

The Becker CVE^E Series Natural Gas Globe Valve Regulator is designed for the following applications:

- Low flow applications
- Low pressure applications with low pressure power gas supply
- Small to medium size power plants
- “Dead-End” system applications with a single gas consumer

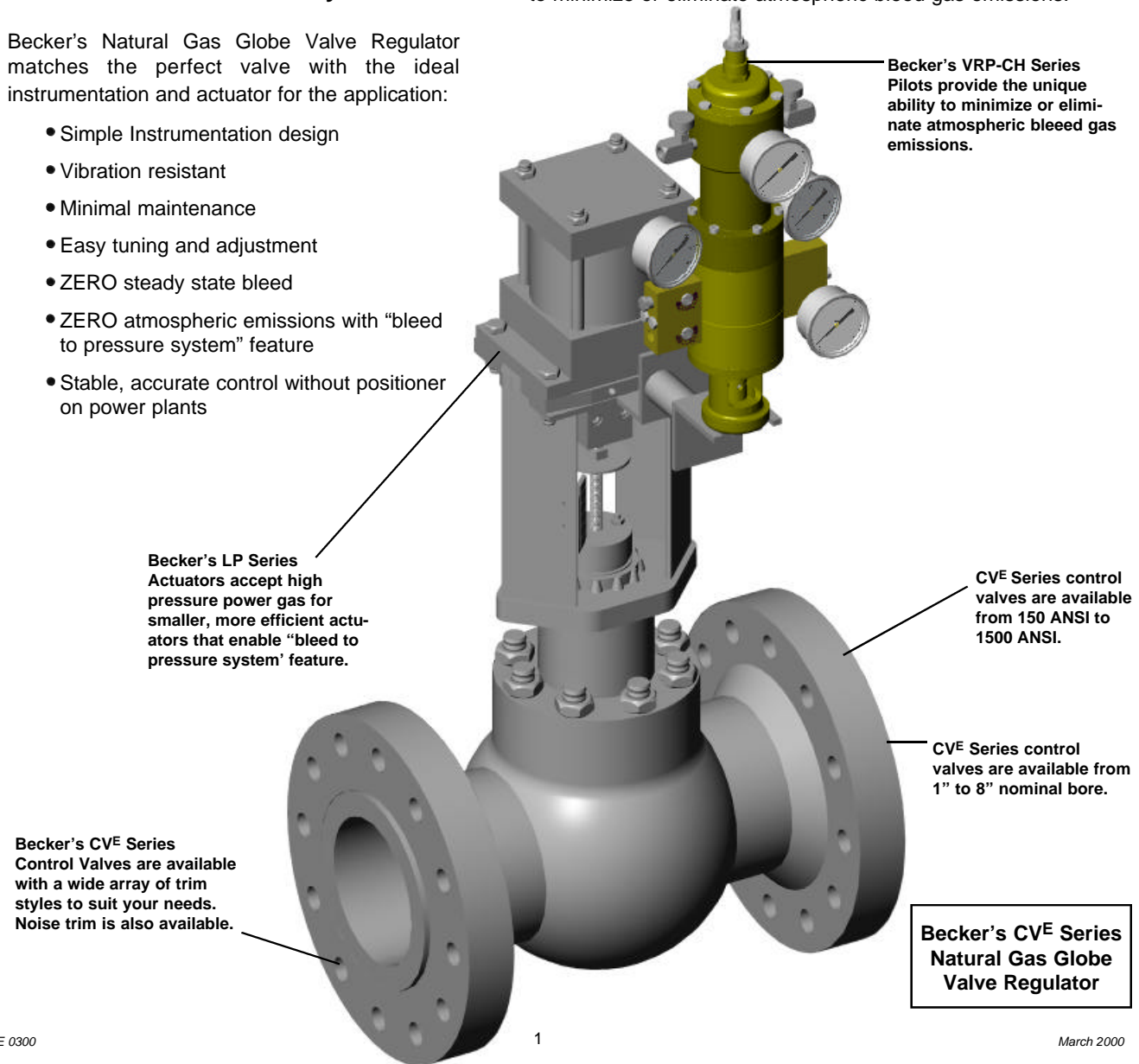
Instrumentation Designed Specifically for the Natural Gas Industry

Becker’s Natural Gas Globe Valve Regulator matches the perfect valve with the ideal instrumentation and actuator for the application:

- Simple Instrumentation design
- Vibration resistant
- Minimal maintenance
- Easy tuning and adjustment
- ZERO steady state bleed
- ZERO atmospheric emissions with “bleed to pressure system” feature
- Stable, accurate control without positioner on power plants

CVE^E Natural Gas Globe Valve Regulator Features:

- Top entry design facilitates maintenance and allows in-line valve service.
- Internal components are interchangeable.
- Hardened stainless steel is standard on the CVE^E Series flow cage, valve plug, and seat ring.
- The CVE^E may be throttled at maximum rated pressure drop.
- Kwik-Change Cage[®] provides variable flow characteristics and available noise attenuation.
- Control instrumentation and actuator combinations allow user to minimize or eliminate atmospheric bleed gas emissions.



Becker’s LP Series Actuators accept high pressure power gas for smaller, more efficient actuators that enable “bleed to pressure system” feature.

Becker’s VRP-CH Series Pilots provide the unique ability to minimize or eliminate atmospheric bleed gas emissions.

CVE Series control valves are available from 150 ANSI to 1500 ANSI.

CVE Series control valves are available from 1” to 8” nominal bore.

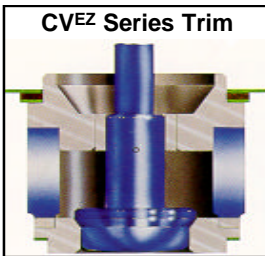
Becker’s CVE^E Series Control Valves are available with a wide array of trim styles to suit your needs. Noise trim is also available.

Becker’s CVE^E Series Natural Gas Globe Valve Regulator

Specifications:			
Sizes:	1" to 8" nominal bore* *Larger sizes available	Kwik Change™ Cages:	Linear Equal Percentage Quick Opening Low Noise Trims
Body Style:	Through globe	Leakage:	Class V Shutoff
ANSI Ratings:	150, 300, 600 (standard) 900, 1500 (available)	All Becker Series CV^E Series Natural Gas Globe Valves are manufactured in accordance with the following:	
End connections:	RFFE, RTJ Screwed End Weld End	Flanged Connections:	ANSIB16.5/API 6A ISA – S75.16
Valve Trim:	CV^{ET} Series CV^{EZ} Series	Butt Weld Connections:	ISA – S75.16
		Socket Weld Connections:	ISA – S75.16

Available Valve Trims:

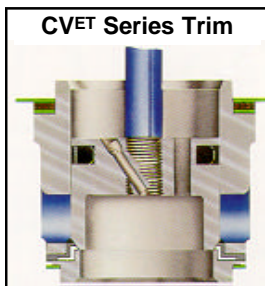
CV^{EZ} Series Trim



- Typically used for small valve applications
- May be utilized when higher flow rangeability is required
- Preferred for severe service or "dirty" applications
- Available 1" to 4" nominal bore

The **CV^{EZ} Series** is a non-balanced single seated construction control valve. Because dynamic flow forces against the valve plug are somewhat higher, the **CV^{EZ} Series** is typically reserved for small valve applications. Additionally, the **CV^{EZ} Series** may be utilized when higher flow rangeability (turndown) is required.

CV^{ET} Series Trim

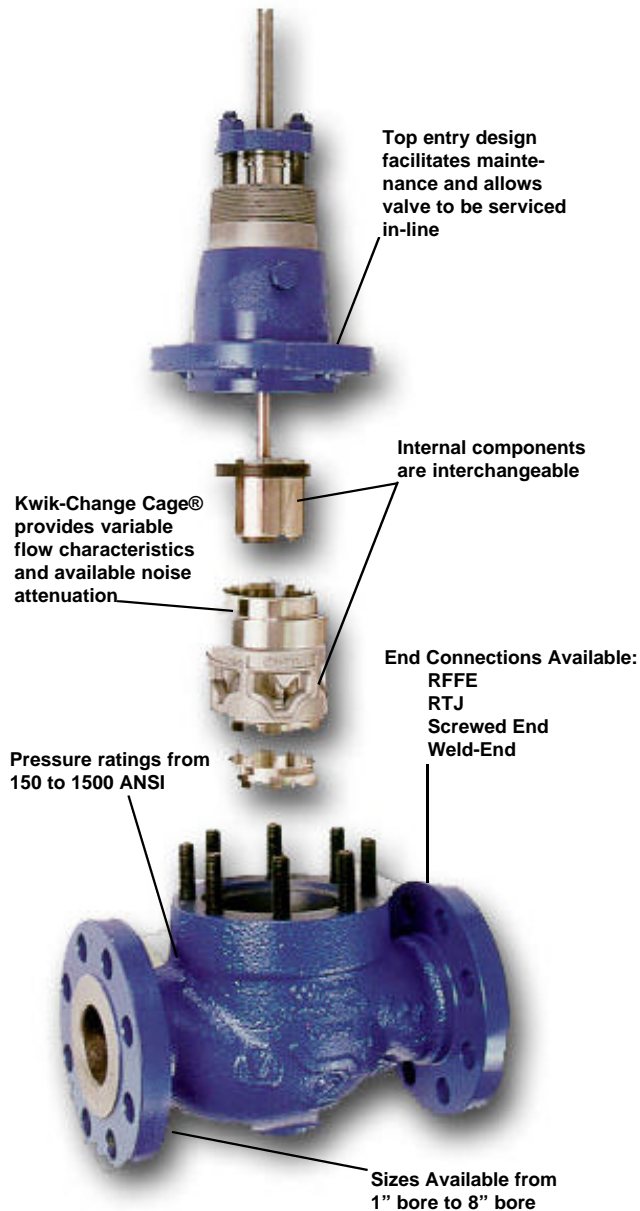


- Typically used with large control valve applications
- Features interchangeable Kwik-Change™ Cages
- Available 1" to 8" nominal bore

The **CV^{ET} Series** is a cage-guided design Control Valve typically used with large control valve applications. The balanced seat design of the **CV^{ET} Series** provides excellent shutoff characteristics with reduced actuator force requirements. Additionally, the **CV^{ET} Series** features PTFE seating surface within the seat ring. The **CV^{ET} Series** also features a wide array of interchangeable Kwik-Change™ Cages for variable flow characteristics or noise attenuation.

A Control Valve for All Applications!

The Becker CVE Series Control Valve may be equipped with a variety of Kwik-Change™ Cages to provide control characteristics ideally-suited for each particular application. Consult Becker for assistance in selecting Kwik-Change™ Trim components.



Kwik-Change Trims® Provide Versatility

The CVE's innovative design makes it among the most versatile natural gas control valves in the world. Its cage-guided Kwik-Change Cage® utilizes multi-interchangeable trim styles, eliminating the need to change body style. The CVE Series Natural Gas Globe Valve are available with balanced or un-balanced trim for natural gas regulating applications such as pressure control and flow control. Body styles provide a choice of flanged, buttweld, or threaded valve end connections.

Available Kwik-Change™ Cages:

- Linear
- Equal Percentage
- Quick-Opening
- Low-Noise Trim:
 - CV¹ Single Stage Low Noise Trim
 - CV^{1X} Single Stage Low Noise Trim (Reduced Capacity)
 - CV² Two Stage Low Noise Trim
 - CV^{2X} Two Stage Low Noise Trim (Reduced Capacity)
 - CV³ Three Stage Low Noise Trim

Becker's CVE Series Natural Gas Control Valve and control instrumentation provide unique advantages over the competition. The Becker Natural Gas Control Valve Regulator Package is ideally suited for natural gas regulation.

Becker Kwik-Change Cages® Provide Versatility

**Available for CV^{ET} Series Natural Gas Globe Valves*



Linear Opening

Flow rate remains equal to the travel of the valve plug throughout the travel range.



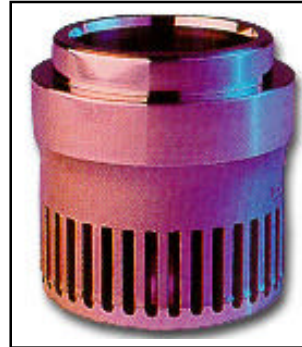
Equal Percentage

For each incremental change of plug travel, flow capacity is increased by an equal percentage.



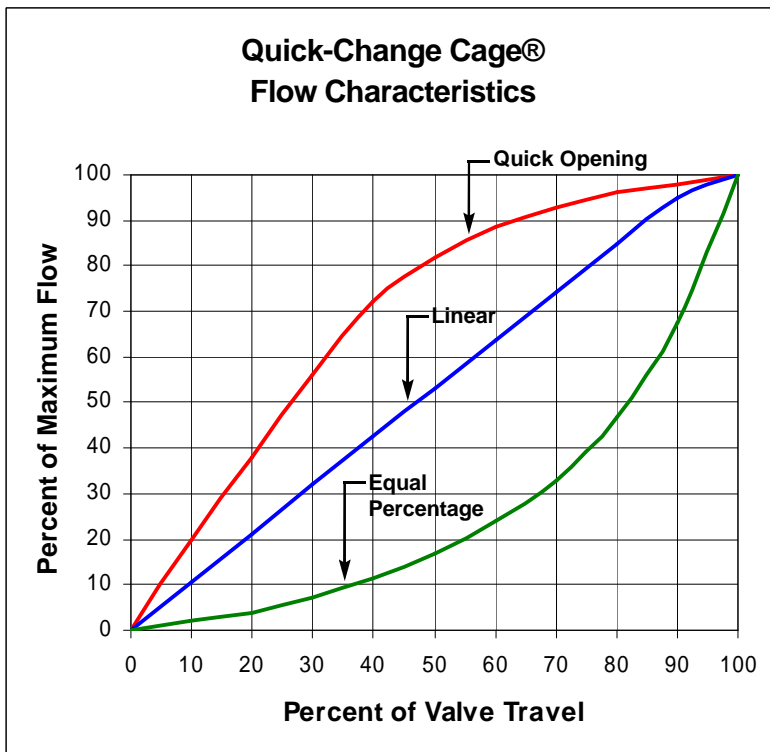
Quick Opening

Sharp increase in flow capacity at low valve plug travel. Slow increases in flow capacity as valve reaches maximum valve plug travel.



Low-Noise Trim

Multiple apertures provide greater control over flowstream geometry. Effectively reduces turbulence and noise.



Need Help?

Toll-Free Assistance!

For assistance in selecting the proper valve size and trim for your application, call Becker at (800) 323-8844. Our qualified engineers are available to provide you with all of the expertise and assistance necessary to ensure your project is designed to achieve optimum performance.

Linear Diaphragm Actuators (Low Pressure Power Gas)

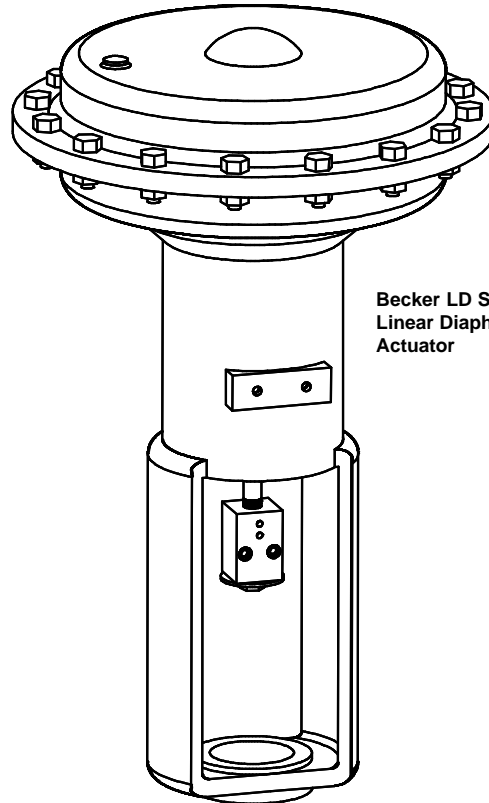
Becker's **Linear Diaphragm Actuators (LD Series)** are typically utilized when available power gas pressure is less than 50 psig. The Linear Diaphragm Actuator features high power output with low power gas pressure input.

The LD Series is available in two configurations:

- LD^D – Pressure-to-close design
- LD^R – Pressure-to-open design

Linear Diaphragm Actuator Accessories:

- Manual Handwheel Override
- Limit Switch Assemblies
- Electronic Overrides
- Manual Control Valve



Becker LD Series
Linear Diaphragm
Actuator

Specifications:

Type:	Spring & Diaphragm
Stroke Lengths:	3/4", 1 1/8", 1 1/2", 2", 3"
Maximum Power Gas Supply:	Up to 65 psig
Maximum Discharge Pressure:	Not Applicable
Pressure Connections:	1/4" NPT Larger port sizes available
Linear Diaphragm Actuator Models:	LD ^D -Pressure-to-close design LD ^R -Pressure-to-open design

Features:

- High Power output with low power gas supply pressures.
- Simple instrumentation design.
- ZERO steady state bleed gas when utilizing Model HPP-SB Positioner or Model VRP-SB Pilot.

Compatible Instrumentation:

- **VRP-SB-CH** Single-Acting Pilot for Pressure control
- **VRP-SB-PID** Single Acting Pilot for Power Plant Type Pressure Control
- **HPP-SB** Single Acting Positioner*
- **EFP** Environmentally Friendly Positioner*

*Restrictions Apply

**Linear Piston Actuators
(High Pressure Power Gas)**

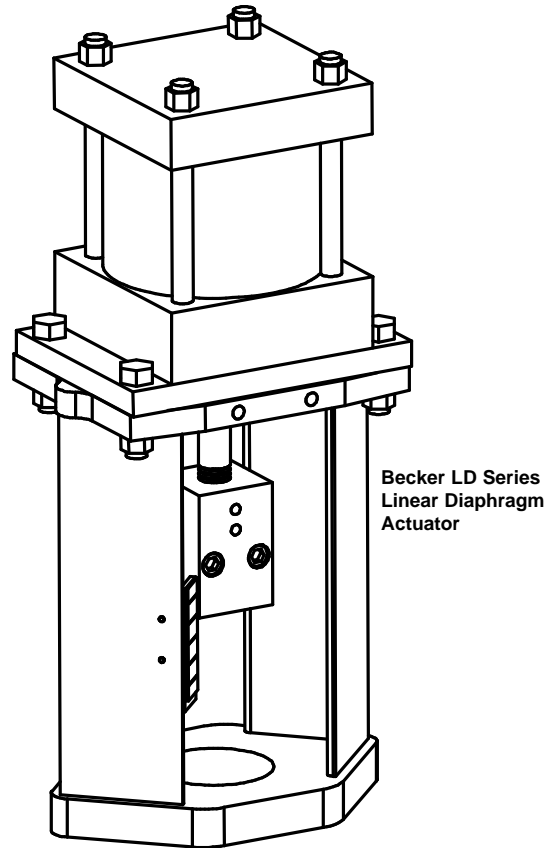
Becker Linear Piston Actuators (**LP Series**) are generally utilized when available power gas pressures are higher than 50 psig. The high-pressure capabilities of the Linear Piston Actuator allows for smaller actuators sizes due to increased power gas pressures. Additionally, the high pressure capabilities of the Becker **LP Series** Actuator allow the user to take advantage of Becker's unique "bleed to pressure system" feature. The "bleed to pressure system" feature allows for complete elimination of atmospheric bleed gas by maintaining control instrumentation discharge within the pipeline system. Becker **LP Series** Actuators are available in Double-Acting (**DA**) design or Spring-Return (**SR**) design for guaranteed failure mode of the control valve in the event of loss of power gas. The Spring-Return **LP** is available in Spring-to-Close or Spring-to-Open designs and are easily field-reversible from one design to the other.

Linear Piston Actuator Models:

- LPDA Double-Acting Design
- LPSR^D Pressure-to-Close Design
- LPSR^R Pressure-to-Open Design

Linear Piston Actuator Accessories:

- Manual Handwheel Override (spring and diaphragm only)
- Limit Switch Assemblies
- Electronic Overrides Manual Control Valve



Specifications:

Types:	Double-Acting Piston Spring & Piston
Stroke Lengths:	3/4", 1 1/8", 1 1/2", 2", 3"
Maximum Power Gas Supply:	*450 psig
Maximum Discharge Pressure:	*350 psig
Inlet Ports:	1/4" NPT Standard (Larger ports available) <i>*Application dependent</i>
Linear Piston Actuator Models:	LPDA Double-Acting Design LPSR ^D Pressure-to-Close Design LPSR ^R Pressure-to-Open Design

- Features:**
- High power gas supply pressure capability.
 - Compact actuator design.
 - Eliminate atmospheric emissions with bleed to pressure system* feature.

Compatible Instrumentation:

LPDA Series Actuators (Double-Acting Piston):

- **VRP-CH** Double-Acting Pilot for Pressure Control
- **HPP-4** Double-Acting Positioner*
- **HPP-5** Double-Acting Positioner*
- **EFP** Environmentally Friendly Positioner (Electro-Pneumatic)

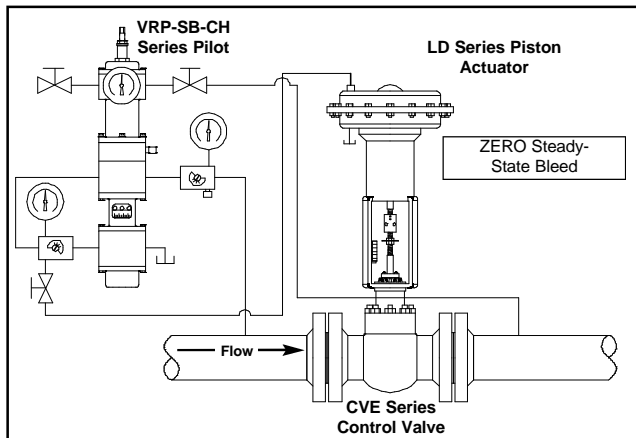
LPSR Series Actuators (Spring & Piston):

- **VRP-SB-CH** Single-Acting Pilot for Pressure Control
- **VRP-SB-PID** Single Acting Pilot for Power Plant Type Pressure Control
- **HPP-SB** Single Acting Positioner*
- **EFP** Environmentally Friendly Positioner* (Electro-Pneumatic)

**Restrictions Apply*

CVE Series Application Examples

Sample Application #1



Usage:

- Pressure Control

For low pressure power gas applications with limited power gas supply pressure where:

- Minimum p_{supply} available ≥ 50 psig
- “Bleed to pressure system” feature is not available

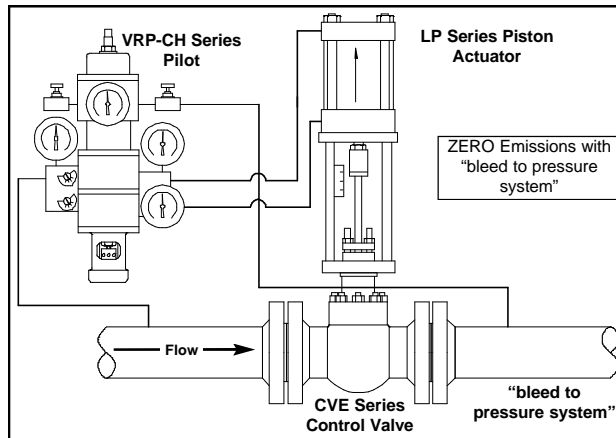
System Features:

- VRP-SB-CH offers ZERO steady-state bleed gas
- VRP-SB-CH eliminates the need for a positioner
- Constructed specifically for use with natural gas
- VRP-SB-CH setpoint ranges available from inches WC to 1300 psig
- LD Series Actuator provides high power output with low pressure power gas

ZERO Steady-State Bleed Feature Minimizes Atmospheric Bleed Emissions:

Becker VRP-SB-CH Pilot Control Systems and HPP-SB Positioners operate with ZERO steady state bleed. This reduces atmospheric emissions so long as the process variable setpoint is met. The only time the instrumentation will bleed gas is when the LS Series diaphragm has to exhaust gas to relieve diaphragm loading pressure.

Sample Application #2



Usage:

- Pressure Control

For High Pressure Power Gas Applications where:

- Minimum p_{supply} available ≥ 50 psig
- “Bleed to pressure system” feature is applicable

System Features:

- VRP-CH Series Pilots and LP Series Actuators enable unique “bleed to pressure system” to eliminate atmospheric emissions
- VRP-CH eliminates need for positioner
- Constructed specifically for use with natural gas
- VRP-CH setpoint ranges available from inches WC to 1300 psig
- LP Series Actuator accepts high pressure power gas, minimizing size of actuator

Bleed to Pressure System Feature Eliminates Atmospheric Bleed Emissions:

Becker instrumentation has the unique ability to direct bleed gas downstream or into a nearby lower pressure system. This eliminates atmospheric emissions, keeps gas in the pipeline, saves money for the operating company, and reduces impact on the environment.



Engineered for
the Environment

Becker Precision Equipment also manufactures these high quality products:



VRP-CH Series Double-Acting Pilot

Compatible with:

- RPDA Rotary Piston Double Acting Actuator
- LPDA Linear Piston Double Acting Actuator



VRP-SB-CH Series Single-Acting Pilot

Compatible with:

- LD Linear Diaphragm
- RPSR Rotary Piston Spring Return
- LPSR Linear Piston Spring Return
- LD Linear Diaphragm



VRP-SB-PID Series Single-Acting Pilot for Power Plants

Compatible with:

- RPSR Rotary Piston Spring Return
- LPSR Linear Piston Spring Return
- LD Linear Diaphragm

VRP Pilots Are the Ideal Companion for CVE Series Globe Valves Used in Pressure Control Applications

Becker VRP Pilots are the optimum choice to provide pressure control when utilized with Becker CVE Series Globe Valves. The Becker VRP Pilot represents an exclusive control instrumentation design that is specifically engineered to provide:

- Reduced or eliminated atmospheric bleed gas
- Easy Adjustment
- Superior reliability
- Simplicity of operation and maintenance
- May be easily retrofit to other manufacturer's globe valves to improve performance!



Engineered for the Environment



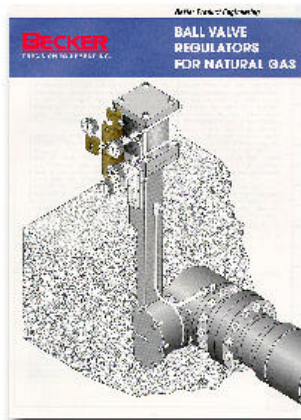
Get your Free Copy of Becker CVE Series Globe Valve Software! Becker's GlobSize software is available for sizing CVE Series globe valves and complete regulator station design. You can obtain you free copy:

- Dial Becker Precision direct (800) 323-8844
- Contact your local Becker sales representative
- Download Globsize for immediate use from www.bpe950.com

When applications require:

- Higher capacity control valves
- Minimal pressure drop characteristics
- Higher flow rangeability (turndown)

Becker recommends utilizing The Ball Valve Regulator. For more information see Ball Valve Regulators For Natural Gas.



**Toll-Free Assistance!
(800) 323-8844**

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