SERIES AP 3004 & 3084
AP 3604 & 3624
AP 3007 & 3627

1/4 INCH DIAPHRAGM VALVE — HIGH PRESSURE

Springless – manual and pneumatic (NC & NO)

- Operating pressures to 4,500 psig (310 bar)
- Replaceable seat
- Stainless steel 316L VAR
- Captured seat option (OX) for high pressure oxygen service and oxidizer
- Constant bleed option 5, 8 and 15 slpm of N2 @ 80 psig (5.5 bar) refer to PN 430
- LOTO and indicating switch options
- Surface finish 15 Ra max/10 Ra avg (10, 7 & 5 Ra max options)
- Multi-port options available (refer to page 4)
- Installation and operating instructions available at www.aptech-online.com in the Tech Briefs section

Manual valves

	PSIG / BAR 3,700 / 255	4,500 / 310
AP 3604 – Round knob, multi-turn	●	
AP 3624 – Lever valve, 1/4 turn – LOTO, PL 225 optional – Lever position indicates valve status	●	
AP 3627 – T handle valve, 1/4 turn – Handle position indicates valve status		●

Pneumatic valves, normally closed (NC)

	PSIG / BAR 3,700 / 255	4,500 / 310
AP 3004 – Switch option for remote monitoring	●	
AP 3007 – Switch option for remote monitoring		●

Pneumatic valves, normally open (NO)

	PSIG / BAR 3,700 / 255	4,500 / 310
AP 3084 – Switch option for remote monitoring	●	

All specifications subject to change without notice.

ENGINEERING DATA — SERIES AP 30 AND AP 36 1/4 INCH VALVE ARRAY

Engineering Data — Manual valves

Operating pressure	AP 3604, 3624	Vacuum to 3,700 psig (255 bar)
	AP 3627	Vacuum to 4,500 psig (310 bar)
Flow coefficient (C_V)	AP 3604, 3624, 3627	0.29 (X_T = 0.6)

Engineering Data — Pneumatic valves

Operating pressure	AP 3004, 3084	Vacuum to 3,700 psig (255 bar)
	AP 3007	Vacuum to 4,500 psig (310 bar)
Flow coefficient (C_V)	AP 3004, 3007, 3084	0.23 (X_T = 0.5)
Status	AP 3004, 3007	Normally closed (NC)
	AP 3084	Normally open (NO)
Actuation pressure	AP 3004, 3007	70 to 110 psig (5 to 8 bar)
	AP 3084	90 to 110 psig (6 to 8 bar)
Actuation port	AP 3004, 3007, 3084	1/8 NPT, top port

Engineering Data — Other parameters all valves

Inlet and outlet connectors		1/4 inch face seal or tube weld
Internal volume		0.06 in^3 (1.07 cm^3)
Operating temperature	AP 3007, 3627	-40° to +140° F (-40° to 60° C)
	AP 3004, 3084, 3604, 3624	-40° to +120° F (-40° to 49° C)
Surface finish		15 µin. Ra max / 10 µin. Ra avg. (0.4/0.25 µm) standard ; 10 µin (0.25 µm); 7 µin (0.18 µm); and 5 µin (0.13 µm) Ra max optional Optional surface finishes meet or exceed 5 µin Ra average
Proof pressure		150% of operating pressures
Burst pressure		300% of operating pressures
Inboard leakage		2 x 10^{-10} sccs
Outboard leakage		2 x 10^{-9} sccs He
Leakage across seat		1 x 10^{-9} sccs He

Engineering Data — Wetted materials all valves

		S
Body		SS 316L secondary remelt
Finish		Electropolished and passivated
Diaphragm		Ni-Co Alloy / UNS R30003
Seat	AP 3004, 3084, 3604, 3624	PCTFE (Polyimide or PEEK optional)
	AP 3007, 3627	Polyimide or PEEK
Seat insert	AP 3004, 3084, 3604, 3624 OX	Seat: PCTFE Insert: Ni-Cr-Mo alloy / UNS N06022

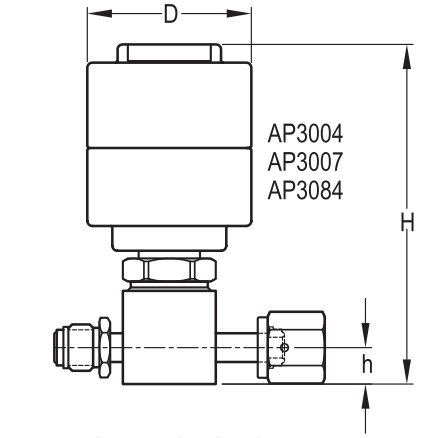
Seat Matrix

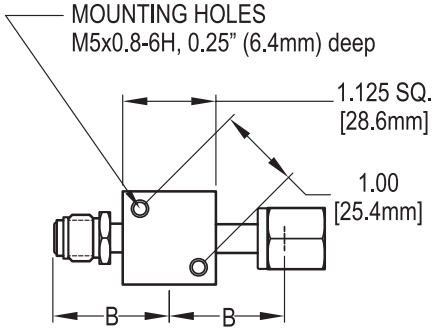
	PCTFE	Polyimide	PEEK
AP 3004, 3084, 3604, 3624	●	O	O
AP 3004, 3084, 3604, 3624 OX	●	NA	NA
AP 3007, 3627	NA	O[1]	O[1]

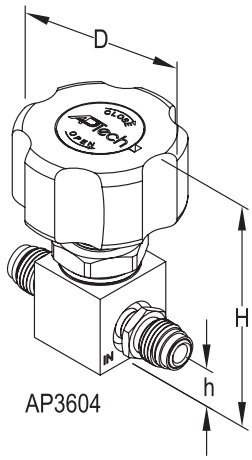
[1] Must select either VS or PK seat. ● Standard O Optional NA Not available

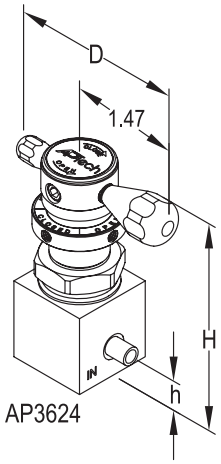
All specifications subject to change without notice.

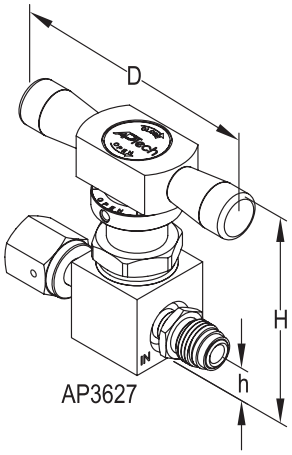
NOTE: Cycle life of AP 3004, 3084, 3604, 3624, 3007 and 3627 is 5,000 cycles at full rated pressure.











- Metric dimensions are for reference only.
- Height of the valve (H) is an approximate value.
- All specifications subject to change without notice.
- All manual valves are shown in open position.

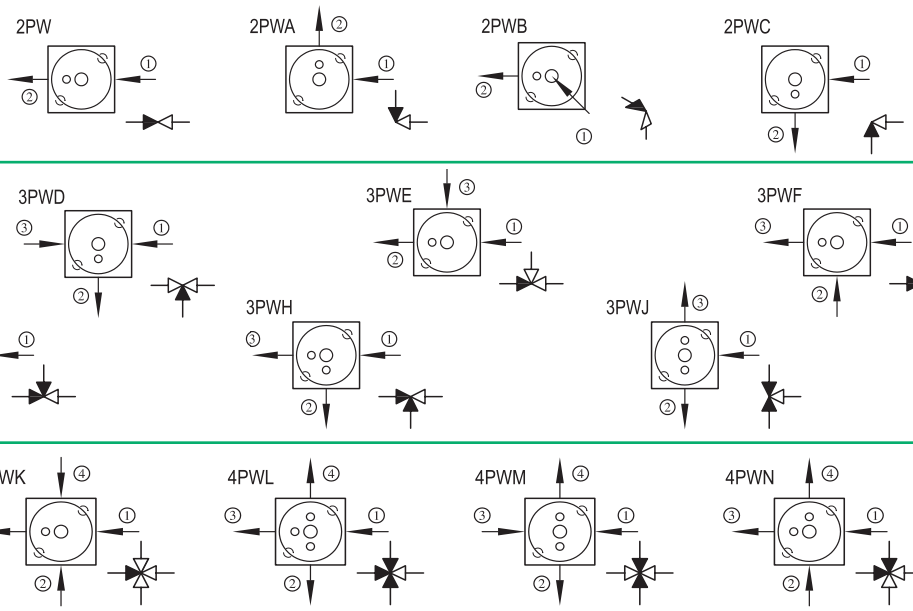
VALVE	D		H	
	inch	mm	inch	mm
AP3004	ø1.98	50.3	4.10	104
AP3007	ø1.98	50.3	4.89	124
AP3084	ø1.98	50.3	4.89	124
AP3604	ø2.12	53.8	3.00	76
AP3624	2.47	62.7	2.94	75
AP3627	3.48	88.4	2.95	75

STAINLESS STEEL BODY				
CONNECTION	B		h	
	inch	mm	inch	mm
FV4, MV4	1.390 ±.010	35.3	0.44	11.2
TW4	1.060 ±.010	26.9	0.44	11.2

ULTRACLEAN TECHNOLOGY BACKED BY SERVICE AND SUPPORT

PORTING CONFIGURATIONS

Top View (Mounting holes on bottom)



2 PORTS

3 PORTS

4 PORTS

- Valves are illustrated top view looking down through the valve. Mounting holes on the valve bottom are shown for reference.
- INLET (Upstream) is defined as a port connected to the region below the valve seat. It is illustrated with an arrow pointing towards the valve body or an "empty" triangle on the schematic. OUTLET (Downstream) is defined as a port connected to the region above the seat and below the diaphragm. It is illustrated with an arrow pointing away from the valve body or a "filled" triangle on the schematic.
- The traditional flow direction is INLET to OUTLET, but AP Tech valves may be employed in either flow direction.
- End connections are specified in numerical order per the diagram's numbered arrows.

CAUTION: Product selection is the sole responsibility of the user, regardless of any recommendations or suggestions made by the factory. The user shall make selections based upon their own analysis and testing with regard to function, material compatibility and product ratings. Proper installation, operation and maintenance are also required to assure safe, trouble free performance.

ORDERING INFORMATION

Sample Order Number		AP 3004S 2PW MV4 MV4
AP 3004	**Series**	AP 3004, 3007 AP 3084 AP 3604 AP 3624 AP 3627
S	**Material**	S = Stainless steel (SS)
	Surface Finish Options	M = 10 µin. Ra max V = 7 µin. Ra max X = 5 µin. Ra max
2PW	**Ports**	2PW = 2 ports welded 3PW = 3 ports welded 4PW = 4 ports welded
	Porting Designation Option	X = Letter code for available porting option Refer to porting options above.
MV4 MV4	**Connections Inlet / Outlet or ① ② ③ ④**	FV4 = 1/4 inch face seal female MV4 = 1/4 inch face seal male TW4 = 1/4 inch tube stub weld**
	Options	1.75 = 1.75" face to face TW4 VS = Polyimide seat P = Panel mount, manual valves* PK = PEEK seat IS = Indicating switch* (AP 3004, 3007, 3084 only) OX = Seat insert (AP 3004, 3084, 3604, 3624 only)**

SEAT MATRIX	PCTFE	VS	PEEK
AP 3004, 3084, 3604, 3624	●	○	○
AP 3004, 3084, 3604, 3624 OX	●	NA	NA
AP 3007, 3627	NA	○[1]	○[1]

[1] Must select either VS or PK seat.
● Standard
○ Option selectable
NA Not available
*Refer to manual for installation information.
**OX option not available with tube stub (TW4) connection due to production testing requirement.

AP Tech has product options and variations which are not documented in data sheets. If you have a model number that is not defined by the ordering information, please consult the factory or your local representative.