

SERIES AP 3657 & AP 4657

MANUAL 1/4" & 3/8" SPRINGLESS DIAPHRAGM VALVE

Pull>twist Lock Out / Tag Out (LOTO) handle

- Handle must be pulled to turn open from closed
- Detent in full open position
- Stainless steel 316L VAR secondary remelt or Hastelloy® alloy C-22® construction
- Lock out/tag out (LOTO) standard feature
- 15 µin. surface finish; (10, 7 and 5 µin. optional)
- Metal to metal seal to atmosphere
- Replaceable PCTFE seat (Vespel® optional)
- Cleaned, assembled and packaged for high purity semiconductor applications

Operating Parameters

Inlet pressure	AP 3657	vacuum to 3,000 psig (207 bar)
	AP 4657	vacuum to 250 psig (17 bar)
Outlet pressure	AP 3657	vacuum to inlet pressure
	AP 4657	vacuum to inlet pressure
Proof pressure	AP 3657	4,000 psig (276 bar)
	AP 4657	1,000 psig (69 bar)
Burst pressure	AP 3657	8,000 psig (552 bar)
	AP 4657	8,000 psig (552 bar)

Other Parameters

Inlet/outlet connectors		1/4 or 3/8 inch face seal or tube weld
Flow coefficient (Cv)	AP 3657	0.29, X _T = 0.6
	AP 4657	0.5, X _T = 0.6
Internal volume		0.06 in ³ (1.07 cm ³)
Operating temperature		-40° to +160°F (-40° to +71°C)
Surface finish		15 µin. (0.4 µm) Ra max standard; 10 µin (0.25 µm); 7 µin (0.18 µm); and 5 µin (0.13 µm) optional
Inboard leakage		2 x 10 ⁻¹⁰ sccs
Outboard leakage		2 x 10 ⁻⁹ sccs He at 250 psig
Leakage across seat		4 x 10 ⁻⁸ sccs He at 250 psig inlet pressure

Materials

Type of Service	Series AP 3657 S & AP 4657 S Noncorrosive	Series AP 3657 H & AP 4657 H Corrosive
Wetted Parts		
Body	SS 316L secondary remelt	Hastelloy alloy C-22
Finish	electropolished and passivated	electropolished
Diaphragm	Elgiloy®	Elgiloy
Seat	PCTFE (Vespel® optional)	PCTFE

All specifications subject to change without notice.

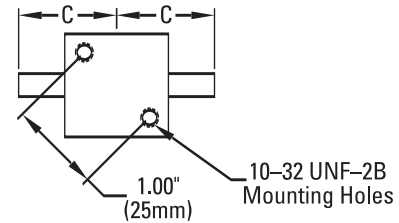
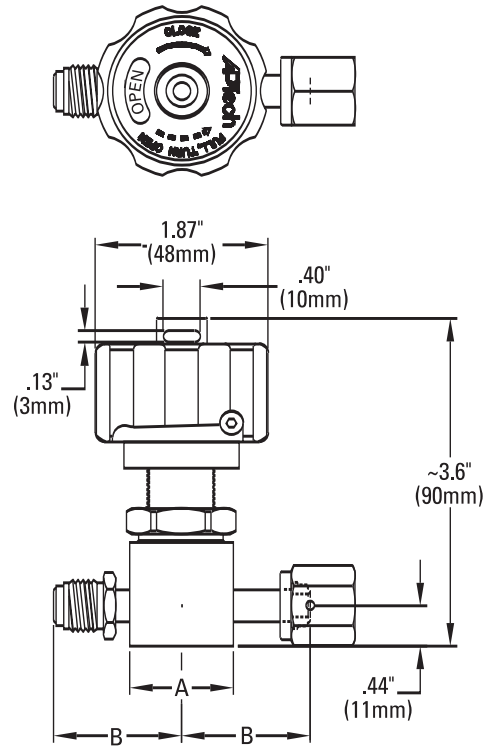
Hastelloy® C-22® Haynes Corporation Vespel® DuPont Elgiloy® Elgiloy Corporation

SERVICE AND SUPPORT BEYOND COMPARE

DIMENSIONAL INFORMATION

MATERIAL	CONNECTION	A		B		C	
		in.	mm	in. [$\pm.01$]	mm	in. [$\pm.01$]	mm
S	FV4, MV4	1.12 sq.	28	1.39	35	-	-
	TW4	1.12 sq.	28	-	-	1.06	27
	FV6, MV6	1.12 sq.	28	1.93	49	-	-
	TW6	1.12 sq.	28	-	-	1.33	34
H	FV4, MV4	1.25 dia.	32	1.45	37	-	-
	TW4	1.25 dia.	32	-	-	1.08	27
	FV6, MV6	1.25 dia.	32	1.93	49	-	-
	TW6	1.25 dia.	32	-	-	1.33	34

All dimensions in inches (mm). Metric dimensions are for reference only.



PORTING CONFIGURATIONS

Please refer to Technical Bulletin 203 for valve porting configurations.

Monoblock and IGS configurations available — consult factory.

ORDERING INFORMATION

Sample Order Number **AP 3657SM 2PW TW4 TW4 1.75**

AP 3657 | Series

AP 3657
AP 4657

S | Material

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

M | Surface Finish Options

M = 10 μ m. Ra max
V = 7 μ m. Ra max
X = 5 μ m. Ra max

2PW | Ports

2PW = 2 ports
3PW = 3 ports
4PW = 4 ports

(Refer to valve porting guide for selection)

TW4 TW4 | Connections Inlet / Outlet

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

1.75 | Options

1.75 = 1.75 inch face to face TW4
VS = Vespel seat
P = Panel mount*

* Panel hole 0.78" diameter.