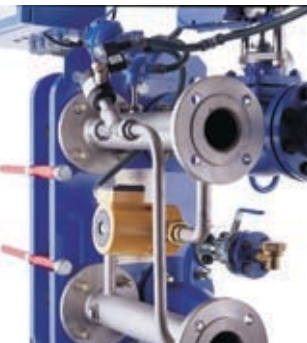


Spirax Sarco Services



offered through

Bibb Control Systems
Service & Expertise Since 1930



spirax
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Spirax Sarco, your global partner

Spirax Sarco provides knowledge, service, products and turnkey solutions for the control and efficient use of steam, air and other industrial fluids for industrial and commercial users in the United States. Originally formed as the Sanders Rehders Company in 1888 in London, our worldwide steam business is today part of the Spirax Sarco Engineering plc Group, which has been listed on the London Stock Exchange since 1959.

With over 100 years of expertise across industry, our holistic approach allows us to apply unequalled engineering knowledge in putting together complete solutions for our customers. 1,100 engineers in 33 countries worldwide work alongside steam users and specifiers to improve the performance of their plant and processes, and maximize return on investment.



Steam. The energy medium of choice

Now more than ever, steam remains the essential modern day, versatile energy medium for heating and sterilization processes in virtually every area of industry. World-class producers in most industrial market segments rely on steam for efficiency and process uptime. Consumers worldwide benefit from products they eat, drink, use and wear that have been produced using clean, odorless, environmentally friendly and sterile steam.

Spirax Sarco and the environment

Providing citizens and businesses worldwide with sustainable energy while addressing climate change is the most urgent environmental issue our society faces. The environmental issue carries with it significant economic impact as well, with real implications to our global standard of living. Throughout our history, Spirax Sarco has provided unrivaled knowledge; service and products to help steam users worldwide use boiler fuel more efficiently with lower emissions and reduced energy consumption. With the increasing threat to the environment, this approach is more relevant today than ever before. Reducing emissions, carbon footprint, and your company's impact on the environment is Spirax Sarco's goal. Not only will this have a strong social and environmental impact but also a positive economic impact today and well into the future.

The modern steam system is extremely efficient; however there is always room for improvement. Spirax Sarco audits hundreds of steam systems annually in the USA and has identified the actions required to modernise plants, using latest best practices, technologies and products, saving 20.7 billion pounds of steam energy and reducing carbon dioxide emissions by 1.4 million tons per year, equivalent to taking 257,000 cars off the road. With Spirax Sarco Services, the savings to both your bottom line and the environment are just waiting to be realized.

The challenge ahead

With the advent of the 21st Century, it has never been more difficult for companies to manage their business. Manufacturers must cope with rising labor costs, ever-increasing global competition, escalating fuel costs, and tightening health, safety and environmental legislation. To improve productivity and reduce costs, most organizations are operating leaner than ever before. Downsizing strategies have seen the reduction of maintenance staff levels and the resultant decline of in-house steam engineering knowledge and experience.

Filling the knowledge void

In tandem with lean operating practices, a sensible strategy for outsourcing services will ensure ongoing improvements in energy efficiency and to the health and safety of plant and personnel. To help energy users address today's competitive pressures, Spirax Sarco established their Services Division. This group of experienced Spirax Sarco engineers is equipped to fill the knowledge void, working alongside your engineering and maintenance staff to maintain and improve performance, efficiency and productivity while reducing costs.



The Spirax Sarco advantage

Our qualified engineers propose optimization solutions based on sound economic models and sensible business proposals that respect your budgets, production schedules and resource requirements while demonstrating a rapid return on investment. Applying our knowledge, service, products and turnkey engineering capabilities, we help our customers maximize profit by upgrading steam system engineering to best practice class. Solutions range from the design and implementation of system efficiency improvements, supply and installation of replacement products and parts, to total steam system management.

Strength through teamwork

Working together as a team alongside Spirax Sarco engineers presents our customers with opportunities to:

Outsource

- Non core business requirements
- Energy supply
- Process design
- Plant design
- Installation & commissioning
- Maintenance, service and replacement

Improve

- Profitability
- Production output
- Product quality
- Plant efficiency
- Automation
- Process control

Reduce

- Energy costs
- Effluent costs
- Chemical treatment
- Product rejects
- Production times
- Unit costs
- CO₂, SO_x, NO_x emissions
- Air, O₂ and N₂ leaks
- Carbon footprint
- Climate change levies/energy taxes
- Downtime
- MRO costs
- Spares inventory

Range of services

Our services are tailored and integrated to suit your resources, plant requirements and available budget. Spirax Sarco engineers will work with you to implement improvements to your system and help you maintain the resulting performance gains. Our services can be split into three categories:

Surveys and audits

- Steam trap surveys
- Steam, air, N₂ and O₂ leak surveys
- Steam system audits
- Steam quality testing
- Process audits
- Energy audits
- Thermal imaging
- Ultrasonic pipewall thickness testing
- Seismic and structural analysis
- Compressor performance analysis
- Product health checks
- Faultfinding & rectification



Installation and service

- Installation
- Commissioning
- Start-up
- On-site training
- Project and site management
- Maintenance contracts
- Service and repair

Engineering and design

- Steam system design
- System efficiency calculations
- Assessment of savings
- Return on investment calculations
- Pre-engineered packaged solutions
- Product/package performance calculations
- Certification and other documentation
- Technical literature

Steam trap surveys

Irrespective of the type or brand, steam traps are recognized as a potential source for significant energy loss. A Spirax Sarco steam trap survey will identify, tag, test and report on every steam trap in your facility. Using Spirax Sarco's Steam Trap Monitoring Software (STMS), the survey team generates comprehensive and detailed reports available either in hard copy or electronically that may be downloaded to a PC. The report includes a full inventory of existing steam traps including:

- Tag No
- Location
- Duty
- Size
- Type
- Brand/manufacturer
- Status (is the trap working correctly, failed open, failed closed or cycling too quickly/too slowly)
- Suitability for application (correct type, size, pressure rating for the duty)



“Spirax Sarco came in, surveyed our steam trap population, replaced failed traps and fixed the leaks. As a result we reduced our energy bill by more than \$1,000,000 this year”

East Coast University

Failed traps are highlighted, steam losses calculated and investment payback time for failed trap replacement reported. A trap that is cycling too rapidly or has failed open will result in:

- Increased fuel bills
- Higher emissions
- Increased water, chemical treatment and effluent charges

A trap that is cycling too slowly or failed closed will result in:

- Poor quality/wet steam
- Waterhammer (and the resultant danger to plant and personnel)
- Increased maintenance
- Longer start-up times
- Increased production time and unit costs
- Reduction in process performance and plant efficiency
- Increase in product quality issues and reject rate

The steam trap survey can also identify steam leaks with the goal of targeting and prioritizing areas of your plant, which with further investigation, could lead to greater savings and improvements.

Steam system audits

A Spirax Sarco steam system audit is tailored to your process or application and available budget. Spirax Sarco has the experience and expertise to identify areas in your steam system where improvements can be made. Following preliminary discussions with site personnel on their concerns, together we will determine and prioritize which audit or audits are required to uncover areas where there is scope to improve your systems' reliability, performance and cost effectiveness. An audit can include the complete steam distribution loop, starting with the water treatment plant right through to process applications and condensate return or just focus on certain aspects of the system.

Each audit is designed to your particular requirements and conducted by experienced Spirax Sarco Certified Energy Managers (CEM) utilizing advanced "Steam System Assessment Tool" (SSAT) modeling software developed by the Department of Energy in conjunction with Spirax Sarco. Our objective is to reduce your operational costs through "Best Practices" steam system management and highlight any health and safety issues.

Being the heart of the steam system, the boiler house is an area where there is often great potential for energy savings. By knowing the fuel, water, chemical treatment and effluent costs and metering the steam generated we can make recommendations and provide accurate payback calculations on proposed system improvements, upgrades and good engineering practices.

The steam system audit conducted by our DOE and SSAT accredited and certified energy managers includes:

- Inventory of key equipment
- Identification of poor engineering practices
- Health and safety issues
- Focus on energy savings through:
 - Heat recovery
 - Identification of steam leaks
 - Identification of misapplied or incorrectly sized equipment
 - Identification of failed steam traps
 - Utilization of flash steam
 - Return of condensate
 - Inspection of insulation





“We estimated that savings in steam was somewhere around \$1,000,000. I would recommend them. Think they did a good job. Good people to work with. I was just very pleased”

B. Wilkins – Dow, Texas City

Typical areas covered by a steam system audit report include:

- Inventory of equipment audited
- Descriptions of problems identified
- Potential energy savings based on actual operating conditions
- Recommended equipment and system improvements to achieve energy savings and emissions reduction
- Before and after fuel and make-up water consumption and costs
- Before and after site emissions (CO₂, SO_x, NO_x)
- Estimated installation costs
- Identification of health and safety issues
- Identification of productivity improvements
- Identification of potential areas for improved product quality (if applicable)
- Planned preventative maintenance schedule (if required)
- Advice on best engineering practices
- Site drawings (if specified)
- Photographic evidence (where applicable)
- Cost of implementing report recommendations
- Return on investment

Installation

Spirax Sarco provides the full range of installation services from the simple install of a heat exchanger package to major turnkey projects involving design, project management, site supervision, installation, commissioning, startup and on-site training. Our qualified installation crews have in depth knowledge of the steam and condensate system and the products they install. When required we subcontract approved mechanical contractors to carry out installation work under the guidance of our project and site management staff.

Maintenance contracts

Having made the investment to improve and enhance your steam system to its optimum efficiency levels, it makes good economic sense to continue to benefit from the returns on your investment in the form of ongoing energy savings and the sustained health and safety of your plant and employees. Many of our customers have seen a reduction of their in-house maintenance staff and the loss of steam engineering experience and this is where outsourcing maintenance and service work offers the most cost effective solution enabling you to focus on core business activities while we focus on your steam system. Our engineers will help you to put together an agreement that balances your maintenance requirements within your budget. The cost of maintenance contracts are typically less than the cost of energy loss caused by not maintaining your steam system to its optimum efficiency levels. Examples of our maintenance contracts are:

- The boiler house
- Flowmetering
- Controls and instrumentation
- Steam trap management

The benefits of an annual maintenance contract include:

- Maintaining most efficient levels of plant performance
- Preferential call out and repair service (if part of the terms of the contract)
- Preventative maintenance carried out at your convenience
- Reduction in breakdowns and downtime
- Savings and benefits become visible through monitoring and progress reports leading to a reduction in the total cost of ownership
- Improved safety





Service

Spirax Sarco offers repair services either on site or through our service departments strategically located across the country. Our national network of highly trained and experienced service engineers can rapidly respond to your requests, normally within 24 hours. The services offered include:

- Repairs
- Recalibration
- Commissioning
- Startups
- Troubleshooting
- Installation

All Spirax Sarco products are supplied with a manufacturers warranty. Any equipment found to be faulty through manufacturing defects within the stipulated warranty period will be replaced.

“We began with a call to Spirax Sarco and they really helped us in trouble-shooting our steam trap problem. Our annual steam cost dropped \$30,000 just in our unit alone – the money was just sitting there waiting to be captured”

A. Stublen – DuPont, Chambers Works

“Having a good steam trap management program is exciting because last year we estimated we saved \$140,000 in wasted steam cost”

J. Wiltsey - DuPont, Wilmington

Engineering and design

Spirax Sarco's highly experienced engineering and design staff will work with you through the key disciplines required to meet your steam and condensate efficiency goals by:

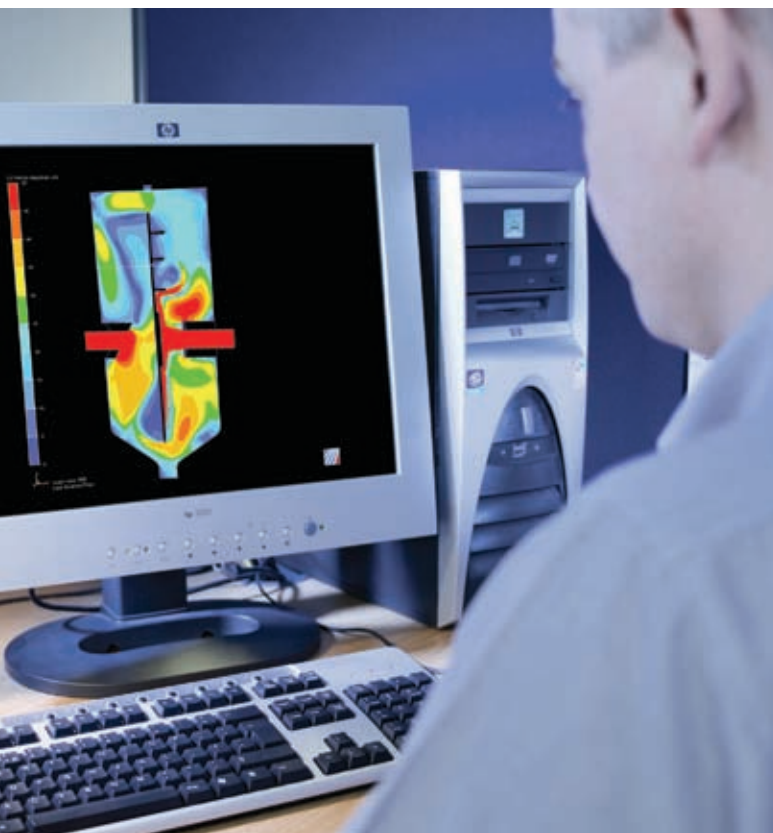
- Identifying opportunities
- Determining the financial impact
- Design
- Estimation of engineering and construction costs
- Prioritization
- Implementation
- Project management
- Performance measurement and verification
- Planning

Spirax Sarco's Engineered Systems Division offers pre-engineered, compact skid mounted packaged solutions. The Engineered Systems advantage expedites the installation process and delivers a quality solution. Benefits include:

- Type and size of components carefully selected to ensure system compatibility
- Reduced engineering, piping layout and procurement costs
- Conserved plant space and optimized operating efficiency
- Minimized field labor and job site welding
- Potential for fewer installation errors and safety mishaps
- Shortened overall project lead times
- Simplified maintenance and prolonged service life
- Pre-tested for faster start up
- Reduced plant down time
- Single source supply for greater accountability

Spirax Sarco's packaged solutions include:

- Manifolds and trap stations
- Condensate recovery solutions
- Heat exchanger solutions
- Heat recovery solutions (e.g. boiler blowdown and flash steam)
- Vessels and receivers
- Steam conditioning stations
- Control valve and flow metering stations
- Deaerators and surge tanks
- Clean steam generators
- Specialized packages



Solutions commitment

Our strength and growth is built on trust and long-term customer relationships, working together to find and implement the best solutions. Over 100,000 loyal customers are testament to a high level of satisfaction with our knowledge, service, products and turnkey solutions. Never complacent, however, we are committed to improving and adapting wherever necessary to meet our customers' ever-changing needs and exceed their expectations. Contact us today for a no-obligation discussion of your needs and how to get started on a path to best-in-class energy management.

Customers include

Merck	B.P.
Boeing	Nestle
Hercules	US Army
Caterpillar	General Mills
Anheuser Busch	Georgia Pacific
Glaxo Smithkline	Huntsman Chemicals
S. Carolina Medical Center	Veterans Administration
Pfizer	Bayer
Valero	Titleist
Goodyear	Frito Lay
Kraft Foods	US Navy
Fort Detrick	Exxon Mobil
ConAgra Foods	Mead Westvaco
Celanese Chemicals	University of Texas

These companies do not endorse Spirax Sarco.



What our customers are saying

"The expectations that we had with the program were very high; we are the largest refinery in North America. We've been able to realize great savings. Here at our facility alone in the first year we netted close to \$2,000,000 worth of savings"

M. Koehn – BP, Texas City

"With only about \$200 spent on materials we were able to save around \$150,000 in material alone per reboiler. It's working, we increased the uptime, we reduced carbonic acid corrosion and the waterhammer"

V. Guidry - DuPont, Pontchatrain Works



Regional sales offices

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