APTech
ADVANCED PRESSURE TECHNOLOGY

SERIES AP 30, 35 & 36

1/4 INCH DIAPHRAGM VALVE

Springless – manual and pneumatic (NC & NO)

- Replaceable seat
- Stainless steel 316L VAR secondary remelt or Hastelloy® C-22® construction
- Operating pressures from 125 psig (9 bar) to 3,000 psig (207 bar)
- LOTO and indicating switch options
- Flow capacity 0.23 to 0.29 C_V
- Surface finish 15 Ra max/10 Ra avg (10, 7 & 5 Ra max options)
- Manual valves 1/4 turn to multi-turn
- Designed for UHP specialty and bulk gas applications
- 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 250 / 17	3,000 / 207
AP 3600		●
– Round knob, multi-turn		
AP 3625		●
– Lever valve, 1/4 turn		
– LOTO, PL 225 optional		
– Lever position indicates valve status		
AP 3650		●
– Round knob, 1/4 turn		
– Open/closed status indication window		
– Switch option for remote monitoring		
AP 3652	●	
– Round knob, 1/4 turn		
– Open/closed status indication window		
– Unique design combines scalloped round knob with raised rectangular section		
AP 3657		●
– Round knob, 1/4 turn		
– Pull, then turn to open – operational safety feature		
– Open/closed status indication window		
– LOTO – integral standard feature		

Pneumatic valves, normally closed (NC)

	PSIG / BAR 125 / 9	250 / 17	3,000 / 207
AP 3540	●		
AP 3542	●		
AP 3550		●	
– Switch option for remote monitoring			
AP 3000 and 3002			●
– Switch option for remote monitoring			

Pneumatic valve, normally open (NO)

	PSIG / BAR 250 / 17	
AP 3580	●	
– Switch option for remote monitoring		

All specifications subject to change without notice.
Hastelloy® C-22® Haynes Corporation

ENGINEERING DATA — SERIES AP 30, 35 & 36 1/4 INCH VALVE ARRAY

Engineering Data — Manual valves

Operating pressure	AP 3652	Vacuum to 250 psig (17 bar)
	AP 3600, 3625, 3650, 3657	Vacuum to 3,000 psig (207 bar)
Flow coefficient (C_V)	AP 3600, 3625, 3650, 3652, AP 3657	0.29 (X_T = 0.6)

Engineering Data — Pneumatic valves

Operating pressure	AP 3540, 3542	Vacuum to 125 psig (9 bar)
	AP 3550, 3580	Vacuum to 250 psig (17 bar)
	AP 3000, 3002	Vacuum to 3,000 psig (207 bar)
Flow coefficient (C_V)	AP 3000	0.23 (X_T = 0.5)
	AP 3002	0.28 (X_T = 0.5)
	AP 3540, 3542, 3550, 3580	0.29 (X_T = 0.6)
Status	AP 3000, 3002, 3540, 3542	Normally closed (NC)
	AP 3550	Normally closed (NC)
	AP 3580	Normally open (NO)
Actuation pressure	AP 3000, 3002, 3540, 3550	70 to 110 psig (5 to 8 bar)
	AP 3580	70 to 110 psig (5 to 8 bar)
	AP 3542	60 to 110 psig (4 to 8 bar)
Actuation port	AP 3000, 3002, 3540, 3580	1/8 NPT, top port
	AP 3542	M5 top port
	AP 3550	10–32 inch, side port

Engineering Data — Other parameters all valves

Inlet and outlet connectors	1/4 and 3/8 inch face seal or tube weld
Internal volume	0.06 in^3 (1.07 cm^3)
Operating temperature	-40° to +160° F (-40° to 71° 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
Proof pressure	1.5 times operating pressure
Burst pressure	3 times operating pressure
Inboard leakage	2 x 10^{-10} sccs
Outboard leakage	2 x 10^{-9} sccs He
Leakage across seat	4 x 10^{-8} sccs He

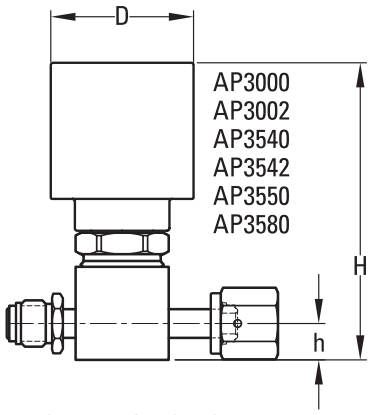
Engineering Data — Wetted materials all valves

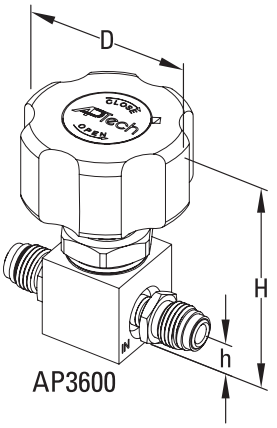
	S	H
Body	SS 316L secondary remelt	Hastelloy® C-22®
Finish	Electropolished and passivated	Electropolished
Diaphragm	Elgiloy®	Elgiloy
Seat	PCTFE (Vespel® optional)	PCTFE

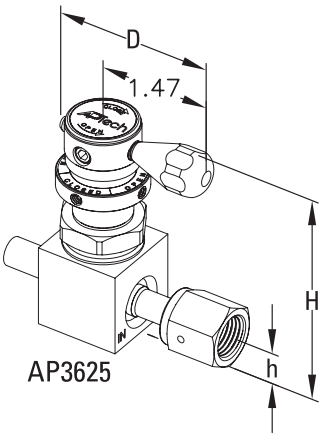
All specifications subject to change without notice.

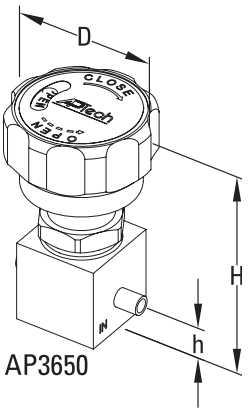
Vespel® DuPont

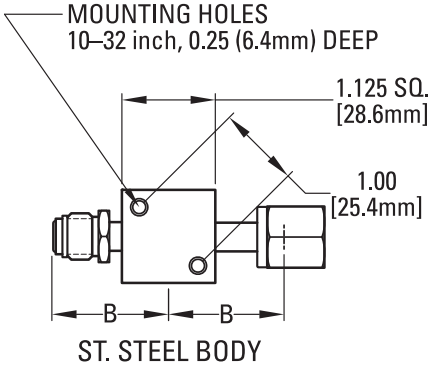
Elgiloy® Elgiloy Corporation
Hastelloy® C-22® Haynes Corporation

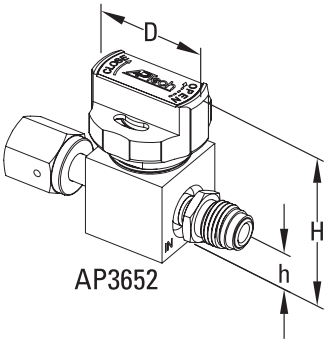


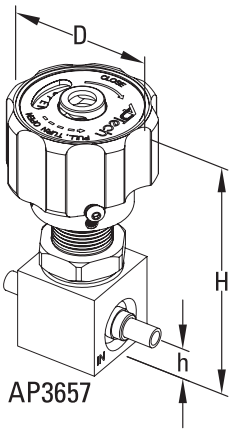


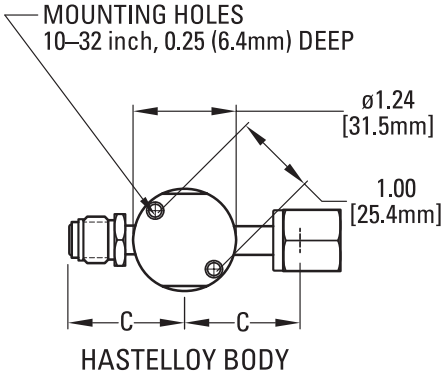












- Metric dimensions are for reference only.
- Height of the valve (H) is an approximate value.
- All specifications subject to change without notice.
- All manual valves are shown in open position.

VALVE	D		H	
	inch	mm	inch	mm
AP3000	ø1.98	50.3	4.10	104
AP3002	ø1.98	50.3	4.10	104
AP3540	ø1.46	37.1	3.49	89
AP3542	ø1.57	40.0	2.24	57
AP3550	ø1.37	34.8	3.28	83
AP3580	ø1.46	37.1	3.17	81
AP3600	ø2.12	53.8	3.00	76
AP3625	2.04	51.8	2.94	75
AP3650	ø1.87	47.5	3.02	77
AP3652	ø1.50	38.0	2.17	55
AP3657	ø1.87	47.5	3.60	91

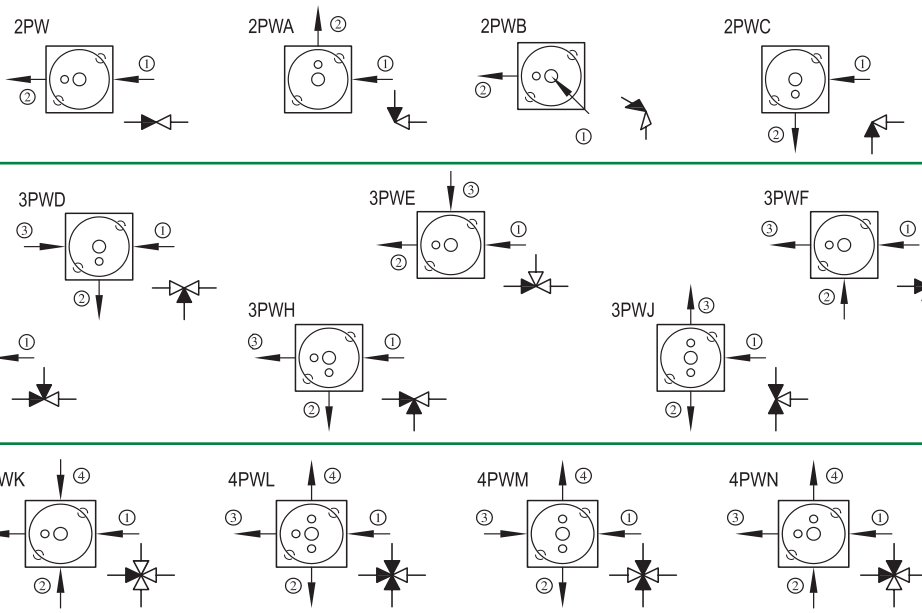
STAINLESS STEEL BODY				
CONNECTION	B		h	
	inch	mm	inch	mm
FV4, MV4	1.390 ±.010	35.3	0.44	11.2
TW4	1.060 ±.010	26.9	0.44	11.2
FV6, MV6	1.930 ±.010	49.0	0.44	11.2
TW6	1.325 ±.010	33.7	0.44	11.2

HASTELLOY C–22 BODY				
CONNECTION	C		h	
	inch	mm	inch	mm
FV4, MV4	1.450 ±.010	36.8	0.44	11.2
TW4	1.080 ±.010	27.4	0.44	11.2
FV6, MV6	1.930 ±.010	49.0	0.44	11.2
TW6	1.325 ±.010	33.7	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 3652S 2PW MV4 MV4**

AP 3652 | Series

AP 3000, 3002
AP 3540, 3542, 3550
AP 3580
AP 3600, 3625
AP 3650, 3652, 3657

S | Material

S = Stainless steel (SS)
H = Hastelloy C-22

| 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
FV6 = 3/8 inch face seal female
MV6 = 3/8 inch face seal male
TW6 = 3/8 inch tube stub weld

Refer to chart on page 3 for available connections.

| Options

1.75 = 1.75" face to face TW4, TW6
VS = Vespel Seat
ISC = Indicating switch, NC* (AP 3550 and 3580 only)
ISO = Indicating switch, NO* (AP 3550 and 3580 only)
IS = Indicating switch* (AP 3000 only)
ISH = Indicating switch* (AP 3650 only)

*Refer to manual for installation information.