

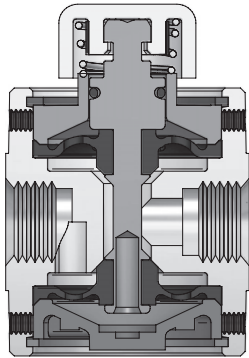
MANUAL AND MECHANICAL VALVES

INTRODUCTION

Humphrey Manual and Mechanical Air Valves feature the exclusive diaphragm-poppet design originated by Humphrey. The design consists of two specially contoured diaphragms mounted to an axial stem within a full orifice valve body. This classic design is simple, versatile, and highly reliable. Valves of this design perform equally well with or without air supply lubrication, and better than competitive products when under poor air conditions.

Humphrey Manual and Mechanical valves are available in 2-, 3- and 4-way porting types, and in a variety of rugged actuator styles.

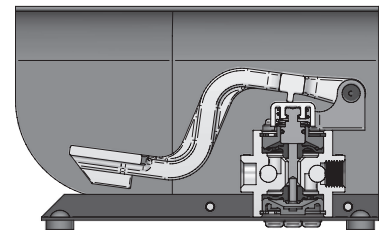
- Manual actuator styles: Push Button, Palm Button, Low-Force Palm, Detented Palm, Foot, Finger Tip, Toggle and Hand.
- Mechanical actuator styles: Ball, Plunger, Cam and Overstroke-Compensated Cam.



250P-3-10-20
Push Button, Unactuated

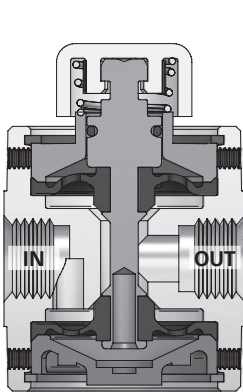
MANUAL/MECHANICAL VALVE FEATURES:

- Simple construction
- No lubrication
- Reliable Operation
- Compact and Lightweight
- Rugged
- Cost effective



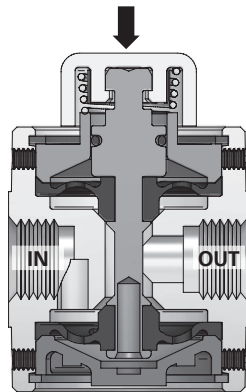
250-4F
Four-Way Foot, Unactuated

FLOW PATH, BASIC NORMALLY CLOSED (NC) AND NORMALLY OPEN (NO) VALVES



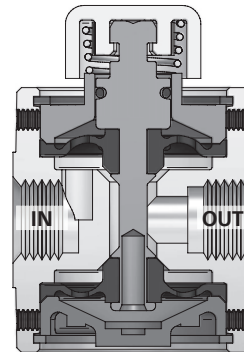
250 NC, Unactuated

Media applied to IN routes down, passing through perforations in bottom diaphragm-poppet and becomes primary force holding valve closed. Top diaphragm-poppet is not seated, so OUT port is open to EXHAUST port (backside, not shown).



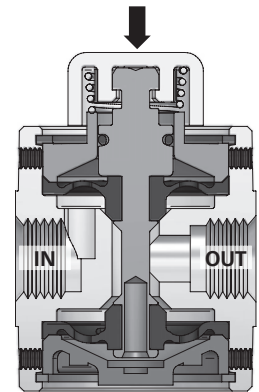
250 NC, Actuated

When the button is depressed, the top diaphragm-poppet seats, while bottom diaphragm-poppet opens, allowing media to pass through to OUT port, while EXHAUST port (backside, not shown), becomes blocked.



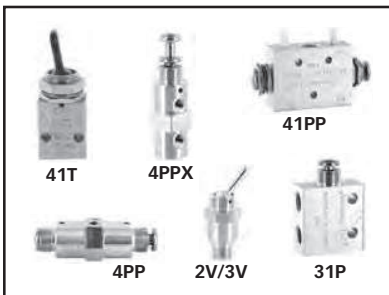
250 NO, Unactuated

Media applied to IN routes up, passing by unseated diaphragm-poppet to OUT port, and becomes primary force holding valve open. Bottom diaphragm-poppet is seated and OUT port is blocked from the EXHAUST port (backside, not shown).



250 NO, Actuated

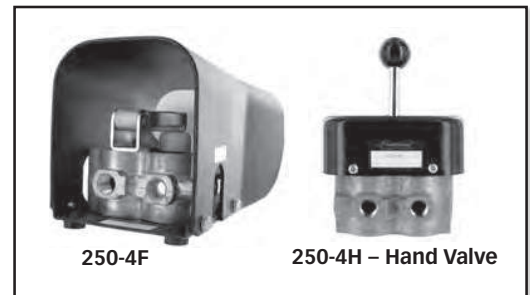
When the button is depressed, the top diaphragm-poppet seats, while bottom diaphragm-poppet opens, allowing media to become blocked from OUT port, while EXHAUST port (backside, not shown), becomes open to OUT port.



TAC Valves



Three-Way Valves



Four-Way Valves

MANUAL AND MECHANICAL VALVES

SECTION INDEX

2-, 3-WAY VALVES		Ports	CFM*	Valves	Page
SMALL	TAC	10-32	6	2P, 3P, 2V, 3V, 2VR, 3VR	24
	TAC2	1/8	18	31P, 31PPX, 31V, 31VR	26
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LARGE	250 Series Manual	1/4	50	250P, 250PL, 250F, 250V, 250HO, 250T	50-51
	250 Series Mechanical	1/4	50	250C	55
	501 Series Manual	1/2	220	501V	53
	500 Series Mechanical	1/2	160	500C	55

4-WAY VALVES		Ports	CFM*	Valves	Page
SMALL	TAC	10-32	9	4P, 4PP, 4PPX, 4V, 4VR	25
	TAC2	1/8	18	41P, 41PP, 41PPX, 41V, 41VR	27
	TAC three-position	1/8	6	41R-D(S)3, 41T-D(S)3	29
LARGE	TAC3	1/4	31	42P, 42PP, 42PA, 42A, 42A2	28
	250-4 Series	1/4	50	250-4F, 250-4H	52

*Nominal flow @100 PSI



Force to Actuate @100 PSI (lbs.) Manual or Mechanical Actuator Code	B	C	F	H	HO	MC	MP	P	PL	PLG	T	V
125	8				7	5	8	8		3	4	2
250		11	5		14			23	21		5	3
250-4			13	4								
501												4

Diaphragm-Poppet Manual Valves

125PLG, 125P, 125HO, 125T, 125V

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. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

Models/Descriptions:

- 125PLG:** Easy Actuation Palm Button
- 125P:** Pushbutton Operated
- 125HO:** Push and Turn, Detented
- 125T:** Fingertip Operated
- 125V:** Toggle, Detented

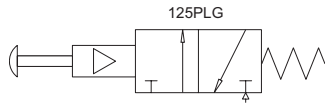
These rugged 2- or 3-way valves are available in normally closed or normally open, or optional brass body construction (for alternate media).

Features

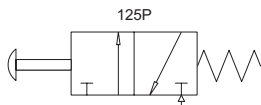
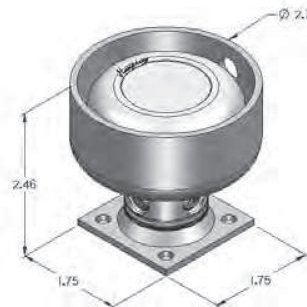
- Full ported 1/8" orifice, 1/8 PIPE ports.
- Fast cycling, high flow, quick dump.
- Reliable operation in lubricated or not lubricated systems. No sliding seals.
- Hard plumb mount, base mount, or panel mount using nuts or mounting base, via the 1"-20 UNEF body mounting threads.
- Buna N seals standard. Fluorocarbon seals optional.

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

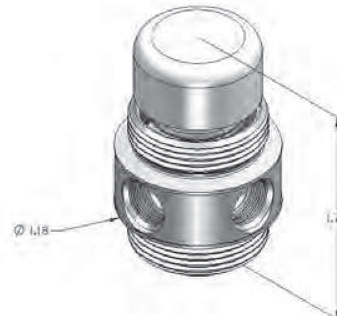
- Non-Catalog Options & Product Configuration Utility
- Additional Specifications & Data Sheets
- CAD Viewer & Model Downloads
- General Information & Handling Instructions



125PLG – Large, Easy Actuation, Push Button



125P – Push Button

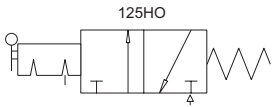


SPECIFICATIONS

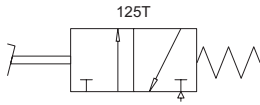
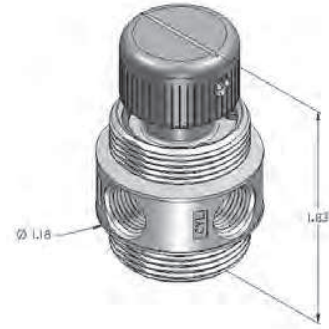
Design Principle:	Pressure Unbalanced, Air Return, Spring Assist	Media:	Air, Inert Gas
Porting Type:	2- or 3-Way	Pressure Range:	0-125 PSI; PLG: 30-125 PSI
Port Size:	1/8 PIPE	Temperature Range:	-20°F to 225°F
		Flow @100 PSI:	18 CFM, 509 LPM (Cv=0.3)

Diaphragm-Poppet Manual Valves

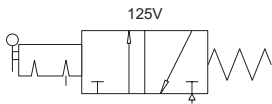
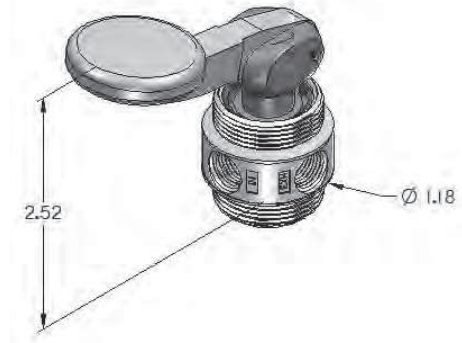
125PLG, 125P, 125HO, 125T, 125V



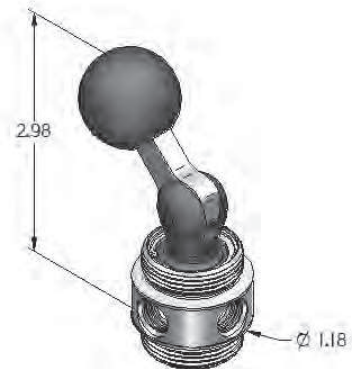
125HO - Hold On



125T - Finger Tip



125V - Toggle



HOW TO ORDER

Base Model	Ports		Function		Mounting		Nylon Button
	2-way	3-way	Norm Closed	Norm Open	No Base	With Base	
125P	-2	-3	-10	-11	-20	-21	-40
125HO							
125T							
125V							
125PLG							

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

MANUAL AND MECHANICAL VALVES

Diaphragm-Poppet Manual Valves

250P, 250PL, 250F, 250V, 250HO, 250T

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. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

Models/Descriptions:

250P: Pushbutton Operated

250PL: Palm Operated

250HO: Hold-On, Detented

250T: Fingertip Operated

250V: Toggle, Detented

250F: Foot Operated

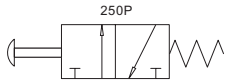
These rugged 2- or 3-way valves are available in normally closed or normally open, or optional brass body construction (for alternate media).

Features

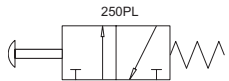
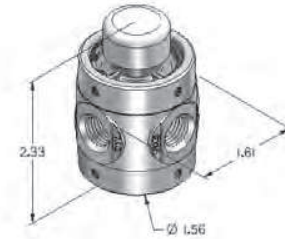
- Full ported 1/4" orifice, 1/4 PIPE ports.
- Fast cycling, high flow, quick dump.
- Hard plumb mount, or base mount.
- Buna N seals standard. Fluorocarbon seals optional.
- 250F includes foot guard.

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

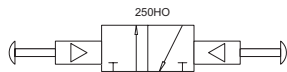
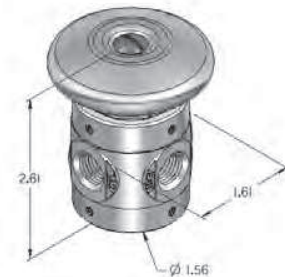
- Non-Catalog Options & Product Configuration Utility
- CAD Viewer & Model Downloads
- Additional Specifications & Data Sheets
- General Information & Handling Instructions



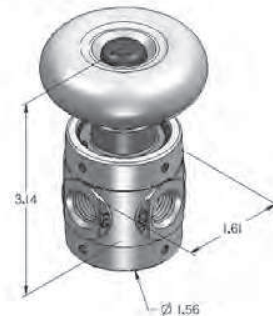
250P – Push Button



250PL – Large Push Button



250HO – Hold On



SPECIFICATIONS

Design Principle: Pressure Unbalanced, Air Return, Spring Assist

Porting Type: 2- or 3-Way

Port Size: 1/4 PIPE

Media: Air, Inert Gas

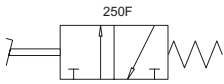
Pressure Range: 0–125 PSI; HO: 25–125 PSI

Temperature Range: -20° to 225°F

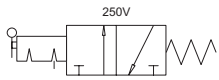
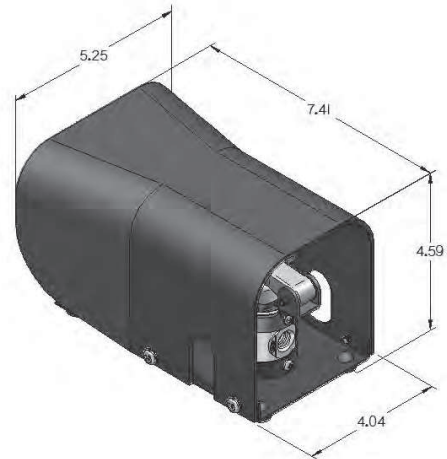
Flow @100 PSI: 50 CFM, 1415 LPM (Cv=0.8)

Diaphragm-Poppet Manual Valves

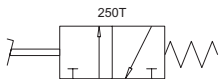
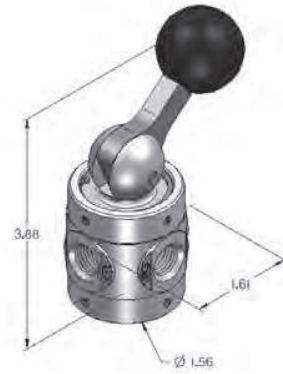
250P, 250PL, 250F, 250V, 250HO, 250T



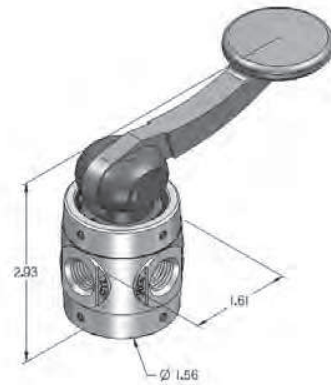
250F – Foot Valve



250V – Toggle



250T – Finger Tip



HOW TO ORDER

Base Model	Ports		Function		Mounting	
	2-way	3-way	Norm Closed	Norm Open	No Base	With Base
250F						
250PL				-11		
250P	-2	-3	-10		-20	-21
250HO						
250V						

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

Diaphragm-Poppet 4-Way Manual Valves

250-4F, 250-4H

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. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

Models/Descriptions:

- 250-4F: Foot Operated (2-position)**
- 250-4H: Lever Operated (3-position)**

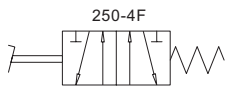
These rugged 4-way valves are available in 2-position (250-4F) and 3-position (250-4H).

Features

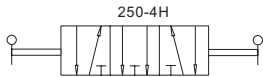
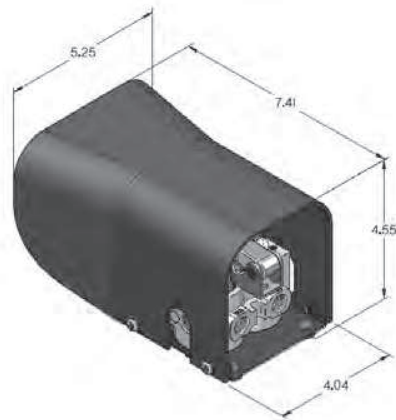
- Full ported 1/4" orifice, 1/4 PIPE ports.
- Fast cycling, high flow, quick dump.
- Hard plumb mount, or base mount.
- Buna N seals standard. Fluorocarbon seals optional.
- 250-4F includes foot guard.

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

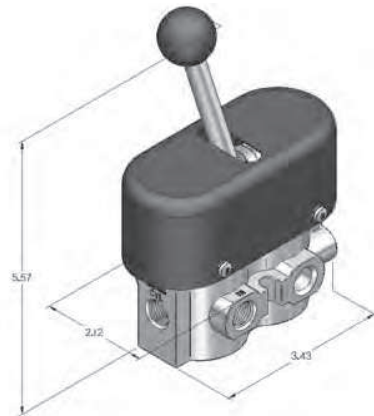
- Non-Catalog Options & Product Configuration Utility
- CAD Viewer & Model Downloads
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250-4F – Foot Valve



250-4H – Hand Valve



MANUAL AND MECHANICAL VALVES

SPECIFICATIONS

Design Principle:	Pressure Unbalanced, Air Return, Spring Assist
Porting Type:	250-4F: 2-pos, 4-way; 250-4H: 3-pos, 4-way
Port Size:	1/4 PIPE
Media:	Air, Inert Gas
Pressure Range:	0–125 PSI
Temperature Range:	-20°F to 225°F
Flow @100 PSI:	50 CFM, 1415 LPM (Cv=0.8)

HOW TO ORDER

Base Model	Seals	
	Buna (std)	FKM
250-4F	-	-VAI
250-4H	-	-VAI

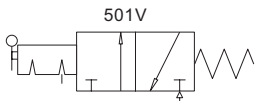
Humphrey piston-poppet, 1/2 PIPE port Toggle valves achieve fully ported, high flow performance relative to overall size. Hard coated, cast aluminum body permits resistance to wear and easy mounting/plumbing. The pressure unbalanced piston poppet design achieves greater flow than comparable 1/2" valves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

501V Toggle Valve, Detented

Available as 2- or 3-way, multi-purpose.

Features

- Full ported 1/2" orifice, 1/2 PIPE ports.
- "Flow through" construction achieves greater flow than competition.
- Heavy duty lever.
- "Quick dump" permits fast cycling.
- Mount in any position via body mounting holes or threads, or optional base (-21).
- Plug for 2-way service.

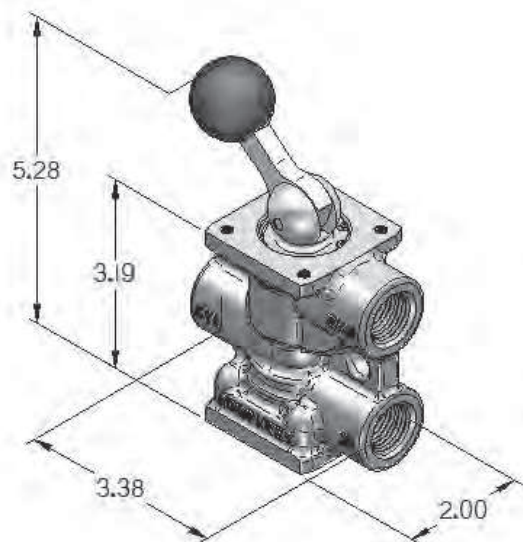


FOR ADDITIONAL INFORMATION AND SPECIFICATIONS, VISIT WWW.HUMPHREY-PRODUCTS.COM TO ACCESS:

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501V



HOW TO ORDER

Base Model	Ports		Multi-Purpose	Mounting	
	2-way	3-way		No Base	With Base
501V	-2	-3	-12	-	-21

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
Port Size:	1/2 PIPE	Temperature Range:	-20°F to 225°F
		Flow @100 PSI:	220 CFM, 6229 LPM (Cv=3.5)

Diaphragm-Poppet Mechanical Valves

125B, 125MP, 125MC

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. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

Models/Descriptions:

- 125B:** Roller Ball Operated
- 125MP:** Plunger Operated
- 125MC:** Cam Operated

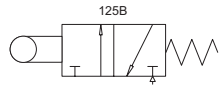
These rugged 2- or 3-way valves are available in normally closed or normally open configurations, in standard or optional brass body construction (for alternate media).

Features

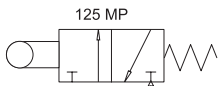
- Full ported 1/8" orifice, 1/8 PIPE ports.
- Fast cycling, high flow, quick dump.
- Reliable operation in lubricated or not lubricated systems. No sliding seals.
- Hard plumb mount, or panel mount using nuts or mounting base, via the 1"-20 UNEF body mounting threads (125 series) or mounting base (250 series).
- Buna N seals standard. Fluorocarbon seals optional.

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

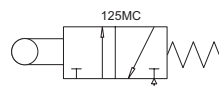
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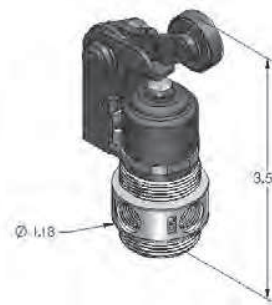
125B – Ball Cam



125MP – Plunger



125MC – Roller Cam



SPECIFICATIONS

Design Principle:	Pressure Unbalanced, Air Return, Spring Assist
Porting Type:	2- or 3-Way
Port Size:	1/8 PIPE
Media:	Air, Inert Gas (Liquid with brass body)
Pressure Range:	0-125 PSI
Temperature Range:	-20°F to 225°F
Flow @100 PSI:	18 CFM, 510 LPM (Cv=0.3)

HOW TO ORDER

Base Model	Ports		Function		Mounting	
	2-way	3-way	Norm Closed	Norm Open	No Base	With Base
125B						
125MP	-2	-3	-10	-11	-20	-21
125MC						

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

MANUAL AND MECHANICAL VALVES

Diaphragm-Poppet Mechanical Valves

250C, 500C

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. Millions of trouble free cycles are expected, regardless of media or ambient conditions.

250 Series Mechanical Valve:

250C: Cam Operated

500 Series Mechanical Valve:

500C: Cam Operated

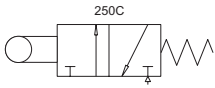
The rugged 250C is available 2- or 3-way, normally closed or open, and in optional brass body (for alternate media). High flow 500C is normally closed brass body only.

Features

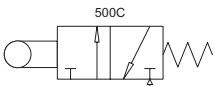
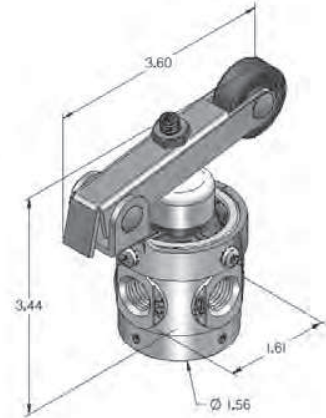
- 250C is full ported 1/4" orifice, 1/4 PIPE ports.
- 500C is full ported 1/2" orifice, 1/2 PIPE ports.
- Fast cycling, high flow, quick dump.
- Reliable operation in lubricated or not lubricated systems. No sliding seals.
- Hard plumb mount base mount.
- Buna N seals standard. Fluorocarbon seals optional.

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

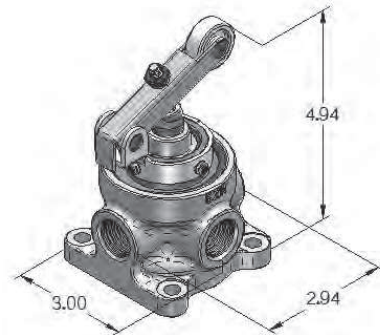
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250C – Roller Cam



500C



HOW TO ORDER

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

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

Base Model	Ports		NC Function
	2-way	3-way	
500C	-2	-3	-10

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:	-20°F to 225°F
Port Size:	250C: 1/4 PIPE; 500C: 1/2 PIPE	Flow @100 PSI:	250: 50 CFM, 1415 LPM (Cv=0.8) 500: 160 CFM, 4530 LPM (Cv=2.7)
Media:	Air, Inert Gas		

MANUAL AND MECHANICAL VALVES