



## ***Valtek GS*** ***The Perfect Balance***

Optimized control valve value and reliability for general service applications



***Experience In Motion***

*Valtek GS provides all that is required and more for a high-performance, high-capacity control valve.*



## ***The Perfect Balance Between Performance and Cost***

### ***The Challenge: Increased Output at Decreased Cost***

Difficult issues confront today's managers in the continuous process industries. These include: tightening CAPEX and OPEX budgets; a workforce in declining numbers; and increasing uptime and throughput goals. The convergence of these forces has increasingly driven plant operators to base their equipment selection on one overriding criterion: low cost of ownership. In the contemporary marketplace, process equipment must be environmentally friendly, simple to install and commission, competitively priced with excellent performance and reliability and, perhaps most importantly, minimal maintenance and operating costs.

### ***The Response: A New Class of Control Valves***

Flowserve has responded to these requirements with its all-new class of general service control valves — the Valtek GS, a fully integrated valve-actuator-instrumentation package for continuous process general service flow control throughout the plant. Engineered from the ground up, the Valtek GS has achieved optimum performance at lower cost. It does this by pursuing the simple design philosophy of building an instrumented control valve package that is “everything it needs to be” by providing the breadth and depth of engineered control under the Valtek trusted name.

### ***Lower Cost for the Value***

The new Valtek GS environmentally “green” valve is based upon the proven Valtek design philosophy. The Valtek GS integrated control valve package consists of the newly designed GS linear globe valve, the new Valtek Logix 420 digital positioner with Quick Cal, and the FlowAct pneumatic diaphragm actuator. Its integrated design makes it a low-cost design to buy, install, operate and maintain. Yet, it delivers best-in-class performance with:

- Highest flow rates in a general service globe valve, offering excellent flow control
- Unequaled durability and reliability
- Trim and material options to handle a wide array of general service requirements
- Quick installation and simple setup by maintenance technicians without the need for instrument or process engineering skills
- Ease of maintenance for long-term low cost

The new Valtek GS integrated control valve package provides process plant operators that perfect balance of performance versus cost without compromise to product quality or integrity.

*Valtek GS delivers flow rates, control accuracy and reliability at levels comparable to special engineered control valves, but at a significantly lower total cost.*



## **At a Glance: Valtek GS Integrated Control Valve Package**

The new Valtek GS product line is low cost, compact and light-weight. Yet, it is rugged and can be used safely and confidently in a wide range of general service applications plant-wide. Its modularity provides trim and material options to suit most service situations. Simplicity of design reduces maintenance and parts inventory costs.

Ideally suited for flow and pressure control of liquid and gas media in oil and gas, power, chemical, and petrochemical processing and related industries, the Valtek GS package provides flow rates, control accuracy and reliability at levels comparable to special engineered service control valves, but at a significantly lower total cost.

### **Valve Type: Linear Globe**

- Size: DN 15 to 150 (ASME 0.5 in to 6 in)
- Pressure: PN 16 and 40 (ASME Class 150 and 300)
- Flow Capacity  $K_v$  ( $C_v$ )\*: 0,4 to 355 (0.46 to 410)
- Temperature: Standard range -46°C to 250°C (-51°F to 482°F)
- Extended range -60°C to 400°C (-76°F to 752°F)
- Rangeability: 50:1
- Shutoff: Class IV standard; Classes V, VI optional

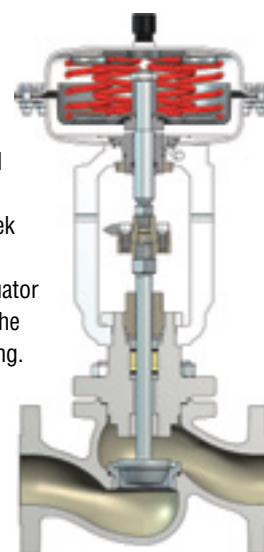
\* Modified equal percent

### **The Logix 420 Digital Positioner**

Specifically designed for simplicity and economy, the Logix 420 features single pushbutton quick-calibration, dip switch basic setup, active rotary gain setting and an optional multi-language LCD display. Utilizing HART™ digital communication, it is globally certified for explosion-proof, intrinsically safe, and non-incendive service as well as general purpose use. The Logix 420 is integrally mounted to the FlowAct actuator without the use of tubing, which in turn increases reliability and further reduces cost.

### **Proven Actuation**

FlowAct is the standard pneumatic diaphragm actuator for Valtek linear globe valves. An optional PS-Automation electric actuator is available. Valtek **Performance!** software automatically selects actuator model and size, without the need of special engineering.





*Modular, compact and lightweight, the Valtek GS delivers optimized performance and reliability across all general service flow control applications.*



## **Valtek GS: Highest $C_v$ , high performance, simple to maintain, lightweight, reliable**

### **Valtek GS Body Design**

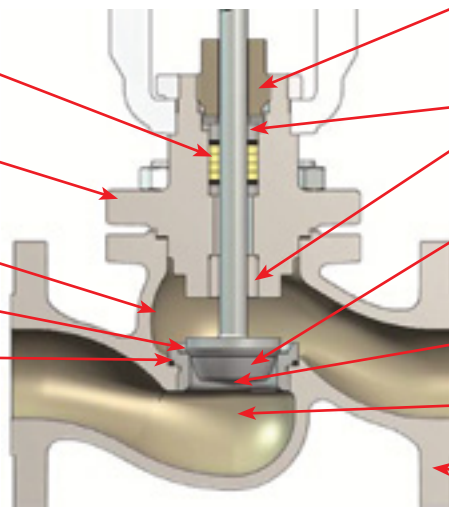
“Green” standard, live loaded  
TA-Luft/ISO 15848-1

Robust integral flanged bonnet

Highest  $C_v$  globe valve

Standard class IV shutoff

Zero-leakage between seat  
and body—less maintenance



Stainless steel packing follower  
fits ASME and DIN wrench

Double stem guiding—outside of  
process fluid

Precisely machined contour on plug  
head—provides multiple optional  
reduced trims

Screwed-in seat ring—easy removal

Excellent flow characteristic

Flanged end connections specified to  
EN 1092-1 raised face or ASME  
B16.5 raised face

### **Valtek GS “FlowAct” Actuator Design**

#### **Pneumatic Diaphragm Actuator**

Type: FlowAct actuator—lightweight, simple design

Sizes: 250, 500 and 700 cm<sup>2</sup>

High air supply: maximum 6 bar (87 psi)

Wide temperature range: -46 to 82°C (-50 to 180°F)

Optional side-mounted handwheel

New lightweight yoke  
made from ductile iron

Easy and versatile actuator mounting



New lightweight actuator housing  
with ribs, results: stronger and lighter  
weight design

Direct mounted digital positioner  
eliminates need for tubing

New digital positioner competitively  
priced, certified for explosion-proof,  
intrinsically safe and non-incendive  
standards

Highest Flow Rates  
of Any General  
Service Globe  
Control Valve



## Linear Globe Valve

### Best-in-Class Control Valve Design

Valtek severe service control valve products have earned world-class distinction for reliability and accuracy in the most challenging applications. This engineering and performance excellence is now available in a new class of general service control valves — the Valtek GS linear globe valve.

Everything about the design of the Valtek GS control valve is focused on optimized performance and reliability. It incorporates the cornerstone engineering elements that drive the Valtek product design philosophy, including:

- **Maximum Capacity Flow Rates:** The Valtek GS replaces a long list of forerunners to handle a wide selection of process control applications for high-flow, general service applications in the oil and gas, chemical, power and general service industries. **The Valtek GS averages 25% higher flow capacity than comparable globe valves.**

- **Cavitation Control/Noise Attenuation:** The Valtek GS is ideal for general service application solutions requiring high  $C_v$ , noise abatement and cavitation control. These trim solutions include unbalanced, pressure balanced and the Flowserve MultiStream for anti-noise, anti-cavitation applications.
- **Smaller, Lighter, Cost-effective:** The Valtek GS achieves maximum-flow capacity that outperforms competing brands with a smaller, lighter and more cost-effective globe control valve.
- **Large-diameter Plug Stem:** Unlike competitive products, the larger-diameter stem virtually eliminates shaft failures. The heavy-duty stem provides a large surface area to reduce guide wear, thus improving reliability and increasing valve life. When higher pressure drops or tight shutoff are required, the robust stem can easily absorb actuator thrust and drive the plug securely into the valve's single-seated trim—offering longer product life and less maintenance.

### Maximum Flow Rates ( $C_v$ ): Flowserve Valtek Competitors

Valve Size DN (Inches)	Valtek GS	A	B	C	D
25 (1)	16.2	14	16	15.7	12
35 (1.5)	36	30	35	29.8	30
50 (2)	55	50	46	47.4	40
75 (3)	145	115	110	107	95
100 (4)	208	200	195	188	190
150 (6)	410	–	400	401	305

**Valtek GS**  
**Design and Actuation**  
**Options to Suit Your**  
**Application Needs With**  
**Quick and Easy Sizing**  
**and Selection**



### Same Versatile Valtek Trim Standards

- **Deep Packing Box** permits a variety of packing configurations in addition to the standard TA-Luft, live-loaded emission for environmentally friendly packing. Packing consists of an upper set and a wiper set. The latter is designed to minimize the amount of fluid on the plug stem. The upper set is positioned far enough away from the wiper set to avoid contamination from the flowing medium.
- **Double Top-stem Guides** ensure accurate plug and seat ring alignment. The widely spaced, nitrided stainless steel guides provide superior guiding over broad temperature ranges and eliminate guide/stem galling.
- **Contoured Plug Design** is readily adaptable for modified equal percentage, linear and quick-open flow characteristics. And it can be easily supplied in multiple optional trim reductions, providing excellent rangeability and resolution.

### Trim Types

The Valtek GS valve is available in standard full area trim and optional reduced trim types. Seat ring and plug interchangeability accomplished without a cage and within a given size permits this flexibility.

#### Standard Trims

- Metal seated valves provide ASME Class IV shutoff. This calls for maximum permissible seat leakage of 0.01% of rated valve capacity.
- Soft seated valves provide ASME Class VI “bubble-tight” shutoff.
- Hard-faced seats (Alloy 6 overlay material) are available.

### Cavitation Control/Noise Attenuation

MultiStream trim can handle higher pressure drops ( $\Delta P$ ) and high flow rates ( $C_v$ ) when noise abatement and cavitation control are required.

### Bonnet Types

- Standard bonnet up to temperatures to 250°C (482°F)
- Extended bonnet for higher temperatures to 400°C (752°F)
- Certified emission controlled packing comes standard, meeting rigorous requirements of TA-Luft/ISO 1548-1. Tightness class for PTFE packing to B,  $10^{-4}$  mg/s m; graphite to class C,  $10^{-2}$  mg/s m

### Certifications

The durability, performance and application flexibility of the Valtek GS integrated control valve system are confirmed by these certifications and compliance with the following design standards:

- ASME 16.34
- EN ISO 9001:2008
- PED 97/23/EC Module H
- TA-Luft (Clean Air Act)/ISO 15848 -1
- ATEX 94/9/EC, Machinery directive 2006/42/EC
- NAMUR
- SIL 3
- NACE MR-01-75



*Simple, cost-effective controls and actuation integration complete the Valtek GS package.*



## **Achieving the Perfect Balance**

### **Logix 420 Digital Positioner**

The Logix 420 is a great choice of digital positioners for any control loop. Fast calibration and setup can be accomplished automatically by simply pressing the Quick-Cal button. An optional multi-language display screen clearly communicates control loop status.

It employs the HART™ communication protocol. Explosion-proof, intrinsically safe and non-incendive, the Logix 420 carries global approvals.

Analog positioners are available, if preferred.



### **FlowAct™ Pneumatic Linear Actuator**

The FlowAct diaphragm actuator features a compact design with up to six long-life spring ranges for use with an integrally mounted digital or analog positioner. It delivers uninterrupted linear travel and no loss of operating force due to its reinforced rolling type diaphragm with minimum area variation during stroke. This actuator's multi-spring design is field reversible from spring-open to spring-close action.

Maximum air supply pressure to 6 bar (87 psi).  
 Sizes: 250/500/700 cm<sup>2</sup>. PS Automation PSL electric linear

actuators may also be specified.

### **Easy to Configure**

**Performance!** is a control valve sizing, selection, quotation and product management tool used for Valtek and other Flowserve control valve products. This program helps you identify the control valve package best suited to each set of service conditions.

**Performance!** provides a fast, user-friendly and flexible means for:

1. Sizing, selecting and generating valve, actuator and positioner specifications
2. Data entry and verification
3. Automatically importing and exporting valve specs from most data formats, including INtools®, Excel®, etc.

**Performance!** provides the above mentioned features and functions by using various user interfaces.

### **A Perfect Balance**

#### **The High-Performance, Reliable Solution**

The Valtek GS provides high reliability and accuracy in control loop applications throughout the continuous processing industries. Its design simplicity, low cost and ready availability make it a best choice selection for new projects, upgrades/retrofits and routine MRO.



## ***Unparalleled service: day or night, worldwide***

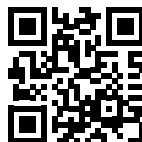
### ***Service when and where you need it most***

Flowserve Quick Response Centers (QRC) are strategically located around the world to ensure rapid response to your time-critical repair needs. They serve as a local, single point of contact for the full inventory of Flowserve products and services, including the machinery to manufacture custom-built units. We offer better than 95% on-time performance for all repairs. Flowserve offers pick-up and delivery within QRC service areas, mobile and on-site repair.

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