

H I G H P U R I T Y R E G U L A T O R S & V A L V E S

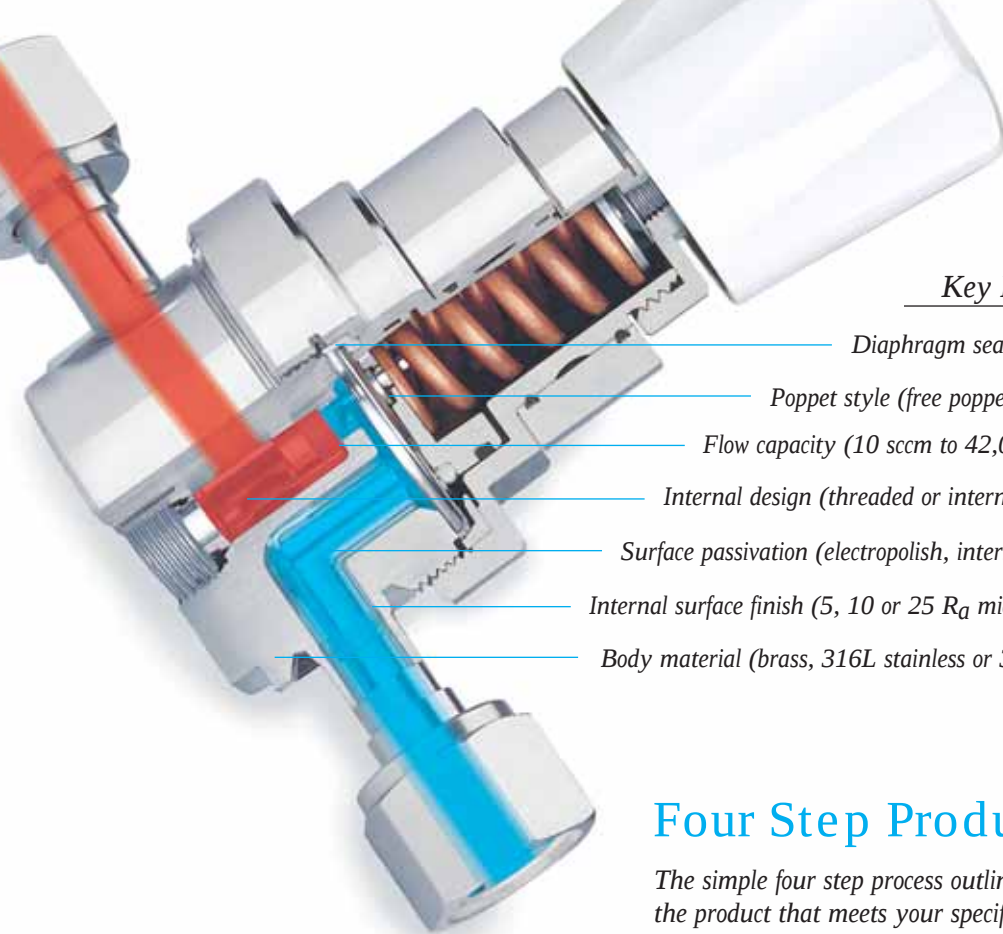
Product Selection Guide



TESCOM
CORPORATION

HIGH PURITY CONTROLS DIVISION

The Engineered Solutions COMpany



Key Feature Considerations

Diaphragm seals (metal to metal)

Poppet style (free poppet or tied diaphragm)

Flow capacity (10 sccm to 42,000 slpm)

Internal design (threaded or internally threadless & springless)

Surface passivation (electropolish, internal electropolish or Precision Electro-Polish)

Internal surface finish (5, 10 or 25 R_a microinch)

Body material (brass, 316L stainless or 316L VAR stainless steel)

Four Step Product Selection Process

The simple four step process outlined below will help you use this guide to find the product that meets your specific application requirements.

1 Semiconductor Application: Choose from one of the nine semiconductor application tables that follow on pages 1-5. Specific applications, e.g., gas trays, gas jungles, and valve manifold boxes are listed at the very top of each table.

As an example, a regulator that is located at the process tool and used to deliver a specialty gas is likely a 1/4" Point of Use Regulator. Point of Use Diaphragm Valves deliver purge gases like Argon or Nitrogen to the process tool. Gas Cabinet Regulators and Bulk Specialty Gas Regulators are used to deliver compressed or liquefied cylinder gases.

2 Pressures & Flow Rates: Narrow your search by referencing your required source pressure, outlet pressure and flow rate. Leak rate and body materials are provided in the tables as a further reference point.

3 Features: Check the bullet points under the regulator or valve model name for a short list of key features.

4 Poppet Types: Free poppet regulators are

recommended for inert gases and point of use process gases.

Tied diaphragm regulators offer a mechanically assisted shutoff to prevent leakage across the seat. The tied diaphragm regulators are recommended for high pressure toxic, corrosive and flammable gases.

To place an order:

Once you have selected a product, you may call the number below for your local distributor or go to **www.tescom.com** and click on the DISTRIBUTORS button.

Need assistance or further specifications?

- A.) Visit us online at **www.tescom.com**. Click on **PRODUCTS** and download a CAD drawing or PDF file of the relevant catalog page.
- B.) Refer to our printed Ultraclean Pressure Controls catalog with matching application category tabs.
- C.) Call the number below for a factory application specialist or the number of a Tescom distributor near you:

1-877-4TESCOM (877)483-7266

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1/4" Point of Use Pressure Regulators

For process tools, gas trays, gas jungles, valve manifold boxes & tool hook-ups



FOCUS F1



74-2400 Series



12 Series
Miniature

Product Series & Features	Source Pressure	Delivery Pressure	Certified Inboard Leak Rate*	Flow Range	Body Material
FOCUS F1 Electronic Pressure Controller - Closed loop pressure control 4-20 mA, 1-5V, 0-10V 5 R_a or 10 R_a microinch finishes - C_v = .15	600 PSIG	90 PSIG	<1x10 ⁻⁹	0-100 SLPM	316L SST or 316L SST VAR
64-2600 Single Stage, Ultra-High Purity 5 R_a or 10 R_a microinch finishes - Electropolish or internal electropolish - Free poppet design - Hastelloy® trim available - C_v = .15	600 PSIG	30, 60, 100, 250 PSIG	<1x10 ⁻⁹	0-100 SLPM	316L SST or 316L SST VAR
64-2800 Single Stage, Ultra-High Purity, Tied Diaphragm - Tied diaphragm design - Electropolish or internal electropolish 5 R_a or 10 R_a microinch finishes - C_v = .15	1000 PSIG	30, 60, 100, 150 PSIG	<1x10 ⁻⁹	0-100 SLPM	316L SST or 316L SST VAR
64-3600 Single Stage, Ultra-High Purity, Low Droop 10 R_a microinch finishes - Electropolish or internal electropolish - Free poppet - Hastelloy® trim available - C_v = .15	600 PSIG	30, 60, 100, 150 PSIG	<1x10 ⁻⁹	0-100 SLPM	316L SST
64-5000 Single Stage, Ultra-High Purity, Absolute Pressure - Subatmospheric to positive pressures 5 R_a or 10 R_a microinch finishes - Electropolish or internal electropolish - C_v = .24	120 PSIG	28" Hg-15, 30, 60, 100 PSIG	<1x10 ⁻⁹	0-5 SLPM	316L SST or 316L SST VAR
74-2400 Single Stage, Ultra-High Purity - Tied diaphragm design - Internally springless & threadless - Electropolish or Precision Electro-Polish 5 R_a or 10 R_a microinch finishes - C_v = .15	600 PSIG	30, 60, 100 PSIG	<1x10 ⁻⁹	0-100 SLPM	316L SST VAR
MR-2400 Single Stage, Ultra-High Purity - Tied diaphragm design - Internally springless & threadless 5 R_a microinch finishes - Precision Electro-Polish - C_v = .15	600 PSIG	30, 60, 100 PSIG	<1x10 ⁻¹⁰	0-100 SLPM	316L SST VAR
12 Single Stage, Ultra-High Purity, Miniature - Tied diaphragm design 5 R_a or 10 R_a microinch finishes - Internally springless & threadless - Electropolish or Precision Electro-Polish 12F Series features integrated filter	150 PSIG	28" Hg-15, 30, 60, 100 PSIG	<1x10 ⁻⁹	30 SLPM & 120 SLPM	316L SST VAR

* units are expressed in atm cc/sec. He

1/2" Point of Use Pressure Regulators

For process tools, gas trays, gas jungles, valve manifold boxes & tool hook-ups



74-3800 Series



64-3200 Series

Product Series & Features	Source Pressure	Delivery Pressure	Certified Inboard Leak Rate*	Flow Range	Body Material
FOCUS F3 Electronic Pressure Controller • 10 R_a microinch finishes • $C_v=1.2$	500 PSIG	60 PSIG	$<2 \times 10^{-8}$	0-900 SLPM (0-32 SCFM)	316L SST
44-3200 Single Stage, High Flow • 10 R_a microinch finishes • $C_v=1.0$ or 1.8	500 PSIG	25, 50, 100, 150, 200 PSIG	$<2 \times 10^{-8}$	0-550, 900 SLPM (0-19, 32 SCFM)	316L SST
64-3200 Single Stage, Ultra-High Purity, High Flow • Tied diaphragm design • 10 R_a microinch finishes • Hastelloy® trim available • $C_v=1.2$	150 PSIG	30, 60, 100, 150 PSIG	$<1 \times 10^{-9}$	0-900 SLPM (0-32 SCFM)	316L SST
74-3000 Single Stage, Ultra-High Purity, High Flow • Internally threadless • Electropolish or Precision Electro-Polish • 5 R_a or 10 R_a microinch finishes • Free poppet design • $C_v=.5$	600, 1000 PSIG	30, 60, 100, 150 PSIG	$<1 \times 10^{-9}$	0-500 SLPM (0-18 SCFM)	316L SST VAR
74-3800 Single Stage, Ultra-High Purity, High Flow • Internally springless & threadless • Electropolish or Precision Electro-Polish • 5 R_a or 10 R_a microinch finishes • Tied diaphragm design • $C_v=.5$	600 PSIG	30, 60, 100 PSIG	$<1 \times 10^{-9}$	0-500 SLPM (0-18 SCFM)	316L SST VAR
23 Single Stage, Ultra-High Purity, High Flow • Internally springless & threadless • Electropolish or Precision Electro-Polish • 5 R_a or 10 R_a microinch finishes • Free poppet or tied diaphragm • $C_v=1.8$	250, 150 PSIG	30, 60, 100 PSIG	$<1 \times 10^{-9}$	0-950 SLPM (0-34 SCFM)	316L SST VAR

Point of Use Diaphragm Valves

For process tools, gas trays, gas jungles, valve manifold boxes & tool hook-ups



14 Series



14 Series

Product Series & Features	Source Pressure	Certified Inboard Leak Rate*	C_v	Body Material
FEATURES (all models): Electropolish or Precision Electro-Polish, 5 R_a or 10 R_a microinch finishes and springless internal design.				
PV 72 1/4-Turn, Lever Handle	3000 PSIG	$<1 \times 10^{-9}$	.17	316L SST VAR
14 Series, AOP	125 PSIG	$<1 \times 10^{-9}$	.35	316L SST VAR
14 Series, High Pressure • 1/4 turn lever	3000 PSIG	$<1 \times 10^{-9}$	.17	316L SST VAR
14 Series, Manual	250 PSIG	$<1 \times 10^{-9}$	.35	316L SST VAR
31 Magnum Series, Manual, High Flow	250 PSIG	$<1 \times 10^{-9}$	2.9	316L SST VAR
31 Magnum Series, Air Actuated, High Flow	250 PSIG	$<1 \times 10^{-9}$	2.9	316L SST VAR

* units are expressed in atm cc/sec. He

Bulk Specialty Gas Systems & Gas Cabinet Pressure Regulators



64-2600 Series



64-5000 Series



449-254 Series

Product Series & Features	Source Pressure	Delivery Pressure	Certified Inboard Leak Rate*	Flow Range	Body Material
64-2600 Single Stage, Ultra-High Purity					
• 5 R_a or 10 R_a microinch finishes • Free poppet design • Electropolish or internal electropolish • C_v=.06	3500 PSIG	30, 60, 100, 250, 500 PSIG	<1x10 ⁻⁹	0-100 SLPM	316L SST or 316L SST VAR
64-2800 Single Stage, Ultra-High Purity, Tied Diaphragm					
• Tied diaphragm design • 5 R_a or 10 R_a microinch finishes • Hastelloy® trim available • C_v=.06 (3500 PSIG max. inlet) • C_v=.15 (1000 PSIG max. inlet)	3500, 1000 PSIG	30, 60, 100, 150 PSIG	<1x10 ⁻⁹	0-100 SLPM	316L SST or 316L SST VAR
64-3200 Single Stage, Ultra-High Purity, High Flow, BSGS					
• Tied diaphragm design • 10 R_a microinch finishes • Hastelloy® trim available • C_v=1.2	1500, 1000 PSIG	30, 60, 100, 150, 200 PSIG	<1x10 ⁻⁹	0-900 SLPM	316L SST
64-3400 Dual Stage, Ultra-High Purity					
• Dual stage pressure reduction • 10 R_a microinch finishes • Free poppet or tied diaphragm • Hastelloy® Trim available • C_v=.06 or .15	3500 PSIG	30, 60, 100, 150 PSIG	<1x10 ⁻⁹	0-80 SLPM	316L SST
64-3600 Single Stage, Ultra-High Purity, Low Droop					
• High sensitivity • 10 R_a microinch finishes • Free poppet or tied diaphragm • Hastelloy® trim available • C_v=.06 or .15	3500 PSIG	30, 60, 100, 150 PSIG	<1x10 ⁻⁹	0-100 SLPM	316L SST
64-5000 Single Stage, Ultra-High Purity, Absolute Pressure					
• Subatmospheric to positive pressures • 5 R_a or 10 R_a microinch finishes • C_v=.06 (3500 PSIG max. inlet) • C_v=.15 (600 PSIG max. inlet) • C_v=.24 (120 PSIG max. inlet)	3500, 600, 120 PSIG	28" Hg-15, 30, 60, 100 PSIG	<1x10 ⁻⁹	0-5 SLPM	316L SST or 316L SST VAR
74-300A Single Stage, Ultra-High Purity, Absolute Pressure					
• Free poppet design • Internally threadless • 5 R_a or 10 R_a microinch finishes • C_v=.5	300 PSIG	28" Hg-15 PSIG	<1x10 ⁻⁹	0-20 SLPM	316L SST VAR
MR-2400 Single Stage, Ultra-High Purity					
• Tied diaphragm design • Internally springless & threadless • 5 R_a microinch finishes • Precision Electro-Polish • C_v=.06	3500 PSIG	30, 60, 100 PSIG	<1x10 ⁻¹⁰	0-100 SLPM	316L SST VAR
74-3800 Single Stage, Ultra-High Purity, High Flow					
• Tied diaphragm design • Internally springless & threadless • 5 R_a or 10 R_a microinch finishes • Precision Electro-Polish • C_v=.5	3500, 1000, 600 PSIG	30, 60, 100 PSIG	<1x10 ⁻⁹	0-500 SLPM	316L SST VAR
449-254 Single Stage, High Pressure, BSGS					
• Free poppet design • 10 R_a microinch finishes • Hastelloy® trim • C_v=1.0	1500 PSIG	400 PSIG	<1x10 ⁻⁹	0-900 SLPM	316L SST VAR

* units are expressed in atm cc/sec. He

Gas Cabinet Diaphragm Valves



14 Series



14 Series

Product Series & Features	Source Pressure	Certified Inboard Leak Rate*	C _v	Body Material
FEATURES (all models): Electropolish or Precision Electro-Polish, 5 R _a or 10 R _a microinch finishes and springless internal design.				
PV 71 1/4-Turn, Round Handle	3000 PSIG 750 PSIG	<1x10 ⁻⁹	.17 .40	316L SST VAR
14 Series, High Pressure • 1/4 turn lever	3000 PSIG	<1x10 ⁻⁹	.17	316L SST VAR
14 Series, AOP NC & NO	125 PSIG	<1x10 ⁻⁹	.35	316L SST VAR
14 Series, Manual	250 PSIG	<1x10 ⁻⁹	.35	316L SST VAR

Facility Pressure Regulators



22-2200 BA grade



44-3200 Series

Product Series & Features	Source Pressure	Delivery Pressure	Certified Inboard Leak Rate*	Flow Rate	Body Material
22-2200 BA grade • Metal to metal diaphragm seals • 25 R _a microinch finishes • C _v = .24	250 PSIG	30, 60, 100 150 PSIG	< 2x10 ⁻⁸	0-100 SLPM	316 SST or Brass
44-3200 (C_v=1.2) Single Stage, Ultra High Flow • Metal to metal diaphragm seals • NPT porting • C _v =1.2	500 PSIG	25, 50, 100, 150, & 200 PSIG	< 2x10 ⁻⁸	1,000 SLPM (35 SCFM)	316 SST
449- 260 High Flow • 10 R _a microinch finishes • C _v =2.8	500 PSIG	25, 50, 100 150, 200 PSIG	< 2x10 ⁻⁸	1700 SLPM (60 SCFM)	316L SST
DH-16 BA grade, Single Stage, High Flow • 25 R _a microinch finishes • C _v =5.0	300 PSIG	50, 100, 150 PSIG	—	7075 SLPM (250 SCFM)	316 SST
15 Series High Purity, Ultra High Flow • Internally threadless • 10 R _a microinch finishes • Spring load: C _v =8 • Bellows dome load: C _v =20	300 PSIG	130 PSIG	< 1x10 ⁻⁹	11,300 SLPM (400 SCFM) 28,300 SLPM (1000 SCFM)	316L SST
FOCUS F6 Electronic Pressure Controller • Closed loop pressure control • 4-20 mA, 1-5V, 0-10V • C _v =20 • 10 R _a microinch finishes	300 PSIG	80 PSIG	<1x10 ⁻⁹	42,450 SLPM (1500 SCFM)	316L SST

* units are expressed in atm cc/sec. He



15 Series

Bulk Gas Diaphragm Valves



35 Series Ultra-High Flow



32-2 Duplex Series

Product Series & Features	Source Pressure	Certified Inboard Leak Rate*	C _v	Body Material
31 Magnum Series, Manual, High Flow - Precision Electro-Polish 5 R_a or 10 R_a microinch finishes - Tied diaphragm design	250 PSIG	<1x10 ⁻⁹	2.9	316L SST VAR
31 Magnum Series, Air Actuated, High Flow - Precision Electro-Polish 5 R_a or 10 R_a microinch finishes - Tied diaphragm design	250 PSIG	<1x10 ⁻⁹	2.9	316L SST VAR
32-1 Magnum Uniplex, 32-2 Magnum Duplex - Precision Electro-Polish 10 R_a microinch finishes - Tied diaphragm design 32-2 Duplex: Horizontal Cross, Vertical Tee or Horizontal Tee Configurations	250 PSIG	<1x10 ⁻⁹	2.9	316L SST VAR
35 Magnum Series, Ultra-High Flow - Precision Electro-Polish 10 R_a microinch finishes - Tied diaphragm design - Line & uniplex porting options	250 PSIG	<1x10 ⁻⁹	10.5	316L SST
CM1 Magnum Series, Uniplex with Integral Purge Valve - Precision Electro-Polish 10 R_a microinch finishes - Tied diaphragm design - Integral purge valve	250 PSIG	<1x10 ⁻⁹	2.9	316L SST VAR

Integrated Gas System Components



12 Series Miniature IGS Regulator



14 Series IGS Valve



14-1 Series IGS Valve

IGS Pressure Reducing Regulators (available to meet SEMI Doc. PR3.1 & PR3.3-0699)

Product Series & Features	Source Pressure	Delivery Pressure	Certified Inboard Leak Rate*	Flow Range	Body Material
309-084 1½" base - Free poppet	3000 PSIG	30, 60, 100 PSIG	<1x10 ⁻⁹	0-100 SLPM	316L SST VAR
12 Series 1½", 1⅞" base 5 R_a or 10 R_a microinch finishes - Electropolish or Precision Electro-Polish - Tied diaphragm design - Internally springless & threadless 12F Series features integrated filter	150 PSIG	28" Hg-15, 30, 60, 100 PSIG	<1x10 ⁻⁹	30 or 120 SLPM	316L SST VAR

IGS Diaphragm Valves (available to meet SEMI Doc. PR3.1 & PR3.3-0699)

Product Series & Features	Source Pressure	Certified Inboard Leak Rate*	C _v	Body Material
14 Series, AOP	125 PSIG	<1x10 ⁻⁹	.30	316L SST VAR
14 Series, Manual	250 PSIG	<1x10 ⁻⁹	.30	316L SST VAR
14-1 Series, 1/4 Turn Manual 1/4 turn, round handknob - Lockout / tagout available	250 PSIG	<1x10 ⁻⁹	.35	316L SST VAR

* units are expressed in atm cc/sec. He



Air Actuated Valve Manifold



FOCUS F6 Facilities Regulator



Additional Items

- ☐ Manifolds
- ☐ Dome loaded regulators
- ☐ Porting styles and configurations
- ☐ Automated pressure and flow control with Tescom's Electronic Control Systems
- ☐ Special testing, leak rate certification, particle counts
- ☐ Materials of construction

Need Technical Assistance?

Call toll free 877-4TESCOM (877-483-7266) for factory application assistance.

Additional Specifications

For a free print or CD catalog featuring our full product line, call 800-447-9650 or contact your local distributor. Our new Product Demonstration Tool CD is also available at no charge.



TESCOM
CORPORATION

HIGH PURITY CONTROLS DIVISION

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ISO 9001 Certified Quality System



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