Oil, Gas and Chemicals overview
solutions for your steam and condensate system
As the world leader in steam technology we are constantly striving to ensure our customers have the support and technology they require to stay ahead of their energy challenges.

Our global network of sales operations deliver solutions to over one hundred countries into a huge variety of industries across the globe. Our steam experts ensure that customers are continually improving quality, efficiency and sustainability through steam and thermal energy excellence.

We work with our customers to deliver...

- Sustainable steam and thermal energy solutions
- Shared expertise and knowledge through dedicated Steam Technology Training Centres
- Auditing and advice to achieve process productivity improvements
- Complete system design including turnkey solutions
- Timely installation and commissioning
- Efficient servicing and maintenance

9 LARGE manufacturing sites in 4 CONTINENTS

Operating in 57 countries
Our steam system services allows you to focus on your objectives, whilst we focus on your steam system

Steam system services
Through understanding our customers’ needs, we have evolved our steam system services to provide support to you when you need it. Working alongside you, our engineers provide the expertise and support needed to ensure you improve and sustain your plants efficiency.

The audit – identifying improvements through:
- Steam trap surveys
- Steam leak surveys
- Heat tracing optimisation
- Engineering reviews
- Optimisation studies
- Solutions development and Front End Engineering Design (FEED)

Our audit report on your plant will explain how implementing our recommendations will help you meet targets, the estimated cost of implementation and the potential return on your investment.

Installation and commissioning
We work with your teams or approved contractors to support them in delivering the recommendations identified in our audit, within time and budget:

<table>
<thead>
<tr>
<th>Implementation</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Management</td>
<td>In many global areas, we offer Project Management services tailored to your specific requirements.</td>
</tr>
<tr>
<td>2. Full installation</td>
<td>We can arrange for approved subcontractors to carry out the work required, which we can inspect as part of a Quality Assurance exercise following the installation.</td>
</tr>
<tr>
<td>3. Basic product</td>
<td>Our service engineers can carry out installation of Spirax Sarco products (dependent on Spirax Sarco Company).</td>
</tr>
<tr>
<td>4. Commissioning and</td>
<td>Our commissioning engineers ensure newly installed equipment operates at its maximum potential.</td>
</tr>
<tr>
<td>start-up</td>
<td></td>
</tr>
<tr>
<td>5. Installation advice</td>
<td>Our sales and service engineers can advise your maintenance teams on good engineering practices and on the installation of Spirax Sarco products.</td>
</tr>
</tbody>
</table>

Service agreements
Having invested in your steam system by bringing it up to its best operating efficiency, it makes economic sense to maintain it at that level. Our engineers will help you to put together a service agreement that balances your maintenance requirements with your budget.

Please contact Spirax Sarco for help and assistance in evaluating the benefits that we can offer your company.
Case study

LARGE OIL REFINERY
Gulf Coast, USA

Objectives:
To find an on-site partner to take ownership and responsibility for its entire steam system, and ensure optimum steam system productivity, energy efficiency, safety and compliance.

Solution:
A tailored steam system management program, consisting of steam trap surveys, steam and condensate leak surveys and steam system optimisation activities.

Results:
• Failed-open steam trap failure rate dropped from 7% to 3.6%
• Failed-closed steam trap failure rate on steam mains drip applications dropped from 8.3% to only 0.6%
• Annual savings of $9.3 million
Our product range - designed to meet your challenges

Our wide range of steam system components will keep your steam system running as efficiently as possible, delivering steam of the right quality and condition to your processes. Designed for quick and easy maintenance and long life, our products will help minimise breakdowns and maximum productivity.

We can be your single supplier for all steam system requirements, from condensate management and return, steam trapping equipment, controls and instrumentation to bespoke packages. You can rely on us for quick provision and reliable supply, and we will support and guide you in selecting the most effective solutions for your applications.

Steam tracing
Our manifolds provide a robust solution for steam tracing. This helps maintain product temperature and viscosity in order to simplify pumping, avoid freezing, and eliminates condensation from instrumentation.
Our products meet recognised industry standards

We work hard to ensure that all the products we develop are fully accredited to recognised standards. This accreditation gives you the confidence and the assurance that the products which we install in your plant fully meet both local requirements and are deemed fit for purpose. Our products are fully accredited to Quality Management System Standards BS EN ISO 9001.

Certification

Certificates of Conformity 2.1

Typical test reports (where applicable) include:

• Hydraulic test
• Steam test
• Air test

Inspection certificates to:

• 3.1 material ISO 10474 / EN 10204
• 3.2 material ISO 10474 / EN 10204 – Option
• ASME
• API

Welding dossiers including:

• Welding map
• Welding procedures specification
• Procedure qualification records
• Welders performance qualifications
• Welding consumables list
• Welding consumables 3.1 certificates

ATEX
IECEEx
NACE
GOST & RTNP
CRN

Where available or applicable

For further information on our products and services please visit www.spiraxsarco.com
Case study

PETROCHEMICAL PRODUCTION PLANT
Abu Dhabi, UAE

Objectives:
Within the ethylene-heater there was a higher back pressure on condensate discharge lines than the inlet steam pressure to the heat exchanger, with water hammering issues downstream of heat exchanger. The secondary tubes in the ethylene production design operated at a pressure of 42 bar g. A solution was required for effective condensate recovery against the back pressure and meeting the 42 bar g ethylene production design conditions.

Solution:
A Spirax Sarco high pressure mechanical pump with steam trap was installed – rated for 42 bar g – to overcome any possible heat exchanger tube failures.

Results:
• 600,000 gallons of water saved
• Savings of approximately $400,000 per year
• Payback period of less than three months
### Operating Companies

**EMEA**
- Belgium
- Czech Republic
- Denmark
- Egypt
- Finland
- France
- Germany
- Hungary
- * Italy

**Americas**
- Argentina
- Brazil
- Canada
- Chile

**Asia Pacific**
- Australia
- * China
- Hong Kong
- * India
- Indonesia
- Japan
- Malaysia

*Manufacturing sites

### Sales Offices

**EMEA**
- Austria
- Greece
- Ivory Coast
- Jordan
- Kazakhstan
- Slovak Republic
- Ukraine

**EMEA**
- South Africa
- Spain
- Sweden
- Switzerland
- Turkey
- UK

**Americas**
- Costa Rica
- Panama

**Asia Pacific**
- Cambodia
- Myanmar

### Distributors

**EMEA**
- Algeria
- Bahrain
- Bulgaria
- Cameroon
- Croatia
- Cyprus
- Egypt
- Ethiopia
- Estonia
- Ghana
- * Iceland
- * Israel
- * Kuwait
- * Latvia
- * Lebanon
- Lithuania
- Madagascar
- Maleawi
- Malta

**Americas**
- Bolivia
- Dominican Republic
- Ecuador
- El Salvador
- Nicaragua
- Paraguay
- Trinidad and Tobago

**Asia Pacific**
- Bangladesh
- * Fiji
- Pakistan

© Copyright 2018 Spirax Sarco is a registered trademark of Spirax Sarco Limited. Some products, services or solutions may not be available in certain markets.
Refer to the end of the product overview for the key to the schematic drawing.

Water tube boiler

Continuous blowdown heat recovery packaged systems

Deaerator packaged systems

Power house and turbine stations

Typical steam applications
Flash steam recovery and condensate return

Water make-up

Condensate return

Superheated H.P. Steam

Desuperheating stations

Flash cooler

Soot blowing

Steam turbine

Intercondensers

Reboiler

( Distillation fractionation)

Hydrocarbon to tower
From tower to next process stage

Hydrocarbon to
receiver

Hydrocarbon in
out

Re-energising low pressure/flash

Emergency relief lines

(flare headers)

L.P. Steam
M.P. Steam
H.P. Steam

Storage tank farms

Temperature controlled tracing

Fired heaters/Steam stripping

- start up

Combustion air

- fire prevention

Steam snuffing

Steam purging

Sump pit

Hot Water/Process
General Water
Condensate
Flash Steam
Plant Steam
Superheated Steam

Vacuum

Cold water/Process

Hot Water/Process

Clean Air

Chemicals

Warm Air

Cool Air

Process Media

Water and treatment chemicals savings

Process efficiency improvements

Energy saving opportunities

Ancillary products

24. Vent heads
23. Steam and condensate manifolds
21. Automatic pump-traps
20. STAPS ISA100
- Thermostatic
19. Steam traps:
Condensate recovery
17. HVAC - Hot water generation
16. Heat recovery/pre-heat systems
15. Thermocompressers
14. Ejectors
- Level gauges
- Magnetic float switches
- Conductivity probes
- Capacitance probes
12. Level controls/alarms:
- Variable area
- Conventional spray
11. Desuperheaters
9. Safety valves
8. Pilot actuated pressure control valves
7. Direct acting pressure control valves
6. Pneumatic and electric actuated control valves
Controls:
4. Flash vessels
2. Deaerator heads

- Bellows sealed globe valves
27. Isolation valves:
26. Check valves
28. Strainers
28. Strainers
31. Pressure gauges
29. Level gauges
30. Magnetic float switches
29. Level gauges
30. Magnetic float switches
- Conductivity probes
- Capacitance probes