

# 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).

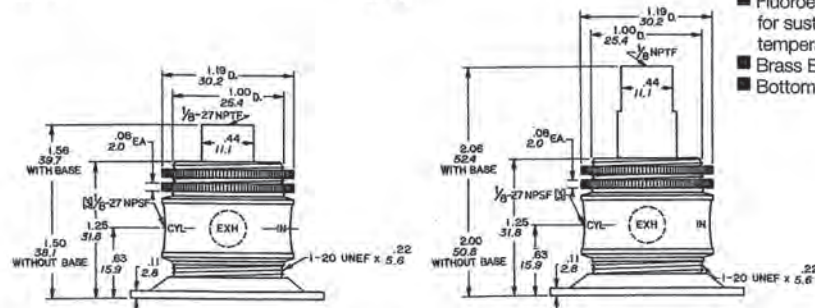
**Two-pressure selector:** High pressure to EXH port (75 psig max.). Low pressure to IN port (50 psig max.). Ensure adequate pilot pressure.

**Normally closed:** Supply pressure to EXH port.



125NC

125NO



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

## 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.

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**

**Weight**

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

**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	
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)

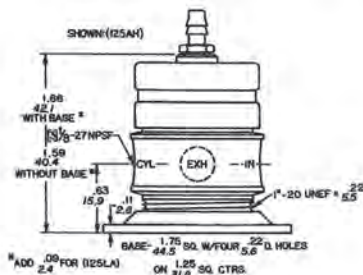
**PRESSURE RANGE:**  
30 to 125 psig (2.1 to 8.6 bars)

**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

## Weight

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						

## 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 0-90 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 5 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.

# Humphrey Air Piloted Valves

## Order Information

### 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
<b>MODEL</b>												
<b>125A</b>	SP	N/C	N/C	SP	NA	N/C	SP	SP	SP	SP	SP	SP
<b>125AA</b>	NA	N/C	N/C	NA	NA	N/C	SP	SP	SP	SP	SP	SP
<b>125AH</b>	SP	N/C	N/C	NA	NA	N/C	SP	SP	NA	NA	NA	SP
<b>125LA</b>	SP	N/C	N/C	NA	NA	N/C	SP	SP	NA	NA	NA	SP
<b>250A</b>	SP	N/C	N/C	SP	NA	N/C	SP	NA	SP	SP	SP	SP
<b>250AA</b>	NA	N/C	N/C	NA	NA	N/C	SP	NA	SP	SP	SP	SP
<b>250AH</b>	SP	N/C	N/C	NA	NA	N/C	SP	NA	NA	NA	NA	SP
<b>250AL</b>	SP	N/C	N/C	NA	NA	N/C	SP	NA	NA	NA	NA	SP
<b>250-4A</b>	NA	NA	NA	NA	NA	N/C	SP	NA	NA	SP	NA	NA
<b>250-4AA</b>	NA	NA	NA	NA	NA	N/C	SP	NA	NA	SP	NA	NA
<b>500A</b>	SP	N/C	N/C	*	NA	NA	STD	NA	NA	SP	STD	NA
<b>500AB</b>	SP	N/C	N/C	*	NA	NA	STD	NA	STD	SP	STD	NA
<b>590A</b>	SP	N/C	N/C	*	NA	NA	STD	NA	NA	SP	SP	NA
<b>590AB</b>	SP	N/C	N/C	*	NA	NA	STD	NA	STD	SP	SP	NA
<b>501A</b>	SP	N/C	*	*	N/C	N/C	SP	NA	NA	SP	NA	NA
<b>501AA</b>	NA	N/C	N/C	NA	NA	N/C	SP	NA	NA	SP	NA	NA
<b>501-4A</b>	NA	NA	NA	NA	NA	NA	STD	NA	NA	SP	NA	NA
<b>501-4AA</b>	NA	NA	NA	NA	NA	NA	STD	NA	NA	SP	NA	NA
<b>SS250A</b>	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 charge for this option
OS =Order separately, additional charge for this option	