GO REGULATOR

High Purity Pressure Regulators

Index

pressure regulators

GO Regulator
405 Centura Court • PO Box 4866 (29305) • Spartanburg, SC 29303
Phone (864) 574-7966 Fax (864) 574-5608
www.goreg.com • sales@goreg.com

GO REGULATOR

UPR-1 Series

Precision Pressure Regulators

The UPR-1 Series 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, standard
- Cv flow: 0.025, 0.06, 0.2, and 0.5
- 316L stainless steel 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®

pressure regulators

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UPR-1 Series

How to Order

UPR1 –

BODY MATERIAL
¼″ VCR® only, see 'Outline & Mounting Dimensions' for other end-to-end dimensions
- **1** 316L stainless steel, 3.70 end-to-end
- **2** Hastelloy® C, 3.70 end-to-end
- **3** 316L stainless steel, 4.12 end-to-end

PORT CONFIGURATIONS
- **A** Standard

For more port configurations, see page 7.

PROCESS & GAUGE PORTS
- **1** ¼″ FVCR process ports, ¼″ FVCR gauge ports
- **2** ¼″ FVCR process ports, ¼″ swivel MVCR gauge ports
- **3** ¼″ FVCR process ports, ¼″ IVCR gauge ports
- **4** ¼″ swivel MVCR process ports, ¼″ FVCR gauge ports
- **5** ¼″ swivel MVCR process ports, ¼″ swivel MVCR gauge ports
- **9** ¼″ IVCR process ports, ¼″ IVCR gauge ports
- **A** ⅜″ FVCR process ports, ¼″ FVCR gauge ports
- **B** ⅜″ FVCR process ports, ¼″ swivel MVCR gauge ports
- **C** ⅜″ FVCR process ports, ¼″ IVCR gauge ports
- **D** ⅜″ swivel MVCR process ports, ¼″ FVCR gauge ports
- **E** ⅜″ swivel MVCR process ports, ¼″ swivel MVCR gauge ports
- **F** ⅜″ swivel MVCR process ports, ¼″ IVCR gauge ports
- **G** ½″ FVCR process ports, ¼″ FVCR gauge ports
- **H** ½″ FVCR process ports, ¼″ swivel MVCR gauge ports
- **I** ½″ FVCR process ports, ¼″ IVCR gauge ports
- **J** ½″ swivel MVCR process ports, ¼″ FVCR gauge ports

CAP ASSEMBLY
- **1** Standard, stainless steel
- **4** Panel mount, stainless steel
- **7** Captured vent, stainless steel

DIAPHRAGM MATERIAL
- **1** Teflon®/stainless steel
- **6** Tefzel ring/stainless steel
- **0** Teflon®/Hastelloy® C

DIAPHRAGM TYPE
- **1** Facing/metal backing
- **4** Vacuum-assist spring

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
- **W** 0–750 psig

FLOW COEFFICIENT (Cv)
- **3** 0.06
- **5** 0.2
- **C** 0.025

SEAT MATERIAL
- **A** Tefzel®
- **H** PCTFE (formerly Kel-F® 81)
- **Q** PEEK™

SURFACE FINISH OF DIAPHRAGM CAVITY
- **1** < 25 Ra

NOTE: The choices above represent an abbreviated list of the more commonly ordered options. For a complete listing of all available options, please see the Selection Wizard on the GO website at www.goreg.com or contact the factory.

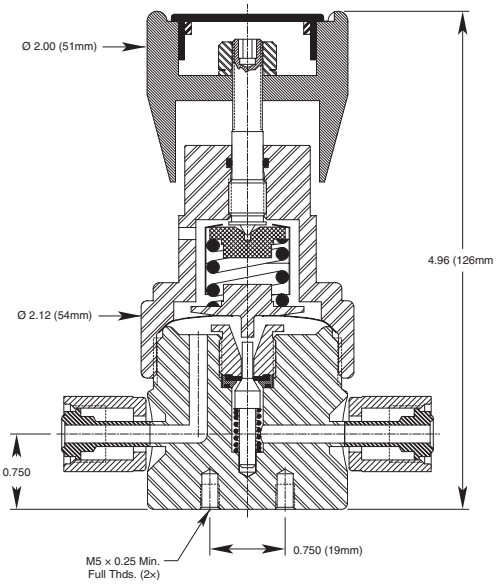
Maximum Temperature & Operating Inlet Pressures

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)
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.*

Outline & Mounting Dimensions

Panel mount option requires 1.300 (35.3mm) minimum diameter panel cut out



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Hastelloy® is a registered trademark of Haynes International, Inc.
Teflon® and Tefzel® are registered trademarks of the DuPont Company.
Kel-F® is a registered trademark of 3M Company.
PEEK™ is a trademark of Victrex PLC.

GO REGULATOR

UCP-1 Series

Precision Pressure Regulator

The UCP-1 Series 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
- 1×10^{-9} atm. cc/sec, inboard leak spec
- Outlet 10, 25, 50, 100, 250 and 500 psig
- Cv flow: 0.025, 0.06, or 0.2
- ¼″ 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

pressure regulators

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UCP-1 Series

How to Order

UCP1 –

BODY MATERIAL
- **1** 316L stainless steel, standard

PORT CONFIGURATIONS
- **A** Standard

For more port configurations, see page 7.

PROCESS & GAUGE PORTS
- **1** ¼″ FVCR process ports, ¼″ FVCR gauge ports
- **2** ¼″ FVCR process ports, ¼″ MVCR gauge ports
- **4** ¼″ swivel MVCR process ports, ¼″ FVCR gauge ports
- **5** ¼″ swivel MVCR process ports, ¼″ swivel MVCR gauge ports
- **7** ¼″ tube stubs at all ports, 3.43 end to end (1.000 stubs)
- **8** ¼″ tube stubs at all ports, 7.43 end to end (3.000 stubs)
- **M** ¼″ fixed MVCR process ports, ¼″ FVCR gauge ports
- **N** ¼″ fixed MVCR process ports, ¼″ swivel MVCR gauge ports
- **O** ¼″ fixed MVCR process ports, ¼″ fixed MVCR gauge ports

SEAT MATERIAL
- **A** Tefzel®
- **C** Polyimide
- **H** PCTFE (formerly Kel-F® 81)
- **I** High density Teflon®
- **Q** PEEK™

CAP ASSEMBLY
- **1** Standard, aluminum
- **4** Panel mount, aluminum
- **5** Captured vent, aluminum
- **7** Captured vent, stainless steel
- **B** Fine adjust, 1⅜″ panel mount, aluminum

O-RING/DIAPHRAGM BACKING
- **1** Teflon®/stainless steel
- **7** Viton®/stainless steel

DIAPHRAGM TYPE
- **1** Standard diaphragm
- **2** Diaphragm attached poppet

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

FLOW COEFFICIENT (Cv)
- **3** 0.06
- **5** 0.2
- **C** 0.025

SURFACE FINISH OF DIAPHRAGM CAVITY
- **1** < 25 Ra

NOTE: The choices above represent an abbreviated list of the more commonly ordered options. For a complete listing of all available options, please see the Selection Wizard on the GO website at www.goreg.com or contact the factory.

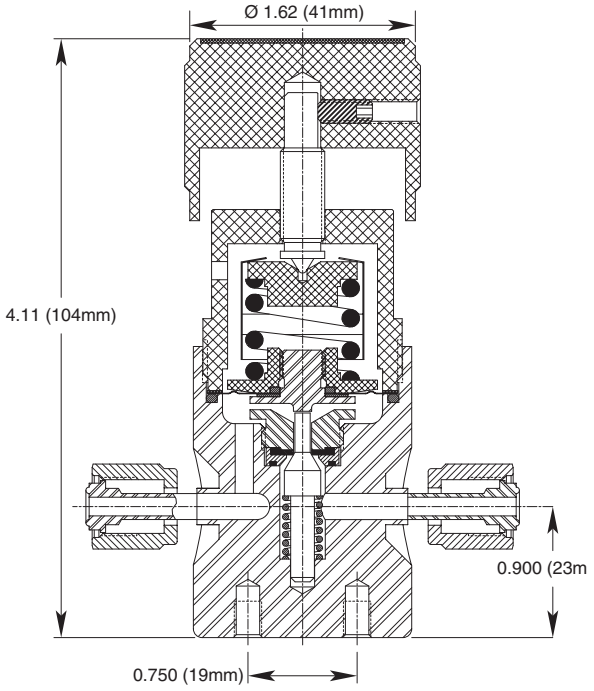
Maximum Temperature & Operating Inlet Pressures

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)
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.*

Outline & Mounting Dimensions

Panel mount option requires 1.390 (35.3mm) minimum diameter panel cut out



GO REGULATOR

UPR-7 Series

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 UPR-7 Series 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, standard
- High flow, Cv 1.1
- Low droop characteristics
- 316L stainless steel 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®

pressure regulators

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UPR-7 Series

How to Order

UPR7 –

BODY MATERIAL
- **1** 316L stainless steel
- **2** Hastelloy® C

PORT CONFIGURATIONS
- **A** Standard

For more port configurations, see page 7.

PROCESS & GAUGE PORTS
- **3** ¼″ FVCR process ports, ¼″ IVCR gauge ports
- **4** ¼″ swivel MVCR process ports, ¼″ FVCR gauge ports
- **7** ¼″ IVCR process ports, ¼″ FVCR gauge ports
- **A** ⅜″ FVCR process ports, ¼″ FVCR gauge ports
- **D** ⅜″ swivel MVCR process ports, ¼″ FVCR gauge ports
- **G** ½″ FVCR process ports, ¼″ FVCR gauge ports
- **I** ½″ FVCR process ports, ¼″ IVCR gauge ports
- **J** ½″ swivel MVCR process ports, ¼″ FVCR gauge ports
- **M** ¾″ FVCR process ports, ¼″ FVCR gauge ports
- **N** ¾″ swivel MVCR process ports, ¼″ swivel MVCR gauge ports

SURFACE FINISH OF DIAPHRAGM CAVITY
- **1** < 25 Ra

SEAT MATERIAL
- **A** Tefzel®
- **D** Viton® (300 psig max. inlet)
- **H** PCTFE (formerly Kel-F® 81)
- **I** Teflon®
- **K** Kalrez® (300 psig max. inlet)
- **Q** PEEK™

CAP ASSEMBLY
- **1** Standard, stainless steel
- **2** T-handle, stainless steel
- **7** Captured vent, stainless steel
- **8** Tamper-proof, stainless steel

DIAPHRAGM FACING/BACKING
- **1** Teflon®/stainless steel
- **2** Teflon®/Viton®
- **6** Tefzel® ring/stainless steel
- **0** Teflon®/Hastelloy® C

DIAPHRAGM TYPE
- **1** Standard

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

FLOW COEFFICIENT (Cv)
- **5** 0.2
- **8** 1.1
- **H** 0.5

NOTE: The choices above represent an abbreviated list of the more commonly ordered options. For a complete listing of all available options, please see the Selection Wizard on the GO website at www.goreg.com or contact the factory.

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)

0–250 psig Outlet Pressure (Hard 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)

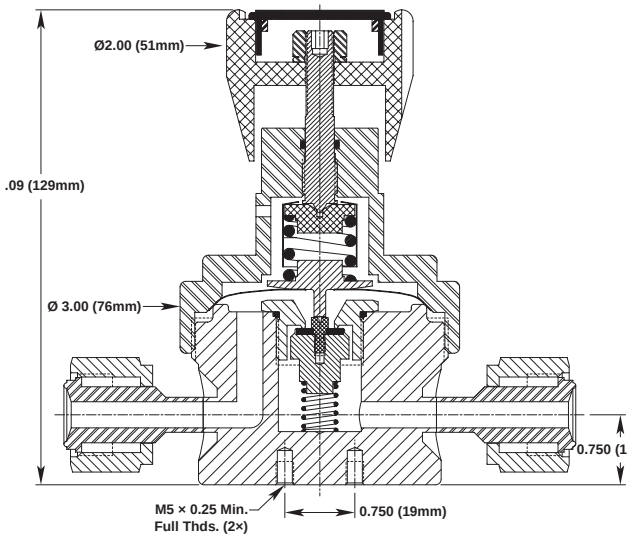
0–250 psig & 0–500 psig Outlet Pressures (T-handle or Tamper-proof)

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.*

Outline & Mounting Dimensions

Panel mount option requires 1.390 (35.3mm) minimum diameter panel cut out



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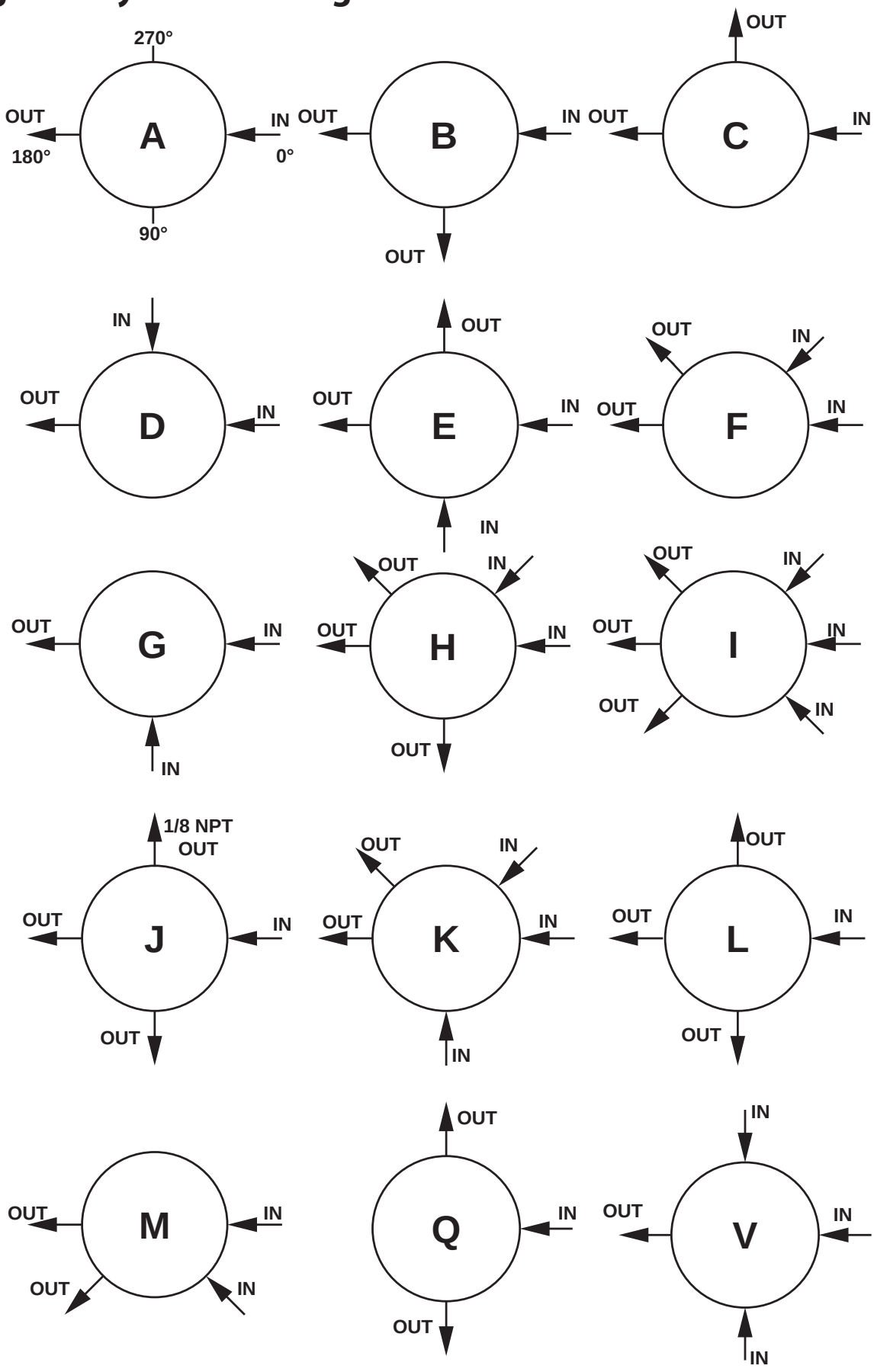
Porting Configurations for High Purity Pressure Regulators



LOCATION OF PORTS FROM TOP VIEW

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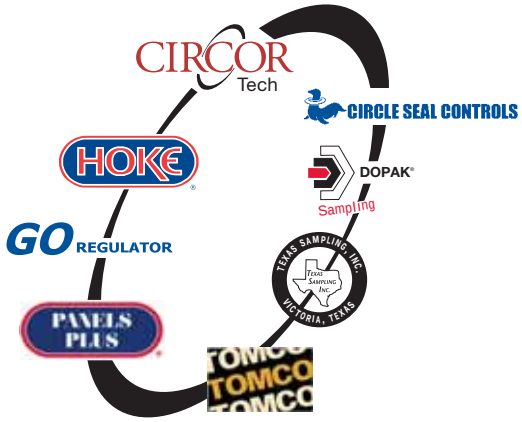

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CIRCOR Instrumentation Technologies

CIRCOR Instrumentation Technologies (CIT) is a product group of CIRCOR International (NYSE: CIR), specializing in fluid process control solutions with orifice sizes typically up to 1″. Our main product lines include ball, needle, packless, diaphragm, solenoid, and metering valves, pressure regulators, quick couplers, Gyrolok® compression tube fittings, and fully integrated sampling systems.

CIT markets primarily to the petrochemical, refining, power generation, food and beverage, semiconductor, and pharmaceutical industries, and to OEM's. CIT separates itself from the competition by offering highly engineered components manufactured to exacting standards and a variety of custom options.