

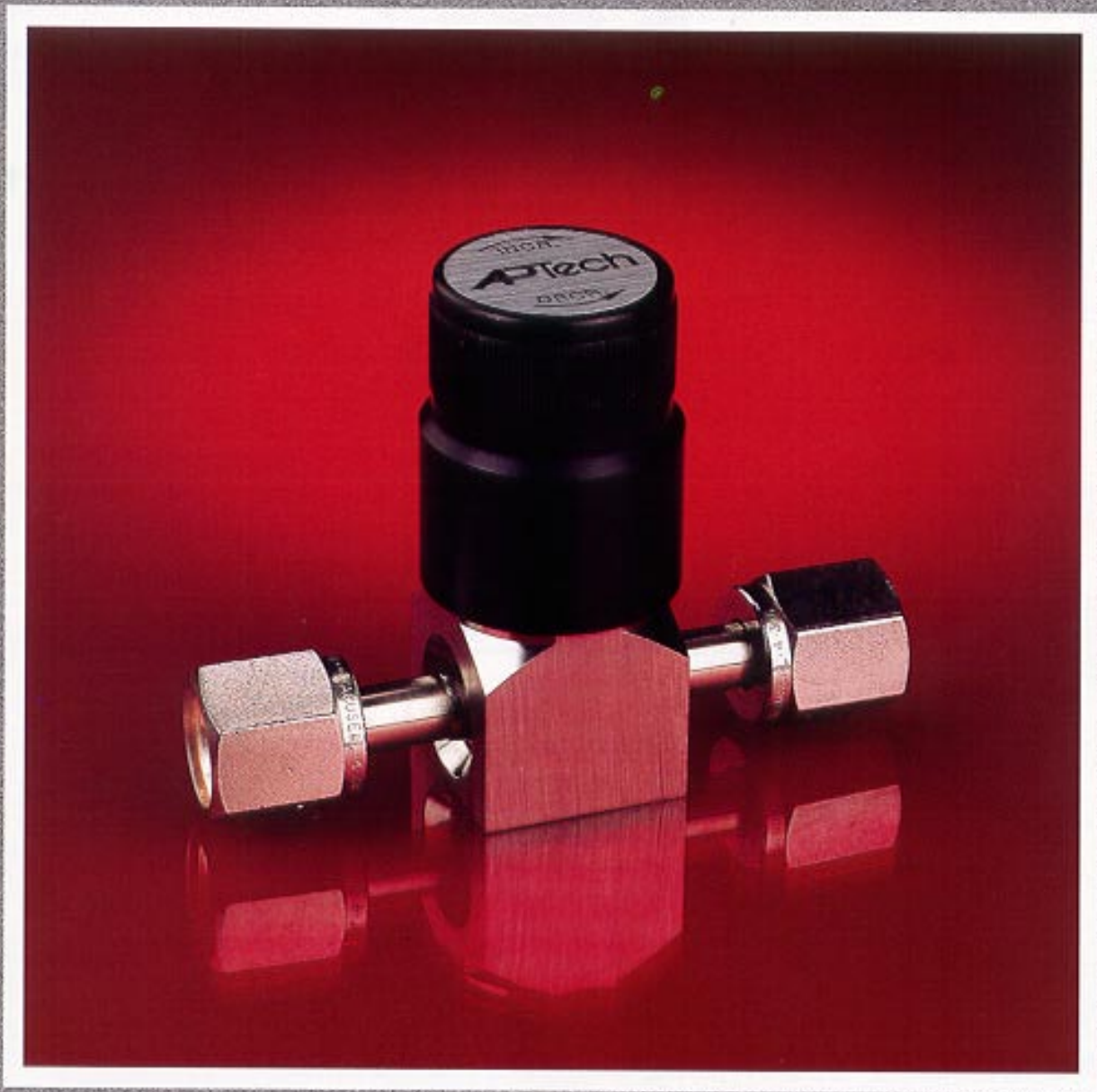


ADVANCED PRESSURE TECHNOLOGY

Series AP 500

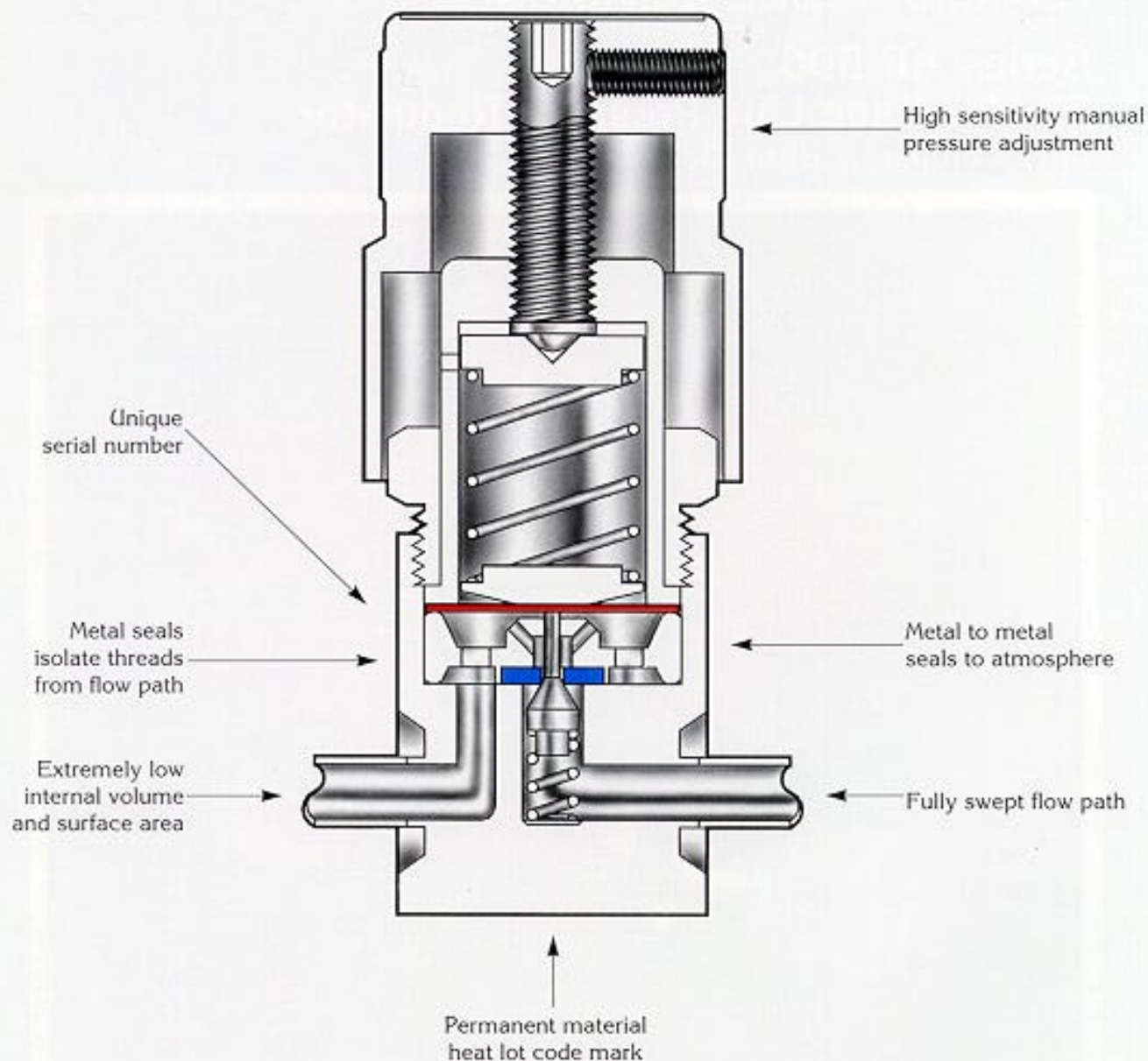
Single Stage Line Pressure Regulator

Ultra Compact / Ultra Clean



- Stainless steel 316L
AOD/VAR construction
- Compact size with low internal volume
- High performance with low hysteresis
- Vacuum to 150 psig inlet (10 bar)
- 1 sccm to 10 slpm flow capacity
- Designed and manufactured
exclusively for UHP
Semiconductor applications

Defining new levels of ultraclean



AP Tech Series AP 500 – Ultra Compact / Ultra Clean

The Series AP 500 is a line pressure regulator designed for point of use applications requiring small size, high performance and relatively low flow. It delivers outstanding pressure regulation with regard to stability, sensitivity and hysteresis with a flow capacity to 10 slpm of nitrogen. Its compact size has a face to face dimension of 2.78", the same as a typical 1/4" springless diaphragm valve, which makes the AP 500 the regulator of choice for process tool gas tray applications.

The AP 500's small size gives this regulator minuscule internal volume and surface area. The flow path is fully swept, free of internal threads and entrapment zones. Naturally, the wetted surfaces are electropolished with fine finishes and proper surface chemistries.

Engineering data – Series AP 500 Pressure Regulators

Operating parameters

| | |
|----------------------------|---------------------------------|
| Source pressure | vacuum to 150 psig (10 bar) |
| Delivery pressure (AP 502) | 0.5 to 30 psig (0.035 to 2 bar) |
| Delivery pressure (AP 510) | 1 to 100 psig (0.07 to 7 bar) |
| Proof pressure | 500 psig (35 bar) |
| Burst pressure | 1000 psig (70 bar) |

Other parameters

| | |
|-----------------------------|--|
| Inlet and outlet connectors | ¼ or ⅜ inch face seal or tube weld |
| Flow coefficient (Cv) | 0.06 |
| Internal volume | 0.05 in ³ (0.82 cm ³) |
| Operating temperature | -40° to +160°F (-40° to +71°C) |
| Surface finish | 15µ inch (.4 µm) Ra standard 10µin (0.25 µm); 7µin (0.18 µm); and 5µin (0.13 µm) inch Ra optional |
| Inboard leakage | 2 x 10 ⁻¹⁰ sccs |
| Outboard leakage | 2 x 10 ⁻⁹ sccs He at 100 psig inlet |
| Leakage across seat | 4 x 10 ⁻⁸ sccs He at 100 psig inlet |
| Delivery pressure rise | 0.20 per 20 psig |
| Hysteresis | 0.25 psig |
| Sensitivity | 0.2 psig |
| Installation | Surface |

Materials

| Type of Service | Series AP 500 S Non-Corrosive | Series AP 500 SH Corrosive |
|-------------------------|---------------------------------------|---------------------------------------|
| Wetted Parts | | |
| Body | Stainless Steel 316L secondary remelt | Stainless Steel 316L secondary remelt |
| Poppet and diaphragm | Stainless Steel 316L / Elgiloy | Hastelloy C-22 / Elgiloy |
| Finish | Electropolished and passivated | Electropolished and passivated |
| Seat | PCTFE (Vespel optional) | PCTFE |
| Non-wetted Parts | | |
| Bonnet cap | Stainless Steel | Stainless Steel |

All specifications subject to change without notice

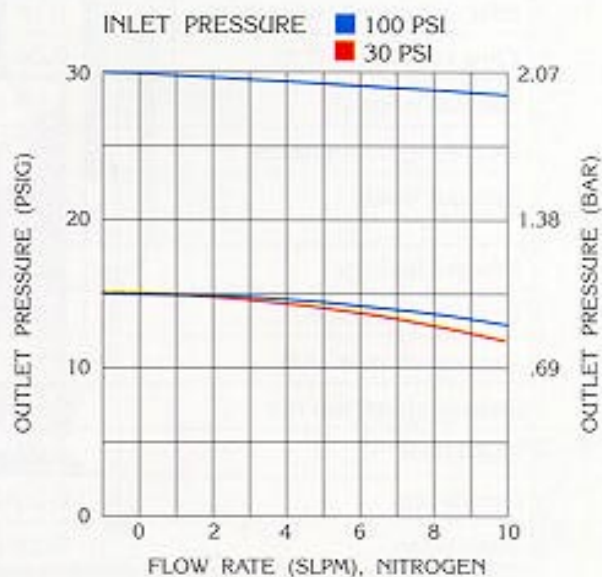
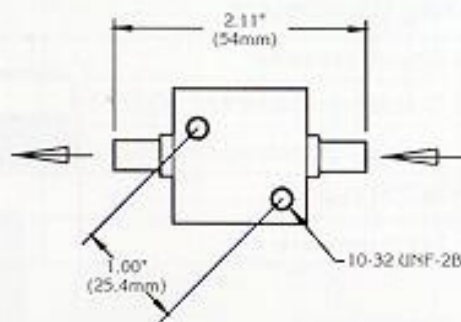
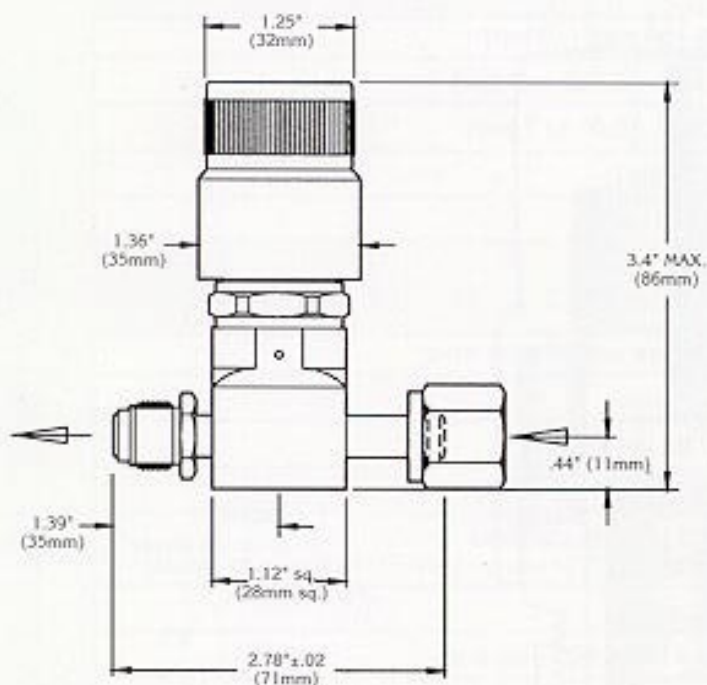
Vespel® DuPont

Cleaning and packaging

Cleaning is a multi-step process performed in a Class 100 clean room. Parts are ultrasonically cleaned with a wetting agent initially and then progressively with hot and cold DI water. Cleaned parts are then blown dry with ultra pure nitrogen prior to being baked completely dry in a nitrogen atmosphere.

Each regulator is then individually assembled, pressure tested, functionally tested and helium leak tested. Labels, including a unique serial number, are installed prior to products being double packaged under ultra pure nitrogen.

Uncompromising quality, performance and reliability from a company known for service and support.



Specifications subject to change without notice.

ORDERING INFORMATION

| | | | | | |
|---|------------------------------|--|--|--|------------------------------|
| <p>Series AP 502</p> <p>AP 502 = .5 - 30 psig (0.035 - 2 bar)</p> <p>AP 510 = 1 - 100 psig (0.07 - 7 bar)</p> | <p>S Material</p> | <p>M Surface Finish Options</p> | <p>2PW Ports</p> | <p>Connections Inlet Port Outlet Port</p> | <p>VS Options</p> |
| <p>S = SS 316L AOD/VAR SH = SS / Hastelloy C-22</p> | | | | <p>MV4 = 1/4 inch male face seal FV4 = 1/4 inch female face seal TW4 = 1/4 inch tube weld stub (3/8" connections optional)</p> | <p>VS = Vespel seat</p> |
| <p>M = 10μ inch Ra V = 7μ inch Ra X = 5μ inch Ra</p> | | | <p>2PW = 2 Ports 3PW = 3 Ports 4PW = 4 Ports (Please refer to Valve Porting Guide for Porting Options)</p> | | |

Products by AP Tech

AP Tech manufactures a wide array of UHP gas handling products exclusively for the Semiconductor industry. Pressure regulators, manual or air actuated springless diaphragm valves and a variety of flow devices are available for applications ranging from the source cylinder cabinet, bulk gas systems, and point of use including process tool gas trays. Please consult your local representative, or the factory, for further information or support regarding our products.