

GO REGULATOR

UPR-1 Precision Pressure Regulator



The Model UPR-1 is the High Purity version of the GO Regulator PR-1 whose design and performance reliability has been proven in over 30 years of field use. The UPR-1 design features include internal components with standard surface finishes better than 25 Ra. This feature provides the Semiconductor end-user with a precision pressure regulator, economically priced for applications ranging from gas distribution to point of use in the manufacturing tool.

Features & Specifications

- 25 Ra Internal Surface Finish, Std.
- C_v Flow .025, .06, 0.2, and 0.5
- 316L SS Body, Cap, Internals
- Male, Female or Internally Machined VCR Compatible Ports
- 1×10^{-9} atm cc/sec, Inboard Leak Spec

Applications

- Bulk Inert Gas Distribution
- Diffusion Furnaces
- Epitaxial Reactors
- Specialty Gas Distribution
- Manufacturing Tool

Options

- Wetted Materials for Corrosive Service Hastelloy

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www.goreg.com
sales@goreg.com

UPR-1

Precision Pressure Regulator

How to Order

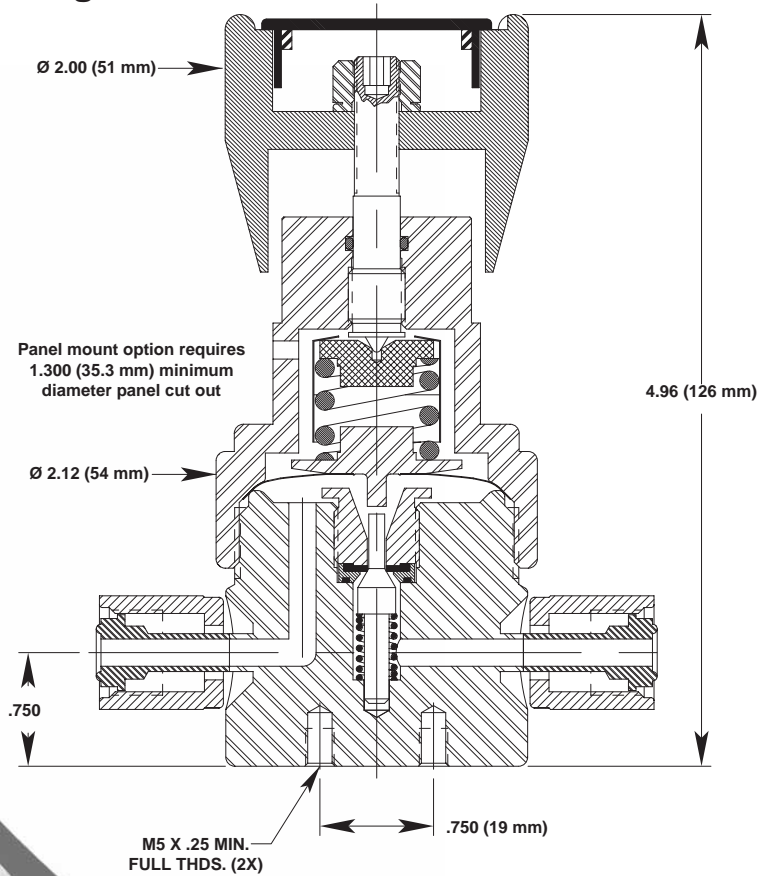
See page 7 for standard configurations. For additional configurations consult the factory.
See page 10 for port locations.

Maximum Temperature & Operating Inlet Pressures

| Seat Material | Maximum Temperature* | @ | Maximum Operating Inlet Pressure |
|---------------------------|----------------------|---|----------------------------------|
| Tefzel® | 150° F (66° C) | @ | 3600 psig (24.82 MPa) |
| High Density Teflon® | 150° F (66° C) | @ | 3600 psig (24.82 MPa) |
| PCTFE (formerly Kel-F 81) | 175° F (80° C) | @ | 6000 psig (41.37 MPa) |
| Polyimide | 500° F (260° C) | @ | 3600 psig (24.82 MPa) |
| | 175° F (80° C) | @ | 6000 psig (41.37 MPa) |
| PEEK | 500° F (260° C) | @ | 3600 psig (24.82 MPa) |
| | 175° F (80° C) | @ | 6000 psig (41.37 MPa) |

*Temperatures in excess of 175° F (80° C) require the use of a metal knob or the tamper proof option.
Tefzel® and Teflon® are registered trademarks of Dupont.

Outline and Mounting Dimensions



For flow curve information go to www.goreg.com/flow_UPR1.htm

GO REGULATOR

UCP-1

Precision Pressure Regulator



The model UCP-1 offers the user an ultra compact pressure regulator for use in high purity systems for the semiconductor industry. Meeting the highest purity standards and low particle generation of the semiconductor industry, this unit features internal components with standard surface finishes better than 25 Ra. The UCP-1 was computer designed to ensure a laminar flow transition from the flow control orifice to the outlet port. This design ensures virtually zero particle entrapment and efficient purge cycles.

Features & Specifications

- 316 Stainless Steel Construction
- Inlet 300 psig max. with Viton® or Kalrez® Seats; 3600 psig max. with Tefzel®, Polyimide, or Kel-F Seats
- 1 x 10⁻⁹ atm cc/sec, Inboard Leak Spec
- Outlet 10, 25, 50, 100, 250 and 500 psig
- C_v Flow 0.025, 0.06, or 0.2
- 1/4" Male or Female VCR Compatible

Applications

- Bulk Inert Gas Distribution
- Diffusion Furnaces
- Epitaxial Reactors
- Specialty Gas Distribution
- Manufacturing Tool

Options

- Corrosion Resistant Materials of Construction
- 15 Ra, 10 Ra or 4 Ra internal surface finish

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UCP-1

Precision Pressure Regulator

How to Order

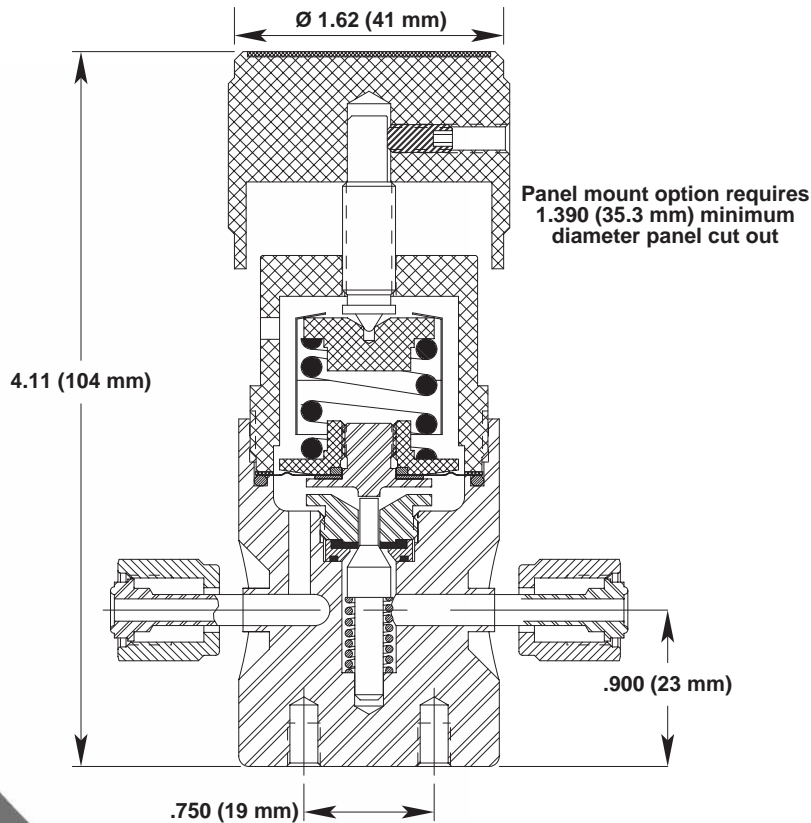
See page 8 for standard configurations. For additional configurations, consult the factory.
See page 10 for port locations.

Maximum Temperature & Operating Inlet Pressures

| Seat Material | Maximum Temperature* | @ | Maximum Operating Inlet Pressure |
|--------------------------|----------------------|---|----------------------------------|
| Tefzel® | 150° F (66° C) | @ | 3600 psiG (24.82 MPa) |
| High Density Teflon® | 150° F (66° C) | @ | 3600 psiG (24.82 MPa) |
| PCTFE (formerly Kel-F81) | 175° F (80° C) | @ | 6000 psiG (41.37 MPa) |
| Polyimide | 500° F (260° C) | @ | 3600 psiG (24.82 MPa) |
| Polyimide | 175° F (80° C) | @ | 6000 psiG (41.37 MPa) |
| PEEK | 500° F (260° C) | @ | 3600 psiG (24.82 MPa) |
| PEEK | 175° F (80° C) | @ | 6000 psiG (41.37 MPa) |

*Temperatures in excess of 175° F (80° C) require the use of a metal knob or the tamper proof option.
Tefzel® and Teflon® are registered trademarks of Dupont.

Outline and Mounting Dimensions



For flow curve information go to www.goreg.com/flow_ucp1.htm

GO REGULATOR

UPR-7

High Flow Precision Pressure Regulator



The high flow coefficient of the UPR-7 provides the user with a high purity pressure regulator exhibiting very low droop characteristics. The combination of high flow and low droop makes the UPR-7 ideally suited for bulk gas distribution applications. The Model UPR-7 features fully electropolished internal components with standard surface finishes better than 25 Ra. This feature provides the semiconductor end-user with a precision pressure regulator, economically priced for applications ranging from gas distribution to point of use in the manufacturing tool.

Features & Specifications

- 25 Ra Internal Surface Finish, Std.
- High Flow, C_v 1.1
- Low Droop Characteristics
- 316L SS Body, Cap, Internals
- Male, Female or Internally Machined VCR Compatible Ports
- 1×10^{-9} atm cc/sec, Inboard Leak Spec

Applications

- Bulk Inert Gas Distribution
- Diffusion Furnaces
- Epitaxial Reactors
- Specialty Gas Distribution

Options

- Wetted Materials for Corrosive Service
Hastelloy, Monel

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UPR-7

High Flow Precision Pressure Regulator

How to Order

See page 9 for standard configurations. For additional configurations, consult the factory.
See page 10 for port locations.

Maximum Temperature & Operating Inlet Pressures

| Up to 100 psig Outlet Pressure | | | |
|--------------------------------|----------------------|---|----------------------------------|
| Seat Material | Maximum Temperature* | @ | Maximum Operating Inlet Pressure |
| Teflon® | 150° F (66° C) | @ | 1000 psiG (6.90 MPa) |
| Tefzel® | 175° F (80° C) | @ | 3600 psiG (24.82 MPa) |
| PCTFE (formerly Kel-F 81®) | 175° F (80° C) | @ | 3600 psiG (24.82 MPa) |
| PEEK | 250° F (121° C) | @ | 3600 psiG (24.82 MPa) |
| Viton® | 250° F (121° C) | @ | 300 psiG (2.07 MPa) |
| Kalrez® | 250° F (121° C) | @ | 300 psiG (2.07 MPa) |

* Temperatures in excess of 175° F (80° C) require the use of a metal knob or the tamper proof option.

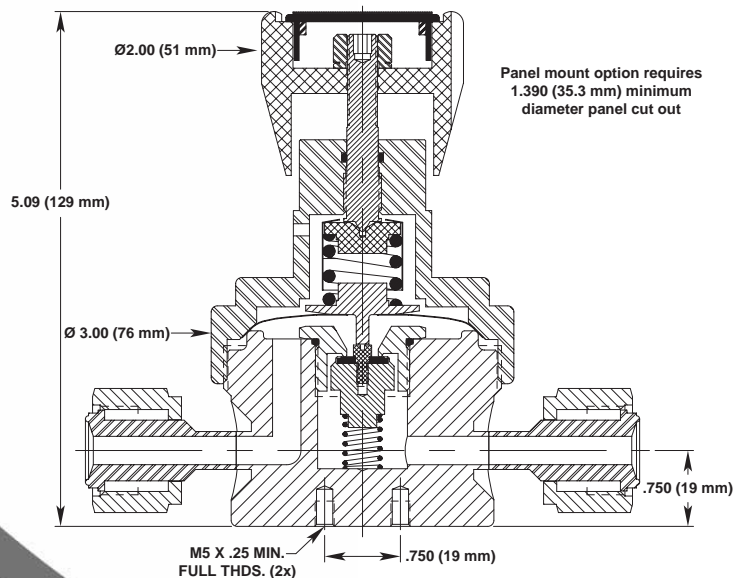
| 0–250 psig Outlet Pressure (Hand Knob) | | | |
|--|----------------------|---|----------------------------------|
| Seat Material | Maximum Temperature* | @ | Maximum Operating Inlet Pressure |
| Teflon® | 150° F (66° C) | @ | 500 psiG (3.45 MPa) |
| Tefzel® | 175° F (80° C) | @ | 500 psiG (3.45 MPa) |
| PCTFE (formerly Kel-F 81®) | 175° F (80° C) | @ | 500 psiG (3.45 MPa) |
| Viton® | 250° F (121° C) | @ | 300 psiG (2.07 MPa) |
| Kalrez® | 250° F (121° C) | @ | 300 psiG (2.07 MPa) |

* Temperatures in excess of 175° F (80° C) require the use of a metal knob or the tamper proof option.

| 0–250 & 0–500 psig Outlet Pressures (T Handle or Tamper Proof) | | | |
|--|----------------------|---|----------------------------------|
| Seat Material | Maximum Temperature* | @ | Maximum Operating Inlet Pressure |
| Teflon® | 150° F (66° C) | @ | 1000 psiG (6.90 MPa) |
| PEEK | 250° F (121° C) | @ | 3600 psiG (24.82 MPa) |

* Temperatures in excess of 175° F (80° C) require the use of a metal knob or the tamper proof option.
Tefzel®, Kalvez®, Viton® and Teflon® are registered trademarks of Dupont.

Outline and Mounting Dimensions



For flow curve information go to www.goreg.com/flow_upr7.htm

UPR-1 Series - Pressure Reducing Regulator

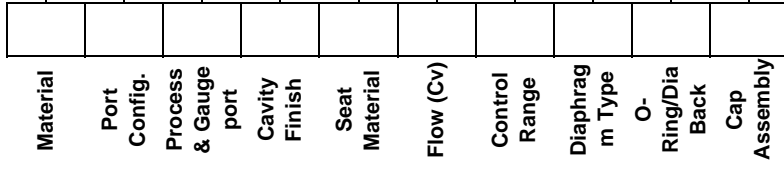
| | |
|--|--|
| Material of Body | |
| 1 | SS 316L, 3.70 End to End (1/4" VCR Only, See O&MD for Other End to End Dimensions) |
| 2 | Hastelloy C, 3.70 End to End (1/4" VCR Only, See O&MD for Other End to End Dimensions) |
| 3 | SS 316L, 4.12 End to End (1/4" VCR Only, See O&MD for Other End to End Dimensions) |
| Port Configuration (Ref. Dwg. 102191) | |
| A | |
| Process & Gauge port | |
| 1 | 1/4" FVCR Process Ports, 1/4" FVCR Gauge Ports |
| 2 | 1/4" FVCR Process Ports, 1/4" Swivel MVCR Gauge Ports |
| 3 | 1/4" FVCR Process Ports, 1/4" IVCR Gauge Ports |
| 4 | 1/4" Swivel MVCR Process Ports, 1/4" FVCR Gauge Ports |
| 5 | 1/4" Swivel MVCR Process Ports, 1/4" Swivel MVCR Gauge Ports |
| 9 | 1/4" IVCR Process Ports, 1/4" IVCR Gauge Ports |
| A | 3/8" FVCR Process Ports, 1/4" FVCR Gauge Ports |
| B | 3/8" FVCR Process Ports, 1/4" Swivel MVCR Gauge Ports |
| C | 3/8" FVCR Process Ports, 1/4" IVCR Gauge Ports |
| D | 3/8" Swivel MVCR Process Ports, 1/4" FVCR Gauge Ports |
| E | 3/8" Swivel MVCR Process Ports, 1/4" Swivel MVCR Gauge Ports |
| F | 3/8" Swivel MVCR Process Ports, 1/4" IVCR Gauge Ports |
| G | 1/2" FVCR Process Ports, 1/4" FVCR Gauge Ports |
| H | 1/2" FVCR Process Ports, 1/4" Swivel MVCR Gauge Ports |
| I | 1/2" FVCR Process Ports, 1/4" IVCR Gauge Ports |
| J | 1/2" Swivel MVCR Process Ports, 1/4" FVCR Gauge Ports |
| Surface Finish of Diaphragm Cavity | |
| 1 | <25 Ra |
| Seat Material | |
| A | Tefzel |
| H | PCTFE (formerly Kel-F 81) |
| Q | PEEK |
| Flow Coefficient (Cv) | |
| 3 | 0.06 |
| 5 | 0.2 |
| C | 0.025 |
| Outlet Range | |
| C | 0 - 10 Psig |
| D | 0 - 25 Psig |
| E | 0 - 50 Psig |
| G | 0 - 100 Psig |
| I | 0 - 250 Psig |
| J | 0 - 500 Psig |
| Diaphragm Type | |
| 1 | Facing / Metal Backing |
| 4 | Vacuum Assist Spring |
| Diaphragm Material | |
| 1 | Teflon / SS |
| 6 | Tefzel Ring / SS |
| 0 | Teflon / Hastelloy C |
| Cap Assembly | |
| 1 | Standard, S.S. |
| 4 | Panel Mount, S.S. |
| 7 | Captured Vent, S.S. |

U P R 1 -

| | | | | | | | | | | |
|----------|--------------|------------|---------------|---------------|-----------|---------------|----------------|--------------------|--------------|--|
| | | | | | | | | | | |
| Material | Port Config. | Port Style | Cavity Finish | Seat Material | Flow (Cv) | Control Range | Diaphragm Type | Diaphragm Material | Cap Assembly | |

| | | | | | |
|---|--|--|--|-------------------------|--|
| 1 | | S.S. 316L, Standard | | Material of Body | |
| A | | Port Configuration (Ref. Dwg. 102191) | | | |
| 1 | | Process & Gauge ports | | | |
| 1 | 1/4" FVCR Process Ports, 1/4" FVCR Gauge Ports | | | | |
| 2 | 1/4" FVCR Process Ports, 1/4" MVCR Gauge Ports | | | | |
| 4 | 1/4" Swivel MVCR Process Ports, 1/4" FVCR Gauge Ports | | | | |
| 5 | 1/4" Swivel MVCR Process Ports, 1/4" Swivel MVCR Gauge Ports | | | | |
| 7 | 1/4" Tube Stubs at all Ports, 3.43 End to End (1.000 Stubs) | | | | |
| 8 | 1/4" Tube Stubs at all Ports, 7.43 End to End (3.000 Stubs) | | | | |
| M | 1/4" Fixed MVCR Process Ports, 1/4" FVCR Gauge Ports | | | | |
| N | 1/4" Fixed MVCR Process Ports, 1/4" Swivel MVCR Gauge Ports | | | | |
| O | 1/4" Fixed MVCR Process Ports, 1/4" Fixed MVCR Gauge Ports | | | | |
| 1 | | Surface Finish of Diaphragm Cavity | | | |
| 1 | | <25 Ra | | | |
| A | | Seat Material | | | |
| A | Tefzel | | | | |
| C | Polyimide | | | | |
| H | PCTFE (formerly Kel-F 81) | | | | |
| I | High Density Teflon | | | | |
| Q | PEEK | | | | |
| 3 | | Flow Coefficient (Cv) | | | |
| 5 | | 0.06 | | | |
| C | | 0.2 | | | |
| C | | Outlet Range | | | |
| C | 0 - 10 Psig | | | | |
| D | 0 - 25 Psig | | | | |
| E | 0 - 50 Psig | | | | |
| G | 0 - 100 Psig | | | | |
| I | 0 - 250 Psig | | | | |
| J | 0 - 500 Psig | | | | |
| 1 | | Diaphragm Type | | | |
| 2 | | Standard Diaphragm | | | |
| 2 | | Diaphragm Attached Poppet | | | |
| 1 | | O-Ring / Diaphragm Backing | | | |
| 7 | | Teflon / SS | | | |
| 7 | | Viton / SS | | | |
| 1 | | Cap Assembly | | | |
| 4 | | Standard, Aluminum | | | |
| 5 | | Panel Mount, Aluminum | | | |
| 7 | | Captured Vent, Aluminum | | | |
| 7 | | Captured Vent, S.S. | | | |
| B | | Fine Adjust, 1 3/8" Panel Mount, Aluminum | | | |

UCP 1 -



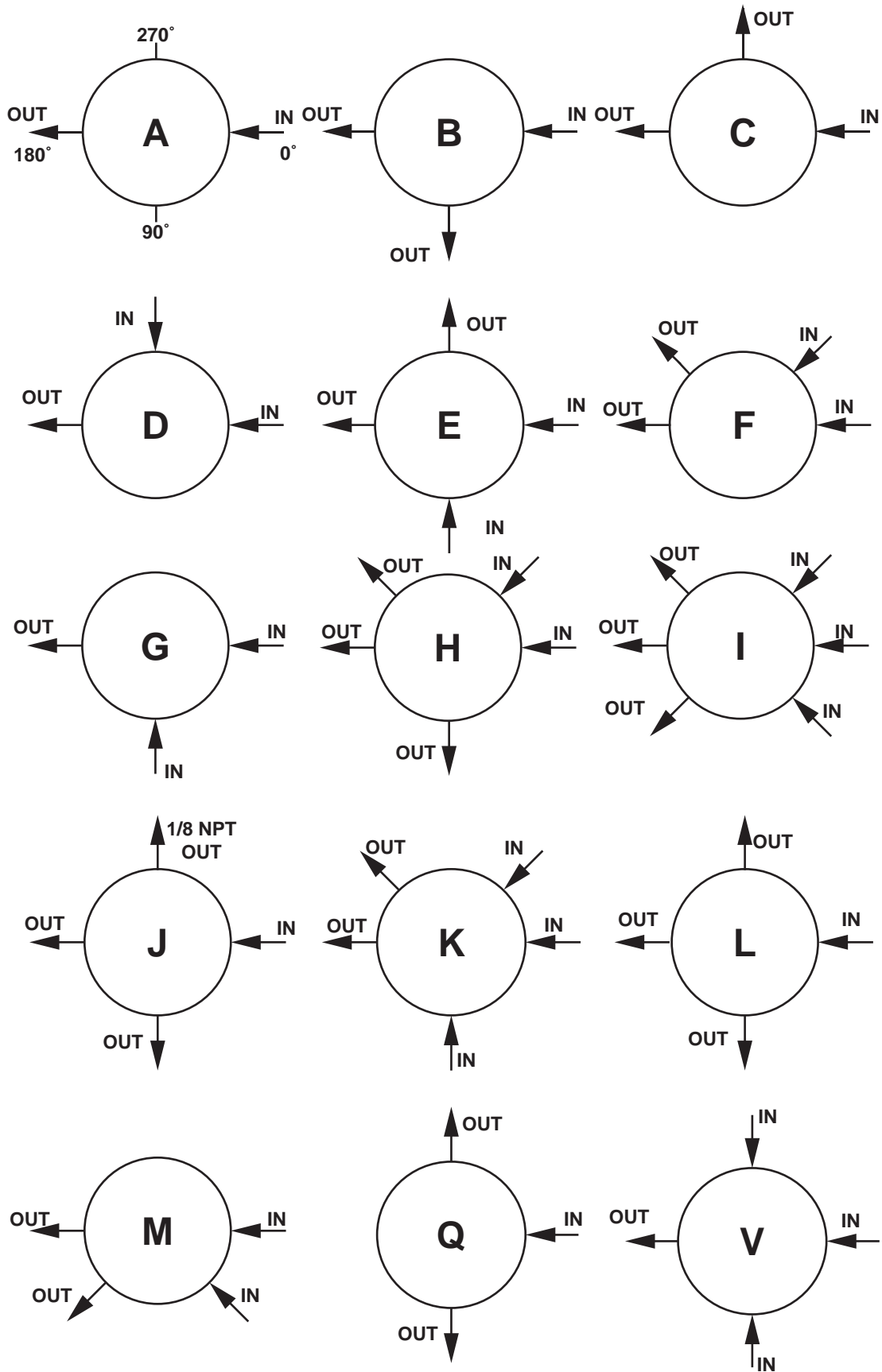
UPR-7 Series - Pressure Reducing Regulator

| | | | |
|-----------|--|--|--|
| | | Material of Body | |
| 1 | SS 316L | | |
| 2 | Hastelloy C | | |
| | | Port Configuration (Ref. Dwg. 102191) | |
| A | | | |
| | | Process & Gauge port | |
| 3 | 1/4" FVCR Process Ports, 1/4" IVCR Gauge Ports | | |
| 4 | 1/4" Swivel MVCR Process Ports, 1/4" FVCR Gauge Ports | | |
| 7 | 1/4" IVCR Process Ports, 1/4" FVCR Gauge Ports | | |
| A | 3/8" FVCR Process Ports, 1/4" FVCR Gauge Ports | | |
| D | 3/8" Swivel MVCR Process Ports, 1/4" FVCR Gauge Ports | | |
| G | 1/2" FVCR Process Ports, 1/4" FVCR Gauge Ports | | |
| I | 1/2" FVCR Process Ports, 1/4" IVCR Gauge Ports | | |
| J | 1/2" Swivel MVCR Process Ports, 1/4" FVCR Gauge Ports | | |
| M | 3/4" FVCR Process Ports, 1/4" FVCR Gauge Ports | | |
| N | 3/4" Swivel MVCR Process Ports, 1/4" Swivel MVCR Gauge Ports | | |
| | | Surface Finish of Diaphragm Cavity | |
| 1 | <25 Ra | | |
| | | Seat Material | |
| A | Tefzel | | |
| D | Viton (300 Psig Max. Inlet) | | |
| I | Teflon | | |
| H | PCTFE (formerly Kel-F 81) | | |
| K | Kalrez (300 Psig Max. Inlet) (Use Alt. Price Column with 0.2 Cv) | | |
| Q | PEEK | | |
| | | Flow Coefficient (Cv) | |
| 5 | 0.2 (Use Alt. Price Column with Viton or Kalrez seat) | | |
| 8 | 1.1 | | |
| H | 0.5 | | |
| | | Outlet Range | |
| C | 0 - 10 Psig | | |
| D | 0 - 25 Psig | | |
| E | 0 - 50 Psig | | |
| G | 0 - 100 Psig | | |
| I | 0 - 250 Psig | | |
| J | 0 - 500 Psig | | |
| | | Diaphragm Type | |
| 1 | Standard | | |
| | | Diaphragm Facing / Backing | |
| Dia Mat'l | 1 | Teflon / SS | |
| | 2 | Teflon / Viton | |
| | 6 | Tefzel Ring / SS | |
| | 0 | Teflon / Hastelloy C | |
| | | Cap Assembly | |
| | 1 | Standard, S.S. | |
| | 2 | T-Handle, S.S. | |
| | 7 | Captured Vent, S.S. | |
| | 8 | Tamper Proof, S.S. | |

U P R 7 -

| | | | | | | | | | |
|----------|--------------|------------|---------------|---------------|-----------|---------------|----------------|--------------------|--------------|
| Material | Port Config. | Port Style | Cavity Finish | Seat Material | Flow (Cv) | Control Range | Diaphragm Type | Diaphragm Material | Cap Assembly |
| | | | | | | | | | |

PORT LOCATIONS (PRECISION PRESSURE REGULATOR)



LOCATION OF PORTS FROM TOP VIEW