product overview
for steam and other industrial fluids

spirax sarco

Spirax Sarco provides knowledge, service and products worldwide for the control and efficient use of steam and other industrial fluids

Knowledge

Our years of accumulated experience have enabled us to develop and nurture an in-depth expertise for the proper control and conditioning of steam. Our experienced field personnel work closely with design, operations, and maintenance engineers, continuously evaluating ways to improve productivity. Often, these solutions pay for themselves many times over.

We operate four U.S. training centers in *Allentown, Chicago, Houston, Los Angeles, and Blythewood, SC*. All have on-site steam systems providing hands-on training. Education programs include the theory of steam, the application of steam products, and plant design and system efficiency, to name just a few. Programs can also be tailored to individual needs. Thousands of engineers complete our training programs each year and return to continue broadening their knowledge of steam systems.

Service

Spirax Sarco draws upon its worldwide resources in bringing you the thorough service that sets us apart. From initial consultation to effective solutions, our goal is a safe, reliable steam system which improves productivity. We offer:

- Experienced steam specialists.
- Quick response to service inquiries.
- Quick, dependable delivery. A network of local authorized distributors provides stock delivery.
- Post-sale service
- Steam system evaluation support

Call 1-800-883-4411.

Products

Whether it's a spare part, a steam trap station, a complete plant room package, a blowdown valve or a complete boiler house, Spirax Sarco has all the building blocks to provide the complete system - one stop shopping for the steam and condensate loop.

Contents

Boiler controls and systems

An extensive range of boiler controls and systems is available. Whether it's a completely new boiler house plant or a simple blowdown valve replacement Spirax Sarco will have the answer.

On/Off Level Controls

For steam boiler installations with a reasonably constant steam demand, a simple on/off control system, operating on the conductivity principle may be used.

Modulating Level Controls

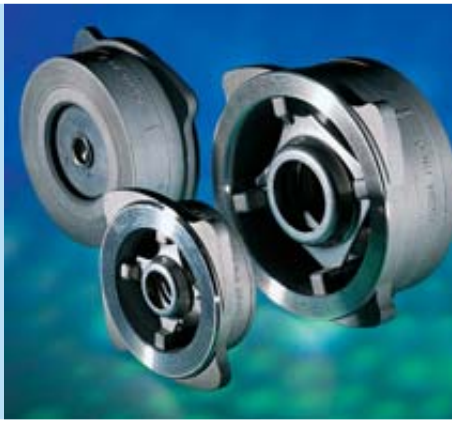
Utilizing capacitance level probes, modulation level controls on boilers give stable water levels reducing the chance of lock-out, steady steam pressure and flowrate, more efficient burner operation and less wear and tear on feedpump and burner.

Boiler blowdown systems

As steam forms it leaves behind impurities and dissolved liquids in the boiler water that will concentrate unless blown down. The TDS (total dissolved solids) in the boiler must be controlled accurately. High TDS will result in carryover of boiler water and impurities causing problems with production and plant. Low TDS due to too much blowdown will be expensive in fuel costs and water treatment chemical losses. Systems are available for large and small, vertical and horizontal shell boilers and water tube and coil boilers.

Feedpump check valves

Fitted with heavy springs and soft seats to prevent a shutdown boiler from flooding with feedwater.



Steam injection systems

Can be used to inject live steam into feedtanks to drive off the dissolved oxygen, considerably reducing the amount of oxygen scavenging chemicals required, and to maintain a high and steady feedwater temperature to the boiler.

Heat recovery systems

Flash steam recovery from blowdown has two advantages. In addition to the heat recovered the flash steam is condensed to 'pure' water, reducing the amount of make-up water and chemical treatment required.
For certain conditions it may be more economical to pass the blowdown directly to a heat exchanger without using a flash vessel. Spirax Sarco can provide a range of alternative solutions to heat recovery.

Sample coolers

To be sure that a boiler is operating at the desired concentration of TDS it is necessary to take a sample of the water and test it. The stainless steel sample cooler lets the operator do this safely and accurately without the risk of steam flashing off.

Bottom blowdown valves

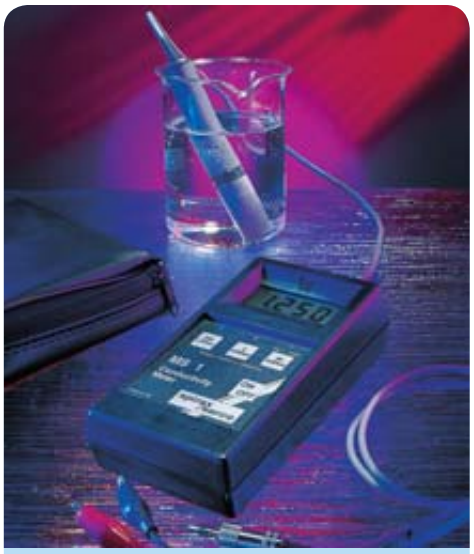
Systems to ensure precise and regular blowdown of precipitated solids from the bottom of the boiler. Both key operated, manual systems and fully automated systems are available.

Vent heads

The vent head separates out condensate and vents flash steam safely without spray. Vent heads are stainless steel to fit and forget.

High Integrity Level Alarms

The dangers of a low water level in steam boilers are well-known and boiler operating standards around the world require stringent safety measures to be taken to guard against this potentially dangerous condition. Spirax Sarco offers high integrity self checking high and low level alarm systems using modern electronic solid state controllers and cut to length conductivity probes.



Conductivity meters

The temperature compensated conductivity meter is an essential instrument to have in the boiler house for checking boiler water and feedwater TDS levels and calibrating control instrumentation.

Flowmeters

Whatever your process or system requirements, there is a flowmeter to suit your needs from the Spirax Sarco range. Our flowmeters have an unrivalled reputation for accuracy, reliability and versatility, being suitable for steam as well as most liquids and gases. A comprehensive choice of flow computers and display units, many of which can be linked to plant or energy management systems, complement the range.

ILVA (In-Line Variable Area

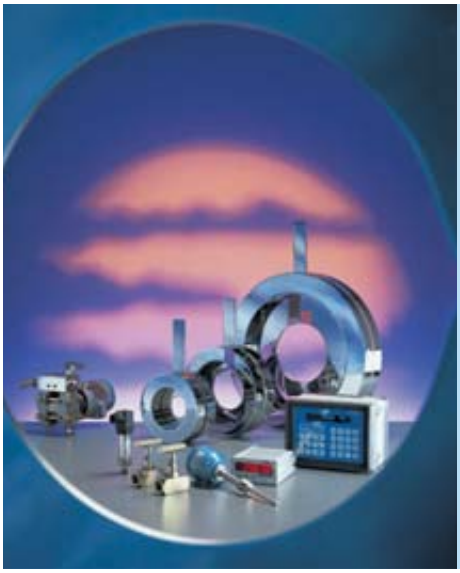
The ILVA is an all stainless steel wafer style flowmeter based on the well-established spring loaded, variable area Gilflo. Suitable for installation between 150, 300 or 600 ANSI flanges, the ILVA provides all the benefits of the Gilflo meters including very compact installation requirements at an attractive price.

Standard Range Gilflo (SRG)

The Gilflo flowmeter offers an unrivalled 100:1 turndown ratio and can be used to meter most industrial fluids including steam and gases. Available in pipeline sizes 2" to 16".

DIVA (Direct In-Line Variable Area)

The DIVA does not rely on measurement of differential pressure across the flowmeter, measuring instead the force generated by the deflection of the cone via a series of high quality stain gauges. The DIVA has an internal temperature sensor enabling full density compensation for saturated steam applications, removing the need for additional sensors and flow computers.



Orifice plate flowmeters

Spirax Sarco orifice plate flowmeters are especially suited for installations in pipelines where the need for high accuracy and turndown is not critical. They can be interfaced with flow computers to give up-to-the-minute data at the touch of a button. Available in pipeline sizes from 1" upwards.

Flow computers

A range of flow computers is available to give automatic density compensation plus analogue, pulse and RS 232C outputs. Flow computers can be sited up to 1000 ft. away from the pipeline units.

Display units

For metering steam, liquids and gases the unit is easy to install and is available pre-set to meet customer requirements which avoids the need for on-site programming.

Control systems

To enable you to make the right choice for your application Spirax Sarco has developed a range of control systems ranging from simple self-acting controls to systems that will fit into highly sophisticated control loops.

Pneumatically actuated control valves

Two and three-way control valves manufactured in cast iron, ductile iron, carbon steel, alloy steel and stainless steel. These valves are available with threaded or flanged connections and sizes from 1/2" to 8" for use at pressure up to 1500 psig. A range of powerful spring and diaphragm pneumatic actuators provides accurate and reliable performance.

Electrically actuated control valves

Using the same valve range as the pneumatic actuators, electric actuators provide an alternative solution to applications that require an electrical power supply.
A comprehensive range of accessories is available.

Positioners

To complement the range of pneumatically actuated control valves, the pneumatic and electropneumatic positioners will allow small actuators to close against higher differential pressures, eliminate hysteresis and improves accuracy and positioning time. Variants are available with automatic commissioning, smart control, programmable functions and digital communications.

Programmable electronic controllers

Panel mounted loop controllers suitable for single or multi setpoint control.
They incorporate PID, auto TUNE and ADAPTIVE algorithms.

Pneumatic transmitter controllers

For pressure or temperature control, controllers are available with simple proportional control action, or with the addition of integral and derivative action. Temperature sensing is via a nitrogen filled direct expansion system and pressure sensing by interconnecting pipework to an internal bourdon tube.

Direct acting pressure reducing and surplussing valves

Models are available for use on water, steam and gases in a wide variety of materials including gunmetal, SG iron, cast steel and stainless steel.
Sizes range from 1/2" to 4" and are suitable for pressures up to 600 psi.

Pilot operated pressure reducing and back pressure valves

Like direct acting pressure reducing valves, these valves are self-powered. Pilot operation provides accurate control under large load change conditions.
Available in iron, cast steel and stainless steel in sizes 1/2" to 8".

High limit temperature cut-out

Designed to protect personnel and product, the high limit temperature cut-out is a self-powered, independent overheat safeguard for use with two and three port valves.
It is inherently 'fail-safe', and can provide remote indication of operation.

Self-acting temperature controls

The range of self-acting temperature control systems is ideal for applications demanding rugged reliability and low maintenance. They are particularly suited to harsh or hazardous environments.

Pilot operated temperature regulators

Like self-acting temperature control systems, these regulators are self-powered. Pilot operation makes them suitable for applications with changing loads. They are ideal for use in harsh or hazardous environments. Available in iron, steel and stainless steel in sizes from 1/2" to 8".

Steam traps

It is essential to remove condensate and often air and other incondensable gases from steam systems, without loss of live steam and then, for energy, efficiency, to return the condensate to the boiler house. The Spirax Sarco range of steam traps allows the best choice to be made for all applications. A steam trap performance monitoring system complements the range.

Balanced pressure thermostatic steam traps

Balanced pressure thermostatic steam traps adjust automatically to varying steam pressures and have excellent air venting characteristics during plant start-up and during normal operation. They have large discharge capacities for their size and the robust design of the internals gives a good life expectancy.
Range: 1/4" to 1"; up to 600 psig; brass, cast steel and stainless steel; capacities up to 11,000 lb/h

Ball float steam traps

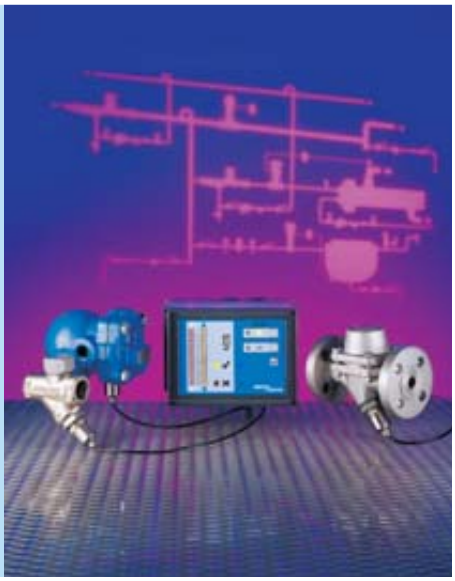
These extremely versatile traps work efficiently on both light and heavy condensate loads. Although compact in size, their discharge capacity is high and continuous, ensuring maximum heat transfer. Ball float steam traps are the best choice for draining plant with automatic temperature control. An integral air vent is fitted as standard and a steam lock release is an option.
Range: 1/2" to 4"; up to 465 psig; cast iron, SG iron, cast steel and stainless steel; capacities up to 300,000 lb/h

Thermodynamic steam traps

Thermodynamic steam traps combine reliability, simplicity and efficiency of operation. With just one moving part - a hardened stainless steel disc - they give a blast discharge with clean, tight shut-off. Able to withstand superheat, waterhammer, corrosive condensate, freezing and vibration the TD trap is the first choice for removal of condensate from steam distribution systems.
Range: 3/8" to 1"; up to 3,625 psig; carbon steel, stainless steel and alloy steel; capacities up to 4,700 lb/h.

Spiratec steam trap monitors

Every steam trap which fails to operate properly causes problems somewhere. The Spiratec system can continuously monitor your steam traps to show their operation and warn of malfunctions. It will detect if traps are passing live steam or if they are waterlogged. The system uses a sensor mounted either in the steam trap or in a sensor chamber upstream of the steam trap with a signal to an external test point.
Range: 1/2" to 2"; up to 465 psig; carbon steel, SG iron and stainless steel.



Inverted bucket steam traps

Inverted bucket traps are the most robust type of the mechanical traps and will resist waterhammer. Also, with a check valve fitted in the inlet, they can be used with superheated steam. They are available with a wide selection of valve orifices for precise pressure and load matching.
Range: 1/2" to 2"; up to 900 psig; cast iron, cast steel, alloy steel and stainless steel; capacities up to 20,000 lb/h. Repairable, sealed and universal connector styles available.

Bimetallic thermostatic steam traps

The bimetallic steam traps can conserve energy by discharging sub-cooled condensate in those applications which can utilize sensible heat. They are the most robust of all the thermostatic steam traps, able to withstand waterhammer and corrosive condensate.
Range: 1/2" to 4"; up to 3045 psig; cast steel, alloy steel and stainless steel. Capacities up to 400,000 lb/h.

Swivel connector steam traps

Quick fit steam traps provide for ease of installation and removal without breaking the pipeline. This facility is extremely useful in those installations where labour costs are high, or where there is a shortage of skilled maintenance personnel. The key feature is a pipeline unit which fits permanently into the line and the trap is free to rotate through 360°.
Range: 1/2" to 1"; screwed and socket weld connections; up to 600 psig; balanced pressure, thermodynamic and inverted bucket versions, float, thermostatic and bimetallic.

Sealed steam traps

Sealed maintenance free steam traps manufactured in stainless steel.
Range: 1/2" to 1"; up to 650 psig; stainless steel; balanced pressure, inverted bucket and bimetallic versions.

Clean steam traps

Balanced pressure thermostatic clean steam for SIP applications. Thermodynamic for clean steam DRIP service. All stainless steel construction. Range from 1/4" to 1-1/2" tri-clamp tube weld, NPT. Pressure to 162 psig flow to 5,000 #/Hr.

Condensate pumps and energy recovery

To maximize energy efficiency it is essential to return clean condensate to the boile house. Spirax Sarco's range of condensate handling equipment allows you to achieve this effectively and economically.

Pivotrol® pumps

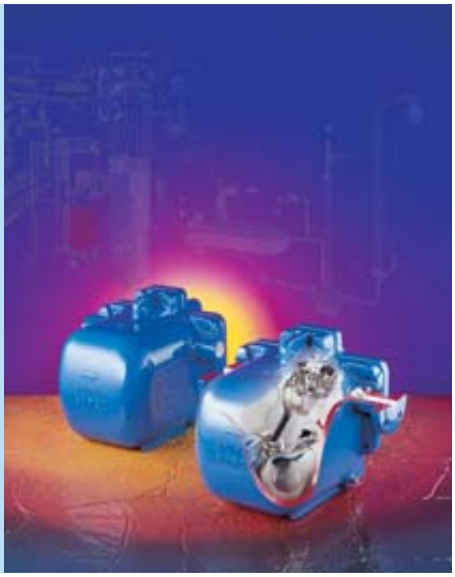
The Pivotrol® Pressure Powered Pump is engineered for dependable steam system condensate recovery in rapid cycling environments. Featuring Reliable PowerPivot® technology and backed by a 3 million cycle x 3-year warranty, The Pivotrol® Pump addresses pump maintenance, high-energy consumption, heat exchanger stall, waterhammer and erratic steam system performance. Extended 5 million cycles x 5-year warranty option also available.

Condensate contamination detection systems

Even low levels of contamination can cause foaming, scaling and corrosion in the boiler. The contamination detection system monitors the conductivity of the condensate and will raise an alarm and divert it to drain if a pre-set limit is passed.

Automatic steam powered condensate pump traps

The APT10 and APT14 offer the benefit of both pump and steam trap as one item. This ensures complete condensate removal from plant, even under vacuum, thus maximizing thermal efficiency at all times.
Range: pressure up to 14 bar loads up to 4 000 kg/h.



Electric powered condensate recovery units

A range of purpose designed, condensate return, vacuum condensate return and boiler feed pumps. Low NPSH units are available for loads up to 100,000 sq. ft E.D.R. and pressures up to 75 psig discharge pressure.

Flash steam recovery vessels

Flash steam is allowed to separate from the condensate in the vessel. The flash steam may then be used in a low pressure steam system and the separated condensate returned to the boiler house.

Pipeline ancillaries

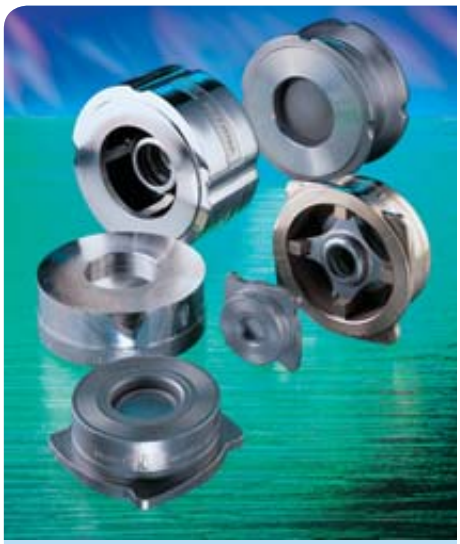
For long and reliable service from steam plant equipment it is necessary that the steam is clean, dry and that maintenance can be carried out easily. Spirax Sarco provides the complete range of products for the job.

Manifolds

A compact range of forged steel manifolds designed for steam tracing applications. The manifolds have 4, 8 or 12 tracer line connections and are supplied with integral piston type isolation valves. Screwed, socket weld, butt weld and flanged connections.

Bellows sealed stop valves

These bellows sealed stop valves are ideal for high temperature and pressure applications requiring zero emissions. Range: 1/2" to 12"; up to 600 psig; cast iron, SG iron, carbon steel and stainless steel; flanged, screwed and socket weld connections.



Check valves

For the prevention of reverse flow in pipelines, the range of valves offers an effective, low maintenance solution. Range: 1/2" to 4"; up to 600 psig; bronze or stainless steel; wafer pattern and screwed connections.

Diffusers

When fitted to the outlet of a steam/air trap that is discharging to atmosphere the diffuser will greatly reduce the noise level and will offer protection from high velocity discharge.

Separators

Separators remove moisture from steam or gas pipelines. They provide a drain point for condensate droplets moving along the pipe wall and deflect entrained droplets out of the main flow. Separators therefore ensure that steam or gas is delivered to its point of use dry - particularly important with highly rated plant or equipment like sterilizers, where steam comes into contact with the product. Range: 1/2" to 14"; up to 400 psig; cast iron, SG iron, carbon steel and stainless steel.

Piston actuated valves

A range of standard and compact size valves available in stainless steel and bronze material. Unique sealing design provides tight shut-off. They are suitable for a wide range of media, up to 385°F (196°C). Excellent stem sealing is provided by self-aligning PTFE and FKM gland seals.
Sizes range from 1/2" to 2" NPT, BSP, flanged, welded and sanitary connections.

Strainers

Range: 1/2" to 10"; up to 950 psig; bronze, cast iron, cast steel and stainless steel; flanged and screwed connections.

Sight glasses, sight checks and pressure gauges

A wide range of sight glasses, sight check valves and pressure gauges is readily available.

Hosedown stations

For general cleaning and washdown applications the hosedown station is the perfect tool. Hot water is economically provided by mixing steam and cold water safely.

Air vents and vacuum breakers

For use on steam and water systems. Range: 1/2" to 1"; brass, carbon steel and stainless steel.

Ball valves

Available as a manual valve or can be supplied with a pneumatic actuator. Range: 1/2" to 4"; up to 950 psig; cast steel and stainless steel; flanged and 1/4" to 2" screwed.

Clean steam products

The use of clean or pure steam to reduce the risk of product or process contamination spans many industries. The Spirax Sarco 'clean steam' product range has been designed and manufactured to the highest standards using stainless steel materials. The products are able to withstand the rigors of service demanded by clean steam and other aggressive process fluids, where contamination must be prevented and service life extended.

Pressure regulators

The range includes direct acting and pilot operated valves. Both types are self-acting, eliminating the need for an external power source and they can be provided with metal or soft seats.
Size range from 1/2" to 3".

Steam traps

Thermostatic, thermodynamic and ball float types are available with screwed or tube weld connections. Thermostatic traps are also available with quick release clamps for easy maintenance.
Sizes range from 3/8" to 2".

Ball valves

The forged stainless steel ball valve with smooth internal surfaces provides a safe environment for high purity and aseptic processes. Its low maintenance, clean design is suitable for steam, liquids and gases. It is available with a wide range of end connections including a quick release sanitary clamp to expedite installation and cleaning.
Size range from 1/2" to 2".

Filters

With an externally polished stainless steel housing the range of filters provides long life in an aesthetically pleasing package. An audible signal warns if the housing is improperly assembled, increasing safety for operating personnel and preventing valuable steam loss. Absolute filtration down to 5 micron reduces contamination and conforms to 3-A sanitary standards for the production of culinary steam.
Size range from 1/2" to 3".

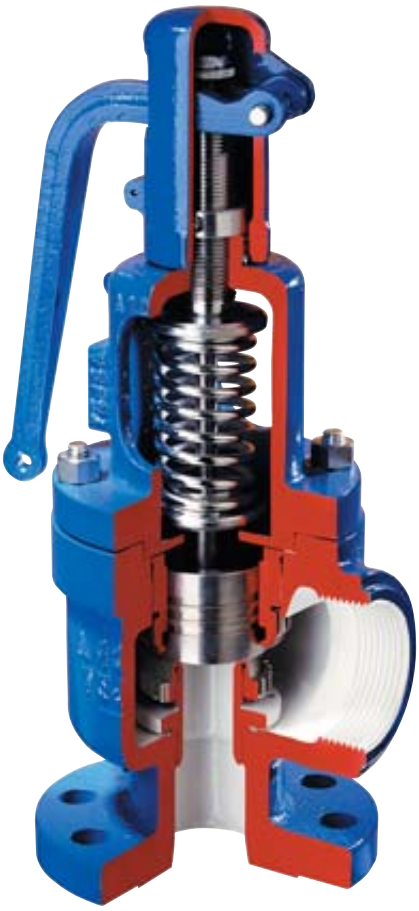
Separators

The stainless steel range of separators ensures that steam is delivered to its point of use dry - particularly important for equipment such as sterilizers.
High efficiency over a wide range of flowrates will minimise the effects of condensate where it could cause erosion and corrosion of valve seats.
Size range from 1/2" to 6".

SV7 Safety Valves

The SV7 safety valve range from Spirax Sarco has been designed to protect against excess pressure across a broad spectrum of industrial processes. Suitable for use with steam and air, SV7 safety valves provide a comprehensive and competitive solution to most applications.

Spirax Sarco safety valves are modern in design, available in a wide range of inlet sizes and body materials and are approved by National Board to ASM Section I and VIII.



211S, 632 and 211 Series Bronze Safety Relief Valves

The 211S, 632 and 211 Series Bronze Safety Relief Valves form Spirax Sarco, Inc. raise the standard of reliability and value with features like the industry's highest capacity for liquid and maintenance costs so low they shatter all previous industry expectations.

Products for compressed air

The Spirax Sarco range of compressed air equipment has been designed to ensure that air of the right quality is delivered to the point of use.

Compressed air products

The condition of compressed air is critical to plant efficiency. Poor quality air can lead to shortened air tool life, increased manufacturing times and even health risks. The Spirax-Monnier range of compressed air products - filters, regulators and lubricators - guarantees high quality air at the point of use.

The range is complemented by soft seated pressure reducing valves, ball valves and drain traps.

Also available is a range of vortex flowmeters which allow precise quantities of air to be measured.

Complete packaged solutions

Our customers are increasingly concentrating on their core businesses and now rely on Spirax Sarco to provide them with effective, well engineered packaged solutions to their heat exchange needs.

Heat exchange packages

A comprehensive range of packaged heat exchange systems to meet your steam to liquid heating requirements, including process and CIP heating applications, LTHW and DHW systems. The key components of the package are configured for optimum performance and represent the ultimate in compact, highly efficient and maintenance friendly heat exchange packages.

Steam System Management

The objective of Steam System Management (SSM) is to reduce the life cycle costs of steam systems.

System audits

Following a detailed system audit, our engineers can identify key areas for improved efficiency and advise on good engineering practices. The benefits to our customers include a reduction in utility charges, downtime and maintenance costs; lower emissions and the peace of mind which comes from a safe and efficient steam system.

A partnership with Spirax Sarco provides knowledge, service and products worldwide for the control and efficient use of steam and other industrial fluids.

Spirax Sarco product range

Boiler controls

Flowmeters

Pneumatically and electronically actuated control valves

Pressure reducing valves

Self-acting temperature control valves

Programmable electronic controllers

Pneumatic transmitter controllers

Safety valves

Steam traps

Steam trap monitoring systems

Condensate pumps

Flash vessels

Separators

Strainers

Stop valves

Check valves

Complete packaged solutions

Steam System Management

Training

For more information on Spirax Sarco, contact your Regional Hub Office below, or call 1-800-883-4411 and you will be connected to the location nearest you.

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