Safematic Seal Support Systems

smiths
bringing technology to life

SAFEMATIC

Seal water filtering, control and monitoring

Seal water functions

Seal water is used for cooling a mechanical seal and the shaft. It also lubricates seal faces. Seal water is often used in conjunction with both packings and mechanical seals in process industries. It also prevents particles from hampering the sealing function.

Each seal type has specific flow and pressure requirements for seal water. Exceeding the flow requirements does not bring any benefits but it generates extra costs due to increased water consumption. Water needs to be filtered before it is used as well as treated after usage. The industry uses various methods ranging from simple components such as control valves to more sophisticated flow meters such as Safematic's Safeunit™.

John Crane Safematic's solutions

John Crane Safematic is continuously developing systems to filter, control and monitor the seal water:

- **Safeunit™** — Complete solution for seal water control and seal condition
- **Safeunit Ultima** — New generation seal water control and monitoring system
- **SmartFlow** — Intelligent seal water control system
- **Safeclean** — Complete mill wide seal water filtering system
- **Safefilter** — In-line seal water filter unit
- **SafeJet** — Compact in-line seal water filter

The John Crane Safematic comprehensive and versatile systems increase the process RUNNABILITY and RELIABILITY.

This results as better competitiveness for our customers.

Safematic Safeunit™

Complete monitoring and control solution for seals and seal water systems

Installing the Safeunit™ seal water system will ensure trouble free operation of process machinery in all conditions and achieve the maximum life cycle profit of your investment.

Safeunit™

Adjusting the seal water flow and pressure with Safeunit™ will create the best possible operating environment for seals and maximise the runnability of the process.

User friendly, compact unit

- Controls and monitors seal water flow and pressure
- Predicts seal and packing failures
- Reduces and pre-determines maximum seal water consumption
- Can be cleaned with equipment running, alarm will not go off with the improved push-clean button
- Simplifies pump setup and service
- Detects and locates seal water line problems
- Flow indicator and pressure gauge with memory pin
- Unique non-clog valves
- Available with optional electrical alarms

One single compact unit for easy seal maintenance

Packings for flush seal — **Type SFP**

Quench seal — **Type SFQ**

Double mechanical seal — **Type SFD**

Optimise seal operation and performance

Safematic Safeunit Ultima

Extended operation area to optimise seal operation in extreme conditions

Safeunit Ultima is specially designed to control seal water flow and pressure. This increases the reliability of seals used in pumps and process machinery while reducing seal water consumption up to 80%. It is designed for use in harsh operating environments where high temperature, high pressure and chemically aggressive elements are present. This makes it ideal for extreme applications found in pulp, paper and chemical industry processes, plus a wide variety of mining and general industrial uses.

The easy to install Safeunit Ultima not only controls and monitors seal water flow and pressure, but also drastically reduces seal water consumption. This results in increased sealing reliability, longer process equipment uptime plus reduced shutdowns and lower maintenance costs.

Rugged and compact seal water unit with:

- Advanced design to reduce seal water pressure loss
- Rugged heavy duty structure
- Patented cleaning plunger that cleans the display and check valve during operation
- Improved accuracy
- Excellent resistance to chemical attacks and corrosion
- Proven regulating valve design providing reliable seal performance
- Greater operating temperatures (up to 100°C)
- Optional 60 bar pressure capability

Type SUP
for flush and packing

Type SUQ
for non pressurised quench

Type SUD
for double seal

We know what it takes to optimise your seal operation

Safematic SmartFlow

Intelligent seal water control system

There is a growing demand for reducing seal water usage and seal-related costs. Environmental issues and standards should also be brought into consideration. John Crane Safematic is proud to introduce a new device for seal water control. This intelligent system uses seal water only when the mechanical seal truly requires cooling. The system saves up to 97% of seal water compared to flow meter regulated control systems.

- Saves water
- Reliable operation based on proven technology
- Simple installation
- Integrated filter to prevent clogging of the system
- No need for electricity, no wiring needed
- No adjustments needed
- Maintenance-free operation, periodic check of filter is adequate
- Fail-safe construction prevents seal failures in case of fault situations
- Available as universal and integrated models

Save more than 90 % of water without risking the seal performance

Seal water filtering solutions

Safematic Safeclean

Mill-wide seal water filter

Safeclean seal water filter system removes impurities and particles providing clean seal water for stuffing boxes and mechanical seals. The system cleans seal water so efficiently that residual particles or impurities will not cause seal malfunction or unnecessary wear. It also reduces organic matter such as humus.

Safematic Safefilter

In-line seal water filter unit

The Safematic Safefilter filtering unit is designed to filter poor quality mill water that services mechanical seals in applications which are very important for the process.

Features and advantages

- System is back flushed during operation
- Pressure regulating devices connected to the piping
- Filtering system sizes from 150 l/min up to a complete mill wide solution
- Completly automatic operation; no need for changing cartridges
- Low operation costs
- Improves flow control reliability extends seal life
- Reduces water consumption
- System contains two filters: possible to replace the filter cartridges during normal operation
- Both filters have two cartridges: longer operation without maintenance
- Built-in, automatic by-pass valve prevents the possible flow reduction to mechanical seals
- Can be used in conjunction with Safematic Safeunit™

Safeclean and Safefilter
- always the right solution for seal water filtering

Safematic SafeJet

Safematic SafeJet

SafeJet is an automatic seal water filter. Its operation is based on "flow through" filter technology which utilises reliable laminar filtering method. This method uses several slotted screen elements and due to this, SafeJet is a solid self-cleaning micro filter. The SafeJet body and the filter elements materials are stainless steel AISI 304. System is also available all AISI 316 material. Filtering elements are capable to remove solid particles larger than 50 µm.

Features and advantages

- Flush is controlled with a timer
- Possibility for flush control based on pressure difference
- Solid and cost-effective structure
- Reliable operation without any moving or wearing parts
- Flushing with raw water
- Easy to clean
- Can be installed directly to the pipeline, no need for separate brackets or stands
- Low space requirement compared to the filtering capacity
- Only 230V AC voltage is needed for control
- Various sizes available
- Max pressure 10 bar

SafeJet
– the filter that saves tons

Around the world, around the corner

For your nearest John Crane facility, please contact one of the locations below.

John Crane Safematic Oy
Muurame, Finland
Tel: 358-10-8525-611
Fax: 358-10-8525-600

Europe
Slough, UK
Tel: 44-1753-224000
Fax: 44-1753-224224

North America
Morton Grove
Tel: 1-847-967-2400
Fax: 1-847-967-3915

Latin America
São Paulo, Brazil
Tel: 55-11-3371-2500
Fax: 55-11-3371-2599

Middle East & Africa
Dubai, United Arab Emirates
Tel: 971-4-8839510
Fax: 971-4-8837766

Asia Pacific
Singapore
Tel: 65-6512-5200
Fax: 65-6512-5233

smiths
bringing technology to life

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use. In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice. ISO 9001, ISO 14001, ISO/TS 16949 Certified. Details available on request.

©2007 John Crane Print 11/07 www.johncrane.com

B-SafematicSealSupport/Eng