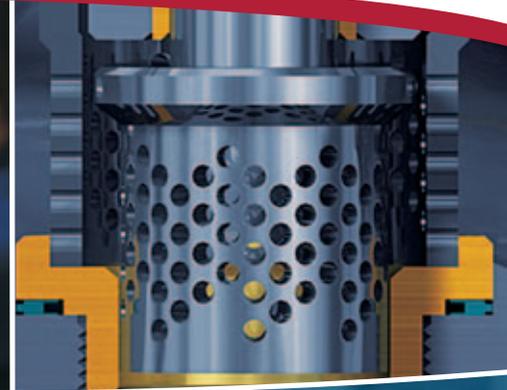




# Masoneilan

Putting You In Control

## CONDENSED CATALOG



**Control Valves**  
**Digital Instrumentation**  
**Liquid Level Controllers**  
**Pressure Regulators**  
**Control Equipment & Accessories**



In 1882, a young inventor, William Mason, invented an automatic steam reducing valve. Today, Dresser Masoneilan is a global leader in providing control valve solutions for process industries.

## Field Proven Reliability

Dresser Masoneilan has provided world-class automated process control solutions for over one hundred years, such as the highly-reliable Dresser Masoneilan 41005 Series Cage-Guided Globe Valve.



## Advanced Digital Technology

The Dresser Masoneilan 12400, SVI® II ESD, SVI® II AP and FVP™ instruments and ValVue®, ValVue® ESD and OVD® software provide high performance digital process control and safety with value-added benefits, such as compatibility with existing analog systems, on-line diagnostics, partial stroke testing and improved process yield.

## Global Customer Service

Dresser Masoneilan provides a network of service and repair facilities around the world to support your every need. Services are available day or night covering on-site support, spare parts, and equipment maintenance programs.



# Dresser Masoneilan

## Capabilities



### Automated Sizing & Selection

Dresser Masoneilan has developed user-friendly software programs for sizing and selecting valve solutions based on current industry standards and calculation methods. These tools significantly reduce the time required to accurately specify and configure products and help customers select and implement the right solutions for every application.



### Resident Engineering

Dresser Masoneilan has implemented the Resident Engineer Program in order to facilitate effective up front design support. This program is focused on providing on-site technical assistance early in the design process, resulting in the reduction or elimination of costly design changes later in the project cycle.



### Smart Technology

Dresser Masoneilan provides microprocessor-based field instrumentation that can help you realize tangible cost savings from initial installation and set-up, through on-going 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 drastically improve performance and maintenance management.

## Customer Benefits



### Global Capabilities

Dresser Masoneilan's efforts are focused to provide support to our worldwide customers throughout a product's life-cycle. The backbone of this support system is a global infrastructure of sales offices, manufacturing operations, and technical resources.



### Field Support Services

Dresser Masoneilan provides factory certified support for all products through a global support network consisting of Masoneilan Authorized Repair Centers (**MARC®**) and field service technicians. This includes OEM components, on-site support, hands-on training and post installation analysis to answer all your MRO needs worldwide and ensure maximum performance efficiencies.



### Maintenance Management Services

Dresser Masoneilan also provides **ValvKeep® II** program to help manage the support of your installed equipment. This program includes plant surveys, data management, scheduling and planning of maintenance, repairs, and overhauls. Historical data and trends can be managed to maximize efficiency of overall equipment support.



### OEM Parts

Dresser Masoneilan fully understands that quick response in obtaining replacement parts and overhaul services is a critical factor in maintaining a smoothly operating plant. As a result, Masoneilan has placed extremely high importance on this customer need within our global aftermarket program.



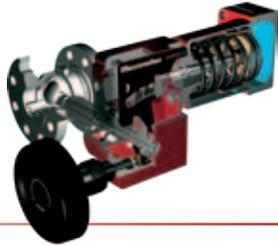
### Diagnostic Services

Dresser Masoneilan has developed advanced diagnostic tools and services designed to optimize process loops and assist in the prevention of unexpected or unnecessary maintenance. Available diagnostic tools include the **ValScope™** and the **OVD®** On-line Valve Diagnostic software for control valves, and the **SVI® II AP** and **FVP™** digital positioners with **ValVue®** software. Diagnostic services include the on-site application of these highly advanced tools by fully trained technicians.



# Control Valve Solutions

## General Service Applications



### Rotary Products

Over one million **35002 Series Camflex®** valves have been successfully installed in a variety of process industries and applications. Today's Camflex II continues to provide legendary dependability through a field-proven concept that remains the standard of excellence for all eccentric plug rotary control valves. The standard version includes the EF Seal (Emission Free packing) with emissions rated at 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 provide a unique combination of high capacity and exceptional turn down capability. Available in ANSI/ISA 75.08.02 (IEC 534-3-2) and ANSI B16.10 short pattern face to face dimensions offering flexibility to match existing installations. Three seat types are available: MN-7 soft seat offering class VI seat leakage; standard flexible metal seat and the Heavy Duty Seat providing class IV shutoff.



### Reciprocating Products

The **21000 Series** is a single ported, heavy top-guided globe valve designed to handle a wide variety of process control applications. The 21000 Series can be provided 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.

Dresser Masoneilan's versatile cage-guided **41005 Series** control valve provides solutions for applications such as high pressure drop steam. This includes highly reliable, balanced trim designs 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 can also be provided to maintain low outlet velocities and minimize downstream noise.

## Corrosive Service Applications



### 31000 Series PFA Lined Products

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

## Erosive Service Applications



### 73000 Series Sweep Angle Products

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

## Severe Service Applications



### 49000 Series

The **49000 Series** is a large capacity control valve designed 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 products from high pressure drop anti-cavitation liquid designs through low noise gas and steam applications. Available in both globe and angle style designs and incorporating the Lo-dB and **V-Log** trims, the 49000 series provides a flexible solution to fit high pressure drop applications in any pipe size or process fluid application.



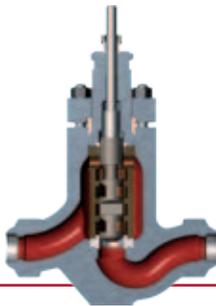
### 72000 Series

Dresser Masoneilan designed the **72000 Series** family of energy management and low noise products 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 to offer effective solutions for customers' specific process needs. For addressing your most severe, high expansion ratio applications, custom **V-Log** trim options are readily available.



### 77000 Series

The **77000 Series** multi-stage expanding area control valve is designed primarily for high-pressure compressible fluid or two-phase applications. It effectively controls erosion, vibration, and high noise conditions, 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 as well as a reliable solution for high pressure gas letdown with entrained debris.



### 78400/18400 Series

Axial flow **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, maintaining staging ratios at all lift points. Velocity and pressure drop are controlled, thus eliminating cavitation and the resulting trim damage. This valve is highly effective in pump recirculation and high-pressure liquid letdown applications.



### 79000 Series

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



### 84000 Series

The **84000 Series SteamForm**®, steam conditioning valve, is built off a flexible platform to condition steam under a full severity range of conditions. Designed to use a wide range of trim options the SteamForm operates from a range of low pressure steady state process steam applications to intermittent, rapid response turbine bypass. Built from patented technology the SteamForm valve uses precision spray nozzles and a proprietary water injection design to desuperheat and trim designs to thermally compensate for high temperature cycling for installation in the most severe steam environments.



# Technology Solutions

## Energy Management Trim

Dresser Masoneilan provides a wide range of solutions to handle fluid energy problems.



### Drilled-Hole Technology

Dresser Masoneilan offers a wide selection of single 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.



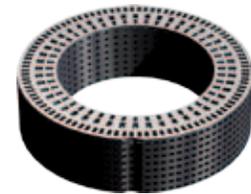
### Differential Velocity Technology

Dresser Masoneilan's patented **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 substantially lower external noise levels.



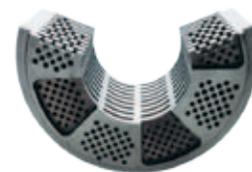
### Axial Flow Technology

**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 was designed specifically for boiler feedwater applications and provides long term Class VI shut-off at the most demanding pressures. The **77000 Series** is multi-stage trim designed with expanding areas for high-pressure gaseous applications.



### Stacked Plate Technology

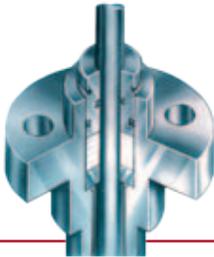
**V-Log®**, Energy Management Trim, is manufactured from a brazed stack of laser cut plates, each designed with a series of 90 degrees turns used to redirect the flow of the process fluid through a high resistant flow path. Each stage also includes an expansion and contraction in area for maximum pressure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



**VRT®**, Variable Resistance Trim, 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 Dresser Masoneilan globe and angle valve bodies.

## Fugitive Emissions Control

Dresser 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 Dresser 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 FM 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 Clean Air Act.



### LE<sup>®</sup> (Low Emission) Packing

Dresser Masoneilan reciprocating control valves can be equipped with the **LE Packing** System option for economic reduction of fugitive emissions to less than 500ppm. The LE packing system is designed to maintain a constant sealing force within the packing box.



### Bellows Seal

**Bellows Seals** are offered for applications as a hermetic metallic seal for valve stem interfaces. Typical applications include handling of flammable, toxic, or explosive fluids, where leakage may cause environmentally unsafe conditions.

## Smart Technology



### SVI<sup>®</sup> II AP Smart Valve Positioner HART<sup>®</sup>

The **SVI<sup>®</sup> II AP** offers high performance control using digital technology that provides valuable benefits such as non-contact position sensing, low maintenance, remote-mounting, online diagnostics, autotuning and auto-calibration. The SVI<sup>®</sup> II AP always provides the option for local or remote communication, even in hazardous environments. It is SIL 2 capable per IEC61508. **ValVue<sup>®</sup>** software provides a user friendly PC-based communication tool for those digital instruments.



### FVP<sup>™</sup> Fieldbus Valve Positioner Foundation Fieldbus

The **FVP<sup>™</sup>** - Fieldbus Valve Positioner - is a Digital Valve Positioner and PID process controller. The FVP offers highly advanced control technology for pneumatically actuated valves, providing higher precision and greater flexibility. A Foundation Fieldbus version of **ValVue<sup>®</sup> FF** software is available, for local or remote communication.



### 12400 DLT Smart Level Transmitter HART<sup>®</sup>

The Dresser Masoneilan **12400** Series Digital Level Transmitter (DLT) is a Smart instrument with **HART<sup>®</sup>** communication protocol utilizing the fully proven liquid displacement and torque tube technology. **ValVue<sup>®</sup>** software is available for the 12400 for local or remote communication, setup and diagnostics



# Dresser Masoneilan Products

## 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, which provides tight shut off, low dynamic forces, and excellent control. This valve is an excellent solution for hydrofluoric and sulfuric acid applications.



### 34003 Series Ultra-Max® Low Noise Ball

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
- 3 stage Multi-Step trim - small sizes, moderate noise attenuation
- 5 Stage Multi-Step trim - large sizes, severe service

Inherent Characteristic:  

- modified equal percent

The **34003 Series Ultra-Max** is low noise and anti-cavitation rotary control valve for gas and liquid applications. Ultra-Max features a full trunnion mounted ball with noise attenuation trim. A wide range of available materials allows Ultra-Max 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

Actuator:  

- model 35 spring diaphragm
- 70 Series cylinder

Trim:  

- eccentric rotary plug

Inherent Characteristic:  

- linear

As the original eccentric plug rotary valve, the **Camflex®** combines top performance and features with an extremely economical design. The **Camflex®** offers enormous versatility and broad application, and remains the most widely used eccentric plug control valve in the world. Now supplied with the EF seal solution to reduce fugitive emissions.

## Rotary Control Valves



### 36005 Series V-Max<sup>®</sup> Control Ball

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

Ratings and Connections:  
• flanged: ANSI 150 - 300

Body Materials:  
• carbon steel  
• stainless steel

Actuator:  
• 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 V-Max** is a high capacity, control ball valve with a patented dual characterized segmented ball design combining high Cv ratings with exceptional 500:1 turndown. It is an excellent solution for both high viscosity fluid applications (i.e. pulp and paper industry) as well as processes requiring very high capacity balanced with accurate control. Standard features also include the environmental packing (EF seal).



### 37002 Series Minitork<sup>®</sup> 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

Actuator:  
• 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 very large flow rates with low pressure drop. It is available with complete PTFE lining (38002 Series) for corrosive fluids applications.



### 39003 Series High-Performance Butterfly

Sizes: 3" through 36"  
(80 through 900 mm)

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

Body Materials:  
• carbon steel  
• stainless steel

Actuator:  
• model 33 spring diaphragm  
• model 34 scotch yoke cylinder

Trim:  
• eccentric butterfly

Inherent Characteristic:  
• equal percentage

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



# Dresser Masoneilan Products

## 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

**Actuator:**

- model 87/88 multi-spring diaphragm
- cylinder actuators

**Trim:**

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

**Inherent Characteristics:**

- linear, quick opening or equal percentage

The **10000 Series** is a double ported valve with top and bottom stem guiding. This design is ideal for high-pressure drop applications, where dirty fluid conditions exist. The 10000 Series is widely used on 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

**Actuator:**

- model 87/88 multi-spring diaphragm

**Trim:**

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

**Inherent Characteristics:**

- 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 is well suited to handle a variety of process applications ranging from standard service conditions to more severe applications. 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

**Trim:**

- full stellite needle plug
- multistep trim available

**Inherent Characteristic:**

- linear

The **Varipak®** is a compact globe style valve designed specifically for microflow control. The Varipak includes an adjustable CV feature between 100% and 40% - to meet applications requiring finer control. Available with bellows seal and anti-cavitation trim option.

## Reciprocating Control Valves



### 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

#### Actuator:

- model 87/88 multi-spring diaphragm
- model 37/38 spring diaphragm
- cylinder actuators

#### Trim:

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

#### Inherent Characteristics:

- 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 provide effective 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

#### Actuator:

- model 87/88 multi-spring diaphragm
- model 37/38 spring diaphragm
- cylinder actuators

#### Trim:

- V-port plug

#### Inherent Characteristic:

- linear

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



# Dresser Masoneilan Products

## 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 actuators

Trim:

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

Inherent Characteristics:

- linear or equal percentage

The **72000 Series** is designed for precise capacity control, while efficiently minimizing noise and outlet velocities using single or multiple cages or V-Log trim.  
Specific applications:

- compressor antisurge
- flare to atmosphere



**77000 Series**  
Multistep Angle Valve

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

Ratings and Connections:

- flanged: inlet ANSI 2500  
outlet ANSI 150 - 2500  
UNI-DIN 10 - 400
- welded: BW or SW

Body Materials:

- carbon steel
- stainless steel
- chrome-moly

Actuator:

- model 37/38 spring-opposed  
diaphragm
- cylinder actuators

Trim:

- 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 designed primarily for high-pressure compressible fluid or 2-phase flow applications. It effectively controls erosion, de-gassing, and high noise levels.  
Specific applications:  
hot separator letdown, well head choke



**18400 & 78400 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

Actuator:

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

Trim:

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

Inherent Characteristic:

- linear

The **18400 & 78400 Series** valve used on liquid services eliminate cavitation.  
Specific applications:

- boiler feed water recirculation
- desuperheater spray water

## Severe Service Control Valves



### 49000 Series Globe and Angle Style with Lo-dB or V-Log® Trim

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

Ratings and Connections:

- flanged: ANSI 150-2500  
UNI-DIN 10 - 400
- welded: BW

Body Materials:

- carbon steel
- stainless steel
- chrome-moly

Actuator:

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

Trim:

- 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** is designed with enlarged body galleries to accommodate large stroke lengths and up to 36-stages of pressure reduction. Specific applications: boiler feed water start-up & 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

Actuator:

- model 87/88 multi-spring diaphragm
- model 37/38 spring diaphragm
- cylinder actuators

Trim:

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

Inherent Characteristic:

- linear

The **79000 Series** valves is designed for 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

Actuator:

- model 87/88 multi-spring diaphragm
- model 37/38 spring diaphragm
- cylinder actuators

Trim:

- single or double stage Lo-dB with optional diffuser, and V-Log energy management trim
- available with thermally compensating 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®** is designed with a wide range of features including a patented water injection system for best performance in steam conditioning applications. Specific applications:

- turbine bypass
- process steam conditioning



# Dresser Masoneilan Products

## 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

Actuator:  
• model 87/88 multi-spring-opposed  
diaphragm  
• cylinder actuators

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 designed to minimize fluid impingement through the body. This design includes very heavy guiding and durable trim parts to withstand harsh operation. Specific applications: visbreaker, hot hydrocarbon fluid and 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

Actuator:  
• model 87/88 multi-spring-opposed  
diaphragm  
• cylinder actuators

Trim:  
• high capacity single stage  
• reduced port Venturi outlet  
• ceramic and tungsten carbide  
optional

Inherent Characteristic:  
• linear

The **73000 Series** control valve is especially suited to throttle highly erosive, flashing, and 2 phase flows. Specific applications:  
• mining  
• coal slurry  
• ash handling  
• hydrocarbon bottoms



### 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 actuators

Trim:  
• 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 valves includes a full sweep angle design and heavy duty plug design to minimize erosion impact from solids or debris found in tank bottoms. Available in 45, 60, and 90 degree angle configurations. Specific applications: Tank level control and pressure letdown applications commonly in reactor or crystallizer tanks

## Regulators



525-526 Series

Sizes:  
 ½" through 4"  
 (15 through 100 mm)

Ratings and Connections:

- flanged: ANSI 150 - 600  
UNI-DIN 10 - 100
- screwed: NPT 15 - 50 mm
- 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 designed for pressure reduction, and the 526 Series for back pressure applications. Also available for differential pressure applications in multiple configurations to meet various combinations of capacity, pressure, and temperature requirements.

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



535V-535H Series

Sizes:  
 ¾" through 2"  
 (15 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

Trim:

- 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** 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 designed for precise control of gas services. Available in both pressure reducing and pressure relieving (back-pressure) constructions for industrial air and gas applications.



174 Series

Sizes:  
 ½" through 1-1/2"  
 (15 through 40 mm)

Ratings and Connections:

- screwed: NPT

Body Materials:

- carbon steel

Actuator:

- integral spring diaphragm

Trim:

- 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)



# Dresser Masoneilan Products

## 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** 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 the fully proven liquid displacement and torque tube principle.



### 12400 Series Digital 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

Electronic Instrument:

- HART® protocol
- 4 - 20 mA signal
- ATEX, FM, and CSA approvals

The Dresser Masoneilan **12400 Series** Instrument is a 2-wire loop powered digital displacement type level Transmitter or Controller with HART® Communication. This high performance instrument is easily set-up and calibrated by use of either **ValVue®** communication software or 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 Smart Communications Software

#### ValVue® HART®

**ValVue® HART®** is a powerful and user friendly interface designed for setup and diagnostics of control valves equipped with an SVI®, SVI II or SVI II AP and of 12300 / 12400 digital level instruments. ValVue HART unleashes the diagnostics capabilities of your control valves and optimizes asset efficiency when setting up a digital valve positioner. It provides electronic documentation of configuration and calibration results as well as valve signature analysis.

#### ValVue® FF

**ValVue® FF** is an intuitive user interface to conduct setup and diagnostics with control valves equipped with an FVP® positioner. The ValVue FF solution reduces the complexity of commissioning this Foundation Fieldbus Valve Positioner. It is also capable of running various tests to measure the performance of a control valve as well as graphically viewing the various types of signatures. It provides electronic documentation of configuration and calibration results as well as valve signature analysis.

#### ValVue® ESD

**ValVue® ESD** is the most advanced software to setup 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.

## Smart Instrumentation



### SVI® II AP Advanced Performance Digital Positioner

Communication Platform:

- HART®

Signal - Supply:

- 4-20 mA control signal
- no external power required
- supply pressure: 20 - 100 psi  
(1.4 - 7 bar)

Communication Software Interface:

- ValVue® - HART®

Hazardous Area Certifications:

- ATEX, FM, and CSA approvals

Dresser Masoneilan's 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 non contact Hall Effect sensor, providing higher precision and reliability, greater flexibility and ease of use. 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

Communication Platform:

- HART®

Signal - Supply:

- 4-20 mA control signal
- 24 Vdc power supply
- combination of 4-20 mA and 24 Vdc (4-wire device)
- supply pressure: 20 - 120 psi  
(1.4 - 10 bar)

Communication Software Interface:

- ValVue® ESD - HART® standalone or integrated

Hazardous Area Certifications:

- ATEX, FM, and CSA approvals

The SVI® II ESD can be implemented using a 4-20mA signal, 0-24Vdc or a combination of both. The single 4-20mA solution is most desirable as it is SIL3 capable while at 4mA, allowing the device to execute the safety function while active. Substantial benefits are realized in capturing shutdown events, allowing continuous HART® communications during a trip and facilitating local panel annunciation using the built-in discrete outputs.

In terms of PST execution, the following are available: local LCD display, remote HART® access, remote use of 4-20mA analog signal, and finally, built-in scheduler functionality. The SVI® II ESD automatically captures the PST in its non-volatile memory and stores the analysis. Two signatures can be stored, allowing the ValVue ESD software to automatically and regularly synchronize its database with field data.

### FVP™ Digital Positioner and PID Controller

Communication Platform:

- Foundation Fieldbus

Input Signal:

- Foundation Fieldbus
- no external power required
- supply pressure: 20 - 100 psi  
(1.4 - 7 bar)

Communication Software Interface:

- ValVue® FF - Foundation Fieldbus

Hazardous Area Certifications:

- ATEX, FM, and CSA approvals

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, providing higher precision and greater flexibility. A Fieldbus version of ValVue® soft-ware is available.



# Dresser Masoneilan Products

## Instrumentation



### 4700P Series Pneumatic Positioner

Characteristic:

- 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)

The **Model 4700P** and **4700E** are field proven positioners utilizing a precision feedback cam to provide accurate positioning, very fast 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

### 4700E Series Electro-Pneumatic Positioner

Characteristic:

- linear or equal percentage obtained through the relevant cam setting.
- Options: bypass customized characteristic

Signals:

- 4 - 20 mA
- split range

Certifications:

- 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<sup>3</sup>/h)

Signals:

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

Certifications:

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

The **4411 I/P** is manufactured with Reedex™ digital-micro valve technology, which provides fast responses and is not sensitive to vibration.

Low air consumption  
Adjustable tight shut-off feature

## Instrumentation



### 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 electro-mechanical 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 electro-mechanical switches, proximity switches or opto-electronic position transmitters. These devices are designed with high resistance to vibration and electrical interference for reliable valve-mounted performance. Mechanical and electrical components are designed to 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

Dresser Masoneilan 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 as required, but also include a locking feature to ensure output pressure remains at the desired level. The compact design allows for ease of mounting onto different equipment using different methods and orientations to fit the specific application. Dresser Masoneilan 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<sub>v</sub>:**

- supply: 2.6
- exhaust: 2.4

**Model BR200** and **BR400** pneumatic booster relays provide high capacity air volume boost for fast and reliable dynamic control valve system response. These devices provide 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 designed using stainless steel components and corrosion resistant finishes for a robust and reliable assembly.

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## About Dresser Masoneilan

Headquartered in Houston, Dresser Masoneilan is a leading brand in the Dresser, Inc. portfolio. With a history of innovation and technological leadership that goes back more than 125 years, Dresser Masoneilan delivers flexible, best-fit process control valve solutions with interoperable instrumentation and smart technologies for a wide range of applications and industries. An "open architecture" technology platform offers more product application and operational flexibility. With strategically located manufacturing operations and a worldwide network of service and support facilities, Dresser Masoneilan delivers comprehensive process control solutions and services to a global market.

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## About Dresser, Inc.

Dresser, Inc. is a leader in providing highly engineered infrastructure products for the global energy industry. The company has leading positions in a broad portfolio of products, including valves, actuators, meters, switches, regulators, piping products, natural gas-fueled engines, retail fuel dispensers and associated retail point-of-sale systems, and air and gas handling equipment. Leading brand names within the Dresser portfolio include Dresser Wayne® retail fueling systems, Waukesha® natural gas-fired engines, Masoneilan® control valves, Consolidated® pressure relief valves, and Roots® blowers. It has manufacturing and customer service facilities located strategically worldwide and a sales presence in more than 100 countries.

