

# 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.

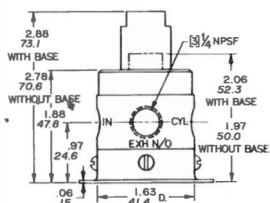
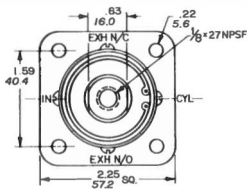
**Normally closed:** Supply pressure to EXH port.



**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.

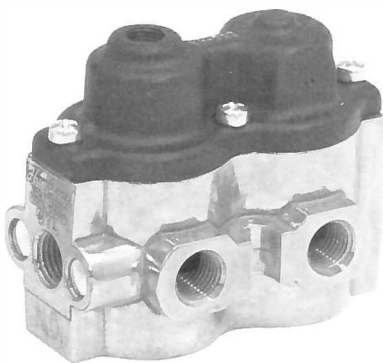


250A



## 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

### 250-4AA

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,

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



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

**OPERATING SPEEDS:**  
To 600 CPM

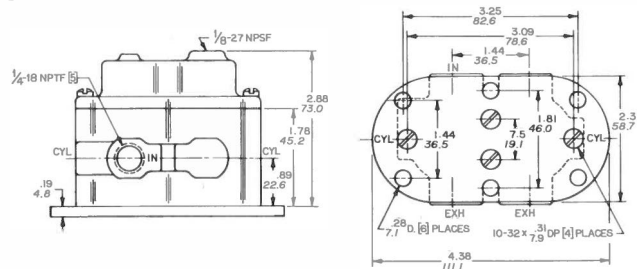
**MATERIALS:**  
Zinc Die Cast, Zinc Plated Steel, Aluminum, Brass, Stainless Steel, Buna N

**LUBRICATION:** Not required  
**FILTRATION:** Not required

**Weight**

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

**250-4A**



**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
<b>PILOT PRESSURE</b>						
MODEL	250A NC	21.7	1.5	48.3	3.3	88.3
	250A NO	23.0	1.6	48.3	3.3	84
	250AA	18.7	1.3	44.8	3.1	72.5
	250-4A	22.3	1.5	46.1	3.2	72.0
	250-4AA	8.5	0.6	25.1	1.7	41.2