CVS CONTROLS LTD

corporate information and product catalogue

2011

Corporate Overview

- CVS Controls has been privately held since 1978.
- Headquarters in Edmonton, Alberta, Canada.
- Over 60 authorized agents and representatives directly and indirectly involved in Engineering, Design, Manufacturing, and Marketing of the CVS product line, which involves in excess of 2000 employees.
- 90,000 sq. ft. manufacturing and assembly facility.

CVS Controls Ltd

Mission Statement

CVS Controls Ltd meets and exceeds our customer's needs and expectations through the highest quality of products, performance, reliability, services and safety while maintaining competitive pricing.

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Corporate Video

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- Detailed Corporate Information
- Product Catalogue Main Page

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Corporate Overview

- Focused on design and manufacture of:
  - Process production controls
  - Control valves
  - Valve Automation
  - Instrumentation
  - Chemical pumps
  - Centrifuges
  - Dew Point testers
  - Centrifuges and Sample Heaters
  - Full Machining and Welding capabilities

Commitment to Quality

- CVS Controls is dedicated to continually improve the efficiency and effectiveness of our quality management system.

- Our product is confirmed by a rigid quality control program which utilizes the most up to date methods of testing and inspection.

- We are continually working towards improving documented procedures to ensure processes are in place to consistently review our performance in meeting these quality objectives.

Commitment to Quality

ISO 9001-2008

QMI
SAI GLOBAL

Certificate Number: CERT-0019342

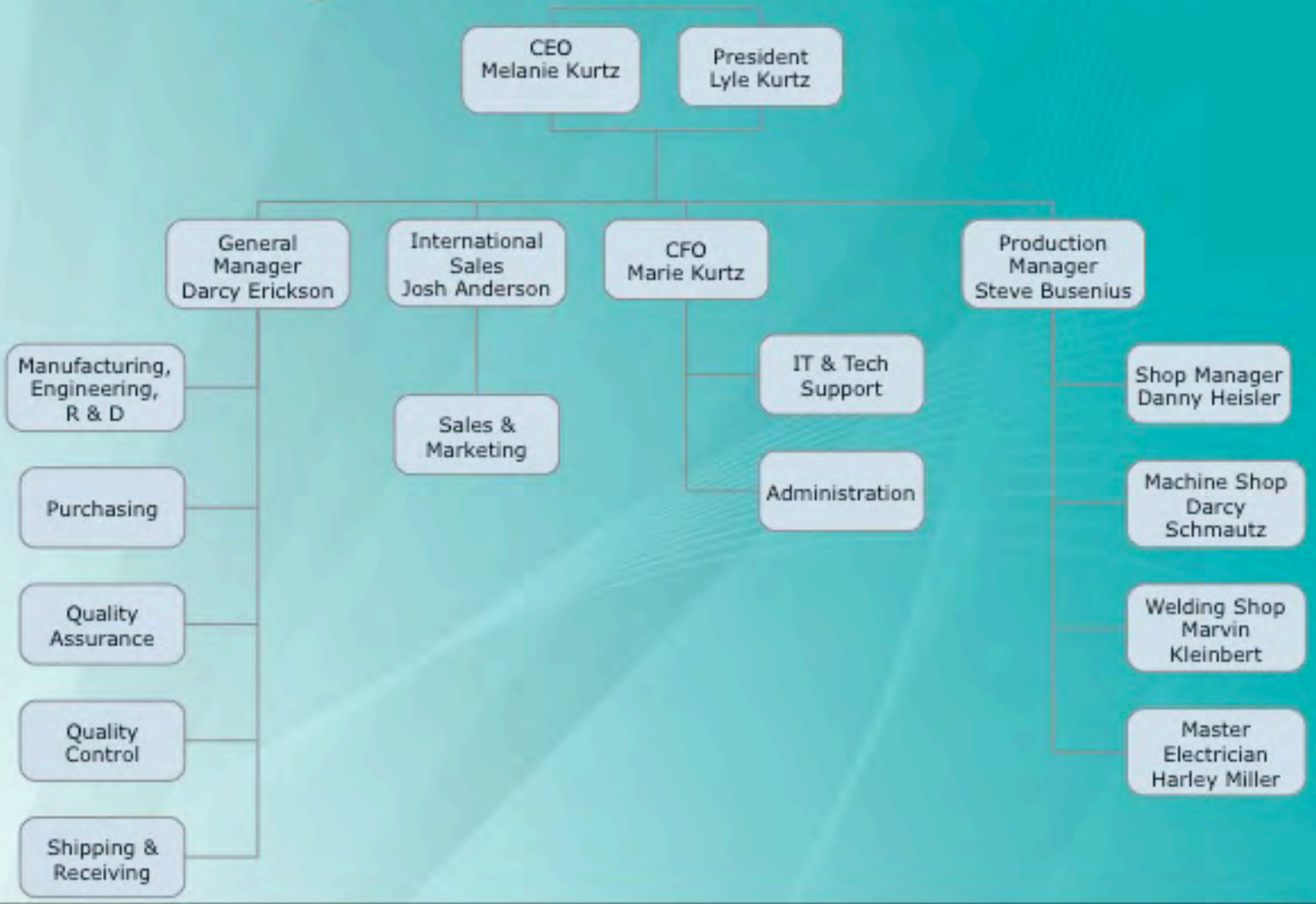
- Registered ISO 9001:2008 facility
- Registered by ABSA (Alberta Boiler Safety Association)
- CVS Controls Ltd. Complies with applicable CSA Standards
- CVS Controls conforms to NACE MRO 175

CVS Controls Ltd

Company Information

- 24 Sales Professionals
- Annual Sales over $35 Million
- Offices in Edmonton and Calgary, Canada. Houston, USA. Mexico City, Mexico, and Shanghai, China.
- 60 authorized agents worldwide
- Supporting Oil & Gas, Petrochemical, HVAC and Pulp & Paper industries

Organizational Chart



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North American References

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International References

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International Marketing Tools

- CVS Controls has a live view Remote Monitoring System that consists of 18+ cameras. This allows International and Domestic Customers to view their products being manufactured, demonstrated, calibrated, and tested in real time.

- The cameras rotate, zoom and record for up to 72 hours with an up to date software package with web interface.

CVS Controls Ltd

2010 Product Catalogue

- Control Valves
- Actuators
- Pressure Controllers
- Positioners
- Limit Switch Box
- Series 670 Loading Regulator
- Regulators
- 3-way Valves
- Norriseal Controls
- Dew Point Testers
- Chemical Pumps
- CVS 2000 Pressure Pilot
- 7970 Pressure Pilot
- Self Contained Hydraulic Pumps
- Centrifuges, Tubes, & Shields
- Pressure & Temperature Recorders
- Dead Weight Testers
- Pressure Gauges
- Thermometers & Thermowells
- Lab Thermometers & Hydrometers
- Load Line Valve Ltd.
- Miscellaneous

CVS Controls Ltd

Control Valves

- Series E, 1 thru 16 inch
- Series H900/1500/2500
- Series EWD
- Series HPX, 2 thru 6 inch
- Series D and DA, 1 and 2 inch
- Series 128 PQC
- Series V-100

CVS Controls Ltd

Series E Globe and EA Angle

1 thru 16 inch

- Single port, globe-style valve body with composition or metal seats.
- Balanced valve plug, with push down to close action.

Design ED

- Intended for general control applications over a wide variety of temperatures & pressure drops.
- Uses upper piston seal ring and metal-to-metal seating.

Design ET

- Intended for applications requiring low leakage rates with composition seating (TFE).
- Offers tight shutoff requirements or metal-to-metal seating with higher temperature capabilities.
- Valve plug has a two-piece upper seal.
- For standard cages the flow direction is flow-down.

Series E
1 thru 16 inch

Available Trim and Flow Characteristics:

- Quick opening, linear, noise abatement, equal percent and anti-cavitation.
- Standard trim material 316 stainless steel.
- Optional material available, alloy 6, cobalt, and tungsten carbide.
- Standard packing material is Teflon, with optional graphite packing for fugitive emission control and high temperatures.

Valve Class and Flange Ratings:

- Valves are rated ASME Class 150, 300 & 600lbs.
- Valve connections are raised face (RF) or ring type joint (RTJ), national pipe thread (NPT) or butt weld, as per ASME B16.34-latest edition.

Coatings:

- Standard valve coating is enamel, optional valve coating is epoxy.
- Valve coating specifications can also be provided by the client.

Valve Body Materials:

- Standard CVS valve bodies - LCC, WCB, CF8M (316SS)

CVS Controls Ltd

Series H900/1500/2500 Valve Bodies

- Single port, globe style valve body with composition or metal seats.
- Balanced valve plug, with push down to close action.
- Available in 3", 4", and 6".

Design ED

- Intended for general to high temperature control applications where tight shut off is not required.
- Upper piston ring seal and metal to metal seating.
- High temperature rating of -23^{0}C to 450^{0}C (-9.4^{0}F to 842^{0}F)

Design ET

- Used in applications requiring low leakage rates and service temperatures ranging from -50^{0}C (-58^{0}F) to 232° C (450 °F).
- Sealing is achieved with a pressure assisted Teflon seal ring.
- For standard cages the flow direction is flow down.

Series H900/1500/2500

Available Trim and Flow Characteristics:

- Quick opening, linear, equal percent, noise abatement, and anti-cavitation.
- Standard trim material 316 Stainless steel.
- Optional material alloy 6, cobalt, and tungsten carbide.
- Standard packing material is Teflon, with optional graphite packing for fugitive. emission control and high temperatures.

Valve Class and Flange Ratings:

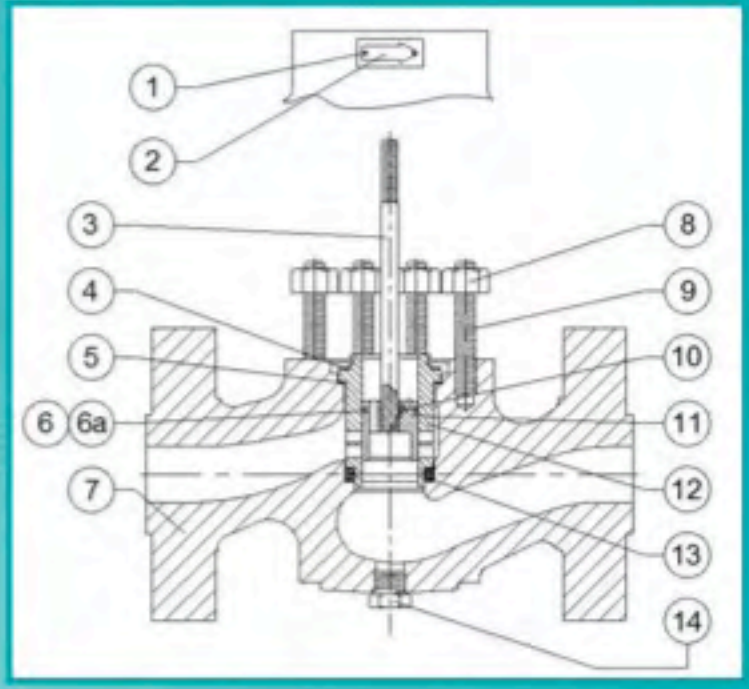
- Valves are rated ASME 900, 1500, & 2500 lbs.
- Valve connections are raised face (RF) , ring type joint (RTJ) or butt weld as per ASME B16.34-latest edition.

Coatings

- Standard valve coating is enamel primer & paint, optional valve coating is epoxy primer & paint.
- Valve coating specifications can also be provided by the client.

Valve Body Materials:

- Standard CVS valve bodies available – LCC, WBC, CF8M (316SS)



CVS Series EH, EW, EU EWT, EUT

- Single port globe-style valve bodies with cage guiding and metal to metal seating, or 3 piece clamped seat rings for tight shut off.
- Push down to close valve plug action.

Design EWD

- Intended for general control applications over a wide variety of temperatures and pressure drops.
- Balanced valve plug with metal to metal seating.

Design EWS

- Used for applications requiring better shut off than the EWD.
- Unbalanced valve plug with metal to metal seating or optional metal to Teflon seating.

Design EWT

- Suitable for applications with stringent shutoff requirements.
- Balanced valve plug with metal to Teflon seating or metal to metal seating for higher temperatures.

CVS Series EH, EW, EU EWT, EUT

Available Trim and Flow Characteristics:

- Quick opening, linear, equal percent, noise abatement, and anti-cavitation.
- Standard trim material 316 Stainless steel.
- Optional material alloy 6, cobalt, and tungsten carbide.
- Standard packing material is Teflon, with optional graphite packing for fugitive emission control and high temperatures.

Valve Class and Flange Ratings:

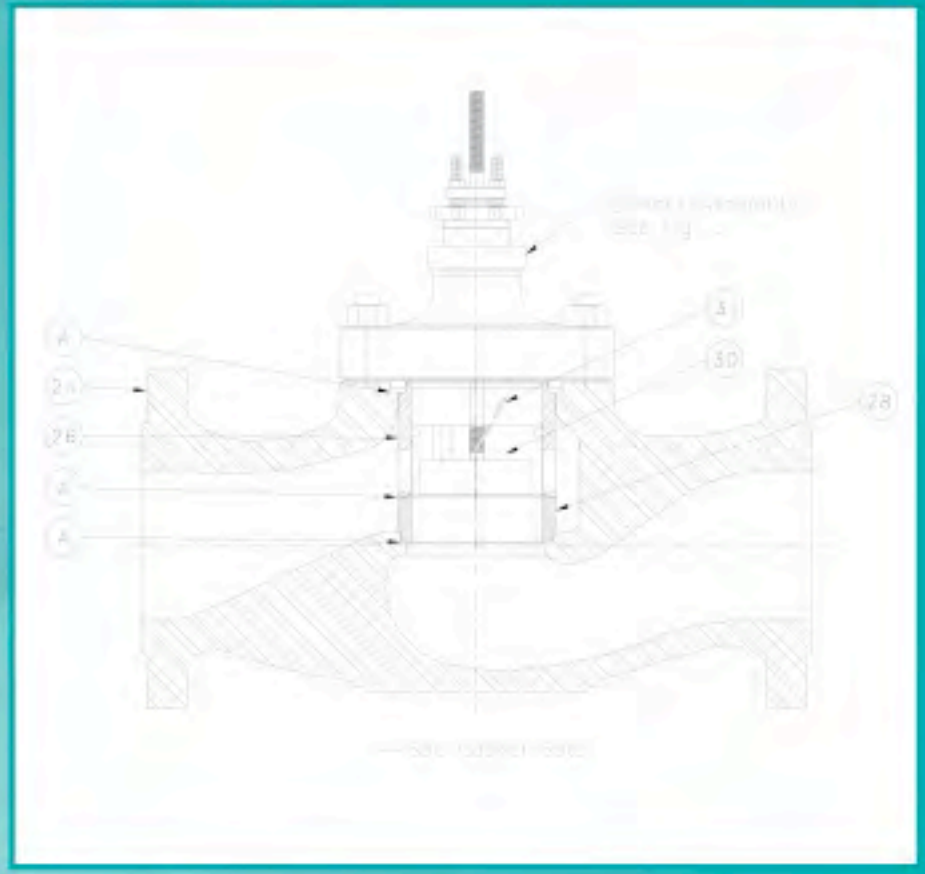
- Valve flanges are rated ASME 150, 300, 600, & 900 lbs.
- Valve Sizing – 8, 10, 12, 16, 20, and 24 Inch
- Valve connections are raised face (RF), ring type joint (RTJ) or butt weld as per ASME B16.34-latest edition.

Coatings

- Standard valve coating is enamel primer & paint, optional valve coating is epoxy primer & paint.
- Valve coating specifications can also be provided by the client.

Valve Body Materials:

- Standard CVS valve body materials – LCC, WCB, CF8M (316SS)



CVS Controls Ltd

Series HPX Globe and Series HPAX Angle Valve Bodies 2 thru 6 inch

- Designed for high pressure applications in the process industry.
- Valves are cage guided, with metal seats and quick change trim.
- Balanced valve plug with push down to close valve action.
- HPX are straight globe valve while the HPAX are an angled valve.

Flow Characteristics:

- Equal percent, modified equal percent, linear, noise abatement, and anti-cavitation.

Valve Class and Flange rating:

- Valves are rated ASME 900, 1500, and 2500lbs.
- Valve connections are raised face (RF), ring type joint, (RTJ), or butt weld as per ASME B16.34-latest edition.

Series HPX2D & HPAX2

- Uses piston rings to provide a seal between the cage and the balanced valve plug.

Series HPX5D & HPAX5

- Sealing is provided by pressure assisted seal ring.

Series D and DA Valve Bodies

1 and 2 inch

- Used in oil production, power plants, and gas distribution, for high pressure applications.
- Available in Globe and Angle style valve body.
- CVS Series D flow characteristic is equal percent, and flow up through the seat ring.
- CVS Series DA flow characteristic is flow in either direction
- Single port, screwed in metal seat ring, and has an unbalanced post guided valve plug.
- Push down to close valve plug action.
- Useful for throttling or on/off control of liquids or gases.

Valve Class and Flange Rating:

- Valves are rated ASME Class 150, 300, 600, 900, 1500, & 2500.
- Valve connections are raised face (RF) or ring type joint (RTJ), National Pipe Thread (NPT) or butt weld as per ASME B16.34-latest edition.

Valve Body Materials:

• Standard CVS valve bodies available – LCC, WCB, CF8M (316SS)

Series D and DA Valve Bodies

1 and 2 inch

- Standard packing material is Teflon, with optional graphite packing for fugitive emission controls and high temperatures.

Coatings

- Standard valve coating is enamel, optional valve coating is epoxy.
- Valve coating specifications can also be provided by the client.

Available Trim

- Flow characteristic is equal percent.
- Flow is up through the seat ring and past the valve plug.
- Standard trim is 316 stainless steel.
- Optional material is tungsten carbide, stellite overlay, cobalt or ceramic.

CVS Series 128 PQC

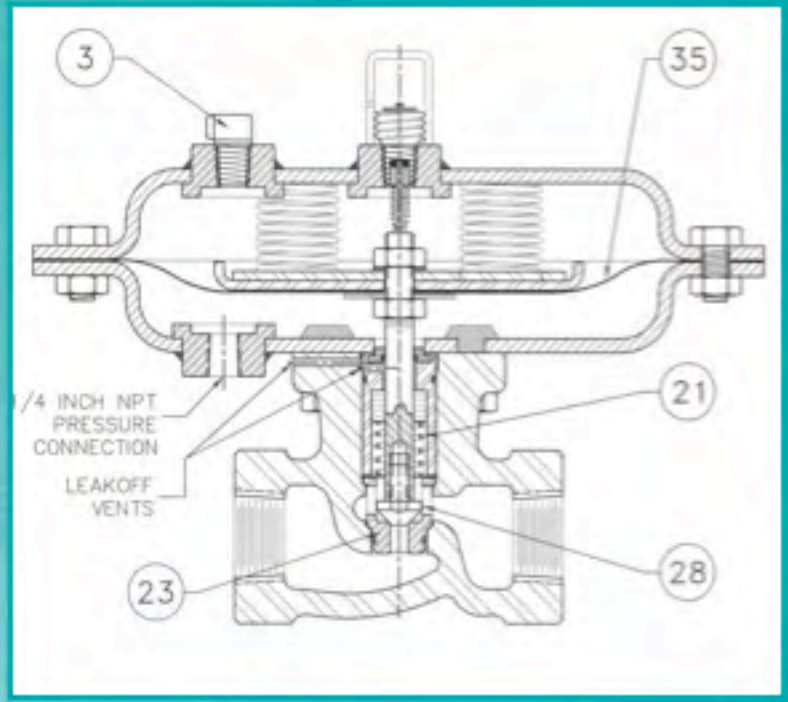
- CVS Series 128PQC control valves are for on-off dump applications, in oil and gas production facilities, for sweet or sour gas.
- Useful for on-off high pressure control for gases and liquids that may be viscous or erosive.
- Single port valve with an unbalanced stem guided valve plug with push down to close action.
- Operated by a Type 128 spring and diaphragm actuator that can be normally fail open or fail closed.

CVS Type 128PQC

- 1 inch control valve with a solid pipe plug threaded on the bottom to allow straight through flow.
- For angled flow simply move the plug to the left port.

CVS Series 128 PQC

- 1 Inch Female NPT.
- All 128PQC valves are available with soft seat, cageless soft seat or metal seat construction.
- All configurations have push down to close valve plug action.
- Valve plug shuts off against the integral seat ring in the cage, except in the cageless soft seat construction where the seat is part of the valve body.
- Maximum inlet pressure of 3600 psi.
- Temperatures from -29°C (-20°F) to 82°C (180°F).
- Manufactured to ASME B16.34-latest edition
- Coatings
  - Standard valve coating is enamel primer & paint, optional valve coating is epoxy primer & paint.
  - Valve coating specifications can also be provided by the client.



CVS Series V-100

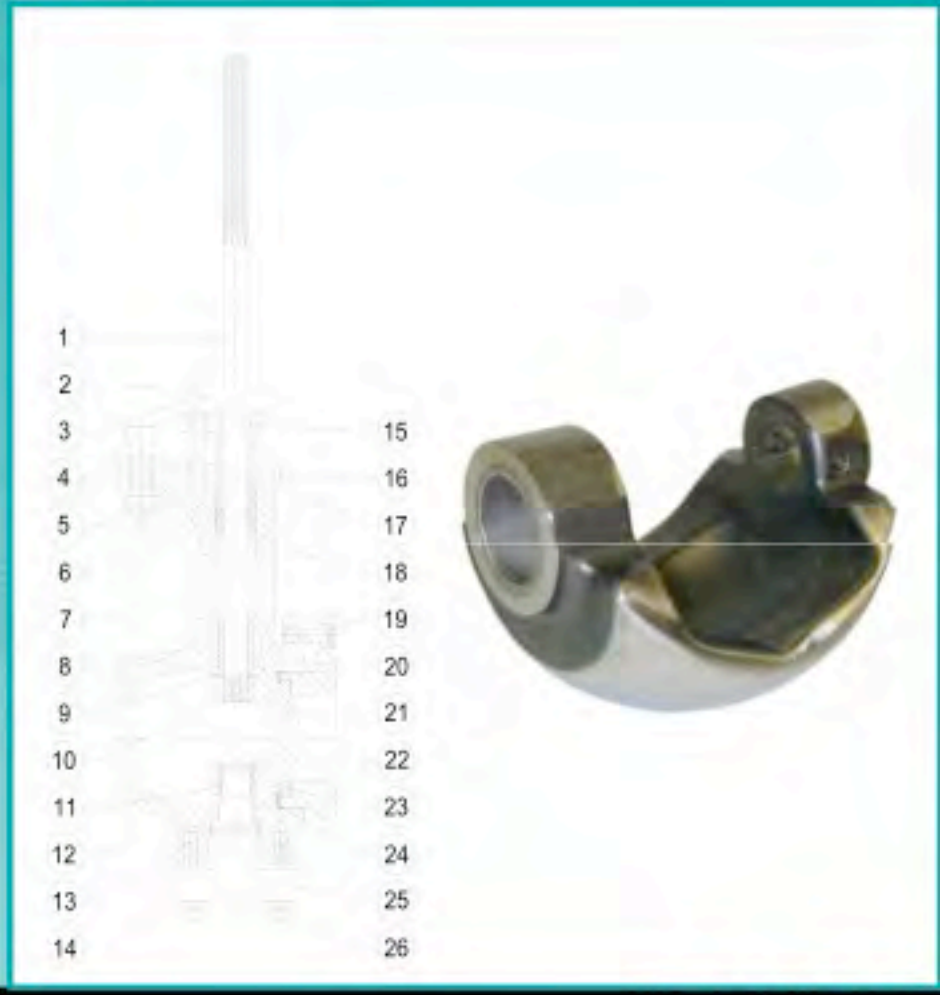
- CVS V-100 ball valve uses a standard ball with a triangular shaped wedge formed inside.
- Design allows for on/off service as well as throttling applications with a variety of actuators.
- V-ball closes against the ball seal with a shearing action as the ball rotates.
- Features a flangeless design that allows the valve body to fit between existing pipeline flanges.
- The flow characteristic is modified equal percent with forward flow into the convex side of the V-ball.
- Valve uses a TCM ball seal, metal ball seal or flow ring.

CVS Series V-100

- Mounting of the actuators can be on the right or left side of the V-ball valve.
- The internal components are made of specific material designed for specific temperature, fluid control, and pressures. The specific valve specifications should not be exceeded.
- Valve Class and Flange Rating:
  - Valves are rated ASME 150, 300, & 600 lbs
  - Manufactured to ASME B16.34-latest edition.
- Available sizing – 2" thru 16"
- Coatings
  - Standard valve coating is enamel primer & paint, optional valve coating is epoxy primer & paint.
  - Valve coating specifications can also be provided by the client.

Valve Body Materials;

- Standard CVS valve bodies available – LCC, WCB, CF8M (316SS)



CVS Controls Ltd

Actuators

- Rack & Pinion Hydraulic Actuators
- Scotch Yoke Actuator
- Series 1051
- Series 657
- Series 667

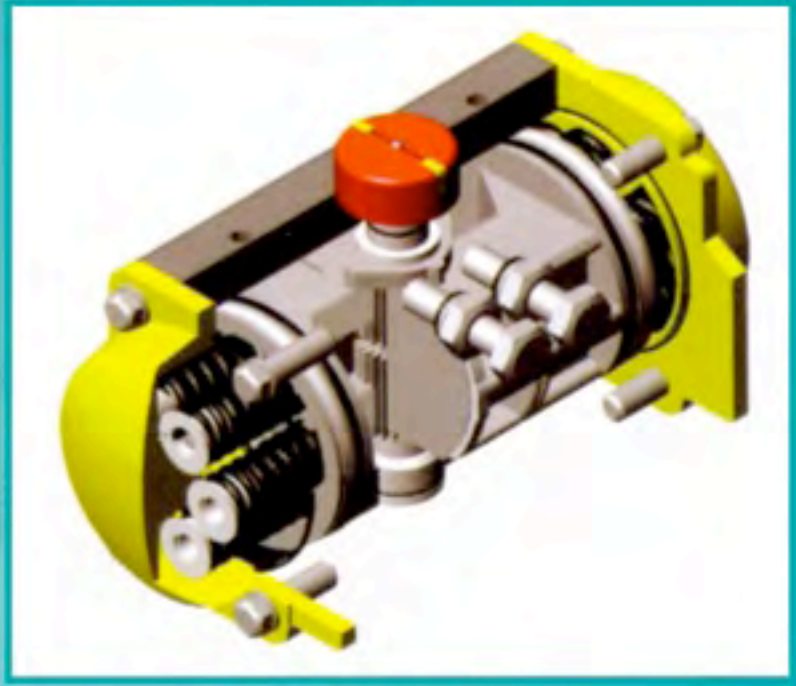
CVS Controls Ltd

Rack & Pinion Actuators

- Rack and pinion actuators are used to open or close ball or butterfly valves with 90° rotation.
- Rack and pinion actuators are pneumatic or hydraulic fluid controlled.
- Supply pressure pushes pistons together or apart causing the pinion shaft to rotate opening or closing the valve.
- Actuators can be double acting or spring return. Double acting requires supply pressure to open and close the actuator.
- Single acting actuators require supply pressure to open the actuator, when the supply pressure is removed the springs push the pistons back to the original position.
- Single acting actuators can be fail open or fail closed.

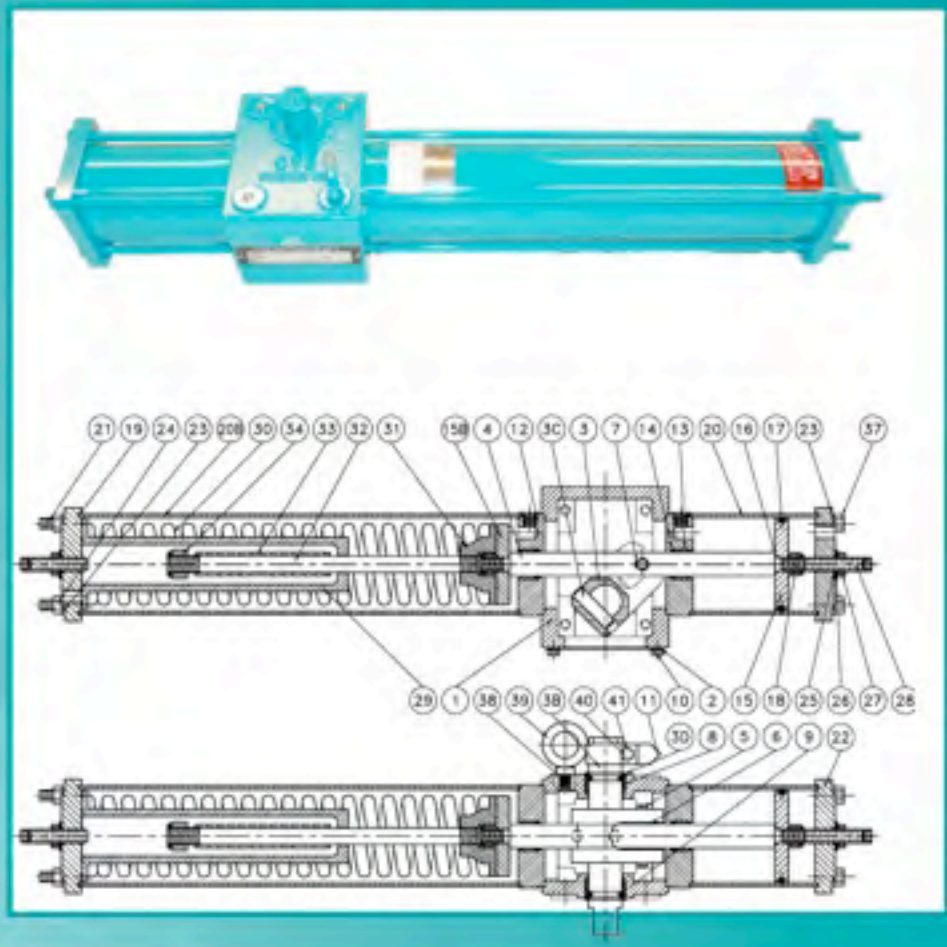
Rack & Pinion Actuators

- CVS actuators are available in sizes 52 to 800 with torques 50 inlbs to 1,565,000 inlbs.
- CVS actuators standard temperature range is -50°C (-58°F) to 80°C (176°F)
- Available in other temperature ranges upon request.
- The actuators adhere to ISO 9001: ISO5211, DIN3337 and VDI/VDE 3845 NAMUR standards.
- Each actuator has a position indicator with NAMUR drive slot for positioners and pneumatic connections.
- Output shaft and valve mounts meet NAMUR standards.
- Each actuator has stroke adjustment 0° to 90° +/- 4 °.
- Stainless Steel also available.



CVS Series 35, 50, 60 and 70
Scotch Yoke Hydraulic Actuator

- CVS Series 35, 50, 60, and 70 actuator uses a scotch yoke mechanism for high breakaway and reset torques, used for opening and closing quarter turn ball and butterfly valves.
- The CVS scotch yoke actuator is a single acting hydraulic actuator which uses pressurized hydraulic fluid to open the actuator. As the fluid is pressurized the piston moves and compresses the spring.
- When the hydraulic fluid depressurized the spring expands and pushes the piston back to its starting position. Piston movement causes the yoke to move and rotate the shaft that connects to the valve.
- The actuators standard operating temperature range is -50C(-58F) to 80C(176F).
- Additional temperature ranges available upon request.
- Hydraulic supply pressure is 200 – 2000 psi
- Wide range of torque values to suit your application.
- The actuator can be used in fail open or fail closed applications.



CVS Controls Ltd

CVS Series 1051
Sizes 30-70

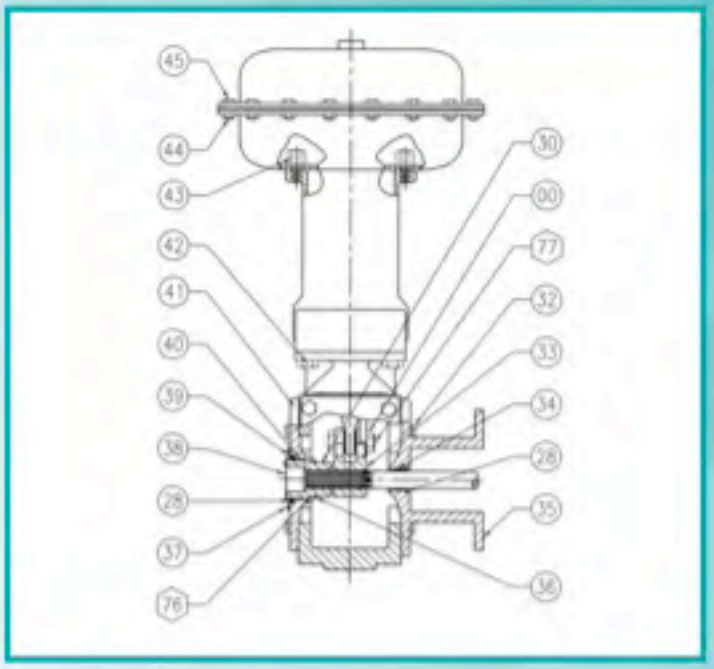
- CVS Type 1051 diaphragm rotary actuator is a pneumatic spring return design for rotary shaft control valves.
- Suitable for on-off service or throttling service when used with a valve positioner.
- Air is supplied from the top of the actuator, as air pressure increases it compresses the spring and the diaphragm rod travels down.
- The rod is connected to a lever which causes the valve shaft to rotate.
- When air supply fails the spring expands and the valve shaft rotates the opposite direction.
- Stroking time is dependent on actuator size, spring rate and supply pressure.
- The travel indicator is a combination graduated disc and pointer on the actuator end.
- Fixed travel stops are an available option.

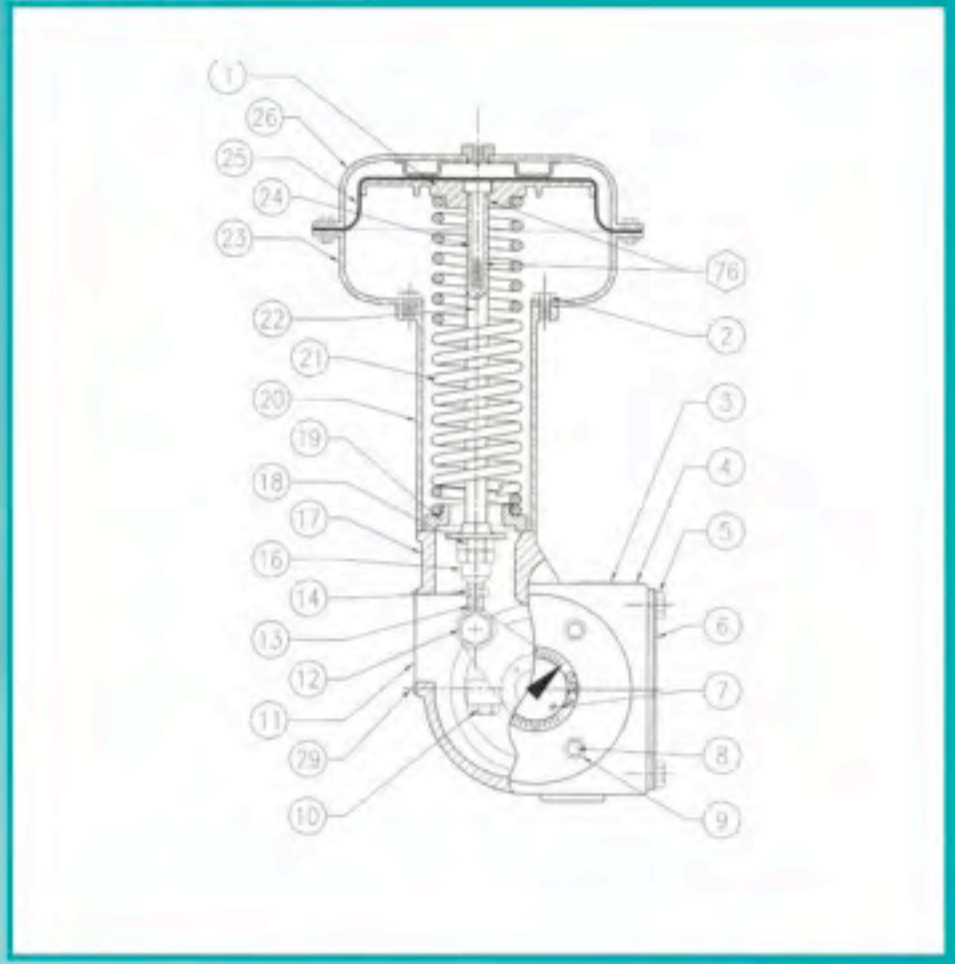
CVS Controls Ltd

CVS Series 1051
Sizes 30-60

Coatings:

- Standard valve coating is enamel, optional valve coating is epoxy.
- Valve coating specifications can also be provided by the client.





CVS Controls Ltd

CVS Series 657
Sizes 30 -80

- Air to close, fail open actuator.
- Used for automatic operation of control valves.
- Typical supply pressures are 3-15 psi or 6-30 psi.
- Air is used to pressurize the diaphragm causing spring to compress.
- As air pressure increases, spring continues to compress causing actuator shaft to move.
- When air pressure is reduced the spring expands causing shaft to move in opposite direction.
- By varying the pneumatic loading on the actuator diaphragm the valve will open, close or throttle.

Travel Adjustment:

- Size 30 – ¼" thru 3/4"
- Sizes 34 thru 60 – 3/8" thru 2"
- Size 70 – 3/8" thru 4"
- Size 80 – ¾" thru 4"

Coatings:

- Standard valve coating is enamel, optional valve coating is epoxy.
- Valve coating specifications can also be provided by the client.

CVS Series 667
Sizes 30 -80

- Air to open, fail closed actuator
- Used for automatic operation of control valves.
- Typical supply pressures are 3-15 psi or 6-30 psi.
- Air is used to pressurize the diaphragm causing spring to compress.
- As air pressure increases, spring continues to compress causing actuator shaft to move.
- When air pressure is reduced the spring expands causing shaft to move in opposite direction.
- By varying the pneumatic loading on the actuator diaphragm the valve will open, close or throttle.

Travel Adjustments:

- Size 30 – 1/4" thru 3/4"
- Sizes 34 thru 60 – 3/8" thru 2"
- Size 70 – 3/8" thru 4"
- Size 80 – ¾" thru 4"

Coatings:

- Standard valve coating is enamel, optional valve coating is epoxy.
- Valve coating specifications can also be provided by the client.

CVS Series 4150/4160 and 4150LE

Pressure Controllers

- The CVS 4150/4160 are pneumatic pressure controllers and transmitters that use a bellows or bourdon tube sensing element, to sense liquid gas or vapor pressure, compound pressure, vacuum or differential pressure.
- Controllers can be set up to be direct acting or reverse acting. This can be easily changed in the field.
- Signal pressure ranges are 3-15 psi and 6-30 psi.
- The controllers are suited for sour service and are NACE compliant.

CVS 4150 Pressure Controller

- The 4150 controller has an adjustable proportional band.

CVS 4150LE

- Low Emission Controller, uses 6 times less fuel gas than a standard 4150 Controller

CVS 4160 Pressure Controller

- The 4160 controller has an adjustable proportional band and reset with adjustable repeat per minute. This levels the output of the controller.

CVS 4150

CVS 4160

CVS Controls Ltd

Positioners

- CVS 1000R
- CVS 1000L
- CVS 1200
- CVS 2400 Smart Positioner

CVS Controls Ltd

CVS 1000R

- The CVS 1000R is an electro-pneumatic valve positioner used for operation of rotary valve actuators by means of electric signal or pneumatic output signals of 3-15 psi or 6-30 psi.
- Input signal is DC 4-20 mA.
- CSA approved and rated ExdmIIBT5 explosion proof zone 1, class 1, division 1.
- Can be reverse acting or direct acting and is suited for single or double acting actuators.
- It is possible to prevent hunting with the correct orifice size for smaller actuators.
- Very low air consumption.(5 lpm)
- Easy to read dome indicator allows for positioner monitoring from a distance.
- It is possible to control the ½ split ranges with simple adjustments without replacing parts.

CVS 1000L

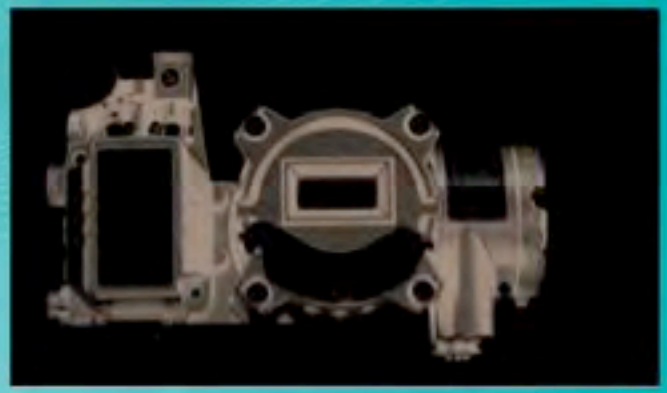
- The CVS 1000L is an electro-pneumatic valve positioner used for operation of pneumatic linear valve actuators by means of electric signal or pneumatic output signals of 3-15 psi or 6-30 psi.
- Input signal is DC 4-20 mA.
- CSA approved and rated ExdmIIBT5 explosion proof zone 1, class 1, division 1.
- Can be reverse acting or direct acting and is suited for single or double acting actuators.
- It is possible to prevent hunting with the correct orifice size for smaller actuators.
- This positioner has very low air consumption. (5 lpm)
- It is possible to control the ½ split ranges with simple adjustments without replacing parts.

CVS 1200

- The CVS 1200 pneumatic valve positioners are available for rotary and linear pneumatic actuators.
- Valve stroke is quickly and accurately controlled with an input signal of 3-15 psi or 6-30 psi.
- Can be reverse acting or direct acting and is suited for single or double acting actuators.
- It is possible to prevent hunting with the correct orifice size for smaller actuators.
- The positioner has very low air consumption.(5 lpm)
- It is possible to control the ½ split ranges with simple adjustments without replacing parts.

CVS 2400 Smart Positioner

- The CVS2400 Smart Positioner accurately controls valve stroke according to the input signal of 4~20mA input from a controller. Available in Linear or Rotary.
- There are four buttons on the outside of the positioner which allow for adjustments of parameters, and menus without opening the cover.
- CSA and ExdIIBT6 Explosion proof rated.
- Adjustable orifice to accommodate small actuators so control is optimized during operation.
- HART communication capability.
- Alarm function is available when using a limit switch.
- Available valve flow characteristics are linear, quick opening, and equal percentage.
- Split Range input is 4~20mA, 12-20mA.
- Self diagnostic function for greater reliability.
- Equipped with manual override.



Limit Switch Box

- CVS-500
- CVS-410-3W

CVS Controls Ltd

CVS-500
Limit Switch Valve

- The CVS-500 Limit Switch is designed for valves and actuators in hazardous locations.
- The limit switch is CSA approved and is rated ExdIIBT6 explosion proof, Zone 1, Class 1, Division 1.
- Standard NAMUR shaft and bracket for easy mounting to NAMUR actuators.
- Secure waterproof case with multi angle top and side visual indicator.

Capabilities

- 2 Single Pole Single Throw up to 4 Single Pole Double Throw

- Optional proximity sensors

CVS-410-3W

Actuator Control Station

- Designed for valves and actuators in hazardous locations.
- Pneumatic solenoid valve is a two position three way valve. Electrically actuated with a spring return spool.
- Limit switch with pneumatic solenoid valve is CSA approved and is rated EXdIIBT6 explosion proof zone 1, class 1, division 1.
- Standard NAMUR shaft and bracket for easy mounting to NAMUR actuators.
- Secure waterproof case with multi angle top and side visual indicator.
- Uses two single pole double throw mechanical switches rated (0.6A 125VDC, 0.3A 250VDC, 16A 125/250VAC)
- Optional two proximity sensors for sensing switch location (8-30VDC, <=150mA or 8VDC, detected<=1mA, not detected>=3mA)
- The solenoid coil is 24VDC (1.2W) or optional 48, 220, 380VAC.
- Solenoid valve is available as a 3/2 or 5/2 valve.

Back to Product Menu
Back to Limit Switch Menu

CVS Controls Ltd

CVS Series 670

Panel Mounted Loading Regulator Station

- The main application for the CVS 670 panel mounted loading regulator station is for the manual control of the pressure to diaphragm control valves.
- May be also used as remote pressure loaders for pressure balanced gas regulators and the control of gas pressure to burners in refinery tube stills, power plants, and other process furnaces.
- Instrument and manual loading pressures are read from the pressure gauges of the regulator.
- Pressure is easily adjusted by turning the regulator hand wheel.

CVS Controls Ltd

Regulators

- CVS Series 630 HP Regulator
- CVS Series 67 AFR Filter Regulator
- CVS Series 1301F & 1301G

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CVS Series 630
HP Regulator

- The CVS 630HP and 630LP are a high and low pressure reducing regulator.
- CVS 630R is a spring loaded relief valve.
- Available in a spring loaded configuration with 1 or 2 inch NPT screwed connections.
- Standard Cast Iron, or Steel Body, with SST pitot tube. LCC also available upon request. Orfice sizes from - 1/8", 3/16", ¼", 3/8", ½".
- The outlet pressure limits for the spring loaded 630 low pressure regulator is 3 – 40 psig, while the 630 high pressure regulator is 27–500 psig.
- Maximum Inlet Pressure is 1500 psi for 1/8", 3/16", and ¼"
  1000 psi for 3/8", and 750 psi for ½".

CVS Controls Ltd

CVS Series 67
AFR Filter Regulator

- The 67AFR filter regulator is a self-operated unit which provides continuous reduced pressures (air or gas) to pilot operated controllers.
- Cellulose or SS filters are used to remove particles greater than 0.0016 inch (0.040mm) in diameter.
- Maximum allowable inlet pressure is 250 psi.
- Outlet pressure ranges 3–100 psi
- Contains an integral low capacity relief valve. It uses a valve stem that sits against an orifice in the diaphragm assembly.
- When downstream pressure increases above the set point, the diaphragm assembly moves off the valve stem and vents the excess pressure through a tapped hole.

CVS Series 1301F & 1301G

- CVS Types 1301F and 1301G regulators are a self-operated high pressure regulator. Complete Stainless Steel construction.
- Used where high pressure gas must be reduced for use as pilot supply pressure, or as loading pressure in pressure loaded regulators.
- Type 1301F regulator provides outlet pressures to 225 psi (15.5 bar) in three spring ranges. Inlet pressures can range up to 6000 psi (414 bar).
- Type 1301G regulator provides outlet pressures to 500 psi (34.5 bar) in three spring ranges. Inlet pressures can range up to 6000 psi (414 bar).

CVS Series 4057 3-Way Valves

- The CVS 4057 is a two position, three way valve that can be used for actuator control, hydraulic, pneumatic panel and safety control systems.
- These valves are suitable for use on clean air, natural gas, L.P. gasses, petroleum based lubricants, and hydraulic oils as well as many other fluids. Viton seals are available for use with oils and other lubricants which may be harmful to Buna N.
- Designed for panel mounting.
- Available in aluminum or 316 stainless steel.
- Temperature rated from -40^{0}C to 120^{0}C with a maximum pressure of 125psi.
- **4057CE**
  - Manual or pressure operated spring return, 26 psi or 16lbs to operate.
- **4057 CG**
  - Features a spring loaded spool that is pneumatically or hydraulically piloted.
- **4057 CP**
  - Features a spring loaded spool that is pneumatically or hydraulically piloted with a manual over ride lever.

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CVS Controls Ltd

Norriseal Controls

Level Controllers-

- **1001A/1001XL** – The Norriseal No-Bleed "Forced Balanced" type Liquid Level Controllers are used to monitor the changing level of fluids in a vessel. The standard configuration consists of a 2.00" NPT body connection, weatherproof case and cover, optional 2.00" - 6.00" ANSI class 150 - 2500 flanged end connections are available.
- Constructed of materials suitable to meet NACE MR-01-75 for severe corrosive process environments.
- Operating temperature limits range from -50° to 500° F

1005E –Is a float actuated electric level switch that opens or closes an electric circuit. 1.5" or 2" NPT, in either carbon steel or 316 SS. Explosion proof , CSA, and UL approved.

- **Norriseal Series 2200 Control Valve**
  1" and 2" NPT screwed or ANSI 150-2500 body. Available with quick opening or throttling trim, making it ideally suited for oil and gas lease production service when operated by either a modulating or snap acting pilot.

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CVS Controls Ltd

CVS Dew Point Tester

- The CVS Dew Point Tester is a chilled mirror apparatus, which operates by attaining the conditions necessary by the definition of dew point.
- The CVS Dew Point Tester consists of a high pressure chamber through which the gas sample flows.
- The CVS Dew Point Tester is a rugged, reliable, mobile instrument that requires no calibration, and is primarily used to measure the moisture content in any gas.
- Mercury and Alcohol ASTM thermometers are used in monitoring the temperature when acquiring your dew point.
- Conforms to ASTM D 1142, and GPA 2140 standards.

CVS Controls Ltd

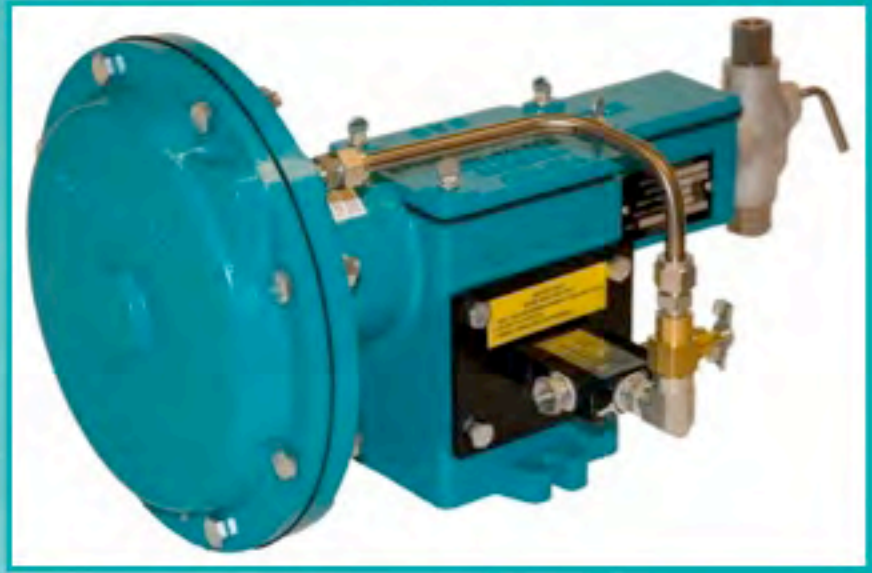
Chemical Pumps

- CVS Series 51 Chemical Injection Pump
- CVS Series 50 Chemical Injection Pump
- CVS Low Emission Pump
- CVS High/Low Pressure Portable Injection Hand Pump

CVS Controls Ltd

CVS Series 51
Chemical Injection Pump

- Used for the introduction of de-emulsifiers, corrosion inhibitors, de-scaling agents, solvents and methanol.
- The pump is a positive displacement pump that uses air or process gas to drive the pump.
- Has discharge pressures up to 6000 psig with a maximum output volume of 30 gallons per day.
- Supply pressures are 15–35 psi and the pump will operate at 0 to 30 strokes per minute with a 1 inch stroke.
- It uses a molded diaphragm to drive a piston through chevron packing making it a positive displacement pump with a spring return.
- Controlled by a 2 position 3 way valve in three configurations:
  - Standard micro switch
  - Traegyr switch
  - Pilot valve
- Available injection plungers are 3/16", ¼", 3/8" and ½"
- Housing is constructed out of powder coated cast aluminum.
- Plunger packing material can be Buna-N, Viton, Teflon or Flourosilicone.
- O-ring suction and discharge seals can be Buna-N, Viton or Flourosilicone.



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CVS Controls Ltd

CVS Series 50
Chemical Injection Pump

- Used for the introduction of de-emulsifiers, corrosion inhibitors, de-scaling agents, solvents and methanol.
- Positive displacement pump that uses air or process gas to drive the pump.
- Discharge pressures up to 10,000 psi with a maximum output volume of 500 gallons per day at 60 strokes per minute, controlled by a 2 position 3 way micro valve.
- Supply pressures are 15–35 psi and the pump will operate at 0 to 60 strokes per minute with a 1 1/4 inch stroke.
- Uses a molded diaphragm to drive a piston through chevron packing making it a positive displacement pump with a spring return.
- Available injection plungers are ¼", 3/8", ½", ¾", 1" and 1 ¼". Housing is constructed out of powder coated cast aluminum.
- Plunger packing material can be Buna-N, Viton, Teflon or Flourosilicone. O-ring suction and discharge seals can be Buna-N, Viton or Flourosilicone.

CVS Low Emission Pump

- Used for the introduction of de-emulsifiers, corrosion inhibitors, de-scaling agents, solvents and methanol.
- Same as the series 51 using a fraction of the supply gas, making it low emission.
- Discharge pressures up to 6000 psig with a maximum output volume of 120 gallons per day.
- Supply pressures are 3–150 psi and the pump will operate at 0 to 100 strokes per minute with a 1 inch stroke.
- Positive displacement pump that uses air or process gas to drive the pump.
- Uses pneumatic double acting cylinder to drive a piston through chevron packing making it a positive displacement pump.
- Has a pneumatic control valve with flow control to actuate the cylinder with pilot valves in the end caps.
- Available injection plungers are 3/16", ¼", 3/8" and ½".
- Plunger packing material can be Buna-N, Viton, Teflon or Flourosilicone.
- O-ring suction and discharge seals can be Buna-N, Viton or Flourosilicone

CVS High/Low Pressure

Portable Injection Hand Pump

- Effectively de-ices valves and lines with just a few strokes.
- Mounted on a 20 litre (5 gallon) metal container and has a rubber core steel braided discharge hose and integrated pressure relief valve.

Low Pressure Pump

- Discharge stroke volume is 2.29 cu.in or 37.5mL per stroke.
- Discharge pressures of 0–1000 psi.

High Pressure Pump

- Discharge stroke volume is 0.73 cu.in or 11.96mL per stroke.
- Adjustable discharge pressures of 0–3000 psi.

CVS 2000 Pressure Pilot

The CVS 2000 Pressure Pilot is a High and Low Pressure sensing unit. Used to monitor process or pipeline pressure in high/low pressure shut down installation. Operated by either hydraulic or pneumatic signal. By utilizing a spring loaded piston, the CVS 2000 Pressure Pilot is able to sense the pre-set pressure settings and activate a pilot valve.

- Adjustable pressure range from 10 psi to 6000 psi (0.7 bar to 413 bar).
- Easy field adjustable set points.
- Operating temperature range from -46°C to 100°c (-50°F to 212°F).
- Available in both manual and automatic reset configurations.
- Ideal for use as part of a complete CVS Shutdown System (ESD)
- Signal supply pressure up to 150 psig
- Standard 2" NPT threaded connection

7970 Pressure Pilot

- Versatile stainless steel sensor that is programmed to detect and react to decreasing or increasing pressure.
- Available with adjustable pressure range from 2 to 10 000 psi. (.138 to 689.5 bar)
- Monitors the process pressure source for changes in normal operating range.
- Senses pressure fluctuations within the control circuit, and will start a shutdown sequence or trigger an alarm.
- Can also indirectly operate on/off flow control valves or pneumatic driven pumps.
- Two position, 3 way pilot with universal ports (H, O, L) automatic spring return reset and pressure balanced spool.
- Four different piston arrangements are available for sensing different pressure ratings.

CVS Controls Ltd

ESD-Self Contained Hydraulic Pumps

- Provides reliable emergency shutdown when an external power source or fuel gas is not available.
- Uses clean hydraulic fluid which is contained in the pump.
- Can be ordered in pressure configurations from 100 - 2250 psi.
- Can be used in remote locations and has an operating temperature from -46^{0}C to 65^{0}C (-50.8^{0}F to 149^{0}F)
- Used in conjunction with linear or rotary spring return actuators the SCHA is a fail safe system which is suitable for ball, plug, quarter turn or linear operated valves.
- Proven reliable under the most demanding operating conditions.
- Designed to be the foundation for a flexible sensing control system and has a built in temperature compensation and pressure relief accumulator.

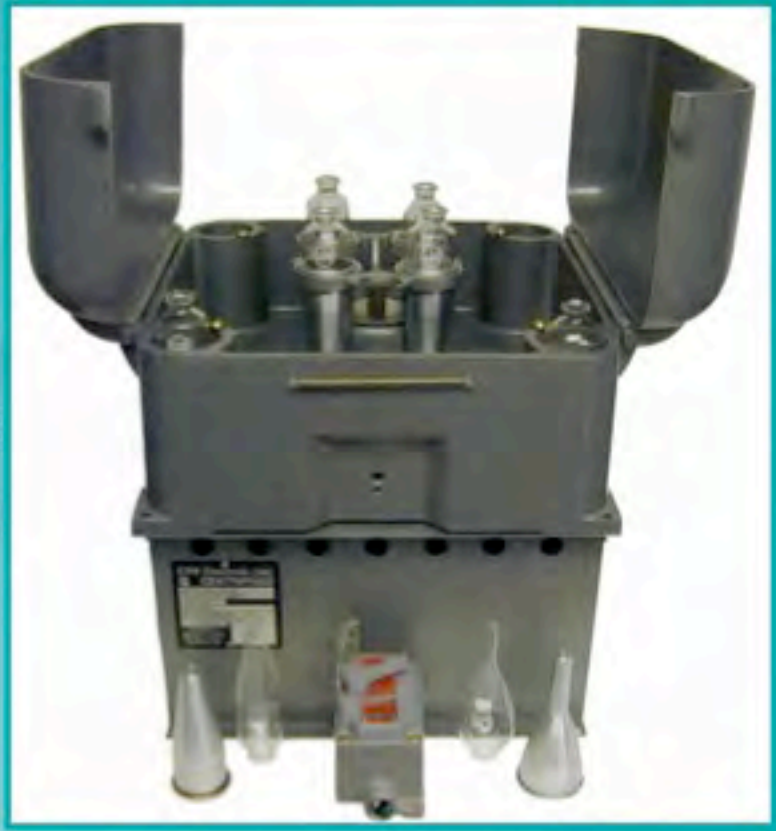
Centrifuges – Tubes - Shields

- CVS Series 18000 Thermo Cycle Heated Centrifuge
- CVS Series 18800 Hand Driven Centrifuge
- CVS Sample Heaters
- CVS Centrifuge Tubes & Shields

CVS Controls Ltd

CVS Series 18000
Thermo Cycle Heated Centrifuge

- The CSA approved, explosion proof thermo cycle heater is mounted on an explosion proof electric centrifuge.
- Thermostatically controlled heating element will heat and by thermal cycling action circulate hot water throughout the heating chamber in the base of the machine.
- An Electric level switch is used to shut down the heater in case of low water volume.
- A Separate oil sample heater is not required.
- Unique feature is the square design with dual lids allowing for preheated pockets to be placed inside the unit for better heating.
- Hole in the center of the lids allows the operator to check speeds using a hand held tachometer.
- Meets the requirements of API MPMS 10.4" Determination of Water and Sediment in Crude Oil by the centrifuge method.
- Single Phase, 60Hz, 1-9 Amp, Class 1, Div 1, Group C, D.



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CVS Series 18800
Hand Driven Centrifuge

- A reliable and durably constructed hand centrifuge, ideal for field use.
- Uses a smooth dual gear driven system with a gear ratio of 16:1 to assure efficient centrifugal force for sediment and water testing.
- Crank design provides ample clearance in all directions when tubes shields and samples are in motion.
- Can easily be clamped to surfaces with the integral serrated clamp.
- CVS 18801 Centrifuge
  - Hand driven, 12.5ml, 2-place finger type comes with 2 finger shields less tubes.
- CVS 18811 Centrifuge
  - Hand driven, 100ml or 200%, 2-place finger type comes with 2 finger shields less tubes.
- CVS 18821 Centrifuge
  - Hand driven, 100ml or 200%, 2-place short cone type comes with 2 short cone shields less tubes.

CVS Sample Heaters

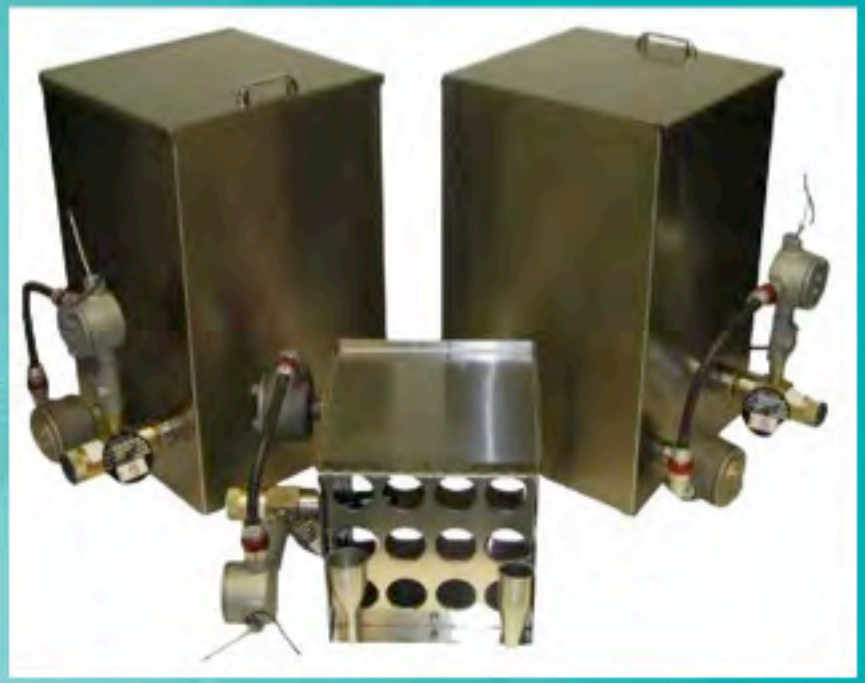
- The CVS Sample Heaters are a CSA approved hot water bath, used for heating samples, and will accept various sizes, quantities, and configurations including:

  - Pear Shaped Tubes
  - Short Cone Tubes
  - Long Cone Tubes
  - Sample Jars
  - Graduated Cylinders

- Other configurations include S chamber that will pre-heat a quantity of product used for cutting samples, and clean up purposes.

- CVS Sample Heaters are approved for:

  - Class 1, Group C and D Hazardous locations
  - 120 Vac, 60 Hz, 1000 Watts



CVS Centrifuge Tubes & Shields

- Model 45170
  - 12.5mL finger tube made to API standards
- Model 45244 – 100
  - 100mL pear shaped tube made to API standards
- Model 45244 – 200
  - 200% pear shaped tube made to API standards
- Model 45243 – 100
  - 100mL short cone tube made to API standards
- Model 45243 – 200
  - 200% short cone tube made to API standards

Barton Pressure and Temperature Recorders

- Barton pressure and temperature recorders are the industry standard for accurate, reliable measurement and recording of pressure, differential pressure, and temperature in a wide variety of applications.
- Feature rupture proof bellows as the actuating unit with features like over range protection and pulsation dampening.
- Safe working pressure 0–2500 psi (172 bar).
- Operating temperatures -40C to 82C (-40F to 180F).

- Disposable Hinged Clip Circular Pens

CVS Controls Ltd

CVS Dead Weight Testers

- The dead weight tester is an extremely compact instrument designed for pressure testing and calibration.
- The unit comes complete with weights, hand jack, hand set and one of each 1/8", ¼", ½" adaptors.
- It has an accuracy of 1/10 of 1% of the rated pressure.
- Standard available ranges 1000 – 20000 psi (7000 – 140 000 KPa)
- Traceable to the National Institute of Standards and Technology (NIST)

Pressure Gauges

- 1-1/2" SST Controller Gauge
- Low Cost Utility Gauge
- Low Pressure Capsule Gauge
- 4" Safety Gauge
- 4-1/2" Econoline Gauge
- 6" and 10" Test Gauges with paralex mirror dial

CVS Controls Ltd

PFÖRTNER

Thermometers & Themowells

- Bi-Metal Thermometers
- Min. & Max Thermometers
- Thermowells

CVS Controls Ltd

Lab Thermometers and Hydrometers

- ASTM Thermometers
- Special Use
- Low Temperature
- Oven Incubator
- General Test
- Standard Laboratory
- Double Scale (°C and °F)
- Pocket
- Double Armor
- Midget Industrial
- Refills
- APU & ASTM Hydrometers

Load Line Valve Ltd.

Introducing a unique and innovative solution from Load Line Valve Ltd.

The Load Line Valve is designed to provide a failsafe solution to stop fluid waste and costly environmental cleanup bills stemming from accidental spills; typically by leaving the Cam Lock fill station or valve in the open position, or partially open, upon removing fill line.

The patent pending Load Line Valve system will **not allow the fill line to be removed, or the cam locks to be opened without first ensuring the valve is in a fully closed position.**

By not allowing the fill line to be removed without first fully closing the valve, there is absolutely no chance of unwanted fluids draining from tanks.

Adversely the valve cannot be opened without fill line completely installed in valve and cam locks in the locked position.

- Eco Friendly, pro active solution to stop unwanted spills
- Safe
- Easy to Use, Convenient
- Cost savings from reduced down time and spill cleanup
- Serviceable
- 3" NPT inlet and Standard 3" Female Cam Lock outlet , and 4" 150# RF Flange with female Cam Lock outlet.
- Two ½" NPT ports for breather check valve or ball valve to pump hose dry
- Valve can be secured and locked out with padlock

Miscellaneous

- Disposable Hinged Clip Circular Pens
- Oil Thief & Accessories
- Windcones
- Accessories for Gauge Lines

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Thank you for choosing,

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