Petro-Chemical & Analyzer Sampling Systems

Pressure control solutions for your industry.

TESCOM™

EMERSON™
Process Management

The TESCOM brand offers a comprehensive range of regulators, valves and changeover systems that are ideal for analyzer and GC sample systems and other petro-chemical applications. Many models feature metal to metal sealed diaphragms and minimal wetted soft goods which means cleaner sample delivery to the analyzer. Our convoluted diaphragms provide excellent sensitivity, accuracy and stable pressure control.

Regulator types include single stage, two stage, vaporizing (steam and electric models), back pressure and sub-atmospheric.

When choosing a regulator...

Major considerations in the selection of a regulator are listed here. Within the requirements of your specific application, use this diagram as a guide to find the regulator that matches your parameters best. Remember, our standard products are only a starting point. TESCOM will modify or custom create a component to meet or exceed your application needs and expectations. Detailed information is available through your local TESCOM representative.

FLOW CAPACITY
C_V is a measurement of regulator flow capacity. The flow coefficient refers to the flow of one GPM of water at one PSI drop across the main valve. The coefficient for gaseous service must be determined from the ratio of inlet to outlet pressure.

MAIN VALVES - UNBALANCED
Unbalanced valve offers simplicity and economy.

INLET PRESSURE RANGES
Subatmospheric to 3500 psig / 240 bar.

OUTLET PRESSURE RANGES AVAILABLE
Starting at 28" Hg. Vac. to 15 psig /1 bar, up to 500 psig / 34.5 bar.

ADDITIONAL CONSIDERATIONS
Gauge ports: 1/8" or 1/4"
Temperature range
Corrosion resistance
Welded connections
Soft goods: Buna-N, PCTFE, Teflon®, Viton-A®, Vespel® and EPDM.

LOADING - SPRING, DOME OR ELECTRONIC
Loading refers to the method used to adjust outlet pressure. *Spring loading* is used with direct acting regulators with handknob adjustment. *Dome loading* is most often used in high flow, quick response type applications. *Electronic* controllers are another loading option - please contact your local representative for more information.

SENSING - DIAPHRAGM
Diaphragms provide sensitive and accurate regulation for outlet pressure ranges up to 500 psig / 34.5 bar.

BODY MATERIALS
316L Stainless Steel, Hastelloy® or Monel

PORTS
Sizes: 1/8" to 1/4"
Types: NPT (all models), welded fittings are also available.

VENTING
Non-venting is standard.

Corrosion and petro-chemical regulators

PRESSURE REDUCING

04 Miniature/ Lecture Bottle

44-2200 Compact

44-3400 Two Stage

PRODUCT SERIES		INLET PRESSURE (MAXIMUM)	OUTLET PRESSURE RANGES	FLOW CAPACITY	BODY MATERIAL
BENEFITS	FEATURES				
04 Series: Miniature/Lecture Bottle					
• Quick purge time • Compact design	• Choice of 1/8" or 1/4" in & out ports • Minimal internal volume	3500 psig 241 bar	0-30, 0-60, 0-100 psig 0-2, 0-4.1, 0-7 bar	C_V = .06	Brass or 316L SST
44-2200 Series: Compact/General Purpose					
• Highly sensitive • Economical brass bar stock design	• 1/4" inlet and outlet ports • Diaphragm sensed • Various trim options available • Metal to metal diaphragm seal	3500, 400 psig 241, 27 bar	1-25, 1-50, 1-100, 2-250, 2-500 psig .07-1.7, .07-3.4, .07-7, .13-17.2, .13-34.5 bar	C_V = .02 C_V = .06 C_V = .15 C_V = .24	Brass, 316L SST, Hastelloy-C® or Monel
44-2600 Series: General Purpose/Large Diaphragm					
• Increased sensitivity, minimal droop • Repeatability: ±1/2% of outlet pressure range • Accuracy: ±1% of outlet pressure	• Large diaphragm ensures greater sensitivity • Low decaying inlet characteristics	3500, 400 psig 241, 27 bar	1-25, 1-50, 1-100, 1-150 psig .07-1.7, .07-3.4, .07-7, .07-10.3 bar	C_V = .02 C_V = .06 C_V = .15 C_V = .24	316L SST
44-2800 Series: Positive Seal					
• Prevents pressure creep • Corrosive applications	• Mechanical link between diaphragm & main valve • Adjustable captured vent bonnet	3000 psig 207 bar	1-25, 1-50, 1-100, 1-150 psig [.07-1.7, .07-3.4, .07-7, .07-10.3 bar]	C_V = .16	316L SST
44-3400 Series: General Purpose/Two Stage					
• Stable outlet pressure • Brass & 316 SST bar stock	• Decaying inlet characteristic: .04 per 100 psig / .003 per 7 bar inlet pressure change • Various trim options available	3500 psig 207 bar	2-25, 2-50, 3-100, 3-150, 3-250 psig .13-1.7, .13-3.4, .2-7, .2-10.3, .2-17.2 bar	C_V = .05	Brass or 316L SST

...continued on page 3

Corrosion and petro-chemical regulators

PRESSURE REDUCING

44-5000
Absolute Pressure

44-5800
Steam & Electric

PRODUCT SERIES		INLET PRESSURE (MAXIMUM)	OUTLET PRESSURE RANGES	FLOW CAPACITY	BODY MATERIAL
BENEFITS	FEATURES				
44-4600 Series: Absolute Pressure					
• Excellent sensitivity	• Large Diaphragm • Metal to metal diaphragm • Controlled pressure range: 28" vacuum to 15 psig / 1 bar	120, 3500 psig 8.3, 241 bar	28" Hg Vac - 15 psig / 1 bar	C_V = .06 C_V = .24	316L SST
44-5000 Series: Absolute Pressure					
• Economical	• Control pressure range: 28" vacuum to 100 psig / 7 bar	120, 400, 3500 psig 8.3, 27.6, 241 bar	28" Hg Vac-15 psig / 1 bar 28" Hg Vac-25 psig / 1.7 bar 28" Hg Vac-50 psig / 13.5 bar 28" Hg Vac-100 psig / 7 bar	C_V = .06 C_V = .15 C_V = .24	316L SST
44-5800 Series: Steam & Electric					
• Controls pressures at higher temperatures • Eliminates moisture in sample system • Durable, tolerant of voltage spikes	• Advanced heat transfer technology • Surrounding temperature rated up to 165°F / 73°C • Voltage capability up to 265 volts (electric) • Optional LCD temperature display (electric) • CSA, ATEX and IECEX Certification to T4 Rating	6000 psig 41.4 bar	0-25, 0-50, 0-100, 0-250, 0-500 psig 0-1.7. 0-3.4. 0-7. 0-17, 0-34.4 bar	C_V = .02	316 SST or Monel

BACK PRESSURE

44-4700
Subatmospheric

PRODUCT SERIES		CONTROLLED PRESSURE RANGES	FLOW CAPACITY	BODY MATERIAL
BENEFITS	FEATURES			
44-2300 Series: Back Pressure				
• Economical, general purpose	• Low crack to reseat • Compact design	0-25, 0-50, 0-100, 0-250 psig 0-1.7, 0-3.4, 0-7, 0-17.2 bar	C_V = .08	Brass or 316L SST
44-4700 Series: Subatmospheric				
• Assures minimal inboard/outboard leakage • Controls subatmospheric to positive pressures	• Metal to metal diaphragm seal • High flow capacity option	28" Hg Vac - 15 psig / 1 bar 28" Hg Vac - 50 psig / 1.7 bar 28" Hg Vac - 100 psig / 13.5 bar 28" Hg Vac - 150 psig / 7 bar	C_V = .04 C_V = .30	316L SST

Valves and special products

CC Metering Valve

VA & VG Air Operated ON/OFF Valves

VJ Bi-Directional Shut-off Valve

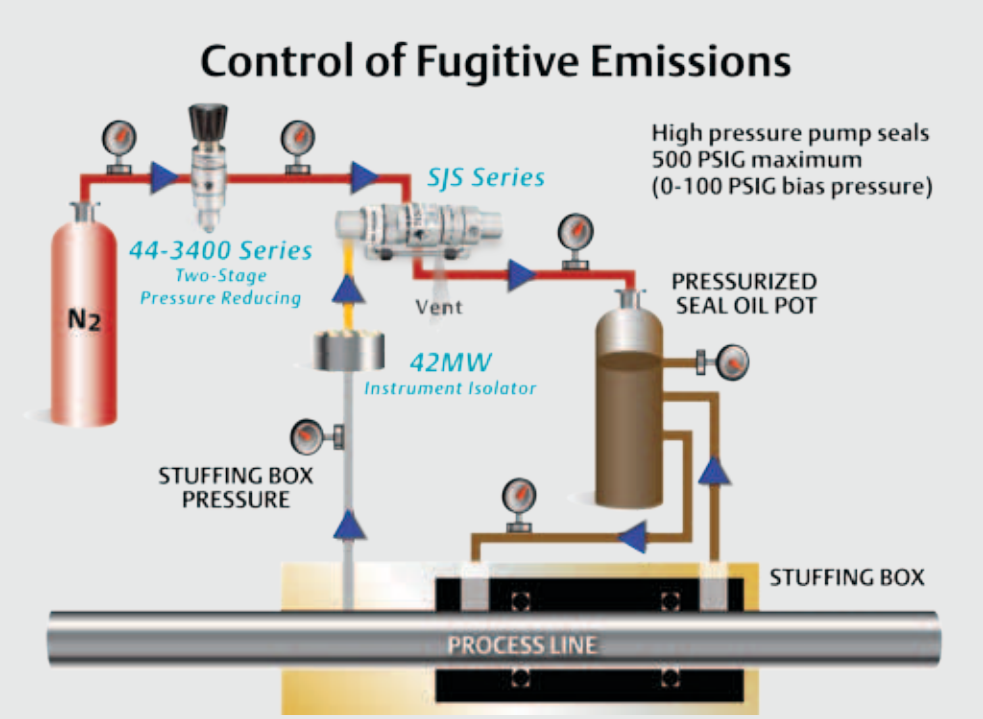
SJS Series Regulator

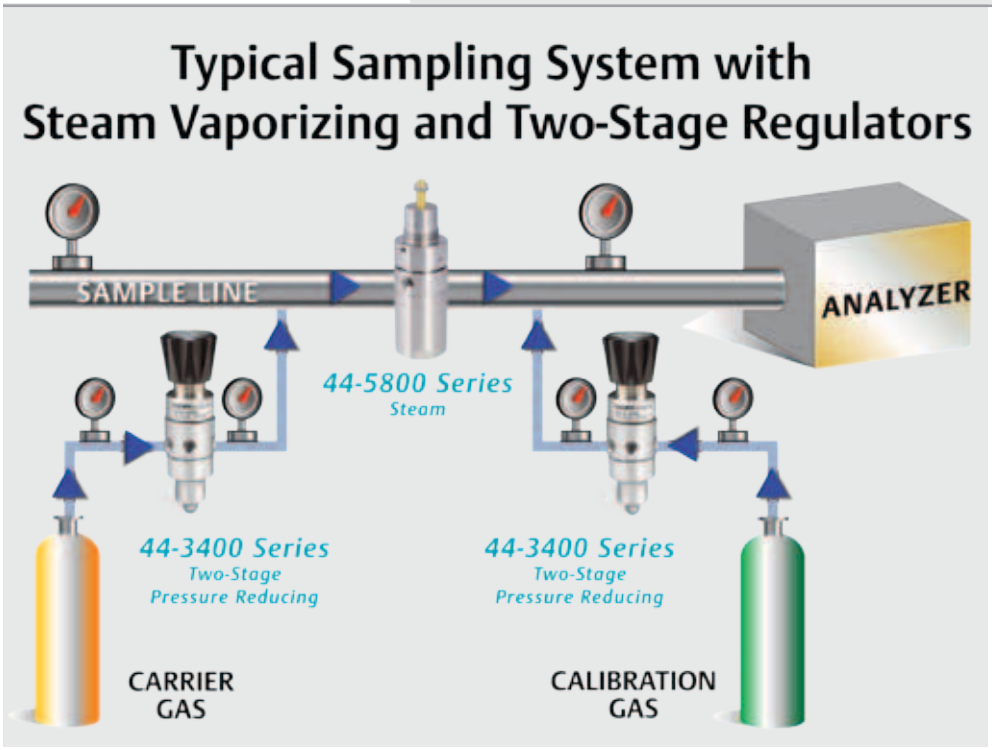
PRODUCT SERIES BENEFITS	FEATURES	OPERATING PRESSURE (MAXIMUM)	FLOW CAPACITY	BODY MATERIAL
CC Series: Metering Valve				
• Precise control at very low flows • Reduces seat wear	• For liquid or gas applications • 20+ turns from shutoff to full open • Non-rotating stem	Full vacuum to 10,000 psig /690 bar	C_V = .00005 C_V = .00125	316 SST
FL7000 Series: Flow Limit Valve				
• Protects downstream personnel & equipment from exposure to hazardous media	• Designed to stop flow automatically when flow exceeds a preset limit • Flow range: 0-6 SCFM (N_2 @ 1000 psig)	100-1000, 300-2500, 600-5000 psig 7-69, 21.7-172.3, 41.3-345 bar	N/A	316 SST
VA & VG Series: Air Operated ON/OFF Valves				
• Reduces required actuation pressure 30-60 psig / 2.1-4.1 bar	• Normally open or normally closed • Balanced main valve • Compact package • Toggle actuator optional	6000, 10,000, 15,000, 20,000 psig 414, 690, 1034, 1379 bar	VA: C_V = .75 VG: C_V = 2.0	Brass or 316 SST
VJ Series: Shut-off Valves				
• Bi-directional flow	• Built-in metallic stop • Globe or angle pattern	6000, 10,000 psig 414, 690 bar	angle: C_V = .49 globe: C_V = .28	Brass or 316 SST
SJS Series: Tracking Regulator				
• Maintains accurate differential pressure when incorporated into a double seal system • Tracks upsets in system pressure and decreases downtime by increasing seal life				
42MW: Welded Diaphragm Instrument Isolator				
• Designed to be used with TESCOM's tracking regulators. • Keeps corrosive media away from regulator.				

42MW Welded Diaphragm Instrument Isolator (shown with SJS Series regulator)

Typical petro-chemical applications

The SJS Series tracking regulator is used to apply blanketing pressure to seals. An inert gas (generally Nitrogen gas) is applied to the environment side of a seal, while the other side of the seal is exposed to a toxic gas or liquid. The SJS regulator tracks the toxic media line pressure and holds a higher blanketing pressure to the seal to ensure that any leakage across the seal will be inboard and not out to atmosphere. Maintaining a slightly higher pressure (positive differential pressure) to the seal also increases life of the seal and reduces system downtime. Typical bias pressure is 10-100 psig /.7 - 70 bar across the seal.

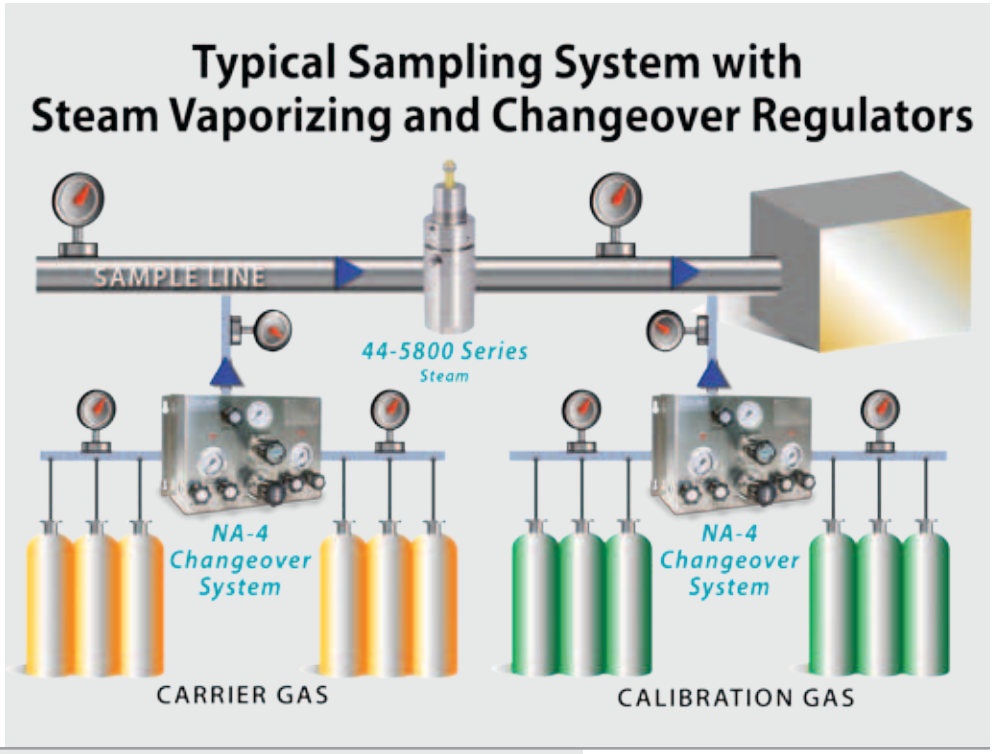


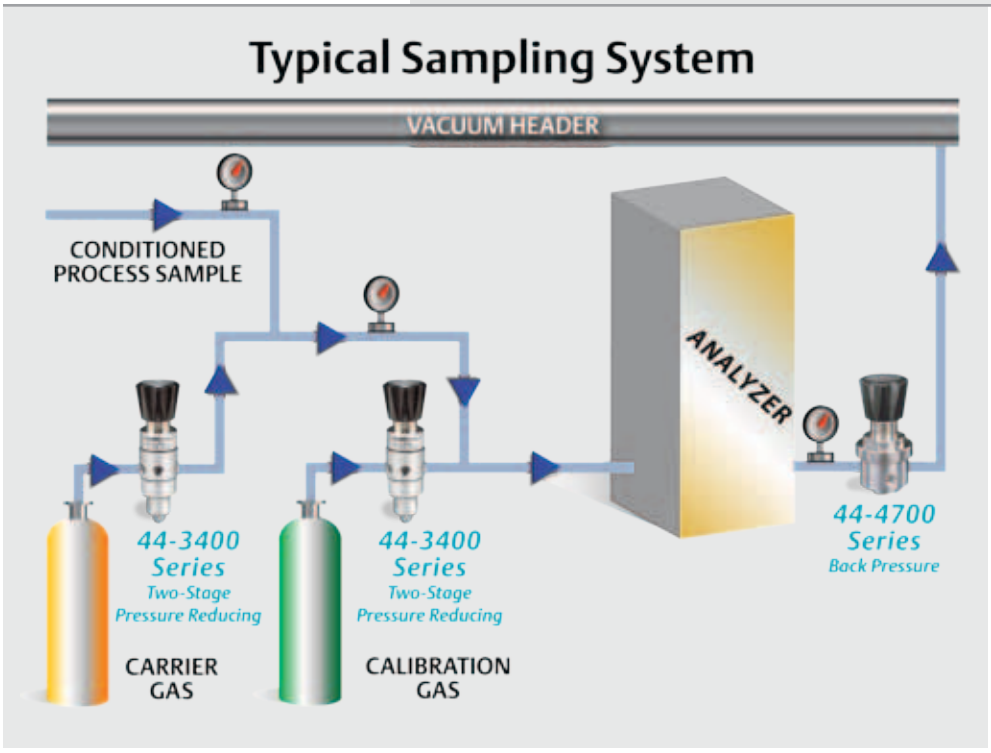


Process line samples need to be conditioned prior to being sent to the analyzer. The sample conditioning includes reducing the sample pressure and ensuring the sample is in a dry gas form. The 44-5800 Series vaporizing regulator accomplishes both of these requirements (electric and steam heated versions available). Two-stage 44-3400 Series regulators are used for pressure control of carrier and calibration gases.

Typical petro-chemical applications

Changeover systems can be used to ensure a continuous supply of carrier and calibration gases with no interruption due to supply depletion or change out. Complete systems can include CGA connections, hoses, check valves, purge valves, pressure switch, alarm, etc.





Back pressure regulators can be used to protect the analyzer from pressure fluctuations in the vacuum header. The 44-4700 Series can be used for vacuum set points and low positive pressure set points.

This is only a start! Call your local TESCOM Representative for more application solutions.

Emerson Process Management
Regulator Technologies, Inc.

Americas
Worldwide Headquarters
310 East University Drive
McKinney, Texas 75069-1872 USA
T: +1 800 558 5853
T: +1 972 548 3574
F: +1 972 542 6433

TESCOM Corporation
12616 Industrial Boulevard
Elk River, Minnesota 55330-2445 USA
T: +1 800 447 1250
T: +1 763 241 3238
F: +1 763 241 3224

Emerson Process Management
Regulator Technologies, Inc.

Europe
Natural Gas: T: +39 051 4190611
Industrial: T: +39 051 4190606
LP-Gas: T: +420 2 710 35 607
TESCOM: T: +49 (0) 38823 31 0

Emerson Process Management
Regulator Technologies, Inc.

Asia Pacific
T: +65 6770 8337

Middle East
T: +971 4811 8100

For further information visit www.emersonprocess.com/regulators or contact us by email: na.tescom@emerson.com

TESCOM™

www.tescom.com

EMERSON™
Process Management