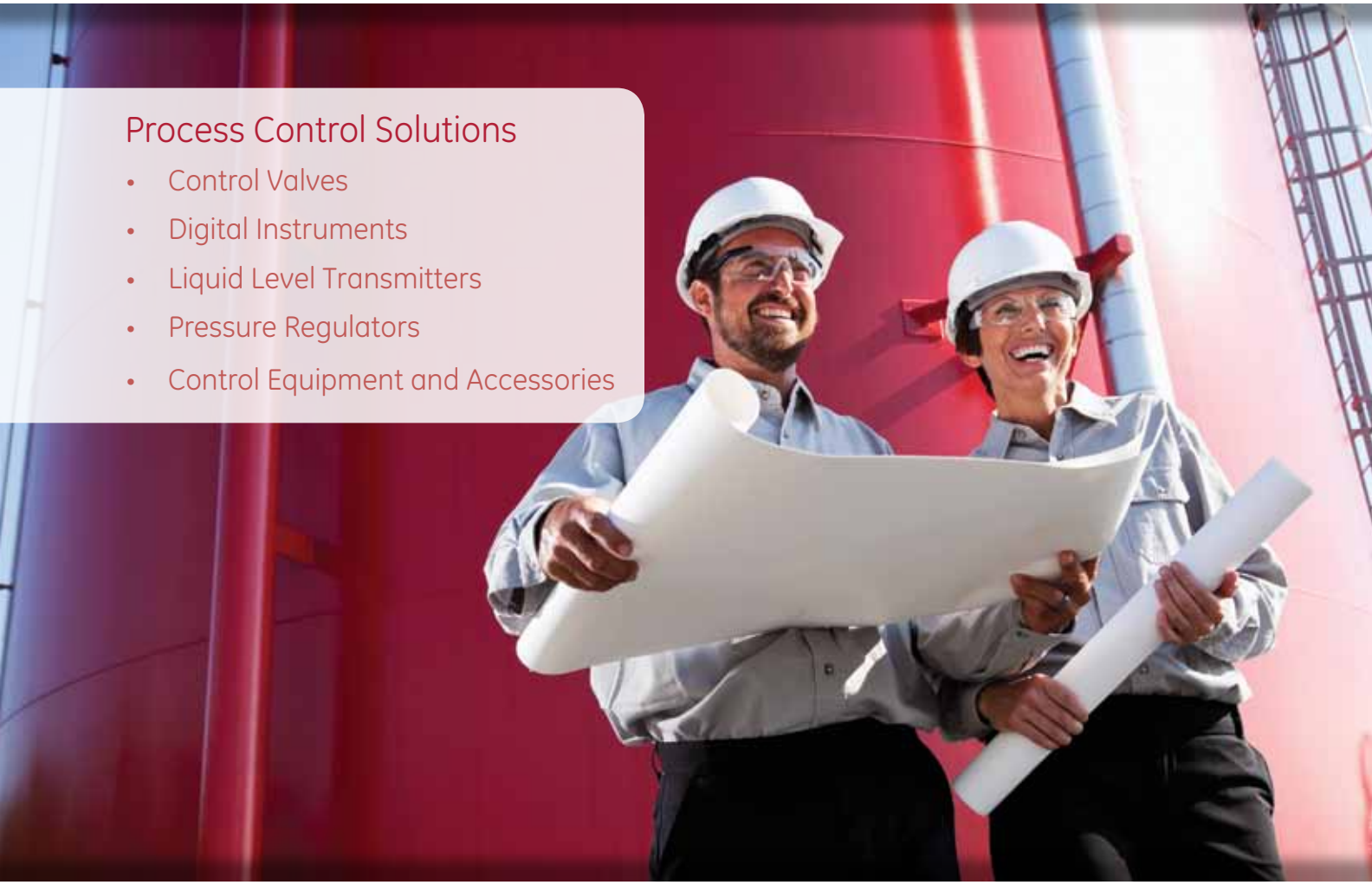
GE Energy

Masoneilan* Process Control Valves

Condensed Catalog



Process Control Solutions

- Control Valves
- Digital Instruments
- Liquid Level Transmitters
- Pressure Regulators
- Control Equipment and Accessories

imagination at work

Quality Control Solutions

Masoneilan automated process control solutions from GE Energy are known throughout the world for their quality and dependability. These solutions, including the Masoneilan 41005 Series Cage-Guided Globe Valve, are part of the portfolio of Masoneilan valve technology that has helped customers maintain smooth operations for more than 100 years.

Advanced Digital Technology

Along with high-performance valve control and in situ asset monitoring, the Masoneilan 12400 digital level transmitter, SVI* II ESD, SVI II AP, and FVP* instruments, and ValVue*, ValVue ESD, and ValVue OVD software offer compatibility with existing analog systems, online diagnostics, partial-stroke testing, and improved process yield.

Global Customer Service

Our network of service and repair facilities around the world are ready to meet your needs day and night with onsite support, spare parts, and equipment maintenance programs.

The Masoneilan valve heritage: In 1882, William Mason invented an automatic steam reducing valve. Today, Masoneilan valves protect process industry assets around the world.

Delivering for our customers

Global Capabilities

GE Energy's global infrastructure of sales offices, manufacturing operations, and technical centers of excellence supports our worldwide customers throughout the plant's life cycle.

Field Support Services

The global network of Masoneilan Authorized Repair Centers (MARC*) and field service technicians offers factory-certified support including OEM components, onsite service , hands-on training, and post-installation analysis to support your MRO needs and maximize performance efficiencies.

Maintenance Management Services

GE Energy offers the Masoneilan ValvKeep* II software tool for managing installed equipment and assets throughout your plant. This program includes plant surveys, data management , maintenance scheduling, planning, repairs, and overhauls. You can also manage historical data and trends to improve the efficiency of overall equipment maintenance.

Genuine OEM Parts

We know you need us to respond quickly to your requests for the replacement parts and overhaul services that will keep your plants operating and efficient. Our global aftermarket program meets that critical need for fast responsiveness. Using OEM parts provides you with refurbished equipment meeting the original specifications.

Diagnostic Services

Masoneilan diagnostic tools and services from GE Energy help improve process loops and reduce unexpected or unnecessary downtime. Available field diagnostic tools include the ValScope* portable scanner, ValVue OVD (on-line valve diagnostic) software for testing control valves without disturbing process, and ValVue software for measuring the health of control valves equipped with SVI II AP or FVP. Fully trained technicians provide onsite diagnostic services using these advanced tools.

Enhancing your results

Automated Sizing and Selection

GE Energy's user-friendly Masoneilan ValSpeQ* program for sizing and selecting valve solutions are based on current industry standards and calculation methods. These tools can significantly reduce the time needed to accurately specify and configure products so that you can select and implement the right solutions for your applications.

Resident Engineering

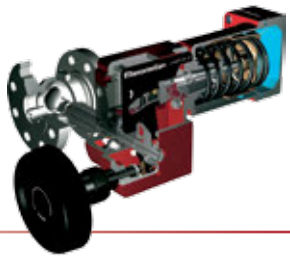
Our Resident Engineer Program gives you effective up-front design support. It provides onsite technical assistance early in the design process to help mitigate costly design changes that may happen late in the project cycle.

Digital Valve Positioners & Valve Monitoring Software Technologies

Masoneilan microprocessor-based field instruments help reduce costs throughout their life cycle, from initial installation and setup through ongoing operation, maintenance and support. The SVI II AP and FVP digital valve positioners, SVI II ESD emergency shutdown device, and 12400 digital level transmitter can help you improve plant efficiency, performance, and safety.

Masoneilan Control Valves

General Service



Rotary Products

More than 1 million 35002 Series Camflex* valves have been successfully installed in a variety of process industries and applications. Today's Camflex II valve continues to offer dependability through a concept that remains a standard of excellence for eccentric-plug rotary globe control valves. The standard version includes the EF Seal (Emission Free packing) with emissions rated less than 500 ppm up to 750,000 cycles.

The 36005 Series V-Max* High Capacity Control Ball Valve incorporates a patented dual characterized V-Ported ball to offer a unique combination of high capacity and turndown capability. Available in ANSI/ISA 75.08.02 (IEC 534-3-2) and ANSI B16.10 short pattern face-to-face dimensions, it offers flexibility to match existing installations. Three seat types are available: MN-7 soft seat with class VI seat leakage, standard flexible metal seat , and the heavy-duty seat with class IV shutoff.

Reciprocating Products

The 21000 Series is a single-ported, heavy top-guided globe valve that can handle a wide variety of process control applications. The 21000 Series is available with many optional packages including bellows seals and angle body designs. Trim options include low-noise, anti-cavitation, and soft-seat trims to meet various application requirements.

The versatile cage-guided 41005 Series control valve offers solutions for demanding applications, such as high pressure drops, large capacities, and wide temperature ranges. The balanced trim design include options for reducing noise and vibration and for containing cavitation. Various balanced-seal options are available to meet a wide range of temperature and seat leakage requirements. Lo-dB* cartridges or plates are also available to help maintain low outlet velocities and downstream noise.

Corrosive Service

31000 Series PFA-Lined

The 31000 Series is a PFA-lined control valve with an eccentric rotary globe plug that features tight shut-off capability, low dynamic forces, and control. This valve offers a solution for aggressive acids that tend to cause bellows permeation problems in reciprocating designs.

Erosive Service

73000 Series

The 73000 Series valve is a sweep-angle configuration for throttling erosive process media. It is available with a wide variety of engineered trim and body materials including high nickel, duplex, titanium, ceramic, and tungsten carbide alloys.

74000 Series

The 74000 Series is a split-body forged angle erosion control valve with captures trim and continuous guided fluted plug for superior stability under harsh conditions with particulate flow.

Severe Service

49000 Series

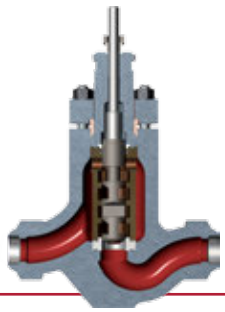
The 49000 Series is a large capacity control valve with an over-sized body area to house multi-stage V-LOG Energy Management trim. The 49000 series can be applied through a wide range of applications from high-pressure drop, anti-cavitation liquid designs through low-noise gas and steam service. Available in both globe and angle-style designs and incorporating the Lo-dB and V-LOG trims, the 49000 series offers a flexible solution to fit high-pressure drop applications in any pipe size or process-fluid application.

72000 Series

The 72000 Series family of energy management and low-noise products is configured for use in compressor anti-surge, gas-to-flare, and other venting applications where high noise attenuation and high flow capacity are required. The 72000 Series is a fabricated angle valve offering an effective solution for customers' specific process needs. Custom V-LOG trim options are available to address severe, high-expansion ratio applications.

77000 Series

The 77000 Series multi-stage, expanding-area control valve is primarily for high-pressure compressible fluid or two-phase applications. It controls under conditions such as flow-entrained debris, damaging vibration, and high noise, making it an ideal solution for high-pressure, high-temperature, flashing hydrocarbon liquid services. Typical applications for this design include a range from hot high-pressure separator control in hydroprocessing applications to gas well-head control in off-shore choke valve applications as well as high-pressure gas letdown with entrained debris.



78400/18400 Series

The axial flow 78400/18400 Series LincolnLog* design utilizes a tortuous path to distribute pressure drop along the axis of the plug. The axial stages throttle in unison as the plug strokes to maintain staging ratios at all lift points. Velocity and pressure drop are controlled, thus reducing cavitation and the resulting trim damage. This valve is highly effective in pump recirculation and high-pressure liquid letdown applications, especially for dirty fluid conditions.

79000 Series

The 79000 Series is an angle body design developed to use the Variable Resistance Trim (VRT*) for high-pressure liquid letdown applications. The anti-cavitation VRT trim can be configured to match pump flow curves, allowing steady operation as the plant is brought up to speed and comes on line. The 79000 Series can be enhanced with a partial-stack design to allow higher flow rates as the travel is increased.

84000 Series SteamForm

The 84000 Series SteamForm* steam conditioning valve is built on a flexible platform to control steam under a full range of applications. Configured with a wide variety of trim options, the SteamForm operates from a range of low-pressure, steady-state process steam applications to intermittent, rapid-response turbine bypass. Built with patented technology, the SteamForm uses high rangeability spray nozzles and a proprietary water injection design for desuperheating, as well as thermally compensated trim designs for high temperature cycling in severe steam installations.

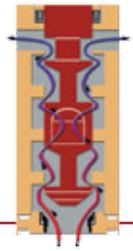
Masoneilan Valve Technology

Energy Management Trim

GE Energy offers a wide range of Masoneilan solutions to meet customers' fluid energy problems.

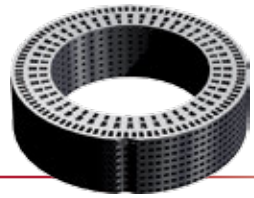
Drilled-Hole Technology

The Masoneilan product line includes a wide selection of single-stage and multiple-stage trims with both balanced and unbalanced globe and angle valve configurations. These designs, based on drilled-hole technology, are only recommended for clean-service applications. Balanced and unbalanced anti-cavitation options are also available with metal-to-metal seating meeting ANSI Class V shut-off performance.



Axial Flow Technology

Axial Flow trims offer multi-stage designs for the control of high-pressure liquids without the damaging effects of cavitation, erosion, and vibration. The unique flow design of the LincolnLog develops the required resistance for throttling but also affords ample clearance for the passage of large particulate. The optional soft seat is specifically for boiler feedwater applications and offers long-term Class VI shut-off at demanding pressures. Similarly, the 77000 Series is a multi-stage trim with expanding areas for high-pressure gaseous applications.



Stacked Plate Technology

V-LOG Energy Management Trim is manufactured from a brazed stack of laser-cut plates, each with a series of 90 degree turns used to redirect the flow of the process fluid through a high-resistant flow path. Each stage also includes an expansion and contraction in area for maximum pressure reduction efficiency. Further, each valve body is contoured to account for flow expansion and trim area velocity to manage the total system noise, offering customers a compact energy management control valve.

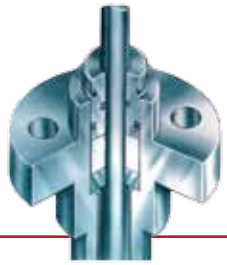
Differential Velocity Technology

GE Energy's patented Masoneilan DVD* (Differential Velocity Device) is a highly efficient noise-reduction solution for rotary valves. Building on technology used in turbo-fan jet engines, the DVD device utilizes larger diameter outer holes to create a lower velocity annular flow stream around the flow area perimeter. This lower velocity flow stream reduces noise transmission from the higher velocity inner flow, resulting in lower external noise levels.

Variable Resistance Trim (VRT*), consists of a brazed stack of drilled plates which efficiently channel the flow through multiple turns in a tortuous path configuration. The design is primarily used in high-pressure drop liquid applications. VRT is typically packaged within standard Masoneilan globe and angle valve bodies.

Fugitive Emissions Control

Masoneilan solutions for reduction of Volatile Organic Chemicals (VOCs) and Hazardous Air Pollutants (HAPs)



EF (Emission Free) Seal

The EF Seal is an emission containment feature that is standard on most Masoneilan rotary products. This seal design can be easily field-retrofitted on any existing valve in the field. It is a simple dual O-ring design that has undergone extensive testing including successful completion of 750,000 full-stroke cycles without failure. This design offers an extremely cost-effective solution for upgrading processes under the guidelines of the various regional and global emissions reduction regulations.

LE* (Low Emission) Packing

Masoneilan reciprocating control valves can be equipped with the LE Packing System option for economic reduction of fugitive emissions to less than 500 ppm. The LE packing system can maintain a constant sealing force within the packing box, providing low leakage performance with minimal field adjustment.

Bellows Seal

Bellows Seals are offered for applications as a hermetic metallic seal for valve stem interfaces providing zero leakage to atmosphere.

Typical applications include handling of flammable, toxic, or explosive fluids where leakage may cause environmentally unsafe conditions. The design also includes a leak-off detection port and a redundant packing box for additional safety.

Digital Technology

SVI II AP Digital Valve Positioner HART*

The SVI II AP offers high performance and reliable control using HART digital technology with valuable benefits such as non-contact position sensing, low maintenance, remote-mounting, online diagnostics, autotuning, and auto-calibration. The SVI II AP offers the option for local or remote communication, even in hazardous environments. It is SIL 2 capable per IEC61508.

FVP Digital Valve Positioner Foundation Fieldbus

The FVP Fieldbus Valve Positioner is a digital valve positioner and PID process controller. The FVP offers advanced control technology for pneumatically actuated valves, offering higher precision and greater flexibility.

12400 Digital Level Transmitter HART

The Masoneilan 12400 Series Digital Level Transmitter (DLT) is a Smart instrument with HART communication protocol utilizing proven liquid displacement and torque tube technology.

Masoneilan Rotary Control Valves

31000 Series
PFA Lined

Sizes: 1" through 3"
(25 through 80 mm)

Ratings and Connections:
- flanged: ANSI 150
  UNI-DIN 10 - 16

Body Materials:
- cast iron PFA lined

Actuator:
- model 35 spring-opposed rolling diaphragm

Trim:
- eccentric rotary plug

Inherent Characteristic:
- linear

The 31000 Series is a PFA-lined control valve with an eccentric rotary plug that offers tight shut-off, low dynamic forces, and control. This valve is suitable for hydrofluoric and sulfuric acid applications.

34000 Series
Low Noise Control Ball Valve

Sizes: 4" through 48"
(200 through 1200 mm)

Ratings and Connections:
- flanged: ANSI 150 - 2500
- welded: BW or SW

Body Materials:
- carbon steel
- stainless steel
- duplex & super duplex St. St.
- other alloys

Actuator:
- spring opposed scotch yoke

Trim:
- standard ball - no noise attenuation
- multi-stage, variable resistance

Inherent Characteristic:
- modified equal percent

The 34000 Series is a low-noise, anti-cavitation rotary control valve for gas and liquid applications, featuring a full trunnion-mounted ball with noise attenuation trim. A wide range of available materials allows it to be customized to suit the application needs. Typically applied in fuel gas control and process applications requiring high capacity, high-turndown, non-clogging operation.

35002 Series
Camflex II Eccentric Plug

Sizes: 1" through 16"
(25 through 400 mm)

Ratings and Connections:
- flanged: ANSI 150 - 600
- flangeless: ANSI 150 - 600
  UNI-DIN 10 - 100
- screwed: NPT (1" through 2")

Body Materials:
- carbon steel
- stainless steel
- high nickel alloy

Actuators:
- model 35 spring diaphragm
- 70 Series cylinder

Trim:
- eccentric rotary plug

Inherent Characteristic:
- linear

As the original eccentric plug rotary valve, the 35002 Series Camflex valve combines quality performance and features with an economical design. The Camflex valve offers versatility and broad application. It is now supplied with the EF seal solution to reduce fugitive emissions.

36005 Series
V-Max Control Ball Valve

Sizes: 1" through 12"
(25 through 300 mm)

Ratings and Connections:
- flanged: ANSI 150 - 300

Body Materials:
- carbon steel
- stainless steel

Actuators:
- model 33 spring diaphragm
- model 31/32 spring diaphragm
- model 34 scotch yoke cylinder

Trim:
- dual characterized, v-ported segmented ball

Inherent Characteristic:
- equal percentage

The 36005 Series V-Max valve is a high-capacity, control ball valve with a patented dual-characterized, segmented ball design combining high C_V ratings with 500:1 turndown. It is for high viscosity fluid applications (i.e. pulp and paper industry) as well as processes requiring high capacity abilities balanced with accurate control. Standard features include the environmental packing (EF seal).

37002 Series Minitork* II
Swing-Through Butterfly

Sizes: 2" through 24"
(50 through 600 mm)

Ratings and Connections:
- wafer for mounting between flanges: ANSI 150 - 300
  UNI-DIN 10 - 40

Body Materials:
- carbon steel
- stainless steel
- liners in Buna-N, Viton and Nordel

Actuators:
- model 33 spring diaphragm
- model 35 spring diaphragm

Trim:
- low torque butterfly

Inherent Characteristic:
- equal percentage

The 37002 Series is a control valve used on large flow rates with low-pressure drop. It is available with complete PTFE lining (38002 Series) for corrosive fluids applications.

39003 & 39004 Series
High-Performance Butterfly

Sizes: 3" through 48"
(80 through 1200 mm)

Ratings and Connections:
- wafer and lug for mounting between flanges:
  ANSI 150 - 600

Body Materials:
- carbon steel
- stainless steel

Actuators:
- model 33 spring diaphragm
- model 34 scotch yoke cylinder
- model 96/97 pneumatic rack and pinion

Trim:
- double eccentric

Inherent Characteristic:
- equal percentage

The 39003 Series is a heavy-duty automatic throttling butterfly control valve with an eccentric disc for large flow rates and moderate-pressure applications.

The Masoneilan 39004 Series High Performance Butterfly Valve (HPBV) offers performance, application flexibility, and long service life.

Masoneilan Reciprocating Control Valves

10000 Series
Double Seated Globe Valve

Sizes: 2" through 24" (50 through 600 mm)

Ratings and Connections:
- flanged: ANSI 150 - 1500, UNI-DIN 10 - 250
- welded: BW or SW
- screwed: NPT 3/4" through 2" (20 through 50 mm)

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuators:
- model 87/88 multi-spring diaphragm
- cylinder

Trims:
- V-port or contoured plug
- top and bottom guided

Inherent Characteristic:
- linear, quick opening or equal percentage

The 10000 Series is a double-ported valve with top and bottom stem guiding. This design is suitable for high-pressure drop applications where dirty fluid conditions exist. The 10000 Series is widely used in hydrocarbon processing applications.

21000 Series
Globe & Angle Top-Guided Valve

Sizes: 3/4" through 8" (20 through 200 mm)

Ratings and Connections:
- flanged: ANSI 150 - 2500, UNI-DIN 10 - 400
- welded: BW or SW
- screwed: NPT 3/4" through 2" (20 through 50 mm)

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuators:
- model 87/88 multi-spring diaphragm
- cylinder

Trims:
- single seat plug top guided.
- Lo-dB and anti-cavitation trims, single or double stage are available

Inherent Characteristic:
- linear or equal percentage

The 21000 Series control valve is a heavy top-guided unbalanced design with noise attenuation and anti-cavitation trim options. It can handle a variety of process applications ranging from standard service conditions to more severe applications. It also includes standard bellows seal and soft seat configurations.

28000 Series Varipak*
Micro-Trim Globe Valve

Sizes: 1" (25 mm) standard, 1/2" through 3/4" (15 through 20 mm) available on request

Ratings and Connections:
- flanged: ANSI 150 - 600
- flangeless for mounting between flanges: ANSI 150 - 2500, UNI-DIN 10 - 400
- screwed: NPT 1/2" through 1" (15 through 25 mm)

Body Materials:
- stainless steel
- monel
- hastelloy C
- alloy 20

Actuator:
- integral spring diaphragm

Trims:
- full stellite needle plug
- multistep trim available

Inherent Characteristic:
- linear

The 28000 Series Varipak* is a compact globe style valve specifically for microflow control. The Varipak includes an adjustable C_V feature between 100 percent and 40 percent that can meet applications requiring finer control. It is available with bellows seal and anti-cavitation trim options.

41005 Series
Globe & Angle Cage-Guided Valve

Sizes: 2" through 24" (50 through 600 mm)

Ratings and Connections:
- flanged: ANSI 150 - 2500 UNI-DIN 10 - 400
- welded: BW or SW
- screwed: NPT 2" (50 mm)

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuators:
- model 87/88 multi-spring diaphragm
- model 37/38 spring diaphragm
- cylinder

Trims:
- balanced cage-guided trim.
- Lo-dB, anti-cavitation and VRT (Variable Resistance Trim), single and multiple cages are available

Inherent Characteristic:
- linear or equal percentage

The 41005 Series is a heavy-duty valve design with balanced trim configurations. It offers cage guiding for added stability and the versatility to offer noise attenuation and anti-cavitation solutions. Available with various balancing seal options including auxiliary pilot design for unmatched high-temperature performance.

80000 Series
3-Way Diverting or Combining Valve

Sizes: 1" through 10" (25 through 250 mm)

Ratings and Connections:
- flanged: ANSI 150 - 600 UNI-DIN 10 -100
- threaded: NPT 3/4" through 2" (20 through 50 mm)
- welded: BW or SW ANSI 900 - 2500 on request

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuators:
- model 87/88 multi-spring diaphragm
- model 37/38 spring diaphragm
- cylinder

Trim:
- v-port plug

Inherent Characteristic:
- linear

The 80000 Series is a line of three-way control valves for either combining or diverting applications. Its key features include high flow capacities and low-pressure recoveries, resulting in efficient flow control performance.

Masoneilan Severe Service Control Valves

72000 Series
Angle Valve with Lo-dB* and V-LOG Trim

Sizes: 6" x 8" through 36" x 48" (150 x 200 through 900 x 1200 mm)

Ratings and Connections:
- flanged: ANSI 150 - 600, UNI-DIN 10 - 100, up to 600 mm
- welded: BW

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuator:
- cylinder

Trims:
- balanced cage guided trim (single or double cage)
- Lo-dB and V-LOG trims available

Inherent Characteristic:
- linear or equal percentage

The 72000 Series offers precise capacity control while efficiently reducing noise and outlet velocities using single or multiple cages or V-LOG trim.

Specific applications:
- compressor antisurge
- flare to atmosphere

77000 Series
Multi-Stage Angle Valve

Sizes: 2" x 3" through 8" x 10" (50 x 80 through 200 x 250 mm)

Ratings and Connections:
- flanged: inlet ANSI 900-2500, outlet ANSI 900 - 2500, UNI-DIN 150 - 400
- welded: BW or SW

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuators:
- model 37/38 spring-opposed diaphragm
- cylinder

Trims:
- axial flow technology
- multi-stage trim (expanding area type)
- anti-cavitation, flashing, de-gassing, and low noise

Inherent Characteristic:
- linear

The 77000 Series multi-stage, expanding-area control valve is primarily for high-pressure compressible fluid or two-phase flow applications. It controls erosion, de-gassing, and high noise levels.

Specific applications:
- hot separator letdown
- well-head choke

78400/18400 Series
LincolnLog

Sizes: 1" through 12" (25 through 300 mm)

Ratings and Connections:
- flanged: ANSI 600 - 2500, UNI-DIN 100 - 400
- welded: BW or SW

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuators:
- model 37/38 spring-opposed diaphragm
- model 87/88 multi-spring-opposed diaphragm
- cylinder

Trims:
- axial flow technology
- multi-stage, cage-guided, anti-cavitation trim
- Class VI available on request

Inherent Characteristic:
- linear

The 18400 and 78400 Series valve is used in high-pressure liquid service applications to help eliminate cavitation.

Specific applications:
- boiler feedwater recirculation

49000 Series
Globe and Angle Style with Lo-dB or V-LOG* Trim

Sizes: 4" through 36" (100 through 900 mm)

Ratings and Connections:
- flanged: ANSI 150-2500, UNI-DIN 10 - 400
- welded: BW

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuators:
- model 37/38 spring-opposed diaphragm
- model 87/88 multi-spring-opposed diaphragm
- cylinder

Trims:
- single or double stage Lo-dB and V-LOG energy management trim
- available in low noise flow-to-open designs or anti-cavitation flow-to-close
- variety of balanced trim options for Class IV and V shutoff

Inherent Characteristic:
- linear or equal percentage

The 49000 Series features enlarged body galleries to accommodate up to 36-stages of pressure reduction.

Specific applications include boiler feedwater start-up and control, steam letdown, pump discharge, water reinjection, gas recycle, and vent applications.

79000 Series
Angle Style with VRT Trim

Sizes: 1" through 6" (25 through 150 mm)

Ratings and Connections:
- flanged: ANSI 600 - 2500, UNI-DIN 100 - 400
- welded: BW

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuators:
- model 87/88 multi-spring diaphragm
- model 37/38 spring diaphragm
- cylinder

Trim:
- multi-stage VRT trim design and VRT partial stack design for control over a wide range of applications

Inherent Characteristic:
- linear

The 79000 Series valves offers anti-cavitation service with control over a wide range of operating conditions, such as the ramp-up transition of a normal feedwater pump.

Specific applications:
- feedwater control
- feedwater pump start-up valve

84000 Series
SteamForm

Trim Sizes: 3" through 24" (80 through 600 mm)
Pipe Sizes: 3" through 48" (80 through 1200 mm)

Ratings and Connections:
- flanged: ANSI 150 - 2500, UNI-DIN 10 - 400
- welded: BW

Body Materials:
- carbon steel
- chrome-moly

Actuators:
- model 87/88 multi-spring diaphragm
- model 37/38 spring diaphragm
- cylinder

Trims:
- single or double stage Lo-dB with optional diffuser, and V-LOG energy management trim
- available with thermally compensated high temperature trim options for long life in high-cycling environments
- variety of balanced trim options for Class IV and V shutoff

Inherent Characteristic:
- linear or equal percentage

The 84000 Series SteamForm* valve includes a patented water-injection system for efficient desuperheating in steam conditioning applications.

Specific applications:
- turbine bypass
- process steam conditioning

Masoneilan Angle Erosive Protection Control Valves

71000 Series
Streamlined Angle Valve

Sizes: 2" x 3" through 10" x 12" (50 x 80 mm through 250 x 300 mm)

Ratings and Connections:
- flanged: ANSI 150 - 2500

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuators:
- model 87/88 multi-spring-opposed diaphragm
- cylinder

Trim:
- heavy top plug guiding coupled with a threaded seat ring design to form an outlet venturi flow path for outlet area protection

Inherent Characteristic:
- linear

The 71000 Series is a modified sweep-angle valve that can reduce fluid impingement through the body. This design includes heavy guiding and durable trim parts to withstand harsh operation.

Specific applications:
- visbreaker
- hot hydrocarbon fluid
- coking applications

73000 Series
Sweep Angle Valve

Sizes: 1" x 1" through 10" x 12" (25 x 25 mm through 250 x 300 mm)

Ratings and Connections:
- flanged: ANSI 150 - 2500

Body Materials:
- carbon steel
- stainless steel
- titanium
- hastelloy
- others

Actuators:
- model 87/88 multi-spring-opposed diaphragm
- cylinder

Trims:
- high capacity single stage
- reduced port venturi outlet
- ceramic and tungsten carbide optional

Inherent Characteristic:
- linear

The 73000 Series control valve can throttle highly erosive, flashing, and two-phase flows.

Specific applications:
- mining
- coal slurry
- ash handling
- hydrocarbon bottoms

74000 Series
Erosion Control Valve

Sizes: 1" through 8" (25 through 400 mm)

Ratings and Connections:
- flanged: ANSI 150 - 2500

Body Materials:
- carbon steel
- stainless steel
- chrome-moly
- duplex stainless steel

Actuators:
- model 87/88 multi-spring-opposed diaphragm
- cylinder

Trims:
- fluted single and multi-stage
- continuous guided plug
- ceramic and tungsten carbide optional
- venturi trim to protect valve body

Inherent Characteristic:
- linear

The 74000 Series is a split-body forged angle erosion control valve with captured trim and continuous guided fluted plug for superior stability under harsh conditions with particulate flow.

Specific applications:
- resid hydro-cracking
- service with entrained catalyst
- pressure drops up to 4000 psi

75000 Series
Tank-Drain Valve

Sizes: 1" x 1" through 10" x 12" (25 x 25 mm through 250 x 300 mm)

Ratings and Connections:
- flanged: ANSI 150 - 1500

Body Materials:
- stainless steel
- titanium
- hastelloy
- others

Actuator:
- cylinder

Trims:
- single piece stem and plug design with both top and bottom guiding to eliminate trim vibration at high-pressure drops

Inherent Characteristic:
- linear or contoured

The 75000 Series tank drain valve includes a full sweep-angle design and heavy-duty plug design to reduce erosion impact from solids or debris found in tank bottoms. It is available in 45, 60, and 90 degree-angle configurations.

Specific applications include tank level control and pressure letdown applications common in reactor or crystallizer tanks.

Masoneilan Regulators

525-526 Series

Sizes:
¾" through 4"
(20 through 100 mm)

Ratings and Connections:
- flanged: ANSI 150 - 600
  UNI-DIN 10 -100
- screwed: NPT
- welded: BW or SW

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuator:
- model 10900 with spring-opposed diaphragm

Trim:
- disc plug, double seat

Working Range:
- 0.5 to 330 psi
  (0.034 to 22.7 bar)

The 525 Series regulators are configured for pressure reduction, and the 526 Series is for back-pressure applications. They are also available for differential-pressure applications in multiple configurations that can meet various combinations of capacity, pressure, and temperature requirements.

The 535V and 535H Series are available in multiple configurations for pressure reduction and differential-pressure applications.

535V-535H Series

¾" through 2"
(20 through 50 mm)

Ratings and Connections:
- flanged: ANSI 150 - 600
  UNI-DIN 10 -100
- screwed: NPT
- welded: SW

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Actuator:
- model 10900 with spring-opposed diaphragm

Trim:
- single seat, disc plug (535H Series)

Working Range:
- 0.5 to 330 psi
  (0.034 to 22.7 bar)

170-171/172-173 Series

Sizes:
¼" through 2"
(6 through 50 mm)

Ratings and Connections:
- flanged: ANSI 150 - 600
  UNI-DIN 10 - 100
- screwed: NPT
- welded: SW

Body Materials:
- cast iron
- carbon steel
- stainless steel

Actuator:
- sizes 80 through 515 spring opposed diaphragm

Trims:
- single seat, disc plug
- hard (metal) and soft (elastomer) seat options

Working Range:
- 0.035 psi to 667 psi
  (0.0024 to 46 bar)

The 170 through 173 Series regulators are a line of pressure reducing and relieving (back-pressure) and differential-pressure regulators for industrial liquid, steam, and gas applications.

The 174 Series is a low pressure regulator for gas service control. It is available in both pressure reducing and pressure relieving (back-pressure) constructions for industrial air and gas applications.

174 Series

½" through 1-1/2"
(15 through 40 mm)

Ratings and Connections:
- screwed: NPT

Body Materials:
- carbon steel

Actuator:
- integral spring diaphragm

Trims:
- single seat, disc plug
- elastomer disc for tight shutoff

Working Range:
- 1.4 inches W.C. to 8.8 psi
  (3.4 mbar to 0.61 bar)

Masoneilan Advanced Technology

Level Transmitters

12800 Series
Pneumatic Level Transmitter / Controller

Range: 14" through 120" (355 through 3048 mm)

Ratings and Connections:
- flanged: ANSI 150 - 2500, UNI-DIN 10 - 100
- screwed: NPT-F (1 1/2", 2")
- welded

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Displacer Materials:
- stainless steel
- other materials on request

Torque Tube Materials:
- Inconel
- stainless steel
- other materials on request

Action:
- proportional
- proportional + reset
- transmitter
- on-off
- duplex

The 12800 Series pneumatic level controllers are used to control and/or transmit the level in a tank with one or two fluids (interface service).

The 12800 Series operates according to liquid displacement and torque tube principles.

12400 Series
Digital Level Transmitter

Range: 14" through 120" (355 through 3048 mm)

Ratings and Connections:
- flanged: ANSI 150 - 2500, UNI-DIN 10 - 100
- screwed: NPT-F (1 1/2", 2")
- welded

Body Materials:
- carbon steel
- stainless steel
- chrome-moly

Displacer Materials:
- stainless steel
- other materials on request

Torque Tube Materials:
- Inconel
- stainless steel
- other materials on request

Electronic Instrument:
- HART protocol
- 4 - 20 mA signal
- ATEX, FM, FMc, JIS, GOST and CSA approvals
- SIL2 safety certified

The Masoneilan 12400 Series Instrument is a two-wire loop-powered, digital-displacement type level transmitter with HART communication. This high performance instrument is easily set-up and calibrated with either ValVue communication software, EDDL, DTM a hand-held communicator, or local pushbuttons and digital display. This versatility allows the operator to configure, calibrate, and perform other functions either at the instrument or from the control room.

ValVue Suite

ValVue Suite
Standalone or Integrated Software

ValVue HART or ValVueFF

ValVue HART and ValVueFF are powerful and user-friendly interfaces designed for set-up and diagnostics of control valves equipped with an SVI, SVI II, SVI II AP, FVP or 12300 / 12400 digital level instruments. ValVue enhances the diagnostics capabilities of your control valves and improves asset efficiency when setting up a digital valve positioner or level transmitter. It offers electronic documentation of configuration and calibration results as well as valve signature analysis. These solutions reduce the complexity in commissioning Foundation Fieldbus or HART digital valve positioners and transmitters.

ValVue OVD

ValVue OVD is a software based technology for monitoring and diagnosing the performance of any control valve during normal process operations. This solution for final control elements improves plant integrity, plant efficiencies and plant uptime resulting in reduced operational expenditures and increased plant profitability.

ValVue ESD

ValVue ESD is an advanced software that can set-up the SVI II ESD product on any emergency shutdown valves and perform partial stroke tests. ValVue ESD is also capable of running various tests to measure the health of an ESD valve as well as graphically displaying the various types of signatures. Plus, its database engine supports historical results archiving and viewing.

Digital Instrumentation

SVi1000
Digital Valve Positioner

Communication Platform:
- HART

Signal - Supply - Features:
- 4-20 mA control signal
- loop powered (9Vdc @ 20 mA)
- supply pressure: 20 - 100 psi (1.4 - 6.9 bar)
- -40°C to 85°C (-40°F to +185°F)
- basic diagnostics (alerts)
- single-acting
- "one-button-one-function" quick setup local LEDs and pushbuttons
- built-in solid state switches (two)
- non-contact travel sensor

Communication Software Interfaces:
- ValVue standalone
- integrated (PLUG-IN, SNAP-ON, FDM)
- eDDL or DTM

Hazardous Area Certifications:
- ATEX, FM, IEC and FMc approvals
- intrinsically safe and non-incendive

GE Energy's SVi1000 is a user friendly 4-20 mA digital positioner with HART protocol for single-acting pneumatic control valves with proven non-contact magnetic position measuring technology.

This solution is perfect for those that need a low maintenance and simple electro-pneumatic valve positioner with built-in local calibration. The SVi1000 is designed to be setup and calibrated in less than five minutes for the majority of control valves.

SVI II AP
Advanced Performance Digital Valve Positioner

Communication Platform:
- HART

Signal - Supply - Features:
- 4-20 mA control signal
- loop powered (9Vdc @ 20 mA)
- supply pressure: 20 - 150 psi (1.4 - 10 bar)
- -40°C to 85°C (-40°F to +185°F)
- standard or advanced diagnostics
- single or double-acting
- local Exd LCD and pushbuttons
- local or remote-mount capable
- built-in position transmitter and switches
- non-contact travel sensor

Communication Software Interfaces:
- ValVue standalone
- integrated (PLUG-IN, SNAP-ON, FDM)
- eDDL or DTM

Hazardous Area Certifications:
- ATEX, FM, IEC, GOST, KOSHA, NEPSI, INMETRO and CSA approvals
- Explosion proof and intrinsically safe

Smart Valve Interface Advanced Performance (SVI II AP) is an intelligent digital valve positioner. SVI II AP offers advanced control technology for pneumatically actuated valves with a proven non-contact Hall Effect sensor for higher precision, reliability, greater flexibility, and ease of use. This solution delivers greater return on investment and provide maximum valve diagnostics capabilities.

ValVue is a communication software tool used to configure, calibrate, and perform valve diagnostics with the SVI II AP utilizing HART communications protocol.

SVI II ESD
Emergency Shutdown Device and PST Controller

Communication Platform:
- HART

Signal - Supply - Features:
- 4-20 mA control signal (ASD) 24 Vdc, (DSD), 4-20 mA and 24Vdc (4-wire device A/DSD)
- supply pressure: 20 - 120 psi (1.4 - 8 bar)
- -40°C to 85°C (-40°F to +185°F)
- single-acting
- local Exd LCD and pushbuttons
- local,remote and automatic partial stroke test
- built-in position transmitter and switches
- non-contact travel sensor

Communication Software Interfaces:
- ValVue ESD standalone
- integrated (PLUG-IN, SNAP-ON)
- eDDL, DTM

Hazardous Area Certifications:
- ATEX, FM, IEC, GOST, KOSHA, NEPSI, INMETRO and CSA approvals
- explosion proof and intrinsically safe

The SVI II ESD is a SIL3 capable partial stroke test controller and emergency shutdown device. It's safety function and PST function are independent of each other allowing the device to respond to a safety function while a test is active. It can capture two shutdown events and allow continuous HART communications during a trip facilitating local panel annunciation using the built-in discrete outputs.

The SVI II ESD automatically captures the PST in its non-volatile memory and stores the analysis while Valvue ESD software automatically and regularly uploads its database with PST and full stroke data.

FVP
Digital Valve Positioner and PID Controller

Communication Platform:
- Foundation Fieldbus (H1)

Signal - Supply - Features:
- Foundation Fieldbus
- fieldbus powered (16 mA)
- supply pressure: 20 - 100 psi (1.4 - 6.9 bar)
- -40°C to 85°C (-40°F to +185°F)
- standard or advanced diagnostics
- single or double-acting
- local pneumatic bypass
- link active scheduler (LAS)
- AO,OS,DI (2), PID (2),AR function block
- non-contact travel sensor

Communication Software Interfaces:
- ValVue FF standalone
- integrated (PLUG-IN, SNAP-ON)
- eDDL or DTM

Hazardous Area Certifications:
- ATEX, FM, GOST, KOSHA, NEPSI, INMETRO and CSA approval
- explosion proof and intrinsically safe

The FVP, Fieldbus Valve Positioner, is a digital valve positioner and PID process controller. The FVP offers highly advanced control technology for pneumatically actuated valves resulting in higher precision and greater flexibility. The FVP has multiple function blocks (AO,PID1,PID2,DI1,DI2,AR,OS) to address a multitude of process topologies.

It has a built-in link active scheduler (LAS) as back up to the control system in order to handle and manage the communication between fieldbus devices. A Fieldbus version of ValVue software is available.

Masoneilan Instrumentation

4700P Series
Pneumatic Positioner

Characteristics:
- linear or equal percentage obtained through the cam setting.

Options:
- bypass
- customized characteristic

Signals:
- 3 - 15 psig
- 6 - 30 psig
- 3 - 9 psig,
- 9 - 15 psig

Action:
- Direct and reverse action (reverse action available on pneumatic version only)

4700E Series
Electro-Pneumatic Positioner

Characteristics:
- linear or equal percentage obtained through the relevant cam setting.

Options:
- bypass
- customized characteristic

Signals:
- 4 - 20 mA
- split range

Certification:
- explosion proof and intrinsically safe enclosure rating per IP 66 and NEMA X

Action:
- Direct and reverse action

Model 4411
Electro-Pneumatic Transducer

Output capacity:
- 12 scfm (20.4 Nm^3/h)

Signals:
- input: 4 - 20 mA (100 mA max)
- output: 3 - 15 psig, 6 - 30 psig

Certification:
- explosion proof and intrinsically safe enclosure rating per IP 66 and NEMA X

The Model 4700P and 4700E instruments are positioners that use a precision feedback cam for accurate positioning, faster response, and customized control characteristics for control valves. These positioners can be used with either rotary or reciprocating actuators. When mounting on reciprocating actuators, a simple, rugged turnbuckle and lever assembly couples stem motion to the cam. On rotary actuators, the cam is mounted directly to the shaft.

The main features of the 4700E/P Series are:

- multi-lobe cam
- simple zero and span adjustments
- corrosion resistant materials
- fully enclosed
- FM, CSA, ATEX approvals
- simple design
- easy to maintain
- optional bypass on pneumatic version
- dampening adjustment

The 4411 I/P is manufactured with Reedex™ digital-micro valve technology for fast response. It is not sensitive to vibration.

- low air consumption
- adjustable tight shut-off feature

496 Series
Rotary Limit Switch

Rating:
- 10 amps @ 300 Volts A.C.
- 0.6 amps @ 24/30 Volts D.C.

Position switches:
- one or two electromechanical switches
- one or two inductive proximity switches

Position transmitter:
- opto-electronic position transmitter

Hazardous Area Certifications:
- ATEX, FM and CSA approvals

The 496 Series switches and position transmitters can be configured as electromechanical switches, proximity switches, or opto-electronic position transmitters. These devices offer high resistance to vibration and electrical interference for reliable valve-mounted performance.

Mechanical and electrical components can operate in harsh environments and are approved for use with various hazardous area ratings including ATEX, FM, and CSA.

Model 78
Air Filter Regulator

Inlet Pressure Rating:
- 210 psi (15 bar) maximum

Filter Element:
- 5 µm sintered porous polyethylene

Pressure Set Range:
- 78-4 Model: 5-40 psi (0.35-2.8 bar)
- 78-40 Model: 5-100 psi (0.35-7 bar)

Ambient Temperature Range:
- -40°C to +83°C (-40°F to +182°F)

Connections:
- ¼" NPT or Rc

GE Energy offers a variety of air filter regulating devices, including the Model 78 Air Filter Regulator for controlling the supply of process plant air to control valve accessories. These regulators are externally adjustable for fine tuning and include a locking feature for maintaining output pressure at the desired level. The compact design is easy to mount onto a range of equipment types using different methods and orientations to fit the specific application. GE Energy also offers the Model 77 Three-Way Transfer Valve for added flexibility in applying and tying together various pneumatic devices within a control valve loop.

Model BR200 / BR400
High Capacity Volume Booster Relays

Maximum Supply Pressure:
- 150 psi (10.3 bar)

Maximum Signal Pressure:
- 150 psi (10.3 bar)

Ambient Temperature Range:
- -30°C to +100°C (-22°F to +212°F)
- optional: -55°C to +100°C (-43°F to +212°F)

Input / Output Ratio:
- 1:1

Maximum C_V:
- supply: 2.6
- exhaust: 2.4

Model BR200 and BR400 pneumatic booster relays offer high capacity air volume boost for faster, dynamic control valve system response. These devices feature a 1:1 input-to-output ratio with a maximum supply and signal pressure of 150 psi (10.3 bar). The BR200 and BR400 also include an integrated internal bypass valve for sensitivity adjustment and dynamic response optimization. These devices also have integrated filters in both the supply and signal ports and are configured using stainless steel components and corrosion resistant finishes for a robust and reliable assembly.

DIRECT SALES OFFICE LOCATIONS

BELGIUM
Phone: +32-2-344-0970
Fax: +32-2-344-1123

BRAZIL
Phone: +55-11-2146-3600
Fax: +55-11-2146-3610

CHINA
Phone: +86-10-8486-4515
Fax: +86-10-8486-5305

FRANCE
Courbevoie
Phone: +33-1-4904-9000
Fax: +33-1-4904-9010

GERMANY
Viersen
Phone: +49-2162-8170-0
Fax: +49-2162-8170-280

INDIA
Mumbai
Phone: +91-22-8354790
Fax: +91-22-8354791

New Delhi
Phone: +91-11-2-6164175
Fax: +91-11-5-1659635

ITALY
Phone: +39-081-7892-111
Fax: +39-081-7892-208

JAPAN
Chiba
Phone: +81-43-297-9222
Fax: +81-43-299-1115

KOREA
Phone: +82-2-2274-0748
Fax: +82-2-2274-0794

MALAYSIA
Phone: +60-3-2161-0322
Fax: +60-3-2163-6312

MEXICO
Phone: +52-5-310-9863
Fax: +52-5-310-5584

THE NETHERLANDS
Phone: +0031-15-3808666
Fax: +0031-18-1641438

RUSSIA
Veliky Novgorod
Phone: +7-8162-55-7898
Fax: +7-8162-55-7921

Moscow
Phone: +7 495-585-1276
Fax: +7 495-585-1279

SAUDI ARABIA
Phone: +966-3-341-0278
Fax: +966-3-341-7624

SINGAPORE
Phone: +65-6861-6100
Fax: +65-6861-7172

SOUTH AFRICA
Phone: +27-11-452-1550
Fax: +27-11-452-6542

SOUTH & CENTRAL
AMERICA AND THE CARIBBEAN
Phone: +55-12-2134-1201
Fax: +55-12-2134-1238

SPAIN
Phone: +34-93-652-6430
Fax: +34-93-652-6444

UNITED ARAB EMIRATES
Phone: +971-4-8991-777
Fax: +971-4-8991-778

UNITED KINGDOM
Wooburn Green
Phone: +44-1628-536300
Fax: +44-1628-536319

UNITED STATES
Massachusetts
Phone: +1-508-586-4600
Fax: +1-508-427-8971

Corpus Christi, Texas
Phone: +1-361-881-8182
Fax: +1-361-881-8246

Deer Park, Texas
Phone: +1-281-884-1000
Fax: +1-281-884-1010

Houston, Texas
Phone: +1-281-671-1640
Fax: +1-281-671-1735

California
Phone: +1-562-941-7610
Fax: +1-562-941-7810

GEA18714 05/2012