

# spirax

Authorised Dealer;  
 PUSHKARNA SALES PVT LTD.  
 4772, Hauz Qazi, Delhi-110006.  
 Telefax : 011-23217239/23216378.  
 Emails : psp1@airtelmail.in,  
 sales@pushkarnasales.com  
 Site : www.pushkarnasales.com

## Piston Actuated On/Off Valves

### Description:

A 2-port pneumatically actuated on/off stainless steel valve for use on steam, water, air, oil and gases.

A pneumatic signal acts on the actuator piston to open or close the valve with a spring return action. The valve plug has a PTFE soft seal to provide a tight shut off. A valve position indicator is included on standard and flow regulator models.

### NC (Normally closed)

These valves are designed for flow over the seat (port 1 to 2)

Caution : Not recommended for water hammer prevention.

### NO (Normally Open)

These valves are designed for flow under the seat (port 2 to 1)

Can be used to prevent water hammer on valve closure in liquid applications.

### BD (Bi-directional normally closed)

These valves are designed for special applications that require flow in both directions and incorporates an anti-water hammer design for liquid applications flowing under the seat (port 2 to 1) Note : To help prevent the possibility of water hammer on liquid applications flowing over the seat (port 1 to 2) the pressure should not exceed 1 bar g.

### Options

Flow Regulator

Limits valve lift to regulate maximum flow.

Pilot Solenoids

3/2 way solenoid valves for 230, 110 and 24 Vac and 24 Vdc.

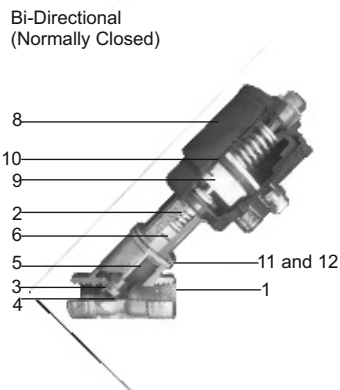
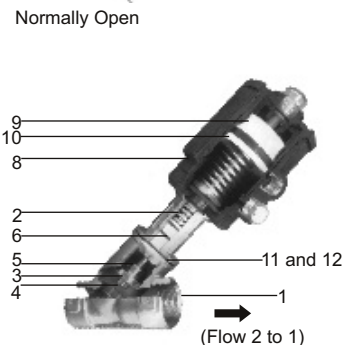
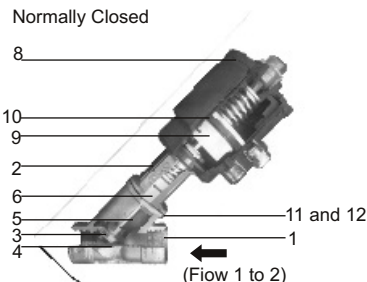
Travel Switch

Relays an electrical signal to indicate open or closed position of the valve.

### Materials:

No.	Part	Material
1.	Body	Stainless Steel AISI 316 L
2.	Bonnet	Stainless Steel AISI 316 L
3.	Plug	Stainless Steel AISI 316 L
4.	Plug Seal	PTFE
5.	Valve Stem	Stainless Steel AISI 316
6.	Stem Seals	PTFE chevrons
*7.	Stem 'O' ring	Viton
8.	Actuator housing	Glass filled polyamide
9	Piston	Glass filled polyamide
10.	Piston lip seal	Nitrile
11.	Gasket	PTFE
12	'O' ring	Viton

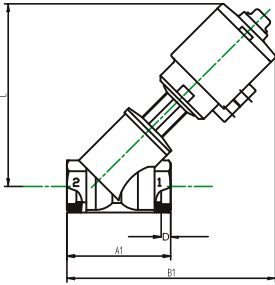
\* not shown



Available Range

Valve Action	Sc rewed		Butt Weld to ANSI.B.36.10	Socket.Weld.to ANSI.B36.10	*Sanitary.Clamp to.ISO.2852	Flanged.to ANSI.150
	BSPT	NPT				
NC-Normally Closed (Flow over seat)	PAV-NC-A	PAV-NC-B	PAV-NC-W	PAV-NC-I	PAV- NC S	PAV-NC-Q
NO-Normally Open (Flow under seat)	PAV-NO-A	PAV-NO-B	PAV-NO-W	PAV-NO-I	PAV-NO-S	PAV-NO-Q
BD-Bi-directional Normally Closed (Flow over or under seat)	PAV-BD-A	PAV-BD-B	PAV-BD-W	PAV-BD-I	PAV-BD-S	PAV-BD-Q

\*Note : Clamp & clamp gasket are not included.



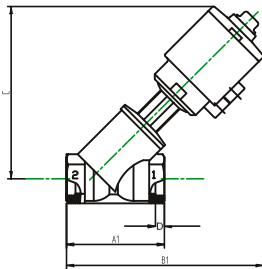
PAV-screwed, Butt & Socket weld ends

Dimensions / weights (approximate) in mm and kg

Valve size	Actuatore					
NB	bore	A1	B1	C	D	Weight
15	63	65	186	165	5	1.2*
20	63	75	192	170	7	1.3*
25	63	90	206	180	8	1.5*
40	63	120	224	193	12	2.4*
50	63	150	243	202	16	2.9*

\* plus 0.2 kg for travel switch or flow regulator option

5.2

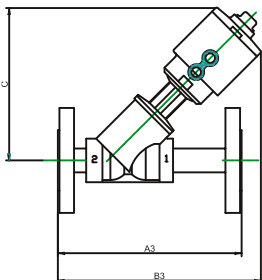


PAV-sanitaryclampendsISO:2852

Dimensions / weights (approximate) in mm and kg

Valve size	Actuatore				
NB	bore	A2	B2	C	Weight
15	63	102	205	165	1.3*
20	63	114	212	170	1.5*
25	63	129	226	180	1.8*
40	63	159	243	193	2.8*
50	63	190	263	202	3.6*

\*plus 0.2kg for travel switch or flow regulator option.



PAV-ANSI 150 Flanged ends

Dimensions / weights (approximate) in mm and kg

Valve size	Actuatore				
NB	bore	A3	B3	C	Weight
15	63	140	191	165	2.3*
20	63	152	200	170	2.7*
25	63	165	213	180	3.5*
40	63	203	232	193	6.2*
50	63	229	250	202	8.4*

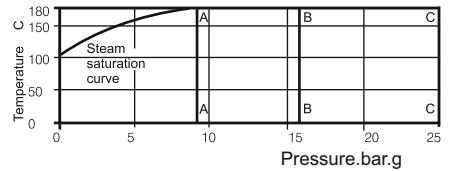
## Technical details

Leakage	PTFE Soft seal	ANSI Class VI
Flow characteristics	Fast opening	on/off
Flow direction	NCFlow overseat	port 1 to 2
	NO Flow underseat	port 2 to 1
	BD Flow overseat	port 1 to 2
	Flow underseat	port 2 to 1
Pilot media	Air or water	(60 C max)
Actuator housing rotation	360	
Actuator size	Pilot connection	Max. pilot pressure
63 mm diameter	1/4" BSP	10 bar g
Limiting Conditions:		
Body design conditions		
Screwed, Butt & Socket Weld (15to25NB)	PN25	
	(40 & 50 NB) PN16	
Flanged ANSI	15-50 NB	CLASS 150
Sanitary Clamp		
compatible connections	15-50NB	PN10
Maximum design temperature	180°C	
Minimum design temperature	-10°C	
Maximum saturated steam pressure	9 barg	
Maximum differential pressure	see table below	

## Kv Values

Size	15 NB	20 NB	25NB	40 NB	50NB
Kvs	4.2	7.8	18.6	42	51.6
For conversion $Cv(UK) = Kv \times 0.97$ $Cv(US) = Kv \times 1.17$					

## Operating range



## Screwed, Butt & Socket Weld

A-A Maximum operating pressure on saturate dsteam	9bar (130psig)
B-B Maximum operating pressure 40&50 NB PAV	16barg(232psig)C
C-C Maximum operating pressure 15to25 NB PAV	25barg(360psig)
Flanged ANSI	15-50 NB PAV CLASS 150
Sanitary Clamp ends	15-50 NB PAV PN 10

5.2

## Differential pressure for PAV-NC (Normally closed) piston actuated valves

Model	Valve size (NB)	Actuator diameter (mm)	Flow direction (1to2)	Maximum differential Pressure(bar)	Pilot Pressure min.(bar) max.(bar)	
PAV-NC	15	63	over seat	20	1.5	10
PAV-NC	20	63	over seat	20	1.5	10
PAV-NC	25	63	over seat	20	1.5	10
PAV-NC	40	63	over seat	16	2.8	10
PAV-NC	50	63	over seat	11	2.8	10

Note: Maximum differential pressure with saturated steam is 9 barg (180°C)

## Differential pressure for PAV-NO (Normally open) piston actuated valves

Model	Valve size (NB)	Actuator diameter (mm)	Flow direction (2to1)	Maximum differential Pressure(bar)	Pilot Pressure min.(bar) max.(bar)	
PAV-NO	15	63	under seat	16	1.5	10
PAV-NO	20	63	under seat	16	1.5	10
PAV-NO	25	63	under seat	16	1.5	10
PAV-NO	40	63	under seat	16	1.5	10
PAV-NO	50	63	under seat	12	1.5	10

Note : Maximum differential pressure with saturated steam is 9 bar g (180°C)

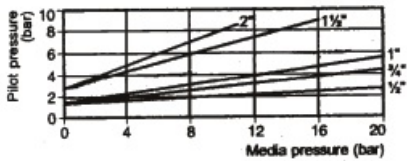
## Differential pressure for PAV-BD (Bi-directional Normally closed) piston actuated valves

Model	Valve size (NB)	Actuator diameter (mm)	Flow direction (1to2)	Maximum differential Pressure(1to2) bar	Flow direction (2to1)	Maximum differential Pressure(2to1) bar	Pilot Pressure min. bar max. bar	
PAV-BD	15	63	over seat	16	under seat	16	3.8	10
PAV-BD	20	63	over seat	16	under seat	16	3.8	10
PAV-BD	25	63	over seat	16	under seat	11	3.8	10
PAV-BD	40	63	over seat	12	under seat	4	3.8	10
PAV-BD	50	63	over seat	8	under seat	2.5	3.8	10

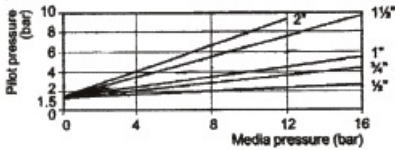
\*Maximum differential pressure for all pilot pressures.

Note : Maximum differential pressure with saturated steam is 9 bar g (180°C)

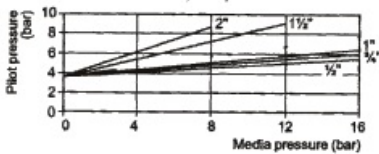
Pilot./Media.Pressure.relationship  
PAV.-NC.flow.over.seat.(1.o.2)



PAV.-NO.flow.under.seat.(2.o.1)



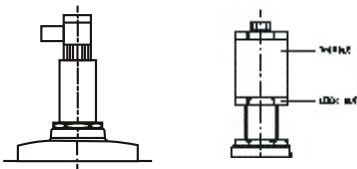
PAV.-BD.flow.over.seat.(1.o.2)



Installation

The valve can be installed in any position with the direction of flow as indicated on the inlet/outlet ports by the connection numbers 1 to 2 for NC, 2 to 1 for NO & bidirectional for BD. To simplify mounting of solenoid valves the actuator can be rotated through 360 (clockwise)

Note : Do not rotate actuator in anticlockwise direction. The pipework should be supported to prevent the valvebody being stressed. Installation and Maintenance Instructions are given in User Manual provided with the valve.



Travel Switch