

SERIES AK 30, 35 & 36

1/4 INCH DIAPHRAGM VALVE

Packless – manual and pneumatic (NC & NO)



- All metal seals to atmosphere
- Compression tube fitting, NPT and BSPT connections available
- Field repairable
- Machined from bar stock
- SS 316L construction
- Operating pressures from 125 psig (9 bar) to 3,000 psig (207 bar)
- Lock Out / Tag Out (LOTO) options
- Flow capacity 0.23 to 0.29 C_v
- Constant bleed option 5, 8 and 15 slpm of N₂ @ 80 psig (5.5 bar) refer to PN 430
- Cleaned for O₂ service
- Internal manual knob stop prevents overstressing seat
- Two step pneumatic valve option: dual operation – metered or full open
- Installation and operating instructions available at www.aptech-online.com in the Tech Briefs section

Manual valves

	PSIG / BAR	
	250 / 17	3,000 / 207
AK 3600 – Round knob, multi-turn		●
AK 3625 – Lever valve, 1/4 turn – LOTO, PL 225 optional – Lever position indicates valve status		●
AK 3650 – Round knob, 1/4 turn – Open/closed status indication window – Switch option for remote monitoring		●
AK 3652 – Round knob, 1/4 turn – Open/closed status indication window – Unique design combines scalloped round knob with raised rectangular section	●	
AK 3657 and 3659 – Round knob, 1/4 turn – Pull, then turn to open – operational safety feature – Open/closed status indication window – LOTO – integral standard feature	●	●
	AK 3659	AK 3657

Pneumatic valves, normally closed (NC)

	PSIG / BAR			
	125 / 9	145 / 10	300 / 21	3,000 / 207
AK 3000 and 3002 – Switch option for remote monitoring				●
AK 3540		●		
AK 3540VS	●			
AK 3542	●			
AK 3550 – Switch option for remote monitoring			●	
AK 3571 – Dual mode – metered or full open	●			

Pneumatic valve, normally open (NO)

	PSIG / BAR	
	250 / 17	3,000 / 207
AK 3080 – Switch option for remote monitoring		●
AK 3580 – Switch option for remote monitoring	●	

All specifications subject to change without notice.

HIGH PURITY ~ HIGH VALUE

Engineering Data — Manual valves

Operating pressure	AK 3652, 3659 AK 3600, 3625, 3650, 3657	Vacuum to 250 psig (17 bar) Vacuum to 3,000 psig (207 bar)
Flow coefficient (C _v)	AK 3600, 3625, 3650, 3652 AK 3657, 3659	0.29 (X _T = 0.6)

Engineering Data — Pneumatic valves

Operating pressure	AK 3540VS, 3542, 3571 AK 3540 AK 3580 AK 3550 AK 3000, 3002, 3080	Vacuum to 125 psig (9 bar) Vacuum to 145 psig (10 bar) Vacuum to 250 psig (17 bar) Vacuum to 300 psig (21 bar) Vacuum to 3,000 psig (207 bar)
Flow coefficient (C _v)	AK 3000, 3080 AK 3002 AK 3540, 3542, 3550, 3571, AK 3580	0.23 (X _T = 0.5) 0.28 (X _T = 0.5) 0.29 (X _T = 0.6)
Status	AK 3000, 3002, 3540, 3542 AK 3550, 3571 AK 3080, 3580	Normally closed (NC) Normally closed (NC) Normally open (NO)
Actuation pressure	AK 3000, 3002, 3540, 3550 AK 3080, 3571, 3580 AK 3542	70 to 110 psig (5 to 8 bar) 70 to 110 psig (5 to 8 bar) 60 to 110 psig (4 to 8 bar)
Actuation port	AK 3000, 3002, 3080, 3540, AK 3580 AK 3542 AK 3550, 3571	1/8 NPT, top port M5, top port M5, side 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	-40° to +160° F (-40° to 71° C)*
Proof pressure	150% of operating pressures
Burst pressure	300% of operating pressures
Leak rate	1 x 10 ⁻⁹ sccs

Engineering Data — Wetted materials all valves

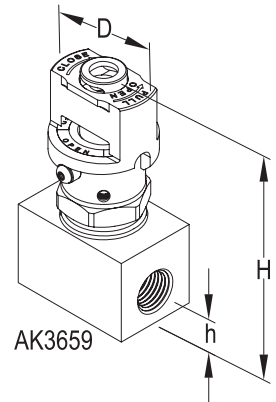
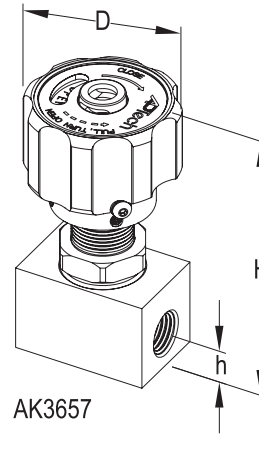
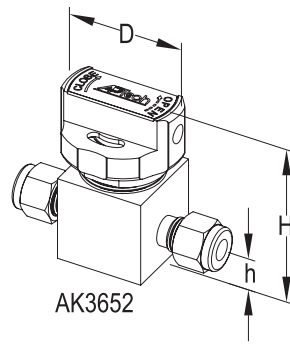
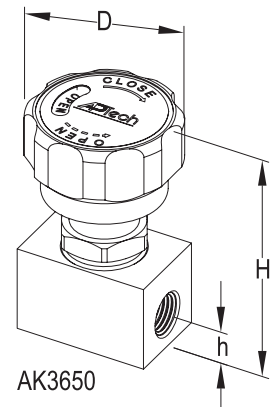
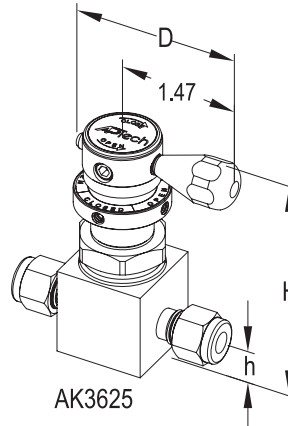
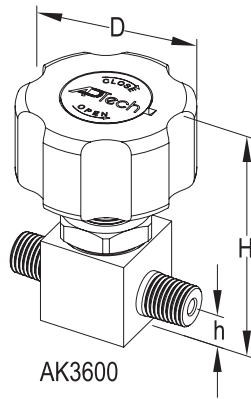
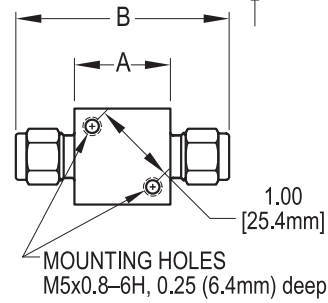
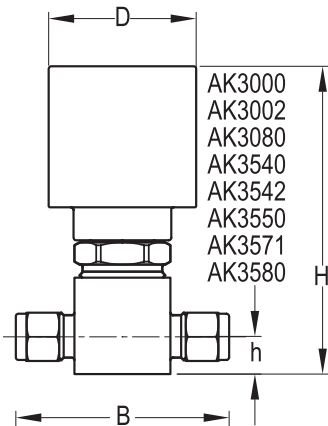
Body	SS 316L
Diaphragm	Ni-Co alloy / UNS R30003
Seat	PCTFE (Polyimide optional)

AK 3571 — Metered flow range tolerance at 80 psig N₂ inlet, 0 psig outlet

10 to 20 slpm	+/- 6 slpm
21 to 50 slpm	+/- 10 slpm
51 to 100 slpm	+/- 15 slpm
101 to 200 slpm	+/- 20 slpm

*VS option 14° to 194°F (-10° to + 90°C).

All specifications subject to change without notice.



VALVE	D		H	
	inch	mm	inch	mm
AK3000	ø1.98	50.3	~4.10	104
AK3002	ø1.98	50.3	~4.10	104
AK3080	ø1.98	50.3	4.89	124
AK3540	ø1.46	37.1	~3.49	89
AK3542	ø1.57	40.0	~2.24	57
AK3550	ø1.37	34.8	~3.28	83
AK3571	ø1.72	43.7	~3.63	92
AK3580	ø1.46	37.1	~3.17	81
AK3600	ø2.12	53.8	~3.00	76
AK3625	2.04	51.8	~2.94	75
AK3650	ø1.87	47.5	~3.02	77
AK3652	ø1.50	38.1	~2.17	55
AK3657	ø1.87	47.5	~3.60	91
AK3659	ø1.30	33.0	~3.13	80

- All manual valves are shown in open position.
- All dimensions in inches (mm).
- Metric dimensions are for reference only.
- All specifications subject to change without notice.

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
6MTx6MT	1.12 SQ	28.4	2.62	66.5	0.44	11.2

HIGH RELIABILITY – HIGH VALUE

- 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

Status indicating switch options

Pneumatic valve

- ISC: NC switch AK 3550 & 3580
- ISO: NO switch AK 3550 & 3580
- IS: switch AK 3000

Manual valve

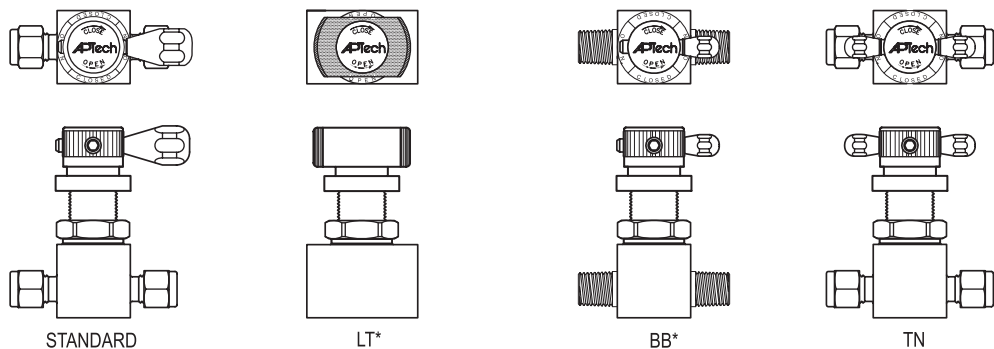
- ISH: switch AK 3650

Please refer to the Installation and Operating Instructions for further information regarding switches.

AK 3625 handle options

Handle color options

- RD = Red
- WT = White
- BL = Blue
- GR = Green
- Black (standard)



*LT and BB handle options limit valve operating pressure to 250 psig (17 bar)

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.

Sample Order Number **AK 3652S 2P 4T 4T**

AK 3652 | Series

- AK 3000, 3002, 3080
- AK 3540, 3542, 3550
- AK 3571, 3580
- AK 3600, 3625
- AK 3650, 3652, 3657, 3659

Options

- VS = Polyimide Seat
- P = Panel mount, manual valves* (except 3652, 3659 & 4659)
- ISC = NC switch 3550 & 3580
- ISO = NO switch 3550 & 3580
- IS = Switch 3000, 3002, 3080
- ISH = Switch 3650
- RD = Red 3625 lever
- WT = White 3625 lever
- BL = Blue 3625 lever
- GR = Green 3625 lever
- LT = 3625 handle option
- BB = 3625 handle option
- TN = 3625 handle option
- MXXX** = 3571 metered adjusts flow in slpm at 80 psig N₂

S | Material

- S = Stainless steel (SS)

2P | Ports

- 2P = 2 ports

4T 4T | 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
- 6MT = 6 mm compression

Inlet and outlet connections must be the same.

*Refer to manual for installation information.
**NOTE: Replace XXX with flow rate using 3 digits, example 50 slpm = M050.

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.