

## 550 Series Back Pressure, Low Pressure Valve

### Application 1"- 4" Valve

- Used on installations where upstream pressure is to be kept within a preset range
- Used as a custody transfer dump valve to hold a certain back pressure, or as a separator back pressure valve on the gas or liquid side
- Self-contained actuation valves:
  - Diaphragm operated topworks – for lower back pressures providing a finer degree of control
  - Piston operated topworks – provides control for higher levels of back pressure
- Pilot operated back pressure control valves:
  - Requires air or gas supply to operate pressure pilot
  - Provides higher levels of back pressure control with greater precision
- NACE material packages available

### Features and Benefits of the 550 Series Valve

- Economical integral / non-removable trim seat or removable stainless seat; other materials available
- In-line serviceability of internal components
- Simple design for ease of service
- Molded nitrile or molded fluorocarbon trim plugs for tight shut-off
- Numerous options for seals and packing material
- Variety of other trim plug and seat materials available
- Particulate filter available in sensing line to protect piston seal or pressure pilot from particulate matter in the process flow
- Rebuild Kits available for all Pathway valves



### Benefits of ALL Pathway Control Products

- Personalized service and support expertise
- Responsive, on-time delivery
- Time-tested & proven design providing dependable, long-term service
- Valves and castings Made in USA



## 550 Series

### Back Pressure, Low Pressure Valve

#### Specifications

**Summary Back Pressure Range (psig)** *See Ordering Chart for Additional Pressure Ranges*

Diaphragm Operated:	1"	2"	3"	4"
Lowest Back Pressure Range	-	15 -70	5-20	5-20
Highest Back Pressure Range	-	70-100	40-90	30-60
<b>Piston Operated:</b>	<b>1"</b>	<b>2"</b>	<b>3"</b>	<b>4"</b>
Lowest Back Pressure Range	10-90	15-80	15-75	20-80
Highest Back Pressure Range				
Threaded, Grooved, 300# RF Flange	100-250	100-315	100-360	100-250
150# RF Flange	100-250	100-275	100-275	100-250
<b>Pilot Operated:</b>	<b>1"</b>	<b>2"</b>	<b>3"</b>	<b>4"</b>
Full Range				
Threaded, Grooved, 300# RF Flange	-	25-350	25-300	25-200
150# RF Flange	-	25-275	25-275	25-200
<b>Cv Factor:</b>	16	45	80	111

**Temperature:** -20° F to +180° F; Available to +240° F maximum temperature

#### Material Selections

**Body:** Ductile ASTM A395 (nickel plating available)  
A105 Carbon steel welded 300# flanges and 1" 150# flanges

#### Topworks:

<p><b>Diaphragm Operated</b> (Self-contained)</p> <p><b>Piston Operated</b> (Self-contained)</p> <p><b>Pilot Operated</b> (Air or gas supply)</p>	<p>Pressed steel diaphragm housing; nitrile diaphragm nylon reinforced standard. Available in nitrile/fluorocarbon diaphragm</p> <p>Molythane packing with brass piston standard; Available in fluorocarbon packing; Nitronic 50 piston available</p> <p>Pressed steel diaphragm housing; nitrile diaphragm (nylon reinforced) standard; Available fluorocarbon pilot diaphragms</p>
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**Stem:** 303 stainless steel; Nitronic 50 stem available

**Trim Seat:** Removable 303 stainless steel  
Integral /non-removable seat – lower cost option  
Available in 316 stainless steel, Hastelloy or 17-4 PH SST removable seat

**Trim Plug:** Molded nitrile/steel plug standard  
Available in:  
Molded fluorocarbon/steel plug  
Trim plug inserts available in acetal, polyurethane, TFE, fluorocarbon  
Throttling-assist attachment available for trim plug inserts  
Hard trim available in 303 SST; 316 SST; Hastelloy; 17-4 PH SST

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### Seals & Packing:

Nitrile/brass packing gland; nitrile seals standard;

Available in:

Fluorocarbon/brass packing gland; fluorocarbon seals

Nitrile/316 SST packing gland; nitrile seals; Nitronic 50 stem

Fluorocarbon/316 SST packing gland; fluorocarbon seals; Nitronic 50 stem

### NACE Material:

NACE materials include 316 SST piston block, or 316 SST lower diaphragm plate or 316 SST wetted pilot components as applicable. Nitronic 50 piston when applicable. Nitronic 50 stem, fluorocarbon/316 SST packing gland, 316 SST internal wetted components, PTFE trim plug insets; Available in molded fluorocarbon/steel trim plug

### Maintenance

#### Rebuild Kits:

Rebuild Kits available which include: valve packing gland, seals, trim plug, valve stem, lock nuts, diaphragms or piston packing when applicable

#### Particulate Filter:

(Self-contained valve)

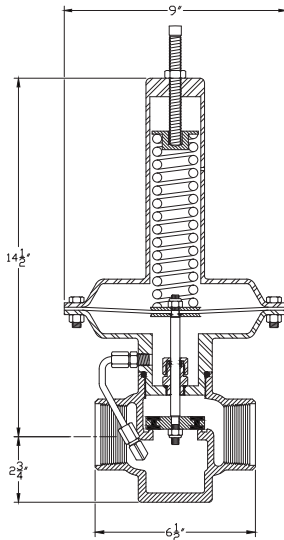
Particulate matter that enters the piston block or to a lesser extent, a diaphragm housing through the liquid sensing line may cause premature wear on the piston seals, the packing gland and valve stem. This excessive wear is not considered normal wear and tear as such matter should be filtered out prior to encountering the valve. Repairs that are a result of this condition are not eligible for warranty replacement.

Pathway offers a Particulate filter placed in the sensing line to assist in protecting the valve from this premature damage. The filter may be used when there is a potential particulate problem and the filter media may be removed when the issue is resolved.

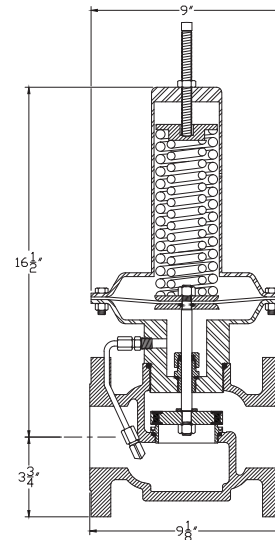
## 550 Series Back Pressure, Low Pressure Valve

### Sample Models

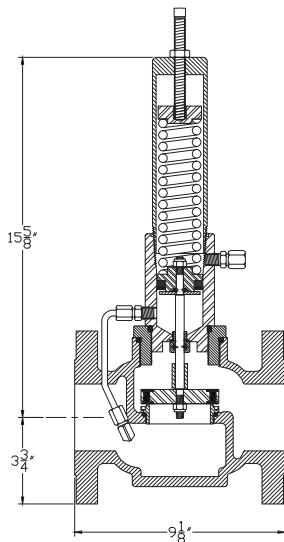
**550-211-11A1**



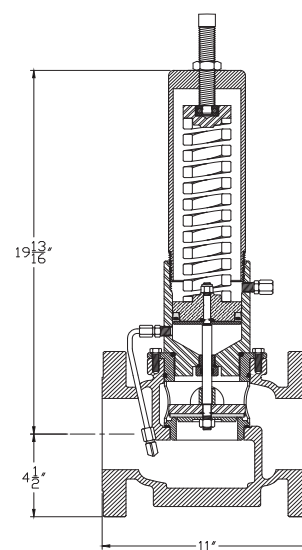
**550-331-21A3**



**550-332-21A1**



**550-432-24B3**



#### Face to Face Dimensions

	1"	2"	3"	4"
<b>Threaded</b>	5"	6 1/2"	9 1/8"	11"
<b>Grooved</b>	5"	6 1/2"	9 1/8"	11"
<b>150# RF</b>	8 3/8"	6 1/2"	9 1/8"	11"
<b>300# RF</b>	8 3/8"	9 1/8"	12"	14 3/4"

#### Other Dimensions

The Centerline to topworks dimensions vary by the topworks selected, by valve size and by spring selections. Please Contact Pathway for dimensions of your particular valve model.

## 550 Series Back Pressure, Low Pressure Valve

**Ordering Chart Example:** 550- 3 3 2 - 3 4 D 3 N (#) Option #, see Special Materials & Features below

SIZE	
1	1" (Piston operated only)
2	2"
3	3"
4	4"

CONNECTION	
1	Threaded
2	Grooved
3	Flange - 150# RF (welded on 1")
4	Flange - 300# RF (welded)

TOPWORKS	
1	Diaphragm (self-contained)
2	Piston (self-contained)
3	Pilot (air or gas supply required)

TRIM SEAT	
1	Integral
Removable Trim Seats	
2	303 SST standard
3	316 SST
H	Hastelloy
P	17-4 PH SST

TRIM PLUG	
1	Molded nitrile/steel
2	Acetal
3	Polyurethane
4	PTFE
6	Fluorocarbon insert
7	Molded fluorocarbon/steel
8	303 SST hard trim
9	316 SST hard trim
H	Hastelloy hard trim
P	17-4 PH SST hard trim

SEALS & PACKING	
A	Nitrile/brass packing gland, nitrile seals
B	Fluorocarbon/brass packing gland, fluorocarbon seals
C	Nitrile/316 SST packing gland, nitrile seals, Nitronic 50 stem
D	Fluorocarbon/316 SST packing gland, fluorocarbon seals, Nitronic 50 stem

SPECIAL MATERIAL & FEATURES	
5	Used by Pathway to indicate custom material and/or feature. Placed in model number in the position it relates to (eg. trim plug, trim seat, etc.). When used, an option number will be assigned by Pathway (see below)
(#)	Option # (in parentheses at end of model number) Pathway will assign option number unique to custom material and/or features

Added Selections ( add as needed )	
2	Heavy duty sealed visual indicator (only on topworks 3)
N	NACE Materials - also choose: Trim Seat 1,3 or H Trim Plug exclude 8 or P Seals and Packing C or D
P	Nickel-plated non-stainless wetted parts
S	Stress relief for welded flanges
T	Throttling-assist trim attachment
F	Particulate filter in sensing line

SPRINGS - PRESSURE RANGE				
Type	Model	Size	Back Pressure Range (psig)	
Diaphragm	1	2"	15-70	
		3"	15-40	
		4"	15-30	
	3	2"	70-100	
		3"	40-90	
		4"	30-60	
	8	2"	N/A	
		3"	5-20 (45in <sup>2</sup> Actuator)	
		4"	5-20 (45in <sup>2</sup> Actuator)	
Piston	1		Integral	Removable
		1"	10-90	10-90
		2"	40-240	40-250
		3"	20-145	20-160
		4"	20-80	20-100
	3	1"	20-140	20-140
		2"	100-300	100-315
		3"	40-180	40-195
	4	4"	25-110	25-130
		1"	100-250	100-250
		2"	N/A	N/A
		3"	100-340	100-360
	6	4"	90-175	90-200
		4"	100-220	100-250
	7	2"	20-125	20-135
3"		15-75	15-85	
8	2"	15-80	15-85	
Pilot	Pilot operated has no spring selection			
	No Visual Indicator			
	1	2"	25-350	
		3"	25-300	
		4"	25-200	
	HD Visual Indicator			
	2	2"	25-350	
3"		25-300		
4"		25-200		