

QUANTUM 944 AOP HP Air Operated High Pressure Diaphragm Valve



VERIFLO
technological
leadership
by design
ISO 9001 Certified

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 1×10^{-9} scc/sec He
Inboard less than 2×10^{-10} scc/sec He
Across seat less than 4×10^{-9} scc/sec He

standard configuration

Any configuration of FS male and/or female fittings.
1/4 inch Gland to gland length 2.78± .02 in.
(70.6± .5mm)
Option 3.06± .02 in (77.7 ± .5 mm)
1/4 inch tube stubs inlet and outlet
End to end length 1.75±.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

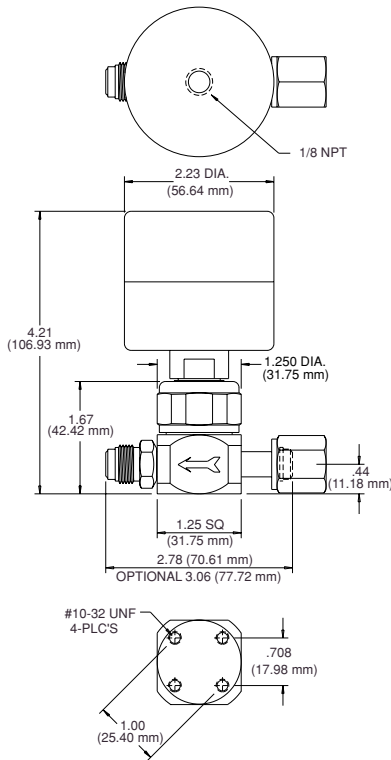
Standard Ra EV=5 micro inch
(.13 micro meter) or less

approximate weight

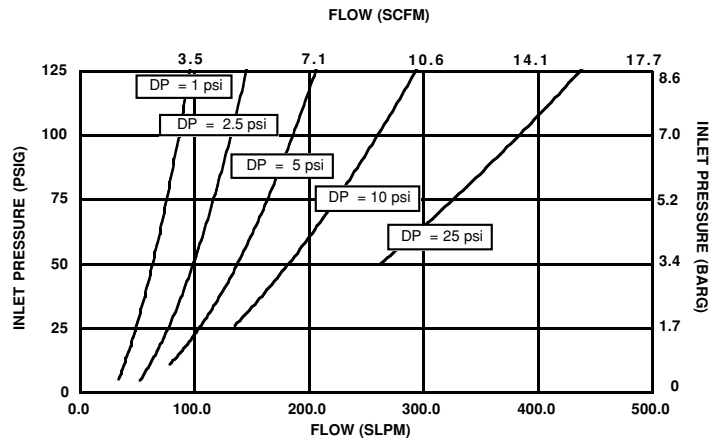
1.75 lbs. (.80 kg)

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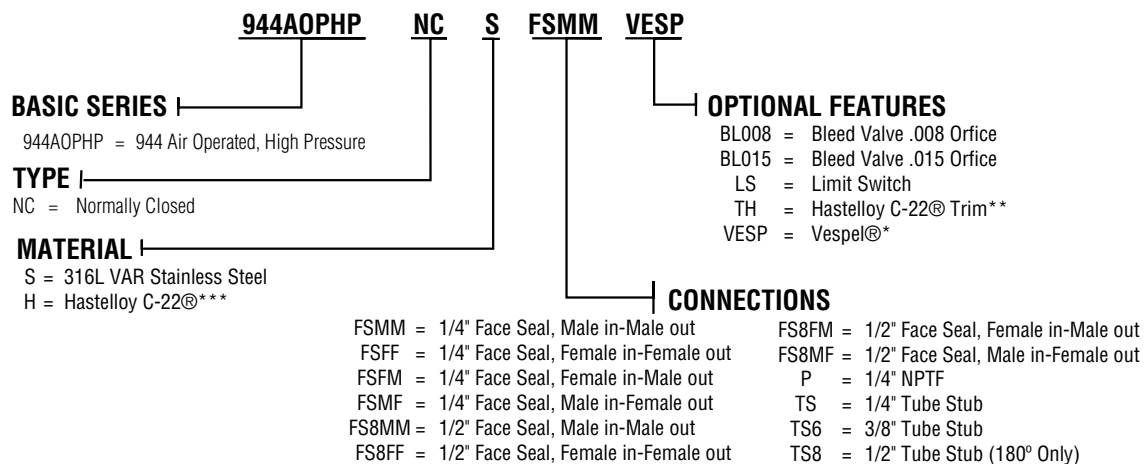
Dimensional Drawing



Flow Curve



Ordering Information



* Recommended for Nitrous Oxide (N₂O) 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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