

AIR-PILOT VALVES

INTRODUCTION

Air-Pilot Valves operate via a remote air signal to shift the valve and internal air pressure to return to its original position when the air signal is removed. Often, they contribute to the most economical, lowest total cost solutions, due to their simple construction and trouble free service in difficult environments.

Air-Pilot Valves use air piping only, and therefore, are inherently explosion-proof. They can be mounted close to work, isolating machine operators or electrical signals away from hazardous or difficult environments. Use of small electrical or manual valves becomes possible as piloting valves, for one or more Air-Pilot Valves in a system. More often than not, this reduces overall cost, total air consumption, and troubleshooting downtime.

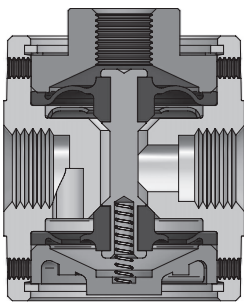
Other common Air-Pilot Valve applications:

- Slave function.
- Interlock function.
- Tight leak requirements.
- Alternate media (use our brass or SST body material).

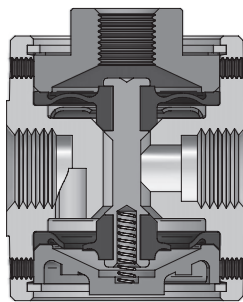
AIR-PILOT VALVE FEATURES:

- Simple construction. Trouble free. Reliable.
- Works equally well with or without air line lubrication, with clean or dirty air.
- Compact and light weight.
- Mount in any direction.
- Cost effective.

"A" TYPE AIR-PILOT VALVES

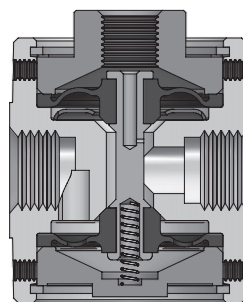


250A
Normal Position

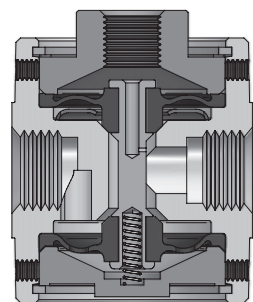


250A
Operating Position

"AA" TYPE AIR-PILOT VALVES



250AA
Normal Position



250AA
Operating Position

Round "A" type valves require continuous pilot pressure to maintain the operating condition. Round "AA" type valves incorporate a bypass hole on the main stem and are for compressed air only. The bypass hole speeds up the valve and also helps the piloting valve maintain its operating condition during a momentary operation, even if there are small air leaks within the pilot line.

EXAMPLES OF AIR-PILOT VALVES



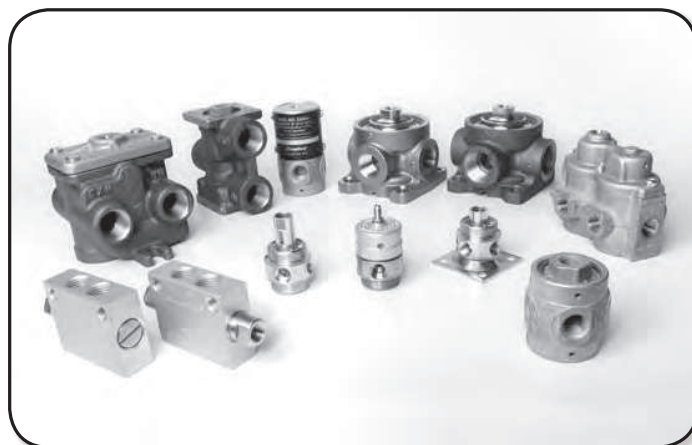
Round Type Valve Offering



Specialty Round Type

2-, 3-WAY VALVES		Ports	CFM*	Valves	Page
SMALL	125A Series	1/8	18	125A	36
	125AA Series	1/8	18	125AA	37
	125 Interface Series	1/8	14	125LA, 125AH	42
	Glue Valve Series	1/8	-	R322C, R561	41
LARGE	250A Series	1/4	50	250A	36
	250AA Series	1/4	50	250AA	37
	250 Interface Series	1/4	40	250AL, 250AH	43
	500 Series	1/2	160	500A, 500AB	38
	501 Series	1/2	220	501A, 501AA	44
	590 Series	3/4	260	590A, 590AB	39
	Glue Valve Series	1/4	-	R332	41
4-WAY VALVES		Ports	CFM*	Valves	Page
LARGE	250-4A Series	1/4	50	250-4A	40
	250-4AA Series	1/4	50	250-4AA	40
	501-4 Series	1/2	170	501-4A, 501-4AA	45

*Nominal flow @100 PSI



Diaphragm-Poppet Air-Pilot Valves

125A, 250A

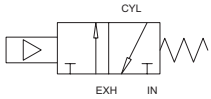
The classic Humphrey diaphragm-poppet design is unique, simple and trouble free. Valve does not leak. Seals tight and cannot stick. Works with clean or poor air, and inert media. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

125A and 250A (SS250A) Air-Pilot Valves

Valves are available as a 2- or 3-way, normally closed or open, single or double piloted. Optional brass body material available.

Features

- Full ported 1/8" orifice, 1/8 PIPE ports, and 1/4" orifice, 1/4 PIPE ports.
- Fast cycling, high flow, quick dump.
- Reliable operation in lubricated or not lubricated systems. No sliding seals.
- Hard plumb mount, base mount, or panel mount (use panel mount nuts for 125 series or inverted mounting base for 250 series).
- Buna N seals standard. Fluorocarbon seals optional.
- **SS250A:** All Stainless Steel, normally closed, 3-way valve. Includes FKM seals.

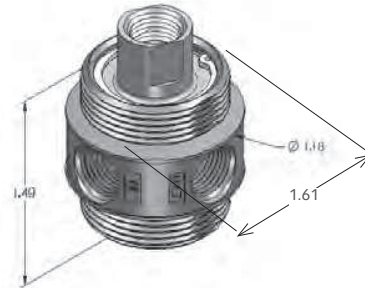


FOR ADDITIONAL INFORMATION AND SPECIFICATIONS, VISIT WWW.HUMPHREY-PRODUCTS.COM TO ACCESS:

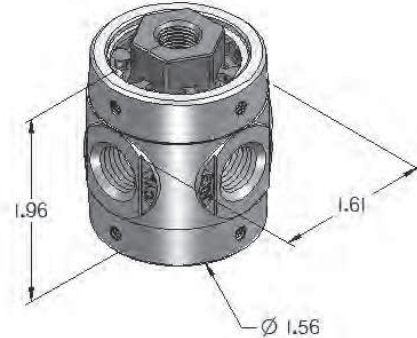
- Non-Catalog Options & Product Configuration Utility
- CAD Viewer & Model Downloads
- Additional Specifications & Data Sheets
- General Information & Handling Instructions



125A-NC



250A-NC



HOW TO ORDER

Base Model	Ports		Function		Mounting	
	2-way	3-way	Norm Closed	Norm Open	No Base	With Base
125A	-2	-3	-10	-11	-20	-21
250A						
SS250A						

Other Option Codes: FKM Seals: "-VAI"; Brass Body: "-BRB"

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Air Return, Spring Assist
Porting Type:	2- or 3-Way
Port Size:	125: 1/8 PIPE; 250: 1/4 PIPE
Media:	Air, Inert Gas, Liquid (brass body)

Pressure Range:	0–125 PSI
Temperature Range:	-20°F to 225°F
Flow @100 PSI:	125: 18 CFM, 509 LPM (Cv=0.3) 250: 50 CFM, 1415 LPM (Cv=0.8)

Diaphragm-Poppet Air-Pilot Valves, AA Type

125AA, 250AA

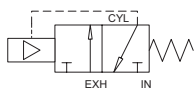
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125AA and 250AA Air-Pilot, Internal Air Assist Valves

Unique Humphrey "AA" principle. See introduction section. Incorporates an internal compensating orifice to achieve faster response or momentary pilot signal. Available as 2- or 3-way, normally closed, single pilot. Optional brass body material available.

Features

- Full ported 1/8" orifice, 1/8 PIPE ports, and 1/4" orifice, 1/4 PIPE ports.
- Fast cycling, high flow, quick dump.
- Reliable operation in lubricated or not lubricated air systems. No sliding seals.
- Hard plumb mount, base mount, or panel mount (use panel mount nuts for 125 series or inverted mounting base for 250 series).
- Excellent for interlocking or sequencing applications.
- Buna N seals standard. Fluorocarbon seals optional.

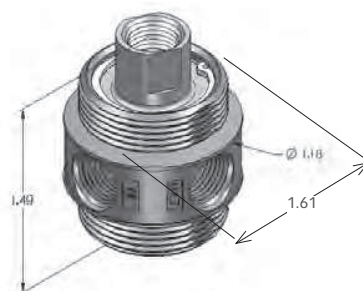


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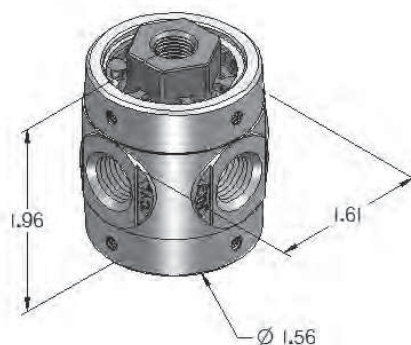
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125AA



250AA



HOW TO ORDER

Base Model	Ports		Function		Mounting	
	2-way	3-way	Norm Closed	Norm Open	No Base	With Base
125AA	-2	-3	-10		-20	-21
250AA						

Other Option Codes: FKM Seals: "-VAI"; Brass Body: "-BRB"

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Air Return, Spring Assist	Pressure Range:	125AA: 10–125 PSI; 250AA: 15–125 PSI
Porting Type:	2- or 3-Way	Temperature Range:	-20°F to 225°F
Port Size:	125: 1/8 PIPE; 250: 1/4 PIPE	Flow @100 PSI:	125AA: 18 CFM, 509 LPM (Cv=0.3) 250AA: 50 CFM, 1415 LPM (Cv=0.8)
Media:	Air		

Diaphragm-Poppet Air-Pilot Valves

500A, 500AB

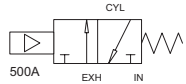
The classic Humphrey diaphragm-poppet design is unique, simple and trouble free. Valve does not leak. Seals tight and cannot stick. Works with clean or poor air, and inert media. Millions of trouble-free cycles are expected, regardless of media or ambient conditions.

500A and 500AB Air-Pilot Valves

Valves are available as a 2- or 3-way, normally closed, single air-pilot. Optional aluminum body material available.

Features

- Full ported 1/2" orifice, 1/2 PIPE ports.
- Fast cycling, high flow.
- Reliable operation in lubricated or not lubricated systems. No sliding seals.
- Hard plumb mount, or use body mounting holes.
- Buna N seals standard. Fluorocarbon seals optional.
- Booster type (**500AB**) available for reduced pilot pressure.

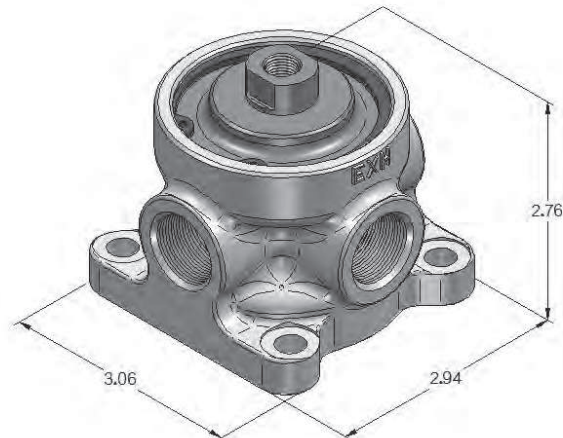


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500A



HOW TO ORDER

Base Model	Ports		Function	
	2-way	3-way	Norm Closed	Norm Open
500A	-2	-3	-10	
500AB				

Other Option Codes: FKM Seals: "-VAI"; Aluminum Body: "-ALU"

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Air Return, Spring Assist	Pressure Range:	0–125 PSI
Porting Type:	2- or 3-Way	Temperature Range:	0°F to 225°F
Port Size:	1/2 PIPE	Flow @100 PSI:	160 CFM, 4530 LPM (Cv=2.7)
Media:	Air, Inert Gas (Liquid with brass body)		

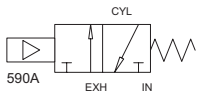
The classic Humphrey diaphragm-poppet design is unique, simple and trouble free. Valve does not leak. Seals tight and cannot stick. Works with clean or poor air, and inert media. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

590A and 590AB Air-Pilot Valves

Valves are available as a 2- or 3-way, normally closed, single air-pilot. Optional brass body material available.

Features

- Valve has 0.59" orifice, 3/4 PIPE ports.
- Fast cycling, high flow.
- Reliable operation in lubricated or not lubricated systems. No sliding seals.
- Hard plumb mount, or use body mounting holes.
- Buna N seals standard. Fluorocarbon seals optional.
- Booster type (**590AB**) available for reduced pilot pressure.

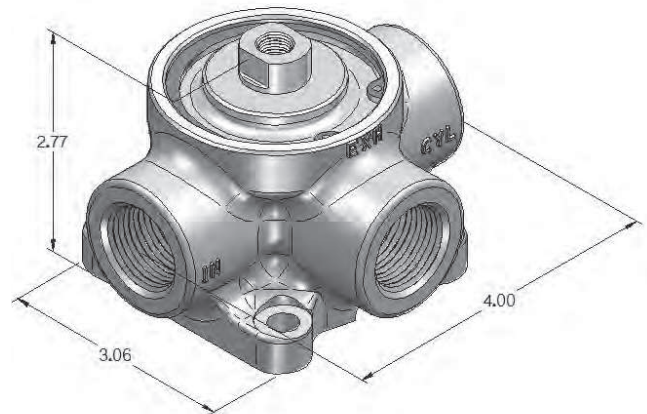


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590A



HOW TO ORDER

Base Model	Ports		Function	
	2-way	3-way	Norm Closed	Norm Open
590A	-2	-3	-10	
590AB				

Other Option Codes: FKM Seals: "-VAI"; Brass Body: "-BRB"

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Air Return, Spring Assist	Pressure Range:	0–125 PSI
Porting Type:	2- or 3-Way	Temperature Range:	0°F to 225°F
Port Size:	3/4 PIPE	Flow @100 PSI:	260 CFM, 7362 LPM (Cv=3.7)
Media:	Air, Inert Gas (Liquid with brass body)		

Diaphragm-Poppet, 4-Way Valves

250-4A, 250-4AA

The classic Humphrey diaphragm-poppet design is unique, simple and trouble free. Valve does not leak. Seals tight and cannot stick. Works with clean or poor air, and inert media. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

250-4A and 250-4AA Air-Pilot Type

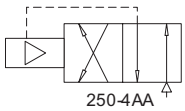
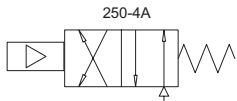
Valves are available as 4-way air operated. Consider unique Humphrey "AA" type. Consult factory for 3-position models.

Features

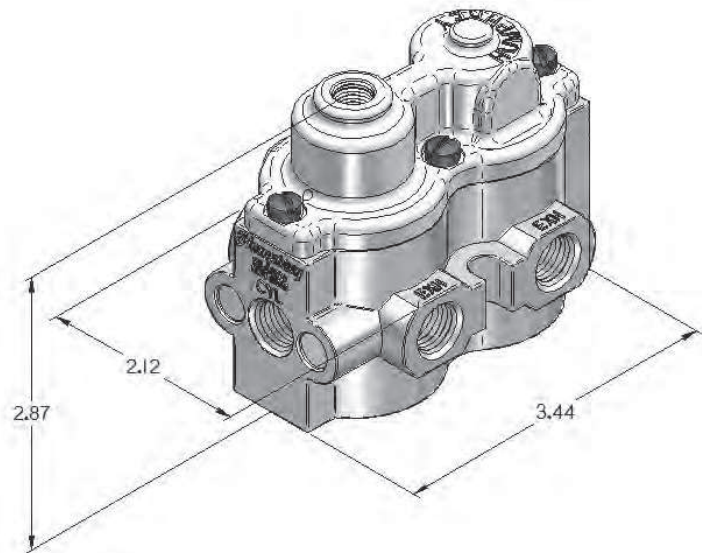
- Full ported 1/4" orifice, 1/4 PIPE ports.
- Fast cycling, high flow, quick dump.
- Reliable operation in lubricated or not lubricated systems. No sliding seals.
- Hard plumb mount, use body threads or mounting base.
- Buna N seals standard. Fluorocarbon seals optional.
- "AA" type is excellent for interlocking or sequencing applications.

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250-4A, 250-4AA



HOW TO ORDER:

Base Model	Mounting	
	No Base	With Base
250-4A	-	-21
250-4AA	-	-21

Other Code: FKM Seals: "-VAI"

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Air Return, Spring Assist	Media:	Air
Porting Type:	4-Way	Pressure Range:	15–125 PSI
Port Size:	1/4 PIPE	Temperature Range:	-20°F to 225°F
		Flow @100 PSI:	50 CFM, 1415 LPM (Cv=0.8)

Diaphragm-Poppet Air-Pilot Glue Valves

R322C, R332, R561

125 and 250 Series Air-Pilot "Glue" valves feature the classic Humphrey diaphragm-poppet in a double air-pilot, 2-way configuration. The design assures a tight seal actuated, or unactuated. Compact design permits close proximity mounting to the work and fast cycling, clean performance. "Suck back" characteristic achieved when valve closes.

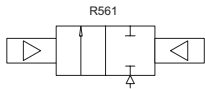
R322C: 1/8 PIPE with fluorocarbon diaphragms.

R561A: 1/8 PIPE with teflon profile diaphragms.

R332: 1/4 PIPE with fluorocarbon diaphragms.

Features

- Full ported 1/8" orifice, 1/8 PIPE ports, and 1/4" orifice, 1/4 PIPE ports.
- Fast cycling, high flow.
- Hard plumb mount, or panel mount using nuts or mounting base, via the 1"-20 UNEF body mounting threads (125 series) or mounting base (250 series).
- Fluorocarbon seals standard. Teflon coated diaphragms are optional.



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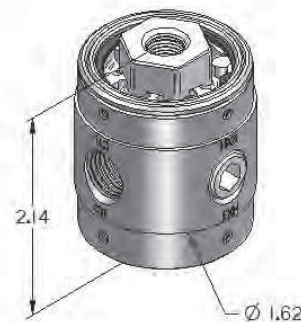
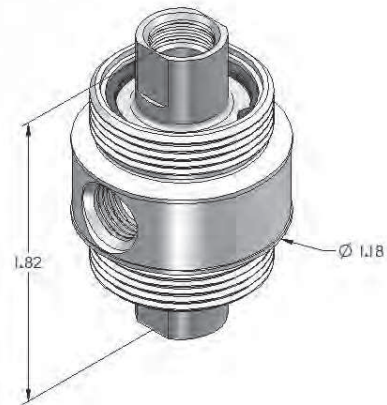
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R561, R322C



R332



HOW TO ORDER

To order Glue Valves, specify: **R322C**
R561A
R332

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Double Air Maintained Pilot	Pressure Range:	0–35 PSI (pilot => body pressure, 30 PSI)
Porting Type:	2-Way	Temperature Range:	-20°F to 225°F
Port Size:	1/8 PIPE, 1/4 PIPE	Flow @100 PSI:	R322C, R561: LPM=7.5 (Cv=0.3) R332: LPM=22.5 (Cv=0.8)
Media:	Glue; Consult factory for others		

Diaphragm-Poppet Air-Pilot Interface Valves

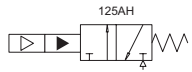
125LA, 125AH

The classic Humphrey diaphragm-poppet design is unique, simple and trouble free. Valve does not leak. Seals tight and cannot stick. Works with clean or poor air, and inert media. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

125LA and 125AH Air-Pilot, "Interface" Type
"Interface" valves are ultra low pilot pressure bleed valves. Pilot pressure as low as 0.1 PSI effectively blocks bleed orifice and internal, full pressure completes shift to actuated position.

Features

- Ideal for fluidics, proximity switching, air jet sensing or back pressure sensing.
- Very fast cycling speeds.
- Super sensitive **125LA** responds to 0.10 ~ 10 PSI pilot pressure.
- Sensitive **125AH** respond to 0.33 ~ 30 PSI pilot pressure.
- Primary valve is 1/8" orifice, 1/8 PIPE ports.



FOR ADDITIONAL INFORMATION AND SPECIFICATIONS, VISIT WWW.HUMPHREY-PRODUCTS.COM TO ACCESS:

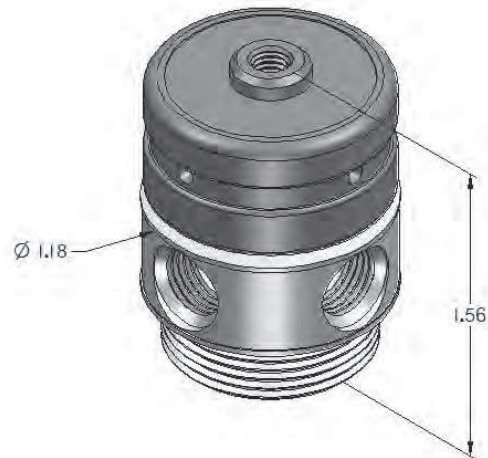
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125LA



125AH



HOW TO ORDER

Base Model	Ports		Function		Mounting	
	2-way	3-way	Norm Closed	Norm Open	No Base	With Base
125LA	-2	-3	-10		-20	-21
125AH						

Other Option Codes: FKM Seals: "-VAI"; Brass Body: "-BRB"

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Air Return, Spring Assist	Pilot Pressure:	125LA: 0.07; 125AH: 0.33
Porting Type:	2- or 3-Way	Pressure Range:	30–100 PSI
Port Size:	1/8 PIPE	Temperature Range:	40°F to 225°F
Media:	Air	Flow @100 PSI:	14 CFM, 400 LPM (Cv=0.2)

Diaphragm-Poppet Air-Pilot Interface Valves

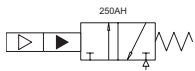
250AL, 250AH

The classic Humphrey diaphragm-poppet design is unique, simple and trouble free. Valve does not leak. Seals tight and cannot stick. Works with clean or poor air, and inert media. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

250AL and 250AH Air-Pilot, "Interface" Type "Interface" valves are ultra low pilot pressure bleed valves. Pilot pressure as low as 0.1 PSI effectively blocks bleed orifice and internal, full pressure completes shift to actuated position.

Features

- Ideal for fluidics, proximity switching, air jet sensing or back pressure sensing.
- Very fast cycling speeds.
- Super sensitive 250AL responds to 0.10 ~ 10 PSI pilot pressure.
- Sensitive 250AH respond to 0.33 ~ 30 PSI pilot pressure.
- Primary valve is 1/4" orifice, 1/4 PIPE ports.



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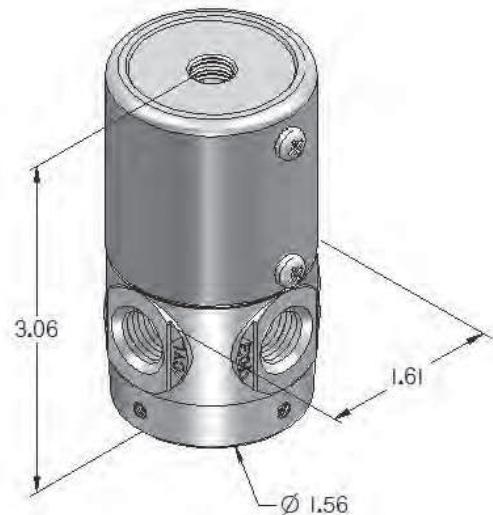
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250AH



250AL



HOW TO ORDER

Base Model	Ports		Function		Mounting	
	2-way	3-way	Norm Closed	Norm Open	No Base	With Base
250AL	-2	-3	-10		-20	-21
250AH						

Other Option Codes: FKM Seals: "-VAI"; Brass Body: "-BRB"

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Air Return, Spring Assist	Pilot Pressure:	250AH: 0.08; 250AL: 0.33
Porting Type:	2- or 3-way	Pressure Range:	30–125 PSI
Port Size:	1/4 PIPE	Temperature Range:	40°F to 225°F
Media:	Air	Flow @100 PSI:	40 CFM, 1130 LPM (Cv=0.7)

Piston-Poppet Air-Pilot Valves

501A, 501AA

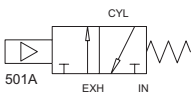
Humphrey piston-poppet, 1/2 PIPE port Air-Pilot valves achieve fully ported, high flow performance relative to overall size. Hard coated, cast aluminum body permits resistance to wear and easy mounting/plumbing. The pressure unbalanced piston poppet design achieves greater flow than comparable 1/2" valves and millions of trouble free cycles.

501A and 501AA Air-Pilot Type

Available as 2- or 3-way, multi-purpose, single air-pilot. Consider unique Humphrey "AA" type (see introduction page).

Features

- Full ported 1/2" orifice, 1/2 PIPE ports.
- "Flow through" construction achieves greater flow than competition.
- Short stroke and "quick dump" permits fast cycling.
- Mount in any position via body mounting holes or threads, or optional base (-21).
- Plug for 2-way service.
- "AA" type is excellent for interlocking or sequencing applications.

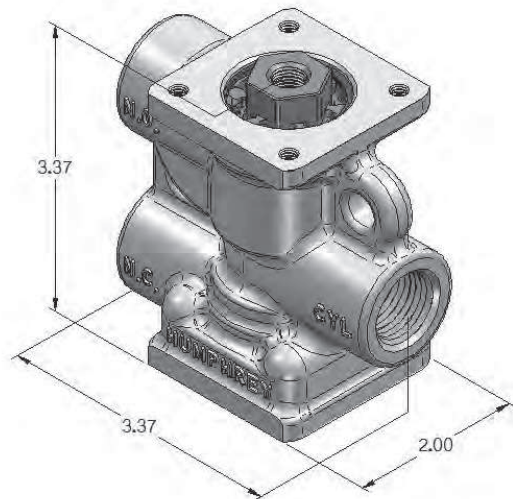


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501A



HOW TO ORDER

Base Model	Ports		Function		Mounting	
	2-way	3-way	Norm Closed	Multi-Purpose	No Base	With Base
501A	-2	-3		-12	-20	-21
501AA			-10			

Other Option Code: FKM Seals: "-VAI"

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Air Return, Spring Assist	Media:	Air, Inert Gas
Porting Type:	2- or 3-Way	Pressure Range:	0–125 PSI (501AA=15–125 PSI)
Port Size:	1/2 PIPE	Temperature Range:	-30°F to 225°F
		Flow @100 PSI:	220 CFM, 6229 LPM (Cv=3.5)

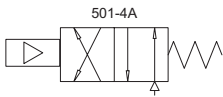
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Features

- Full ported 1/2" orifice, 1/2 PIPE ports.
- "Flow through" construction achieves greater flow than competition.
- Short stroke and "quick dump" permits fast cycling.
- Mount in any position via body mounting lugs.
- "AA" type is excellent for interlocking or sequencing applications.

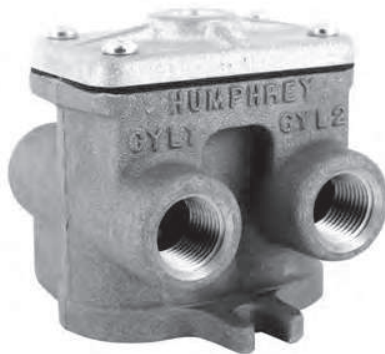
501-4A and 501-4AA Air-Pilot Type

Available as 4-way, single air-pilot. Consider unique Humphrey "AA" type (see introduction page).

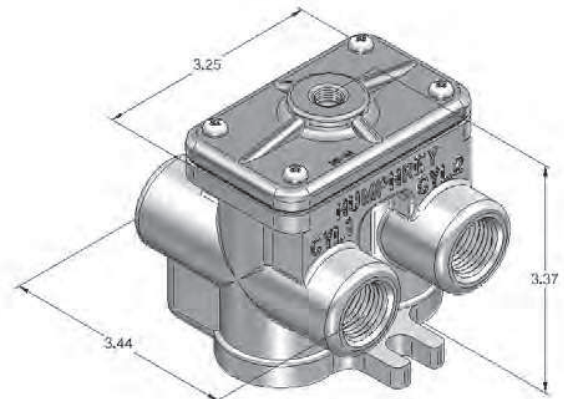


FOR ADDITIONAL INFORMATION AND SPECIFICATIONS, VISIT WWW.HUMPHREY-PRODUCTS.COM TO ACCESS:

- Non-Catalog Options & Product Configuration Utility
- CAD Viewer & Model Downloads
- Additional Specifications & Data Sheets
- General Information & Handling Instructions



501-4AA



501-4A

HOW TO ORDER

Base Model	Seals	
	Buna (std)	FKM
501-4A	-	-VAI
501-4AA	-	-VAI

SPECIFICATIONS

Design Principle:	Pressure Unbalanced – Air Return, Spring Assist	Media:	Air, Inert Gas
Porting Type:	4-Way	Pressure Range:	0–125 PSI (501-4AA=15–125 PSI)
Port Size:	1/2 PIPE	Temperature Range:	-30°F to 225°F
		Flow @100 PSI:	170 CFM, 4810 LPM (Cv=2.5)