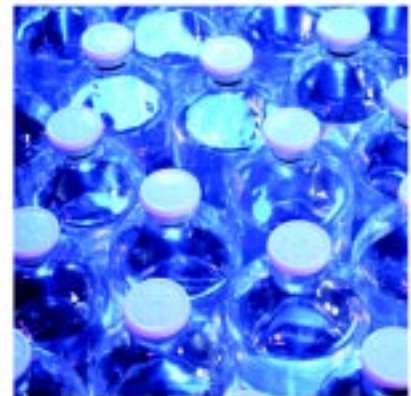


# STERIFLOW™

Sanitary Products by Jordan Valve



## Mark 90 Cavity Filled 3-Piece Ball Valve

### Description

The Mark 90 ball valve is designed to meet the specifications of Pharmaceutical and Biotechnological users, while including the flexibility required by the Chemical, Cosmetic and Food Processing industries.

This product line combines the convenience of standard sanitary features with the availability to customize the valve to benefit a particular process. A wide variety of options and accessories are available.

The MK90 ball valves offer high flow capacities, tight shutoff and an unobstructed flow path (inlet/outlet ID match ID of ball) to help keep your system clean and maintain product integrity.



### Features & Benefits

- Sizes from 1/2" (DN15) through 4" (DN100)
- Full port design to provide unobstructed flow and better drainage
- Body pressure rating up to 1000 psi (70 bar), installed rating determined by clamp or tube ends
- Standard with Virgin Teflon cavity filler
- Internal mechanical polish to 32 Ra (0,8 µm)
- Lockable handle to prevent accidental opening or closing of valve
- Pneumatic and electric actuators available
- In-line repair feature

## Mark 93 Sanitary Steam Traps

### Description

The Mark 93 is a thermostatic steam trap designed specifically for use in clean steam systems demanding that sanitary conditions be maintained. It features a 20-25 Ra (0,5 - 0,6 µm) internal finish to insure efficient performance that will meet the stringent requirements of your sanitary system.

During start-up, the element is fully open to discharge all air, non-condensable gases and cool condensate. The heat of the entering steam causes the element to expand, closing the valve. Condensate then enters in the body, cooling the element, causing the element to retract and the trap to open.

Typical applications are: fermentors, bioreactors, sterilizers/autoclaves, SIP systems, process piping equipment and steam barriers.



### Features & Benefits

- Sizes 1/2" (DN15), 3/4" (DN20), 1" (DN25)
- Thermostatic steam trap in 316L stainless steel, designed for clean steam tracing, drip-leg and process applications
- All 316L stainless steel housing and internals
- Polished components — body interior is polished to 20-25 Ra finish (0,5 - 0,6 µm)
- Sanitary clamp ends standard, tube or threaded ends optional
- Self-draining when installed vertically (outlet side down)

## Mark 95 Sanitary Back Pressure Regulator

### Description

The Mark 95 is ideal for back pressure applications where sanitary conditions must be maintained and fast, simple cleaning and maintenance are desired.

316L barstock is the standard material for the body and metal trim components. The valve is mechanically polished to 20 Ra (0,5 µm) and then electropolished. The self-draining design eliminates all dead spaces, which can trap media. The design of the MK95 is 3A<sup>®</sup> approved, and all seals comply with FDA requirements ideal for food & beverage or pharmaceutical manufacturing processes. Available with hard or soft seat, and a variety of o-ring materials, the MK95 is well suited for virtually any sterile back pressure application.

The MK95 is often used in:

- Pump by-pass loops for WFI systems
- Tank relief valve (non-coded) applications
- Reactor injection-type installations



### Features & Benefits

- Sizes 3/4" (DN20) through 3" (DN80)
- Soft seat capability for ANSI Class VI shutoff
- No guiding surfaces in the fluid — prevents particulate generation
- 100% 316L barstock body — no wetted parts made from forgings or castings
- Self-draining
- No threads in contact with service media
- Easy to disassemble for cleaning
- Steam-in-Place, Clean-in-Place (SIP/CIP)
- Large diaphragm areas for superior accuracy

## Mark 96 Sanitary Pressure Regulators

### Description

The Mark 96 Sanitary Pressure Regulator is designed to regulate pressure in systems requiring the maintenance of sanitary conditions. The design of the MK96 is 3A<sup>®</sup> approved.

The MK96 operates by sensing pressure under the diaphragm on the downstream side of the seat. As the downstream pressure approaches the set point, the force caused by the pressure acting on the diaphragm overcomes the force of the range spring, and the plug begins to move up toward closed. If the pressure underneath the diaphragm begins to fall, the spring forces the plug to move down toward open, to allow the set point to be maintained.

Applications for the MK96 include steam, gas and liquid services found in the pharmaceutical, biotech, health care, food & beverage and other industries.



### Features & Benefits

- Sizes 3/4" (DN20) through 3" (DN80)
- Soft seat capability for ANSI Class VI shutoff
- No guiding surfaces in the fluid — prevents particulate generation
- 100% 316L barstock body — no wetted parts made from forgings or castings
- 20 Ra (0,5 µm) standard finish, 8 Ra (0,2 µm) optional
- No threads in contact with service media
- Steam-in-Place, Clean-in-Place (SIP/CIP)
- Large diaphragm areas for minimal droop

## Mark 97 Sanitary Control Valves

### Description

The Mark 97 sanitary globe-style control valves are pneumatic and electric (pictured at right) control valves designed in accordance to 3-A® standards. The MK97 Series is suitable in a wide variety of applications in the pharmaceutical, biotechnology, cosmetic, dairy and food & beverage industries.

As a 3-A® approved valve with FDA conforming materials, the MK97 is ideally suited for a range of flowing media, including liquid, gas and steam service.

High rangeability, various Cv offerings, characterized trim, and excellent temperature and pressure ratings provide the performance required for process control without compromising sterility.



### Features & Benefits

- Sizes 1/2" (DN15) through 2" (DN50)
- Easy to perform sanitary maintenance with simple disassembly, reassembly, and steam-in-place/clean-in-place capabilities
- Wetted parts made of 100% 316L Stainless Steel barstock
- No guiding surfaces in the fluid
- Totally enclosed multi-spring actuator — available in four sizes to meet a wide range of differential pressure requirements. Electric actuators (shown) also available.
- Self-draining — when mounted in traditional vertical orientation

## Mark 98 Diaphragm-Sealed Control Valve

### Description

The Mark 98 is a pneumatically actuated modulating valve. It has been designed for use on water for injection (WFI) and other very high purity liquids. The MK98 conforms to ASME BPE 2002 standards for the bio-pharmaceutical industry.

The MK98 supplies the key benefits of a diaphragm seal: no stem o-ring, Class VI shut-off, while incorporating a contoured plug and precision orifice to give true control valve performance. This combination offers exceptional turndown, in conjunction with the ability to choose a flow characteristic to match system needs - benefits not available with conventional diaphragm control valves.

Applications include WFI, Ultra Pure Water, De-Ionized Water, De-Mineralized Water, Aqueous Solution, CIP chemicals and process product. Suitable for Sterilization by SIP or CIP.



### Features & Benefits

- Sizes 1/2" (DN15) through 2" (DN50)
- Self-draining and crevice-free to maintain sanitary conditions whether mounted horizontally or vertically
- No guiding surfaces in the fluid
- Teflon covered EPDM diaphragm with polyester reinforcement
- Clean-in-Place, Steam-in-Place capabilities
- Contoured plug provides precise flow characteristics (equal percentage, linear)
- 20 Ra (0,5 µm) standard polished interior with 8 Ra (0,2 µm) available



## SHC Series Sanitary Check Valves

### Description

The SHC Series is a horizontal check valve designed specifically for use in pharmaceutical and biotech applications. It features a spring-less design, which eliminates concerns about media entrapment and particulate generation associated with spring-loaded designs, to ensure zero dead space and to maintain sterile conditions.

The SVC Series is ideal in the following applications: WFI, Purified water lines on pump outlets; Condensate drainage from clean steam distribution loops; Condensate drainage from process systems using clean steam — fermenters, bioreactors, SIP systems, and sterilizers; to replace actuated diaphragm valves on liquid mixing lines, and Gas (N<sub>2</sub>) purge/drying lines.



### Features & Benefits

- Sizes 1" (DN25), 1-1/2" (DN40), 2" (DN50)
- Polished components — body interior is polished to 32 Ra (0,8 µm); disc is polished to 20 Ra (0,5 µm)
- Sanitary tube ends are standard, with Tri-Clamp ends available
- Positive shutoff without the use of a spring
- Reduced dead space and crevices associated with spring check valves
- Self-draining flow path
- Applicable for gas, liquid or low pressure steam service

## SVC Series Sanitary Check Valves

### Description

The SVC Series is a vertical check valve designed specifically for use in pharmaceutical and biotech applications. It features a spring-less design to ensure zero dead space and to maintain sterile conditions, not possible with spring-loaded models.

The SVC Series is ideal in the following applications: WFI, Purified water lines on pump outlets; Condensate drainage from clean steam distribution loops; Condensate drainage from process systems using clean steam — fermenters, bioreactors, SIP systems, and sterilizers; To replace actuated diaphragm valves on liquid mixing lines, and Gas (N<sub>2</sub>) purge/drying lines.



### Features & Benefits

- Sizes 1/2" (DN15), 1" (DN25), 1-1/2" (DN40), 2" (DN50), 2-1/2" (DN65), 3" (DN80)
- Polished components — body interior is polished to 32 Ra (0,8 µm); disc is polished to 20 Ra (0,5 µm)
- Sanitary tube ends are standard, with Tri-Clamp ends available
- Positive shutoff without the use of a spring
- Dead space and crevices associated with spring check valves are eliminated
- Applicable for gas, liquid or low pressure steam service

## Sanitary PID Pressure Controller

### Description

This Proportional/Integral/Derivative pressure controller features a sanitary clamp process connection (not shown) to prevent media from entering the controller and ensures sterility in the process. The pressure measuring element is a piezoresistive sensor that compares the measured pressure to the setpoint and sends a corrective 4-20mA output signal to a final control element (i.e. MK97 Control Valve) to control the pressure.

The operating parameters may be changed by means of the four push buttons that are located below the LDC display. The housing is made from die cast aluminum alloy and coated with an epoxy resin, suitable for washdown. Coupled together with the Steriflow™ MK97 or MK98, a complete control loop can be configured to control pressure even beyond the capabilities of the Steriflow™ MK95 and MK96 pressure regulators.



### Features & Benefits

- Wide rangeability for the measuring span
- IP 66 environmental protection
- Automatic temperature compensation in measuring cell
- Proportional Band adjustable by 1% steps, from 200% to 5% of measuring range
- Set Point adjustable by 1% step from 0-100% of span
- Automatic Reset adjustable by 2 sec. step from 8'30" to 2"
- Rate Action adjustable by 0.25 sec. steps from 63.75" to 0.25"

## Sanitary PID Temperature Controller

### Description

The PID temperature controller will generate a standard 4-20mA corrective output signal to a final control element (i.e. MK98 Control Valve) to control the pressure, as the process requires. The measuring element may be a thermocouple, a resistance RTD element or a potentiometer.

As with the PID pressure controller, four push button keys allow changing of the operating parameters. All necessary data can be viewed in the easy-to-read LCD display. With the epoxy coated, die cast aluminum housing, this highly accurate controller is suitable for washdown situations encountered in sanitary processes.



### Features & Benefits

- Wide rangeability for the measuring span
- IP 66 environmental protection
- Ambient temperature compensation
- 5 microA output resolution
- Proportional Band adjustable by 1% steps, from 200% to 5% of measuring range
- Set Point adjustable by 1% step from 0-100% of span
- Automatic Reset adjustable by 2 sec. step from 8'30" to 2"
- Rate Action adjustable by 0.25 sec. steps from 63.75" to 0.25"

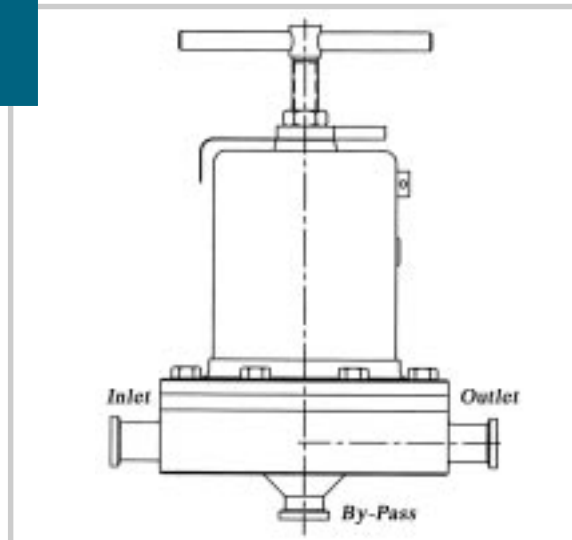
## MK95FT “Flow Through” Back Pressure Regulator

### Description

The Mark 95FT has all the features and benefits as the standard MK95, but offers an additional connection to allow straight through flow when the valve is closed. This design is primarily intended for pump by-pass loops.

### Features and Benefits

- Reduces weld joints in typical by-pass loop
- Reduces “T” and “L” fitting requirements
- Reduces dead legs by simplifying piping



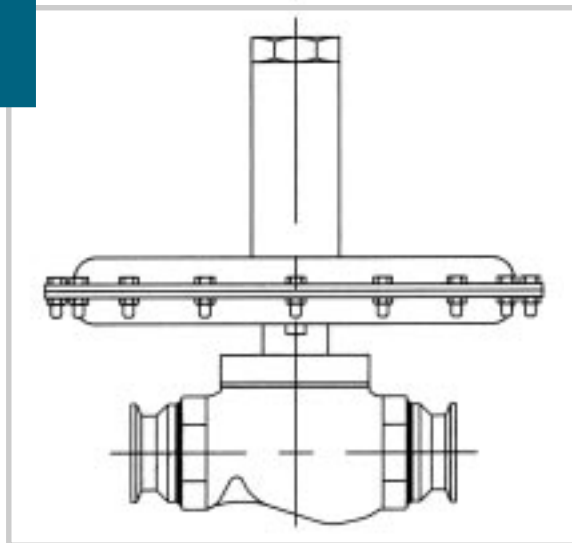
## MK968 Low Pressure Gas Regulator

### Description

The Mark 968 is ideal for low pressure gas regulation in pharmaceutical and food & beverage applications. The self-contained low pressure gas regulator is for use on tank blanketing and other low pressure air and gas applications. Together, the SST construction, FDA-approved seals and the tri-clamp connections make the valve well suited for sterile applications and environments.

### Features and Benefits

- Inlet pressures up to 150 psi
- 360° body orientation
- 316/316L SST body/trim and tri-clamp, quick disconnect connections



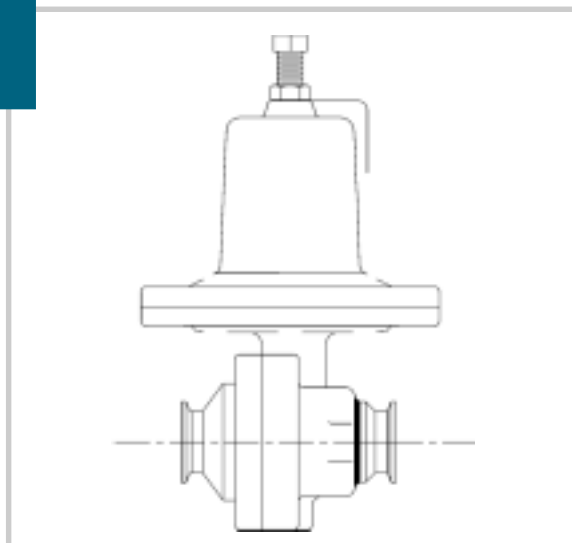
## MK60 with Tri-Clamp Ends Pressure Regulator

### Description

The Mark 60 utilizes the hallmark Sliding Gate design for precise regulation. With complete 316/316L stainless steel for all wetted parts, the MK60 eliminates any concerns with seal compatibility and conformity.

### Features and Benefits

- Proven Sliding Gate design
- No elastomers in contact with medium — wetted parts are 100% stainless steel
- Sanitary clamp connections
- Ideal for high temperature/pressure applications



# STERIFLOW™

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