Series AK 3004 & 3084
AK 3604 & 3624
AK 3007 & 3627

1/4 INCH DIAPHRAGM VALVE — HIGH PRESSURE

Packless – manual and pneumatic (NC & NO)

- Operating pressures to 4,500 psig (310 bar)
- Replaceable seat
- Stainless steel 316L
- Captured seat option (OX) for high pressure oxygen service and oxidizer
- LOTO and indicating switch options
- Multi-port options available (refer to page 4)
- Constant bleed option 5, 8 and 15 slpm of N2 @ 80 psig (5.5 bar) refer to PN 430
- Machined from bar stock
- Cleaned for O2 service
- Field repairable
- 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
AK 3604 – Round knob, multi-turn	●	
AK 3624 – Lever valve, 1/4 turn – LOTO, PL 225 optional – Lever position indicates valve status	●	
AK 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
AK 3004 – Switch option for remote monitoring	●	
AK 3007 – Switch option for remote monitoring		●

Pneumatic valves, normally open (NO)

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

All specifications subject to change without notice.

Engineering Data — Manual valves

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

Engineering Data — Pneumatic valves

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

Engineering Data — Other parameters all valves

Inlet and outlet connectors		1/4 inch compression, NPT or BSPT
Internal volume		0.06 in^3 (1.07 cm^3)
Operating temperature	AK 3007, 3627	-40° to +140° F (-40° to 60° C)
	AK 3004, 3084, 3604, 3624	-40° to +120° F (-40° to 49° C)
Proof pressure		150% of operating pressures
Burst pressure		300% of operating pressures
Leak rate		1 x 10^{-9} sccs He

Engineering Data — Wetted materials all valves

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

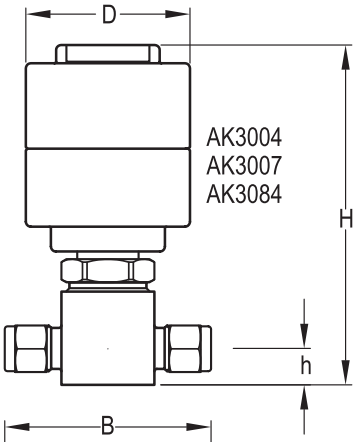
Seat Matrix

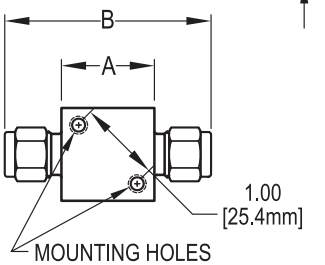
	PCTFE	Polyimide	PEEK
AK 3004, 3084, 3604, 3624	●	○	○
AK 3004, 3084, 3604, 3624 OX	●	NA	NA
AK 3007, 3627	NA	○[1]	○[1]

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

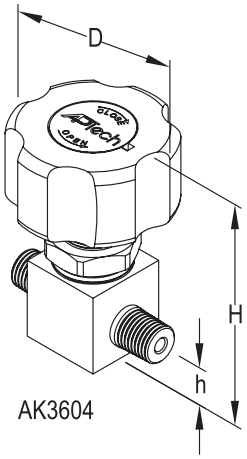
All specifications subject to change without notice.

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

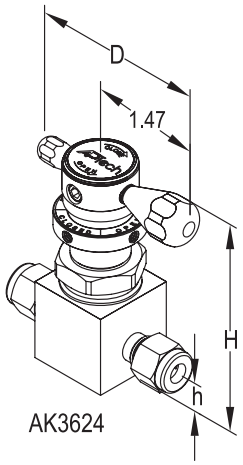




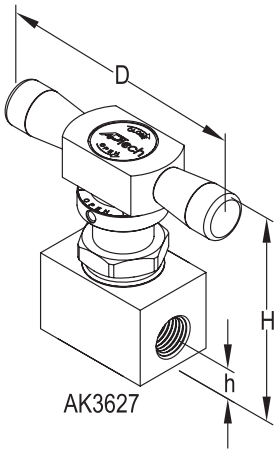
BOTTOM VIEW



AK3604



AK3624



AK3627

- 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
AK3004	ø1.98	50.3	4.10	104
AK3007	ø1.98	50.3	4.89	124
AK3084	ø1.98	50.3	4.89	124
AK3604	ø2.12	53.8	3.00	76
AK3624	2.47	62.7	2.94	75
AK3627	3.48	88.4	2.95	75

CONNECTION	A		B		h	
	inch	mm	inch	mm	inch	mm
4Tx4T	1.12 sq	28.4	2.56	65.0	0.44	11.2
4Nx4N	1.12 sq	28.4	2.32	58.9	0.44	11.2
4BRNx4BRN	1.12 sq	28.4	2.32	58.9	0.44	11.2
4x4	N/A	N/A	1.70	43.2	0.44	11.2
4BRx4BR	N/A	N/A	1.70	43.2	0.44	11.2

AK Valves

- Internal stop prevents over stressing seat – knob and lever position does not change with time
- Replaceable seat
- High leak integrity – all metal seals to atmosphere
- Designed and manufactured for high purity gas applications
- Helium leak tested

Pressure Regulators with 4,500 psig (310 bar) or higher source pressure rating

- AK 1500 HR single stage diaphragm type regulator
- AK 1700 HR two stage diaphragm type regulator
- KT 10 and KT 12 single stage, piston type regulator

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 — **AK 3004S 2P 44**

AK 3004 | Series
AK 3004, 3007
AK 3084
AK 3604
AK 3624
AK 3627

S | Material
S = Stainless steel (SS)

2P | Ports
2P = 2 ports

44 | Connections Inlet / Outlet
4 = 1/4 inch NPT female
4N = 1/4 inch NPT male
4T = 1/4 inch compression
4BR = 1/4 inch BSPT female
4BRN = 1/4 inch BSPT male

Options
VS = Polyimide seat
P = Panel mount, manual valves*
PK = PEEK seat
IS = Indicating switch* (AK 3004, 3007, 3084 only)
OX = Seat insert (AK 3004, 3084, 3604, 3624 only)

*Refer to manual for installation information.

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

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

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.