

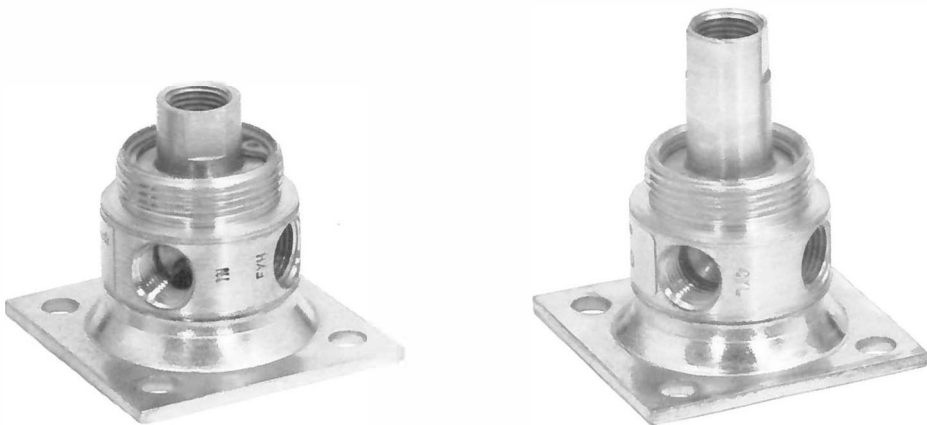
Humphrey 125 Series Air-Piloted Valves

Humphrey 125 Series air-piloted valves are simple, reliable, 2-position, pressure-operated, spring- and pressure-return, 2-way or 3-way valves offering high flow rates (27.5 scfm at 125 psig) and fast cycling (to 600 cpm). They feature a short stroke for fast response.

These small, lightweight, double diaphragm poppet, “no-stick” valves require no lubrication and are ideal for use with instrument air or other media which prohibit lubrication. The use of lubrication, however, will not prevent a 125 Series valve from functioning if the lubricant is varied or removed.

125 Series air-piloted valves have no sliding seals subject to cuts, metal seals subject to scratches, or O-rings subject to damage or replacement, so they are ideal for use with contaminated media and are unaffected by compressor varnish.

These versatile and economical valves can be mounted in any position.



125A

125A-3-10-21

Model 125A is a normally closed 0.125-inch orifice valve. For use with low-pressure pilot signals, specify "w/pilot booster."



125A

125A-3-11-21

Model 125A is a normally open 0.125-inch orifice valve. Furnished with pilot booster.

The Valve may also be used as:

Directional: Supply pressure to CYL port (Open to IN).

Two-pressure selector: High pressure to EXH port (75 psig max.). Low pressure to IN port (50 psig max.). Ensure adequate pilot pressure.

Normally closed: Supply pressure to EXH port.

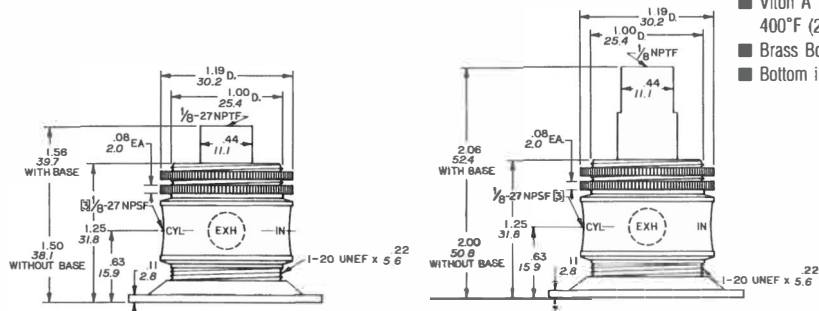


Options for 125 Series Air-Piloted Valves

- Mounting Base, Code 21.
- Viton A Diaphragm for resistance to mild chemicals and for sustained temperatures to 400°F (204.4°) and intermittent temperatures to 600°F (315.5°).
- Brass Body.
- Bottom inlet for normally closed models.

125NC

125NO



Base: (all) — 1.75 Sq. w/four 0.22 D. holes on 1.25 Sq. centers



125AA

125AA-3-10-20

Model 125AA is a normally closed, 3-way or "detented" 3-way air-piloted valve. Its internal compensating orifice maintains actuated position after momentary pilot signal, maintains "trapped"

pilot pressure to compensate for minor leaks, and speeds both the opening and closing response time.



Specifications

MEDIA:
Compressed Air (Consult factory for others)

TEMPERATURE RANGE:
-20 to 225°F (-28.9 to 107.2°C)

PRESSURE RANGE:

125A NC: 0 to 125 psig (0 to 8.6 bars)

125A NC with booster: 25 to 125 psig (1.7 to 8.6 bars)

125A NO, 125AA: 10 to 125 psig (.7 to 8.6 bars)

OPERATING SPEEDS:
To 600 CPM

MATERIALS:
Zinc Die Cast, Zinc Plated Steel, Aluminum, Brass, Stainless Steel, Buna N

LUBRICATION Not required
FILTRATION Not required

Air Flow to Atmosphere

MODEL	25 PSIG CFM	(1.7 BARS) LPM	125 PSIG CFM	(8.6 BARS) LPM	ACTUAL LBS	KGS
All	4.5	127.3	24	679.2	.20	.09

Weight

Fill/Exhaust Times (Seconds)

MODEL	SUPPLY PRESSURE							
	At 50 psig (3.5 bars)				At 100 psig (7.0 bars)			
	Chamber Fill 0-40 psig (0-2.8 bars)		Exhaust 50-10 psig (3.5-.7 bars)		Chamber Fill 0-80 psig (0-5.5 bars)		Exhaust 100-20 psig (7.0-1.4 bars)	
	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)
MODEL	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST
125A NC	0.106	0.238	0.834	1.150	0.124	0.221	0.922	1.260
125A NO	0.144	0.113	0.825	0.924	0.127	0.155	0.850	1.230
125AA NC	0.093	0.177	0.779	1.090	0.111	0.193	0.901	1.280
VALVED PRESSURE								
PILOT PRESSURE								
MODEL	125A NC	21.6	1.5	36.0	2.5	51.5	3.6	
	125A NO	27.3	1.9	53.6	3.9	88.2	6.1	
	125AA	20.0	1.4	34.8	2.4	49.7	3.4	

Humphrey 125 Series Interface Valves

Humphrey 125 Series valves are 2-way or 3-way valves for interfacing low (fluidic) pilot pressures with full working pressures. These high flow valves offer exceptional performance and durability. Vibration or shock will not cause unwanted actuation. A 125 Series valve has a full 0.125-inch orifice (27.5 scfm at 125 psig). They mount in any position. Both series require a clean, dry air supply, filtered to 10 microns.



125LA

Model 125LA is a super-sensitive pilot operated interface valve for operation at ultra-low pilot pressures. See Pilot Pressure Requirements Chart. A 125LA valve has a full 0.125-inch orifice. The pilot

diaphragm chamber volume is 0.011 cubic inches when the diaphragm has moved its 0.015-inch stroke; provides for rapid response.



125AH

125AH-3-10-20

Model 125AH is a sensitive pilot operated interface valve for operation at low pilot pressures. See Pilot Pressure Requirements Chart. A 125AH valve has a full

0.125-inch orifice. The pilot diaphragm chamber volume is 0.011 cubic inches when the diaphragm has moved its 0.015-inch stroke; provides for rapid response.



Options for 125 Series Interface Valves

- Mounting Base, Code 21.
- Brass Body
- Bottom Inlet.

Specifications

MEDIA:
Compressed Air (Consult factory for others)

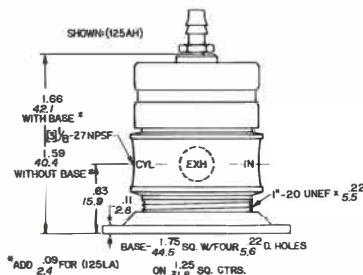
PRESSURE RANGE:
30 to 125 psig (2.1 to 8.6 bars)

TEMPERATURE RANGE:
40 to 125°F (4.4 to 51.7°C)

OPERATING SPEEDS:
To 1200 CPM

MATERIALS:
Aluminum, Brass, Zinc Plated Steel, Stainless Steel, Buna N

LUBRICATION Not required
 FILTRATION Recommended,
 10 Microns Minimum



Air Flow to Atmosphere

MODEL	25 PSIG CFM	(1.7 BARS) LPM	125 PSIG CFM	(8.6 BARS) LPM	ACTUAL LBS	KGS
125LA 125AH	3.6	101.8	18.0	509.4	0.24	0.11

Weight

Fill/Exhaust Times (Seconds)

	SUPPLY PRESSURE							
	At 50 psig (3.5 bars)				At 100 psig (7.0 bars)			
	Chamber Fill 0-40 psig (0-2.8 bars)		Exhaust 50-10 psig (3.5-.7 bars)		Chamber Fill 0-80 psig (0-5.5 bars)		Exhaust 100-20 psig (7.0-1.4 bars)	
	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)
MODEL	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST
125LA	0.130	0.150	1.090	1.310	0.137	0.177	1.130	1.550
125AH	0.122	0.137	1.030	1.250	0.127	0.165	1.070	1.420

Pilot Pressure Requirements

Minimum pilot pressures to open the valve at valved pressures of

MODEL	MAXIMUM PILOT	HYS-TER-ESIS+	30 PSIG (Minimum) (2.1 BARS)	80 PSIG (5.5 BARS)	125 PSIG (Maximum) (8.6 BARS)
125LA*	30 psig	20%	A .4 B .8 C 1.2	A .4 B 1.2 C 1.7	A .6 B 1.8 C 2.0
125AH	10 psig	30%	9 in. of water col.	9 in. of water col.	9 in. of water col.

*The speed at which the pilot signal is delivered to the valve is noted as, SLOWLY APPLIED PILOT SIGNALS (as some liquid level sensing applications) —

A — At this minimum pressure the valve will start to open, thus connecting all ports (IN-CYL-EXH) until

B — At this minimum pressure the valve is fully open.

RAPIDLY APPLIED PILOT SIGNALS —

C— At this minimum pressure the valve is fully open.

+ Once the valve is open, the valve will close when the minimum pilot pressure is reduced by the percentage shown.

Humphrey 250 Series Interface Valves

Humphrey 250 Series valves are 2-way or 3-way valves for interfacing low (fluidic) pilot pressures with full working pressures. These high flow valves offer exceptional performance and durability. Vibration or shock will not cause unwanted actuation. A 250 Series valve has a full 0.250-inch orifice (75 scfm at 125 psig). They mount in any position, and require a clean, dry air supply, filtered to 10 microns.



250AL

Model 250AL is a super-sensitive pilot operated interface valve for operation at the ultra-low pilot pressures encountered in jet sens-

ing and some fluidic applications. See Pilot Pressure Requirements Chart. A 250AL valve has a full 0.250-inch orifice.



Options for 250 Interface Valves

- Mounting Base, Code 21.
- Brass Body.
- Bottom Inlet.

Specifications

MEDIA:
Compressed Air (Consult factory for others)

PRESSURE RANGE:
30 to 125 psig (2.1 to 8.6 bars)

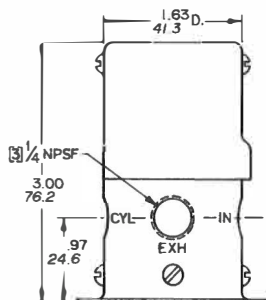
TEMPERATURE RANGE:
40 to 125°F (4.4 to 51.7°C)

OPERATING SPEEDS:
60-125 psig, 600 CPM
30-60 psig, 400 CPM

MATERIALS:
Aluminum, Brass, Zinc Plated Steel, Stainless Steel, Buna N

LUBRICATION Not required
FILTRATION Recommended,
10 Microns Minimum

Base — 2.25 Sq. w/four
0.22 D. holes on
1.59 Sq. centers.



250AH

Model 250AH is a sensitive pilot operated interface valve for operation at the low pilot pressures encountered in jet sensing

and some fluidic applications. See Pilot Pressure Requirement Chart. A 250AH valve has a full 0.250-inch orifice.



Air Flow to Atmosphere

MODEL	25 PSIG CFM	(1.7 BARS) LPM	125 PSIG CFM	(8.6 BARS) LPM	ACTUAL LBS	KGS
250AL	16.0	452.8	40.0	1132.0	0.77	0.35
250AH						

Weight

Fill/Exhaust Times (Seconds)

MODEL	SUPPLY PRESSURE							
	At 50 psig (3.5 bars)				At 100 psig (7.0 bars)			
	Chamber Fill 0-40 psig (0-2.8 bars)		Exhaust 50-10 psig (3.5-.7 bars)		Chamber Fill 0-80 psig (0-5.5 bars)		Exhaust 100-20 psig (7.0-1.4 bars)	
	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)
250AL	FILL 0.082	EXHAUST 0.083	FILL 0.339	EXHAUST 0.460	FILL 0.081	EXHAUST 0.093	FILL 0.365	EXHAUST 0.581
250AH	0.075	0.084	0.346	0.465	0.076	0.093	0.371	0.578

Pilot Pressure Requirements

Minimum pilot pressures to open the valve at valved pressures of

MODEL	MAXIMUM PILOT	HYS- TER- ESIS +	30 PSIG (Minimum) (2.1 BARS)	80 PSIG (5.5 BARS)	125 PSIG (Maximum) (8.6 BARS)
250AL	10 psig	30%	.8 in. of water col.	1.2 in. of water col.	2.1 in. of water col.
250AH	30 psig	30%	9 in. of water col.	9 in. of water col.	9 in. of water col.

+ Once the valve is open, the valve will close when the minimum pilot pressure is reduced by the percentage shown.

Humphrey 250 Series Air-Piloted Valves

Humphrey 250 Series air-piloted valves are simple, reliable, 2-position, pressure-operated, spring- and pressure-return, 2-way or 3-way valves offering high flow rates (75 scfm at 125 psig) and fast cycling (to 600 cpm). They feature a short stroke for fast response.

These small, lightweight, double diaphragm poppet, "no-stick" valves require no lubrication and are ideal for use with instrument air or other media which prohibit lubrication. The use of lubrication, however, will not prevent a 250 Series Valve from functioning if the lubricant is varied or removed.

250 Series air-piloted valves have no sliding seals subject to cuts, metal seals subject to scratches, or O-rings subject to damage or replacement, so they are ideal for use with contaminated media and are unaffected by compressor varnish.

These versatile and economical valves can be mounted in any position.



250A 250A-3-10-20
Model 250A is a normally closed 0.250-inch orifice valve. For use with low-pressure pilot signals, specify "w/pilot booster."

Model SS250A is identical in design to the 250A valve but is fabricated of 316 stainless steel and is furnished with Viton A diaphragms.



250A 250A-3-11-21
Model 250A is a normally open 0.250-inch orifice valve. Furnished with pilot booster. Three additional functions are possible:

Directional: Supply pressure to CYL port (Open to IN).

Two-pressure selector: High pressure to EXH port (75 psig max.). Low pressure to IN port (50 psig max.). Insure adequate pilot pressure.

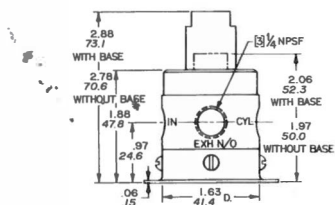
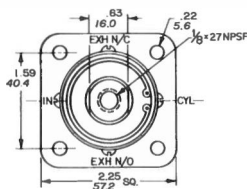
Normally closed: Supply pressure to EXH port.



250AA 250AA-3-10-21
Model 250AA is a normally closed, 3-way or detented 3-way valve. Its internal compensating orifice maintains actuated position after momentary pilot signal, maintains "trapped" pilot pressure to compensate for minor leaks, and speeds both the opening and closing response time.



250A



Options for 125 and 250 Series Valves

- Mounting Base, Code 21.
- Viton A Diaphragm for resistance to mild chemicals and for sustained temperatures to 400°F (204.4°) and intermittent temperatures to 600°F (315.5°).
- Brass Body (Not available for 4-way valves).
- Bottom Inlet for normally closed models (Not available for 4-way valves).



250-4A

Model 250-4A is a 4-way, 5-port valve with common supply and exhaust ports. Can be mounted in any position using four #10-32 holes in bottom, two slotted lugs on body, or with mounting base (Code 21). Black pilot cap.



Specifications

MEDIA:
Compressed Air (Consult factory for others)

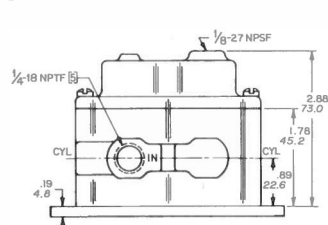
PRESSURE RANGE:

- 250A NC:** 10 to 125 psig (.7 to 8.6 bars)
- 250 NO, 250A NC with booster, 250-4A:** 10 to 125 psig (.7 to 8.6 bars)
- 250-4AA:** 20 to 125 psig (1.4 to 8.6 bars)
- 250AA:** 15 to 125 psig (1.0 to 8.6 bars)

Air Flow to Atmosphere

MODEL	25 PSIG CFM	(1.7 BARS) LPM	125 PSIG CFM	(8.6 BARS) LPM
250A/AA 250-4A/AA	25.0	707.5	75	2122.5

250 4A



250-4AA

Model 250-4AA is identical to the 250-4A valve but has an internal compensating orifice which maintains actuated position after momentary pilot signal, maintains "trapped" pilot reserve to compensate for minor leaks,

TEMPERATURE RANGE:
-20 to 225°F (-28.9 to 107.2°C)

OPERATING SPEEDS:
To 600 CPM

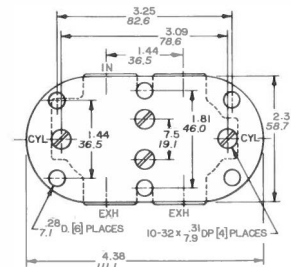
MATERIALS:
Zinc Die Cast, Zinc Plated Steel, Aluminum, Brass, Stainless Steel, Buna N

LUBRICATION: Not required

FILTRATION: Not required

Weight

MODEL	ACTUAL LBS	KGS
250-4A 250-4AA	0.5 1.8	0.2 0.8



and speeds both the opening and the closing response time. Furnished with gold pilot cap to visually distinguish it from 250-4A valve.



Fill/Exhaust Times (Seconds)

MODEL	SUPPLY PRESSURE							
	At 50 psig (3.5 bars)				At 100 psig (7.0 bars)			
	Chamber Fill 0-40 psig (0-2.8 bars)		Exhaust 50-10 psig (3.5-.7 bars)		Chamber Fill 0-80 psig (0-5.5 bars)		Exhaust 100-20 psig (7.0-1.4 bars)	
	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)
250A NC	0.032	0.044	0.312	0.433	0.033	0.059	0.324	0.565
250A NO	0.035	0.044	0.311	0.384	0.036	0.055	0.305	0.438
250AA	0.032	0.044	0.312	0.433	0.033	0.059	0.324	0.565
250-4A NC	0.032	0.049	0.307	0.405	0.033	0.060	0.315	0.505
250-4A NO	0.037	0.048	0.305	0.368	0.039	0.055	0.305	0.425
250-4AA/NC	0.034	0.045	0.310	0.427	0.034	0.057	0.300	0.527
250-4AA/NO	0.037	0.048	0.305	0.368	0.039	0.055	0.305	0.425

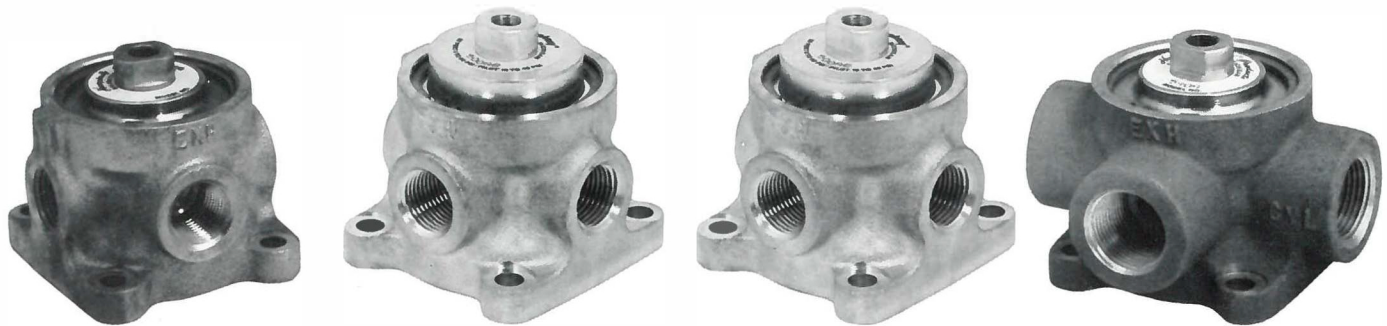
VALVED PRESSURE		25 psig	1.7 bars	75 psig	5.2 bars	125 psig	8.6 bars
PILOT PRESSURE							
MODEL		250A NC	21.7	1.5	48.3	3.3	88.3
	250A NO	23.0	1.6	48.3	3.3	84	6.1
	250AA	18.7	1.3	44.8	3.1	72.5	5.0
	250-4A	22.3	1.5	46.1	3.2	72.0	5.0
	250-4AA	8.5	0.6	25.1	1.7	41.2	2.8

Humphrey 500-590 Series Air-Piloted Valves

Air-piloted valves of this series are of double diaphragm poppet design. 500 and 590 Series valves require no lubrication and are ideal for use with instrument air or other media which prohibit lubrication. They have no sliding seals subject to cuts, metal seals subject to scratches, or O-rings subject to damage or replacement, so they are also ideal for use with contaminated media and are unaffected by compressor varnish.

500 Series valves have full 0.500-inch orifices. A 590 Series valve has a full 0.625-inch orifice.

Any 500 or 590 Series valve can be mounted in any position.



500A 500A-3-10
Model 500A is a 2-way or 3-way, normally closed only valve offering high flow rates (to 200 scfm at 125 psig). The 500A requires no lubrication. Pilot air is isolated from valved media for applications requiring air pilot control for air, water, oil, instrument air, and gases. The 500A may be used normally open by connecting air supply at pressures within 15-60 psig to EXH port. Valve body is brass.



500AB 500AB-3-10
Model 500AB is identical to the 500A valve but has a booster piston to reduce pilot air pressure requirements. Air-operated only. Valve body is brass.



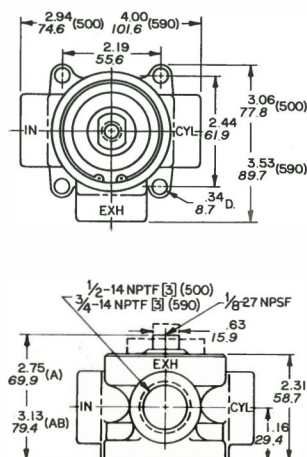
500AG 500AG-3-10
Model 500AG is identical to the 500AB valve but has Viton A diaphragms to accommodate temperatures from -25°F (31.6°C) to 400°F (204.4°C). The 500AG is used extensively in the glass industry as a "blow valve." Valve body is brass.



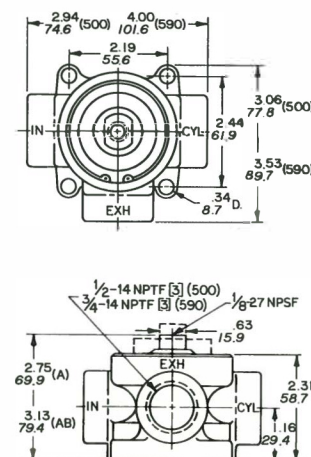
590A 590A-3-10
Model 590A is a 2-way or 3-way normally closed valve offering high flow rates to (312 scfm at 125 psig). Available with lightweight aluminum body or with optional brass body. The 590A requires no lubrication.



500A/AB/AG



590A/AB/AG





590AB

590AB-3-10

Model 590AB is identical to the 590A valve but has a booster piston to reduce pilot air pressure requirements and is air-operated only.



590AG

590AG-3-10

Model 590AG is identical to the 590AB valve but has Viton A diaphragms to accommodate temperatures from -25°F (31.6°C) to 400°F (204.4°C). The 590AG is used extensively in the glass industry as a "blow valve."



Specifications

MEDIA:

Compressed Air (Consult factory for others)

PRESSURE RANGE:

500/590A: 0 to 125 psig (0 to 8.6 bars)
500/590AB, 500/590AG: 10 to 60 psig (.69 to 4.1 bars) inlet, 10 to 40 psig (.69 to 2.8 bars) pilot

TEMPERATURE RANGE:

0 to 225°F (-17.8 to 107.2°C)
AB: -10 to 150°F (-23 to 65.5°C)
AG: -25 to 400°F (-31.6 to 204°C)

OPERATING SPEEDS:

To 600 CPM

MATERIALS:

500/590: Cast Aluminum & Brass, Machined Brass, Stainless Steel, Machined Aluminum, Zinc Plated Steel, Buna N

LUBRICATION Not required
 FILTRATION Not required

Air Flow to Atmosphere

MODEL	30 PSIG CFM	(2.1 BARS) LPM	120 PSIG CFM	(8.3 BARS) LPM	ACTUAL LBS	KGS
500A/AB	65.0	1839.5	214.0	6056.2	2.7	1.2
590A/AB	100.0	2831.0	289.0	8178.7	1.5	0.6

Weight

Fill/Exhaust Times (Seconds)

MODEL	SUPPLY PRESSURE							
	At 50 psig (3.5 bars)				At 100 psig (7.0 bars)			
	Chamber Fill 0-40 psig (0-2.8 bars)		Exhaust 50-10 psig (3.5-.7 bars)		Chamber Fill 0-80 psig (0-5.5 bars)		Exhaust 100-20 psig (7.0-1.4 bars)	
	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)	10 Cubic Inches (164cc)	100 Cubic Inches (1640cc)
	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST	FILL	EXHAUST
500A	0.009	0.020	0.085	0.157	0.010	0.027	0.102	0.195
500AB	0.010	0.013	0.084	0.097	0.011	0.015	0.100	0.114
590A	0.010	0.021	0.071	0.148	0.010	0.028	0.079	0.174
590AB	0.011	0.013	0.066	0.072	0.011	0.012	0.079	0.086

VALVED PRESSURE		25 psig	1.7 bars	75 psig	5.2 bars	125 psig	8.6 bars
PILOT PRESSURE							
MODEL	500A	17.0	1.2	49.5	3.4	97.8	6.7
	500AB	14.5	1.0	33.3	2.3	53.2	3.7
	590A	21.8	1.5	54.0	3.7	104.0	7.2
	590AB	15.3	1.1	34.1	2.4	41.5	2.9

Options for 500, 590, Series Valves

- Viton A diaphragms for resistance to mild chemicals and for steady temperatures to 400°F (204.4°C) and intermittent temperatures to 600°F (315°C). Viton A Diaphragms are standard on 500AG and 590AG valves. Not available for 501 valves.
- Brass Body. Available for 590 valves. Brass body is standard for 500 valves.