

MODEL // 988/989

Models 988 and 989 are globe-style control valves with pneumatic spring-return actuator. Originally designed for chemical plants and corrosive service, they have large diameter stems, special finishes on the stem and packing boxes, close-coupled guiding, and live-loaded packing systems. Rugged construction, longevity, and low maintenance make these valves a popular choice in industrial process applications. The main difference between the 988 and 989 are in the face-to-face dimensions.



The Models 988 and 989 are versatile, heavy-duty throttling valves for general or corrosive chemical service.

Body sizes:

3/4" (988 only), 1", 1-1/2", 2"

Maximum Cv:

From 0.25 to 50

Materials:

Body – CS, 316L SST, Ni-Mo-Cr, CW-12MW (988 only)

Trim – 316L SST, HC-22

End connections:

988 – NPT, SW, separable flanges for Classes 150#, 300#, and PN40 989 – separable flanges for Classes 150# and 300#

Face-to-face:

988 – ISA - 75.08.07 (long)

989 – ISA - 75.08.01 (short)

Temperature range:

-20° F to +750° F

Pressure drop:

TFE seat – up to 1480 psid

Metal seat – 740 psid

MODEL // 988-MB

Model 988-MB is a modified version of our Model 988 designed to handle hazardous fluids. To minimize fugitive emissions, it is fitted with a metallic bellows stem seal subassembly and live-loaded secondary stem packing seal. Inlet pressure is from full vacuum to 200 psig. This model protects against fugitive emissions.



The Model 988-MB is a heavy duty control valve with maximum protection against leakage.

Body sizes:

3/4", 1", 1-1/2", 2"

Maximum Cv:

From 0.25 to 50

Materials:

Body – CS, 316L SST, Ni-Mo-Cr, CW-12MW (988 only)

Trim – 316L SST, HC-22

End connections:

NPT, SW, separable flanges for Classes 150#, 300#, and PN40

Face-to-face:

ISA - 75.08.07 (long)

Temperature range:

-20° F to +450° F

Pressure drop:

200 psid

Seat leakage:

Class IV and Class VI

Options:

High temperature service, NACE service, multiple packing variations, stellited seat surfaces

MODEL // **RANGER QCT**

The Ranger QCT is the only truly universal control valve you can buy. It is the most versatile, adaptable, and easily maintainable valve ever produced. No other valve is more user friendly.

The Ranger offers 10 different trim combinations. Trim can easily be changed in less than 5 minutes without disturbing the packing, actuator, or positioner calibration. The service area is a threadless design, which resists corrosion or collection of chemical deposits. No other valve on the market can handle cavitation or noise reduction as easily or as economically!

A selection of 4 body materials with a broad temperature range from -325°F to +750°F makes the Ranger adaptable for use in steam, heat transfer fluids, slurries, gases, liquids, and cryogenic applications. Ranger's unique dual seating design provides both Class VI and backup Class IV seat leakage. And the standard patented live-loaded packing system lets you check and adjust packing without the need for specialized tools or complicated procedures.

A multiple-spring-return actuator that offers fail-safe capability and runs on a minimal air supply (35 psig max) is standard. The Ranger has a square shaft stem connection instead of a spline shaft, so that it can be quickly and economically adapted to other types of actuators. In every respect, the Ranger QCT exemplifies the Cashco motto – "Innovative Solutions".

REDUCING TRIM



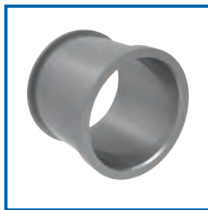
installs in minutes without plug or seat-ring changes

ANTI-CAVITATION TRIM

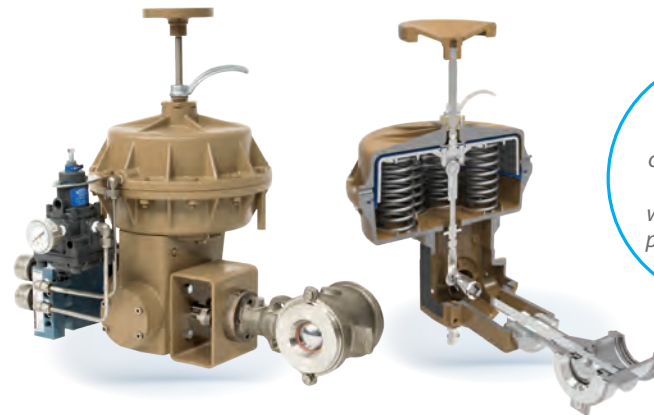


replaces the standard seal retainer

ABRASION SLEEVE



offers exceptional erosion resistance



*The only **Rotary Control Valve** on the market that can remove trim without pulling the positioner actuator stem.*

Body sizes:

1", 1-1/2", 2", 3", 4", 6", 8"

Maximum Cv:

1260

Materials:

Body – DI, CS, SST, HC

Trim – Inconel X-750/625 metal seals, TFE soft seals, Stellite #6, castm17-4 PH, or monel plug

Remaining parts – SST 10 trim combinations to select from

End connections:

Flanged in CS and SST and available in flangeless

Temperature range:

-325° F to +750° F

Pressure drop:

From 150 to 1400 psid

Seat leakage:

ANSI/FCI 70-2, Class VI with TFE Class IV above 500°F or without TFE

Options:

Multiple low noise reduction trim and seal retainers 0.2, 0.4, 0.6 reduced trims, anti-cavitation trim, abrasion sleeve, P/P or I/P smart positioners, position switch, line bolting, special packing designs NACE service cryogenic service pneumatic, electric, or manual actuators

Face to face:

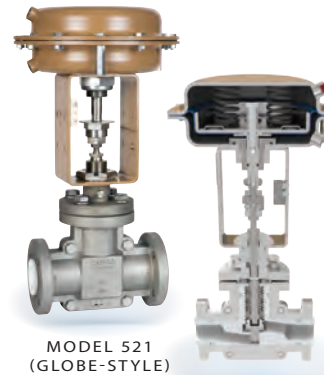
ISA-75.08.02

MODEL // 521

The Model 521 Globe-Style Control Valve with sliding stem, bellows sealed, pneumatically actuated valves designed to achieve the ultimate in long-term corrosive chemical service.

Our exclusive unibody forged-TFE construction is unique in the industry and can handle even absolute vacuum applications. The one-piece body is machined from a solid block of isostatically compacted virgin TFE and encased in a cast 304 SST body shell to prevent distortion.

Construction includes a 100,000-cycle TFE bellows, quick change trim, replaceable plug, and dual stem seal design to minimize emissions. This valve can handle strong acids and bases, most organics and industrial reagents.



MODEL 521
(GLOBE-STYLE)

The Model 521 with dense TFE walls is capable of vacuum service, with max corrosion protection while minimizing permeation.

Body sizes:

1/2", 1", 1-1/2", 2"

Maximum Cv:

From 0.10 to 40

Materials:

Isostatically compacted TFE in SST body shell

End connections:

150# and 300# Flanged

Temperature range:

0° F to +310° F

Pressure drop:

Up to 275 psid

Seat leakage:

Class VI

MODEL // THE PREMIER

This valve was born to throttle. The Premier EZO (short for easy opening) has superb throttling characteristics and is designed to eliminate "popoff" flow surges. It is available in a lined version or unlined in three body materials and five sizes from 3" to 10". The Premier uses the same multi-spring return actuator as the Ranger QCT and has a square-shaft stem coupling that's easy to adapt to your favorite actuator. This valve has a butterfly design for demanding throttling service.



Body sizes:

3", 4", 6", 8", 10"

Maximum Cv:

EZO – from 179 to 3815

Unlined – from 243 to 4406

Materials:

Body – CI, CS, SST

Stem – 17-4PH, 316

Disc – SST

End connections:

EZO – flangeless, mates with ASME 150# and 300#
Unlined – flangeless wafer, mates with ASME 125#, 150#, and 300#

Temperature range:

-320° F to +500° F

Pressure drop:

EZO – to 150 psid
Unlined – to 300 psid

Seat leakage:

EZO – Class VI

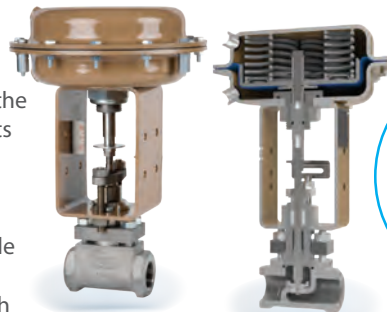
Unlined – 1% of maximum Cv

Options:

P/P or I/P positioners, handwheel, position switches or solenoid

MODEL // 987

The Model 987 precision globe-style "chemical valve" is the valve of choice to handle hostile fluids and environments – as well as steam and water. Its corrosion-resistant, field-reversible actuator, alloy body and trim materials, high pressure-drop capability, and exceptionally low Cv rangeability make the Model 987 one of the most reliable and versatile valves in the chemical process industry. This valve is for exceptional low Cv rangeability plus high pressure capability.



The Model 987 control valve offers precision control for chemical processes.

Body sizes:

1/2", 3/4", 1"

Maximum Cv:

Six sizes for metal seat 0.276 to 6.95

Three sizes for TFE seat 2.60 to 6.70

Materials:

Body and trim — 316L SST, Hastelloy C-22, and similar alloys

End connections:

NPT, 150#, 300#, 600# Flanged, and Extended Pipe Nipples

Temperature range:

-20° F to +450° F

Pressure drop:

Metal seat – up to 1440 psid

TFE seat – up to 400 psid

Seat leakage:

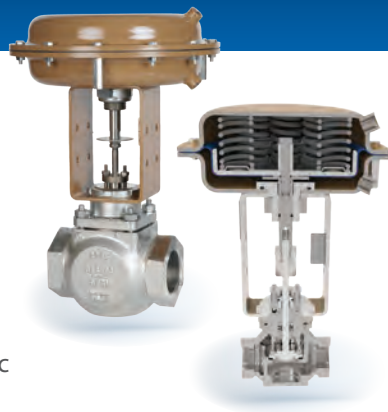
Class IV or Class VI

Options:

Stellite seating side-mounted handwheel, P/P and I/P positioners, position switches

MODEL // 2296/2296HF

The Model 2296/2296HF is a stainless steel or bronze glove-style control valve available with pneumatic or rotork electric actuators. The Model 2296/2296HF offers Quick-Change Trim, equal or linear trim characteristic, and 316 or 316L SST internals. With cryogenic capabilities, the 2296/2296HF is one of the most versatile and economical control valves on the market.



The Model 2296 is a small control valve with cryogenic capabilities suitable for skid builders.

Body sizes:

1/2", 3/4", 1", 1-1/2", 2"

Maximum Cv:

44.5

Materials:

Body — 316 L SST, BRZ

Trim — SST

Seat — SST, TFE

End connections:

NPT female pipe thread, Flanged, and Extended Nipples

Temperature range:

-20° F to +400° F

-425° F to +400° F cryogenic

Pressure drop:

1557

Seat leakage:

Metal - Class IV

Soft - Class VI

Options:

Cryogenic Construction, Reduced Orifice, P/P and I/P smart positioners

MODEL // 964

The Model 964 is a globe-style pneumatic control valve for general plant utility services. It is field-reversible, without removal from the line. This "workhorse" valve offers equal-percentage quick-change cage-type trim and can handle steam, industrial gases, air, water, and oil applications. This is a versatile, low cost valve available in iron and carbon steel.



The Model 964 is a versatile, low cost valve available in iron and steel.

Body sizes:

1/2", 3/4", 1", 1-1/2", 2", 3"

Maximum Cv:

83

Materials:

Body — DI, CS

Trim — SST

Seat — Metal, TFE

End connections:

1/2", 3/4", 1", 1-1/2", 2" — NPT

1-1/2", 2", 3" — 125#, 250# integral flanges or 150#, 300# separable steel flanges

Temperature range:

-20° F to +450° F

Pressure drop:

Soft seat — up to 400 psid

Metal seat — up to 740 psid

Seat leakage:

Class IV and Class VI

Options:

Stellited metal seat, P/P and I/P smart positioners

MODEL // 764P

The Model 764P is a reliable, versatile, and inexpensive pneumatic proportional pressure controller. It's available with iron or 316 SST sensing heads and can be set for direct or reverse action.

Signal Output:

3-15 psig
6-30 psig

Control Range:

30" Vac through 2500 psig

Options:

Diaphragm Seals
Tri-clamp Connection



The Model 764P is a reliable and economic pressure controller.

MODEL // 764T

The Model 764T is a pneumatic temperature controller. Ideal for bleachers, cookers, heat exchangers and other applications that require durable and accurate temperature control.

Signal Output:

3-15 psig

Control Range:

-70° F to +580° F

Options:

Thermal Bulb



The Model 764T is reliable and economic for temperature control.