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Title: 125A/AA, 125LA, 125AH Air Piloted Valves

ISO Date: April 10, 2006

Don't Take Chances

Compressed air is an extremely powerful medium. Always take maximum precautions when handling any component of a compressed air system. **Never** attempt to construct, replace, operate or service any component of a compressed air system unless you have been specifically and properly trained to do so. **Always** disconnect the supply air, and exhaust the air system before attempting to remove or service a component of that system. Failure to heed these warnings could result in SERIOUS, EVEN FATAL, PERSONAL INJURY.

Design And Specifications

The design and specifications and other product information contained in this catalog is for general reference purposes based upon customary and usual manufacturing standards and product applications. However, it is difficult to predict or to anticipate the functioning or suitability of the product for any particular application or use. Therefore, nothing herein shall be deemed a representation or warranty of the product design or specifications and Buyer shall have the responsibility for investigating and testing the product in any particular application or use and all risks attendant in such use.

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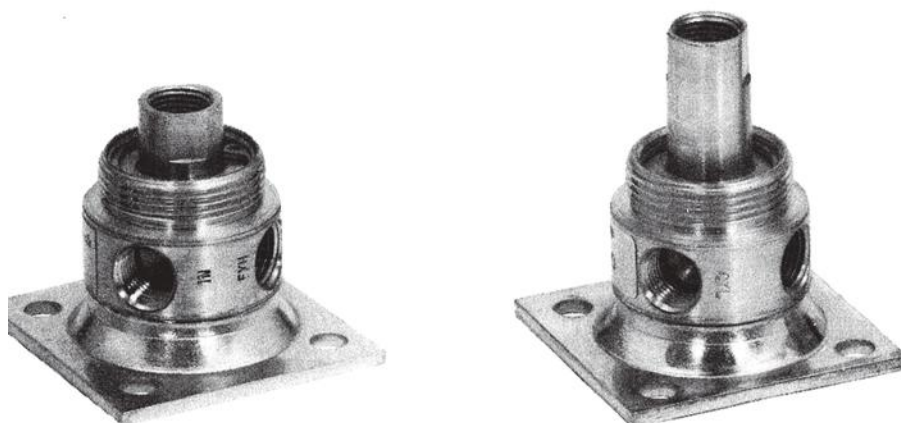
Humphrey 125 Series Air-Piloted Valves

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.

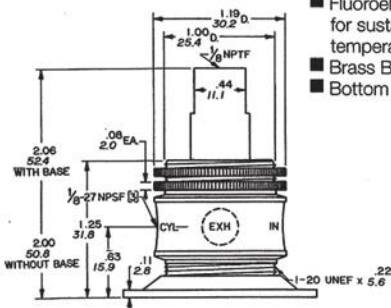
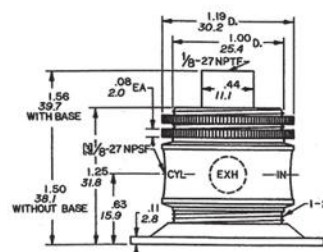


Options for 125 Series Air-Piloted Valves

- Mounting Base, Code 21.
- Fluoroelastomer diaphragms for resistance to mild chemicals and for sustained temperatures to 400°F (204.4°C) and intermittent temperatures to 600°F (315.5°C).
- 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

Order Information on page 204.



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)

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)

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

Air Flow to Atmosphere

MODEL	25 PSIG CFM	(1.7 BARS) LPM	125 PSIG CFM	(8.6 BARS) LPM
All	4.5	127.3	24	679.2

Weight

ACTUAL LBS	KGS
.20	.09

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)	
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		25 psig	1.7 bars	75 psig	5.2 bars	125 psig	8.6 bars
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

Order Information on page 204.

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)

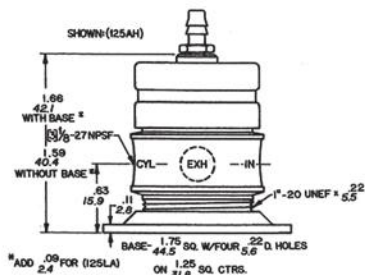
PRESSURE RANGE:
30 to 125 psig (2.1 to 8.6 bars)

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	3.6	101.8	18.0	509.4	0.24	0.11
125AH						

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)	
	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.

Order Information on page 204.

125/250/500/501/590 Series

1/8-, 1/4-, 1/2-, and 3/4-inch ports, 2-way, 3-way, 4-way

VALVES

	2 Way	3 Way	Norm. Closed	Norm. Open	Universal	w/Out Mounting Base	With Mounting Base	Panel Mounting Nuts	Booster (STD on NO)	FKM** Seals	Brass Body	Bottom Inlet (NC only)
Option Code	2	3	10	11	12	20	21	22	w/BOS	w/VAI	w/BRB	w/BIN
MODEL												
125A	SP	N/C	N/C	SP	NA	N/C	SP	SP	SP	SP	SP	SP
125AA	NA	N/C	N/C	NA	NA	N/C	SP	SP	SP	SP	SP	SP
125AH	SP	N/C	N/C	NA	NA	N/C	SP	SP	NA	NA	NA	SP
125LA	SP	N/C	N/C	NA	NA	N/C	SP	SP	NA	NA	NA	SP
250A	SP	N/C	N/C	SP	NA	N/C	SP	NA	SP	SP	SP	SP
250AA	NA	N/C	N/C	NA	NA	N/C	SP	NA	SP	SP	SP	SP
250AH	SP	N/C	N/C	NA	NA	N/C	SP	NA	NA	NA	NA	SP
250AL	SP	N/C	N/C	NA	NA	N/C	SP	NA	NA	NA	NA	SP
250-4A	NA	NA	NA	NA	NA	N/C	SP	NA	NA	SP	NA	NA
250-4AA	NA	NA	NA	NA	NA	N/C	SP	NA	NA	SP	NA	NA
500A	SP	N/C	N/C	*	NA	NA	STD	NA	NA	SP	STD	NA
500AB	SP	N/C	N/C	*	NA	NA	STD	NA	STD	SP	STD	NA
590A	SP	N/C	N/C	*	NA	NA	STD	NA	NA	SP	SP	NA
590AB	SP	N/C	N/C	*	NA	NA	STD	NA	STD	SP	SP	NA
501A	SP	N/C	*	*	N/C	N/C	SP	NA	NA	SP	NA	NA
501AA	NA	N/C	N/C	NA	NA	N/C	SP	NA	NA	SP	NA	NA
501-4A	NA	NA	NA	NA	NA	NA	STD	NA	NA	SP	NA	NA
501-4AA	NA	NA	NA	NA	NA	NA	STD	NA	NA	SP	NA	NA
SS250A	NA	STD	STD	NA	NA	STD	NA	NA	NA	STD	NA	NA

*These options can be achieved by plumbing supply to the appropriate port. See specific catalog section.

**Fluoroelastomer

HOW TO ORDER

Starting with Model Number specify options in order from left to right.

Example: To Order Model 125A-3-10-22 w/BRB

3-Way Operation	(125A-3)
Normally Closed	(125A-3-10)
Panel Mounting Nuts	(125A-3-10-22)
With Brass Body	(125A-3-10-22 w/BRB)

Remember: Option Codes marked STD and NA are not used as part of the Model Number when ordering. N/C indicates no charge but Option Code must be included in the Model Number. OS indicates that Option must be ordered separately and is not used as part of the Model Number.

N/C=No charge	STD=Standard
NA =Not available	SP=Specify, additional
OS =Order separately,	charge for this option
additional charge	
for this option	