

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

Pressure Control Solutions



TESCOM
CORPORATION
HIGH PURITY CONTROLS DIVISION

The Engineered Solutions COMpany



A Global Quality Leader

- ❑ Established in 1916. Currently a world leader in high purity pressure control technology
- ❑ Over 100 Tescom distribution partners provide products and services in 40 countries. Manufacturing facilities in the U.S., Germany and Korea
- ❑ An ISO 9001 certified quality system since 1993 – the first U.S. high purity regulator manufacturer to receive ISO certification
- ❑ The first company outside of Japan to become MITI certified (Fifth Procedural Manual – Japanese Ministry of International Trade and Industry)

Leading Features

- ❑ Electropolished metal surfaces with finishes as low as 5 R_a microinch
- ❑ Threadless and springless wetted construction
- ❑ True metal to metal diaphragm to body seals
- ❑ 20+ standard models – custom modifications available
- ❑ Product performance matched to semiconductor applications

Key Manufacturing Processes

- ❑ Focused UHP production facilities solely dedicated to the design and manufacture of high purity and ultra-high purity valves, regulators and manifolds
- ❑ Precision Electro-Polish (P.E.P.) process monitored by AUGER & ESCA analysis
- ❑ VCR® fittings and tube stubs welded in Class 100 Cleanroom
- ❑ 'VIEW' internal weld inspection system (see photo - bottom left)
- ❑ SPC control of critical product performance characteristics
- ❑ PureWeld™ internal diameter welding

Cleanrooms

- ❑ 3100 sq. ft. Class 10 Cleanrooms and Class 10 Clean Line
- ❑ Cleanrooms certified per Federal Standard 209E
- ❑ Certified particle counts of .1 and .02 micron
- ❑ Product 100% performance tested for function and leak integrity
- ❑ Final packaging includes double bagging with N₂ purge and vacuum sealing



Product Selection Guide Contents

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1/4" Point of Use Pressure Regulators

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



V1000 Series



74-2400 Series



12 Series
Miniature

Product Series & Features	Source Pressure	Delivery Pressure	Certified Inboard Leak Rate*	Flow Range	Body Material
V1000 Vision Electronic Pressure Controller • Closed loop pressure control • 4-20 mA, Digital, RS-485 capable • 5 R _A or 10 R _A microinch finishes • C _V = .06	150 PSIG	70 PSIG	1x10 ⁻⁹	0-10 SLPM 1-70 SLPM	316L SS 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 SS or 316L SS 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 SS or 316L SS VAR
64-3600 Single Stage, Ultra-High Purity, Low Droop • 10 R _A microinch finishes • Electropolish or internal electropolish • Free poppet or tied diaphragm • Hastelloy® trim available • C _V = .15	600 PSIG	30, 60, 100, 150 PSIG	1x10 ⁻⁹	0-100 SLPM	316L SS
64-5000 Single Stage, Ultra-High Purity, Absolute Pressure • Sub-atmospheric pressure control • 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 SS or 316L SS 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 SS VAR
MR-2400 Single Stage, Ultra-High Purity • Tied diaphragm design • Internally springless & threadless • 5 R _A microinch finishes • Electropolish or Precision Electro-Polish • C _V = .15	600 PSIG	30, 60, 100 PSIG	4x10 ⁻¹¹	0-100 SLPM	316L SS 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	150 PSIG	28" Hg-15, 30, 60, 100 PSIG	1x10 ⁻⁹	0-50 SLPM	316L SS 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
44-3200 (C_v = 1.0) Single Stage, High Flow • 10 R _a microinch finishes • C _v =1.0	500 PSIG	25, 50, 100, 150, 200 PSIG	2x10 ⁻⁸	0-550 SLPM (19.4 SCFM)	316L SS
44-3200 (C_v = 1.8) Single Stage, High Flow • 10 R _a microinch finishes • C _v =1.8	500 PSIG	25, 50, 100, 150, 200 PSIG	2x10 ⁻⁸	0-900 SLPM (31.8 SCFM)	316L SS
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	1x10 ⁻⁹	0-900 SLPM (31.8 SCFM)	316L SS
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	1x10 ⁻⁹	0-500 SLPM (17.7 SCFM)	316L SS 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	1x10 ⁻⁹	0-500 SLPM (17.7 SCFM)	316L SS 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	1x10 ⁻⁹	0-950 SLPM (33.6 SCFM)	316L SS VAR

Point of Use Diaphragm Valves

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



PV72 Series



33 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 .4	316L SS VAR
PV 72 1/4-Turn, Lever Handle	3000 PSIG 750 PSIG	1x10 ⁻⁹	.17 .4	316L SS VAR
PV7T Toggle, Lever Handle	125 PSIG	1x10 ⁻⁹	.17 or .5	316L SS VAR
33 Series, Normally Closed or Normally Open, Air Actuated	125 PSIG	1x10 ⁻⁹	.17 or .5	316L SS VAR
31 Magnum Series, Manual, High Flow	250 PSIG	1x10 ⁻⁹	2.9	316L SS VAR
31 Magnum Series, Air Operated, High Flow	250 PSIG	1x10 ⁻⁹	2.9	316L SS 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 <ul style="list-style-type: none"> • 5 R_a or 10 R_a microinch finishes • Free poppet design • C_v= .06 	3500 PSIG	30, 60, 100, 250 PSIG	1x10 ⁻⁹	0-100 SLPM	316L SS or 316L SS VAR
64-2800 Single Stage, Ultra-High Purity, Tied Diaphragm <ul style="list-style-type: none"> • 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 SS 316L SS VAR
64-3200 Single Stage, Ultra-High Purity, High Flow, BSGS <ul style="list-style-type: none"> • 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 SS
64-3400 Dual Stage, Ultra-High Purity <ul style="list-style-type: none"> • Dual stage pressure reduction • 10 R_a microinch finishes • Free poppet or tied diaphragm • Hastelloy® Trim available • C_v= .06 	3500 PSIG	30, 60, 100, 150 PSIG	1x10 ⁻⁹	0-80 SLPM	316L SS
64-3600 Single Stage, Ultra-High Purity, Low Droop <ul style="list-style-type: none"> • 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 SS
64-5000 Single Stage, Ultra-High Purity, Absolute Pressure <ul style="list-style-type: none"> • Sub-atmospheric pressure control • 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 SS or 316L SS VAR
74-300A Single Stage, Ultra-High Purity, Absolute Pressure <ul style="list-style-type: none"> • 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 SS VAR
MR-2400 Single Stage, Ultra-High Purity <ul style="list-style-type: none"> • Tied diaphragm design • Internally springless & threadless • 5 R_a microinch finishes • C_v= .06 	3500 PSIG	30, 60, 100 PSIG	4x10 ⁻¹¹	0-100 SLPM	316L SS VAR
74-3800 Single Stage, Ultra-High Purity, High Flow <ul style="list-style-type: none"> • Tied diaphragm design • Internally springless & threadless • 5 R_a or 10 R_a microinch finishes • C_v= .5 	3500, 1000, 600 PSIG	30, 60, 100, 150 PSIG	1x10 ⁻⁹	0-500 SLPM	316L SS VAR
449-254 Single Stage, High Pressure, BSGS <ul style="list-style-type: none"> • Free poppet design • 10 Ra microinch finishes • Hastelloy® trim • C_v= 1.0 	1500 PSIG	400 PSIG	1x10 ⁻⁹	0-900 SLPM	316L SS

* units are expressed in atm cc/sec. He

Gas Cabinet Diaphragm Valves



PV72 Series



34 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 .4	316L SS VAR
PV 72 1/4-Turn, Lever Handle	3000 PSIG 750 PSIG	1x10 ⁻⁹	.17 .4	316L SS VAR
33 Series, Normally Closed or Normally Open, Air Actuated	125 PSIG	1x10 ⁻⁹	.17 or .5	316L SS VAR
34 Series, Normally Closed, Air Actuated	3045 PSIG	1x10 ⁻⁹	.17	316L SS VAR

Facility Pressure Regulators



22-2200 BA grade



44-2200 Series



15 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 SS
44-2200 Single Stage • Metal to metal diaphragm seals • NPT porting • C _v = .15 (.24 available)	400 PSIG	25, 50, 100, 250 PSIG	2x10 ⁻⁸	0-100 SLPM	316 SS or Brass
44-3200 (C_v=1.0) Single Stage, High Flow • Metal to metal diaphragm seals • NPT porting • C _v =1.0	500 PSIG	25, 50, 100, 150, 200 PSIG	2x10 ⁻⁸	0-550 SLPM (0-19.4 SCFM)	316 SS or Brass
44-3200 (C_v=1.8) Single Stage, Ultra High Flow • Metal to metal diaphragm seals • NPT porting • C _v =1.8	500 PSIG	25, 50, 100, 150, 200 PSIG	2x10 ⁻⁸	0-900 SLPM (0-31.8 SCFM)	316 SS or Brass
04-1 Single Stage, Miniature • NPT porting • Miniature / lecture bottle size • C _v = .06	3500 PSIG	30, 60, 100 PSIG	2x10 ⁻⁸	0-30 SLPM	316 SS, Brass or Aluminum
FR-1000 High Purity • Internally threadless • 316L construction • C _v = 15	500 PSIG	150 PSIG	–	100-28,300 SLPM (0-1000 SCFM)	316L SS
15 Series High Purity • Internally threadless • 10 R _a microinch finishes • Spring or bellows dome load • C _v =8	300 PSIG	130 PSIG	1x10 ⁻⁹	11,300 SLPM (400 SCFM) 100-28,300 SLPM (0-1000 SCFM)	316L SS

* units are expressed in atm cc/sec. He

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 <ul style="list-style-type: none"> Precision Electro-Polish 5 R_a or 10 R_a microinch finishes Tied diaphragm design 	250 PSIG	1x10 ⁻⁹	2.9	316L SS VAR
31 Magnum Series, Air Operated, High Flow <ul style="list-style-type: none"> Precision Electro-Polish 5 R_a or 10 R_a microinch finishes Tied diaphragm design 	250 PSIG	1x10 ⁻⁹	2.9	316L SS VAR
32-1 Magnum Uniplex, 32-2 Duplex Valves <ul style="list-style-type: none"> 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 SS VAR
35 Magnum Series, Ultra-High Flow <ul style="list-style-type: none"> Precision Electro-Polish 10 R_a microinch finishes Tied diaphragm design 	250 PSIG	1x10 ⁻⁹	11	316L SS
CM1 Magnum Series, Uniplex with Integral Purge Valve <ul style="list-style-type: none"> Precision Electro-Polish 10 R_a microinch finishes Tied diaphragm design Integral purge 	250 PSIG	1x10 ⁻⁹	2.9	316L SS VAR

Integrated Gas System Components

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



12 Series Miniature IGS Regulator



33 Series IGS Valve



PV71 Series IGS Valve

Product Series & Features	Source Pressure	Delivery Pressure	Certified Inboard Leak Rate*	Flow Range	Body Material
V1000 Vision Electronic Pressure Controller <ul style="list-style-type: none"> Closed loop pressure control 4-20 mA, Digital, RS-485 capable 5 R_a or 10 R_a microinch finishes 1.5" base 	150 PSIG	70 PSIG	1x10 ⁻⁹ SLPM	0-10 1-70 SLPM	316L SS VAR
309-084 <ul style="list-style-type: none"> 1.5" base Free poppet 	3000 PSIG	30, 60, 100 PSIG	1x10 ⁻⁹	0-100 SLPM	316L SS VAR
12 Series <ul style="list-style-type: none"> 1.5", 1.125" base 	150 PSIG	28" Hg-15, 30, 60, 100 PSIG	1x10 ⁻⁹	0-20 SLPM 0-50 SLPM	316L SS 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
33 Series, Air Actuated Valve	125 PSIG	1x10 ⁻⁹	.24 or .4	316L SS VAR
34 Series, Air Actuated Valve	3045 PSIG	1x10 ⁻⁹	.17	316L SS VAR
PV71 Series, Manual Valve	250 PSIG	1x10 ⁻⁹	.24 or .4	316L SS VAR
309-078 Metering Valve	200 PSIG	1x10 ⁻⁹	.10	316L SS VAR

* units are expressed in atm cc/sec. He



Air Actuated Valve Manifold



Electronic Controller



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

C O R P O R A T I O N

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