

# QUANTUM 944 AOP HP Air Operated High Pressure Diaphragm Valve



Veriflo's 944 AOP HP is an air-operated high pressure version of the process proven 944 diaphragm valve for use in gas cabinets. It is capable of handling pressures from vacuum to 3500 psig.



## features

- ▶ "VeriClean", Veriflo's custom high purity type 316L VAR Stainless Steel, which enhances electropolishing, welding and corrosion resistance.
- ▶ Standard surface finish 5 micro inch Ra (.13 micro meter).
- ▶ Internally threadless and springless.
- ▶ Compression member that holds seat can be replaced without special tools, allowing ease of full field serviceability.
- ▶ A unique patented compression member which loads the seal uniformly without the need for threaded components or crimping operations.
- ▶ Change over from high pressure actuation to low pressure actuation or lever possible without intruding into wetted area.
- ▶ 100% Helium leak tested.

## materials of construction

### Wetted

Body ..... "VeriClean", Veriflo's custom high purity type 316L VAR Stainless Steel  
 Seal ..... PCTFE (formerly Kel-F 81®)  
 Diaphragm ..... Elgiloy® or equivalent

### Non-wetted

Nut ..... 316L Stainless Steel  
 Cap ..... 316L Stainless Steel

### Actuator Materials

Body ..... Anodized Aluminum  
 Pistons ..... Brass  
 Actuator stem ..... 316L Stainless Steel  
 Hydraulic fluid ..... High viscosity synthetic oil  
 O-ring seals ..... Viton®  
 Internal Springs ..... Belleville type, 1075 spring steel

## operating conditions

Maximum operating pressure ..... 3,500 psig (240 bar)  
 For oxygen ..... 2,200 psig (150 bar)  
 Minimum operating pressure ..... Vacuum  
 Actuation ..... 75 psig nominal control pressure (5 bar)  
 Temperature ..... 0°F to 150°F (-18°C to 65°C)  
 Bake out ..... 250°F (121°C) in the open position

## functional performance

Flow capacity .....  $C_v = .25$   
 (ANSI/ISA S 75.02 1988 using water) (.25 I.D. Gland)  
 Leakage:  
 Outboard ..... less than  $1 \times 10^{-9}$  scc/sec He  
 Inboard ..... less than  $2 \times 10^{-10}$  scc/sec He  
 Across seat ..... less than  $4 \times 10^{-9}$  scc/sec He

## standard configuration

Any configuration of FS male and/or female fittings.  
 1/4 inch Gland to gland length .....  $2.78 \pm .02$  in.  
 (70.6 ± .5mm)  
 Option .....  $3.06 \pm .02$  in (77.7 ± .5 mm)  
 1/4 inch tube stubs inlet and outlet  
 End to end length .....  $1.75 \pm .02$  in. (44.5 ± .5 mm)  
 1/4 inch female pipe threads inlet and outlet  
 End to end length ..... 1.25 inches (31.75 mm)  
 Other configurations available as options including as many as four ports.

## internal volume

1.86 cc (including face seal fittings)

## surface finishes

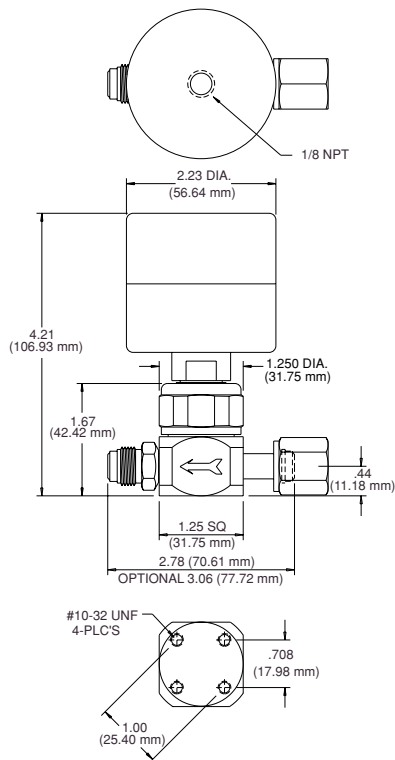
Standard Ra ..... EV=5 micro inch  
 (.13 micro meter) or less

## approximate weight

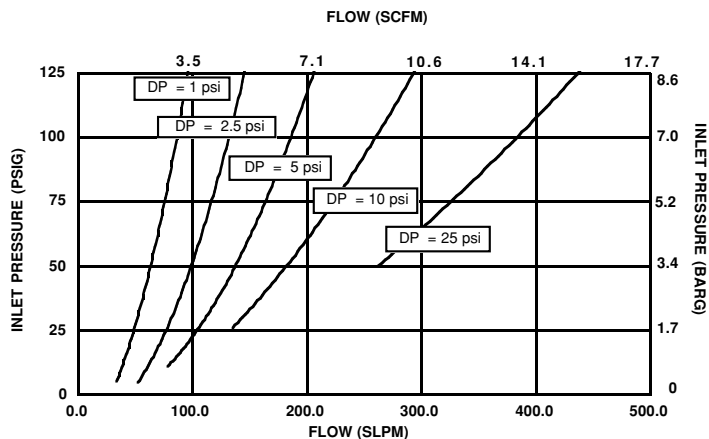
1.75 lbs. (.80 kg)

# QUANTUM 944 AOP HP

## Dimensional Drawing



## Flow Curve



## Ordering Information

**944AOPHP**

**NC**

**S**

**FSMM**

**VESP**

### BASIC SERIES

944AOPHP = 944 Air Operated, High Pressure

### TYPE

NC = Normally Closed

### MATERIAL

S = 316L VAR Stainless Steel

H = Hastelloy C-22®\*\*\*

### OPTIONAL FEATURES

BL008 = Bleed Valve .008 Orifice

BL015 = Bleed Valve .015 Orifice

LS = Limit Switch

TH = Hastelloy C-22® Trim\*\*

VESP = Vespel®\*

### CONNECTIONS

FSMM = 1/4" Face Seal, Male in-Male out

FSFF = 1/4" Face Seal, Female in-Female out

FSFM = 1/4" Face Seal, Female in-Male out

FSMF = 1/4" Face Seal, Male in-Female out

FS8MM = 1/2" Face Seal, Male in-Male out

FS8FF = 1/2" Face Seal, Female in-Female out

FS8FM = 1/2" Face Seal, Female in-Male out

FS8MF = 1/2" Face Seal, Male in-Female out

P = 1/4" NPTF

TS = 1/4" Tube Stub

TS6 = 3/8" Tube Stub

TS8 = 1/2" Tube Stub (180° Only)

\* Recommended for Nitrous Oxide (N<sub>2</sub>O) Service

\*\* Includes Compression Member

\*\*\* Includes Body, compression Member

Kel-F 81® is a registered trademark of 3M Company.

Elgiloy® is a registered trademark of Elgiloy Company.

Vespel® is a registered trademark of DuPont Company.

Viton® is a registered trademark of DuPont Dow Elastomers.

Hastelloy® is a registered trademark of Cabot Corporation.

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