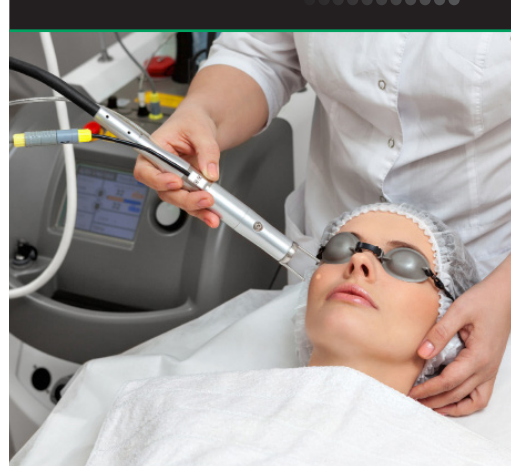


MEDICAL LASERS



Gems' products measure and control water, gases, cleaning solutions, dialysate, coolant and air to support heating and cooling in medical lasers and thermal management of the patient's body

CHALLENGE

- Consistently maintain coolant tank levels
- Overheated lasers and downtime
- Need higher flow rate in a smaller package to adapt to machine sizes decreasing
- Overheated lasers and downtime
- Need to meet footprint requirements without jeopardizing reliability or time to market

SOLUTION



LS-7 Level Switch

LS-7 Float Type Single Point, LS-300 Multi Point, Electro-Optic Level Sensors and XM-300/350 Continuous Level Transmitters to provide consistent level detection in laser's coolant reservoirs and water tanks to prevent overheating and machine shut down



B-Cryo Solenoid Valve

Gems offers miniature and subminiature valves:

A, B & D Valves to control fluid for cooling laser heads

CRYO Valves (B & D) to control the flow of cryogen in cryogenic lasers

E & A Valves to directly control the flow of freon or CO₂



FS-380P Flow Switch

FS-380P Flow Switch and FS-500 Flow Switch confirm coolant flow to ensure proper cooling to prevent overheating and machine shut down



Customized Fluidic System

When multiple valves and technologies are utilized or duplicate paths are required, integrating them can offer many benefits including smaller footprint, reduced leak points, ease of assembly and plug and play service.

MEDICAL IMAGING



Gems' products monitor the machine's cooling system to prevent overheating and machine down time

CHALLENGE

- Unable to consistently maintain coolant tank levels
- Overheated machines and downtime
- Need higher flow rate in a smaller package to adapt to machine size decreasing
- Need repeatability on low set points
- Overheated machines and downtime
- Need to balance the flow rate and temperatures across multiple zones

SOLUTION



LS-350 Level Switch

LS-7 Float Type Single Point, LS-300/ LS-350 Multi Point, Electro Optic Level Sensors and XM-300/350 Continuous Level Transmitters to provide consistent level detection in laser's coolant reservoirs and water tanks to prevent overheating and machine shut down



FT-110 Flow Sensor

FT-110 and FT-330 Flow Sensors to provide continuous flow monitoring in a uniquely small footprint



PS-11 Pressure Switch

PS-11 Pressure Switch to detect low pressures and loss of coolant on electronic cooling systems



Customized Fluidic System

When multiple technologies are utilized or duplicate paths are required, integrating them can offer many benefits including footprint, reduced leak points, ease of assembly and plug and play service – i.e.: Integrated manifold with pressure, temperature and flow to balance and monitor coolant

SURGICAL EQUIPMENT



Gems' supports fluid delivery systems in medical surgical equipment and critical vacuum measurement

CHALLENGE

- Alternative wetted materials required when in contact with chemicals, gasses, or waste. (measure water pressure across filter – inlet/discharge) Need accurate and consistent readings
- Able to aid in evacuation or machine control
- Need to fit sensors and valves into a smaller package
- Need to incorporate control functionality at point of use

SOLUTION



2200 Series Pressure Transducer

2200 Series Pressure Transducer to accurately and consistently monitor inlet and discharge pressure in de-ionized water distribution systems



809 Series Pressure Transducer

809 Series Pressure Transducer to monitor vacuum pressure to help control vacuum pump in surgical equipment



Customized Fluidic System

When multiple technologies are utilized or duplicate paths are required then integrating them can offer many benefits including reduced footprint



Customized E Series Valve

Customized Valve Solutions modified for end-user ergonomic or device footprint considerations

STERILIZATION



Gems' products support the delivery of chemicals and monitor critical pressure to ensure proper sterilization

CHALLENGE

- Need high steam pressure control, a safety mechanism for opening and closing the sterilizer door and sensors that can withstand the high temperature environment and chemicals used in sterilizers
- Need valve seals that don't dissolve and are able to withstand extremely harsh chemicals at high temperatures

SOLUTION



3X00 Series Pressure Sensors

3100 Series, 3500 Series Pressure Transducers and 3600 Series Pressure Switch monitor critical pressure to ensure proper sterilization of instruments and laboratory operator safety

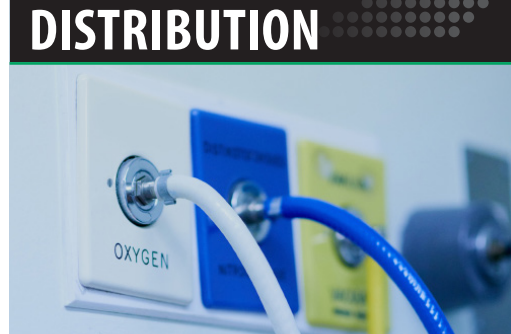


B-Series Solenoid Valve

A, B, D Valves with a wide variety of plunger seal and O-ring material options to deliver chemicals (i.e.: ethylene oxide) to sterilize equipment without dissolving

Coming soon - High purity valve

MEDICAL GAS DISTRIBUTION



Gems' products support oxygen and gas monitoring

CHALLENGE

- Wetted parts compatibility with gases, sensor size to fit on gas distribution bank, no oil filled sensors allowed due to possible diaphragm rupture causing contamination in system (oil)
- Need a valve that won't outgas and is compatible with a wide variety of gases

SOLUTION



3X00 Series Pressure Sensors

3100 Series, 3500 Series Pressure Transducers and 3600 Series Pressure Switch with all welded 17-4 or 316L stainless steel wetted parts with no internal O-rings or seals to monitor oxygen line pressure for medical gas distribution



A-Series Solenoid Valve

All of Gems' valves are suitable for inert gases and can come cleaned for oxygen service

Coming soon - High purity valve

RENAL CARE



Gems' products support purified water filtration, delivery and heat purification

CHALLENGE

- Need a valve that doesn't exchange ions
- Prevent valve from rusting
- Need valve seals that don't dissolve and are able to withstand extremely harsh chemicals at high temperatures

SOLUTION



B-Series Solenoid Valve

Direct acting solenoid valves for water inlet to control sterilization chemicals with a wide variety of plunger seal and O-ring material options

Coming soon: High purity valves for sterile water control

DIALYZER RE-PROCESSING



Gems' products support the re-processing procedure to clean a dialyzer with a sterilant to make it safe for re-use

CHALLENGE

- Need valve seals that don't dissolve and are able to withstand extremely harsh chemicals with a long service life

SOLUTION



A-Series Solenoid Valve

A, B, C, D, AS & BS Valves can be configured with elastomers and steels required to meet media compatibility needs.

Custom interfaces available for ease of inspection, cleaning and service

DIAGNOSTICS



Gems' products support testing in labs

CHALLENGE

- Need consistent and reproducible slide staining process
- Alternative wetted materials required when in contact with chemicals, gases, or waste
- Machines are getting smaller and more portable

SOLUTION



3500-Series Vacuum Transducer

3500 Series Vacuum Transducer to monitor and control vacuum slide carousel for access to reagents required for automated immunohistochemistry (IHC) analysis



D-Series Solenoid Valve

(A, B & D) water delivery valves to feed RO system

Select between **A, B, C, D, G** depending on flow rates required. Valves configured for vacuum service are a standard catalog option. Easily suitable for both air control or liquid (condensate) extraction



Customized Fluidic System

Valve and level products controlling liquid can be easily integrated into the machine or bottle cap to further reduce footprint

WATER PURIFICATION



Gems' products support reverse osmosis (RO) systems

CHALLENGE

- Need to detect worn or clogged filters for replacement
- Need a valve that doesn't exchange ions
- Prevent valve from rusting

SOLUTION



2200-Series Pressure Transducer

2200 Series Pressure Transducers to monitor inlet and discharge water pressure across the filter to detect a drop in pressure indicating a clogged or worn filter



B-Series Solenoid Valve

A, B, D, AS and BS Valves with a wide variety of plunger seal and O-ring material options to deliver chemicals (i.e.: peroxides) to sterilize equipment without rusting

Coming soon - High purity valve