Output Pressure

150 psig, [10.0 BAR], (1000 kPa) Maximum

Sensitivity

1" (2.54 cm) Water Column

Ambient Temperature

-40°F to +200° F, (-40°C to +93° C)

Materials of Construction

Body and Housing Die Cast Aluminum
 Trim Stainless Steel, Brass, Aluminum,
 and Zinc Plated Steel
 Diaphragms Nitrile or Dacron

Catalog Information

Catalog Number 2001 XLR

Pipe Size
 1 1/2" NPT 12

Options

By Pass Valve	<input type="checkbox"/> I
Fluorocarbon (Viton) Elastomers	<input type="checkbox"/> J
Increased Sensitivity	<input type="checkbox"/> L

(for more precision control at low setpoints)

Installation

For installation instructions, refer to the *Fairchild Model 200XLR Pneumatic Volume Booster Installation, Operation and Maintenance Instructions, IS-20200XLR*.

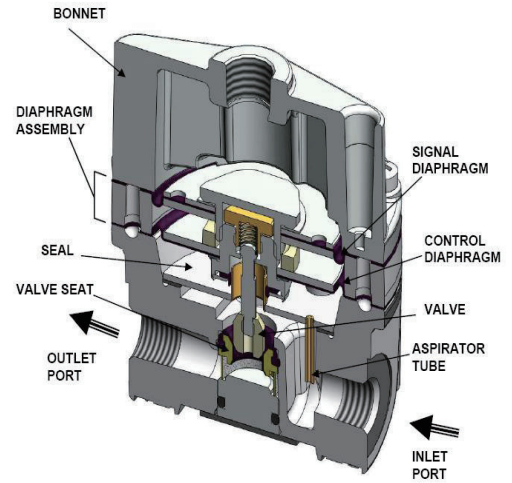


Model 20BP Pneumatic Precision Back Pressure Booster



Features

- The Model 20BP Pneumatic High Capacity Back Pressure Booster uses a pneumatic input signal to accurately control output pressure
- Aspirator Tube compensates pressure droop under flowing conditions
- A separate Control Chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing
- Unit construction allows servicing without removal
- Mounting Bracket available
- Canadian Registration Number (CRN) Certification for all territories and provinces

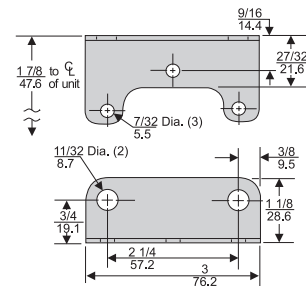


Operating Principles

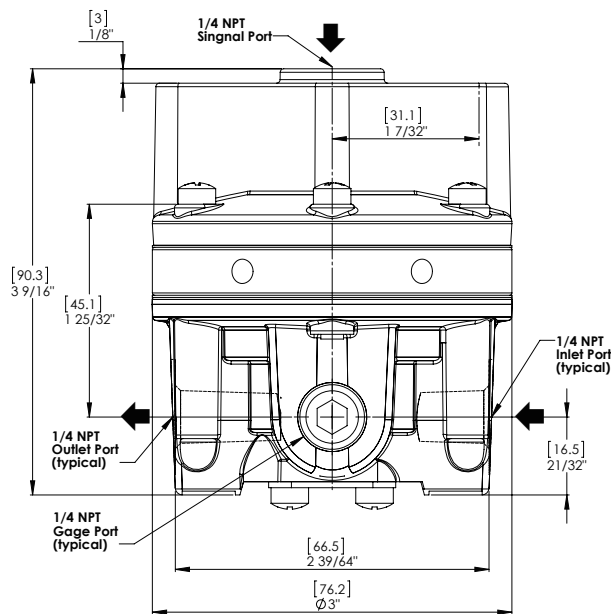
The Model 20BP Back Pressure Booster is a pneumatic device capable of high flow capacity. This device uses a force balance system to open the relief valve and vent system pressure when the set point is exceeded.

When system pressure increase, the force on the bottom of the Diaphragm Assembly increase until it reaches the set point. When system pressure increases beyond the set point, the assembly moves upward, lifting the Relief Valve from its seat and vents the system air.

If system pressure decreases below the set point, the assembly moves downward closing the Relief Valve.

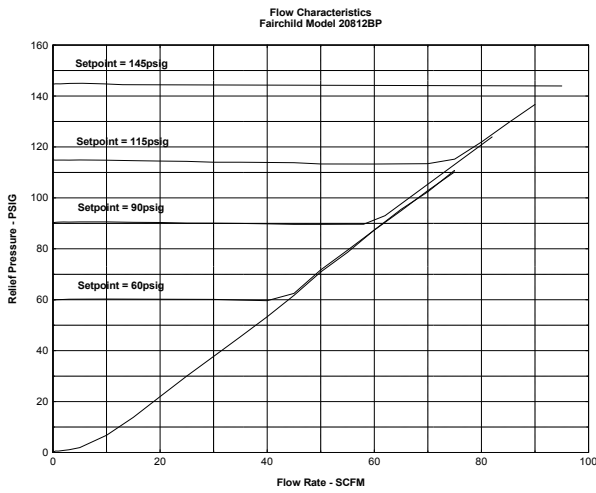


Model 20 Mounting Bracket Kit
P/N 09921 (Zinc Plated Steel)
(sold separately)



Model 20BP Pneumatic Precision Back Pressure Booster

Technical Information



Catalog Information

Catalog Number 208 BP

Ratio

1:1

Pipe Size

1/4" NPT
 3/8" NPT
 1/2" NPT

Options

Silicone Elastomers¹
 BSP (Parallel)²
 Viton Elastomers
 BSPT (Tapered)

¹ Maximum Pressure – 75 psig, [5.0 BAR], (500 kPa).
² BSP Threads in Inlet, Outlet, Bonnet & Exhaust Ports Only. Others BSPT.

Specifications

SIGNAL:OUTPUT (1:1 Ratio)	
Maximum Signal Pressure	150 psig [10.0 BAR] 1000kPa
Maximum System Pressure	250psig [17.0BAR] 1700kPa
Flow Capacity SCFM, @100 psig, [7.0 BAR], (700 kPa) System Pressure	60 SCFM (101.9 m ³ /HR)
Sensitivity (water column)	1/4" (.64 cm)
Ratio Accuracy % of 100 psig, [7.0 BAR], (700 kPa) Input span	1.0
Ambient Temperature	-40 °F to 200 °F, (-40 °C to 93.3°C)

Hazardous Locations

Acceptable for use in Zones 1 and 2 for gas atmosphere; Groups IIA and IIB and Zones 21 and 22 for dust atmospheres

Materials of Construction

Body & Housing Aluminum
 Trim Zinc Plated Steel, Brass
 Diaphragm Nitrile on Dacron Fabric

Installation

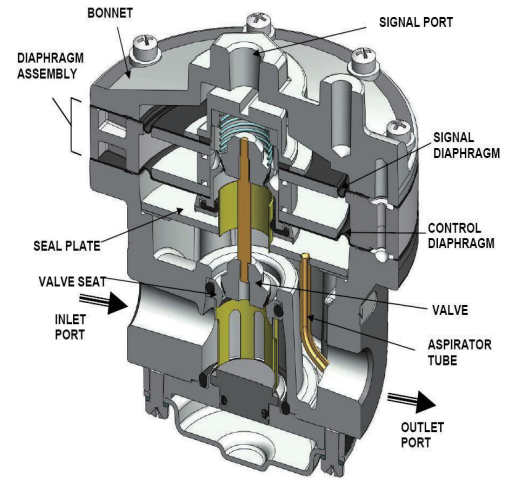
For installation instructions, refer to the *Fairchild Installation, Operation and Maintenance Instructions*.



Model 4500ABP Pneumatic Back Pressure Booster

Features

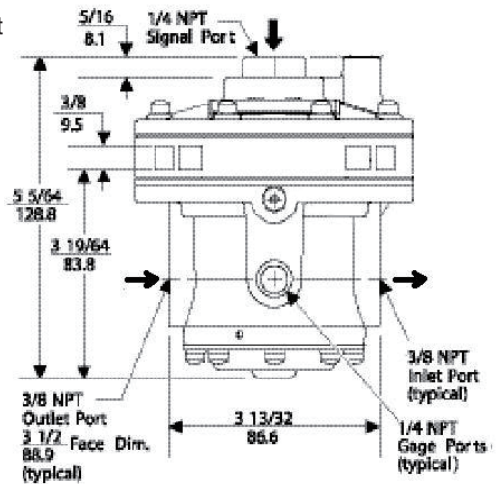
- Control sensitivity of 1" water column allows use in precision applications.
- Large Exhaust Valve provides high exhaust flows.
- An Aspirator Tube compensates pressure droop under flow conditions.
- A separate Control Chamber isolates the diaphragm from the main flow to eliminate hunting and buzzing.
- Unit construction lets you service the Model 4500ABP without removing it from the line.



Operating Principles

The Model 4500ABP Booster is a pneumatic device capable of high flow capacity. This device uses a force balance system to open the relief valve and vent system pressure when set point is exceeded. When system pressure increases, the force on the bottom of the Diaphragm Assembly increases beyond the set point, the assembly moves upward, lifting the Relief Valve from its seat and vents the system air.

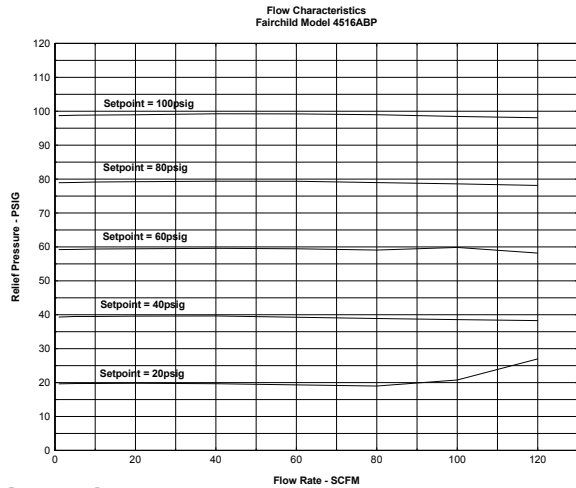
If system pressure decreases below the set point, the assembly moves downward closing the Relief Valve.



Volume Booster
C
 Model 4500ABP

Model 4500ABP Pneumatic Back Pressure Booster

Technical Information



Specifications

		RATIO	1:1
Maximum Signal Pressure	psig [BAR] (kPa)	150 [10.0] (1000)	
Maximum System Pressure	psig [BAR] (kPa)	250 [17.0] (1700)	
Flow Capacity	AT 100 psig, [7.0 BAR], 700 kPa) System Pressure,		
	SCFM m ³ /HR	150 (255)	
Sensitivity	Water Column (cm)	1" (2.54)	
Ratio Accuracy	% of 100 psig, [7.0 BAR], (700 kPa) input span.	3.0	

Ambient Temperature

-40°F to 200°F, (-40°C to 93.3°C)

Hazardous Locations

Acceptable for use in Zones 1 and 2 for gas atmosphere; Groups IIA and IIB and Zones 21 and 22 for dust atmospheres

Materials of Construction

Body and Housing..... Aluminum
Trim.....Zinc Plated Steel
Diaphragm.....Nitrile on Dacron

Catalog Information

Catalog Number

45 ABP

Ratio

1:1..... 1

Pipe Size

3/8" NPT..... 3
1/2" NPT..... 4
3/4" NPT..... 6

Options

BSPT (Tapered).....
BSPP (Parallel) ¹.....
Viton Elastomers.....

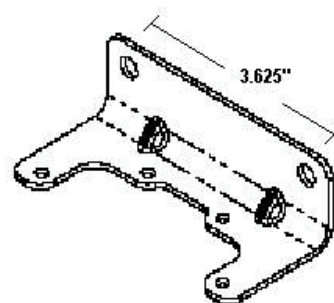
U
 H
 J

¹ BSPP Threads in Inlet, Outlet, Exhaust & Bonnet Ports Only. Others BSPT



Installation

For installations instructions, refer to the corresponding *Fairchild Model 4500ABP Pneumatic Volume Booster Instruction, Operation and Maintenance Instructions.*



Model 4500ABP Mounting Bracket
Kit P/N 20555-1 zinc plated (sold separately)