

# Applications Overview

for the steam and condensate loop



*First for Steam Solutions*

EXPERTISE | SOLUTIONS | SUSTAINABILITY

**spirax**  
**sarco**

# Steam Generation

## Feedwater Storage and Conditioning

- 1 Feedtank
- 2 Deaerator heads
- 3 Steam injection and temperature control systems
- 4 Level controls
- 5 Recirculating systems
- 6 Air vent and vacuum breakers

## Feedwater Supply and Boiler Level Controls

- 7 Modulating feedwater valve controls
- 8 Water level alarms
- 9 Feedpump check valves

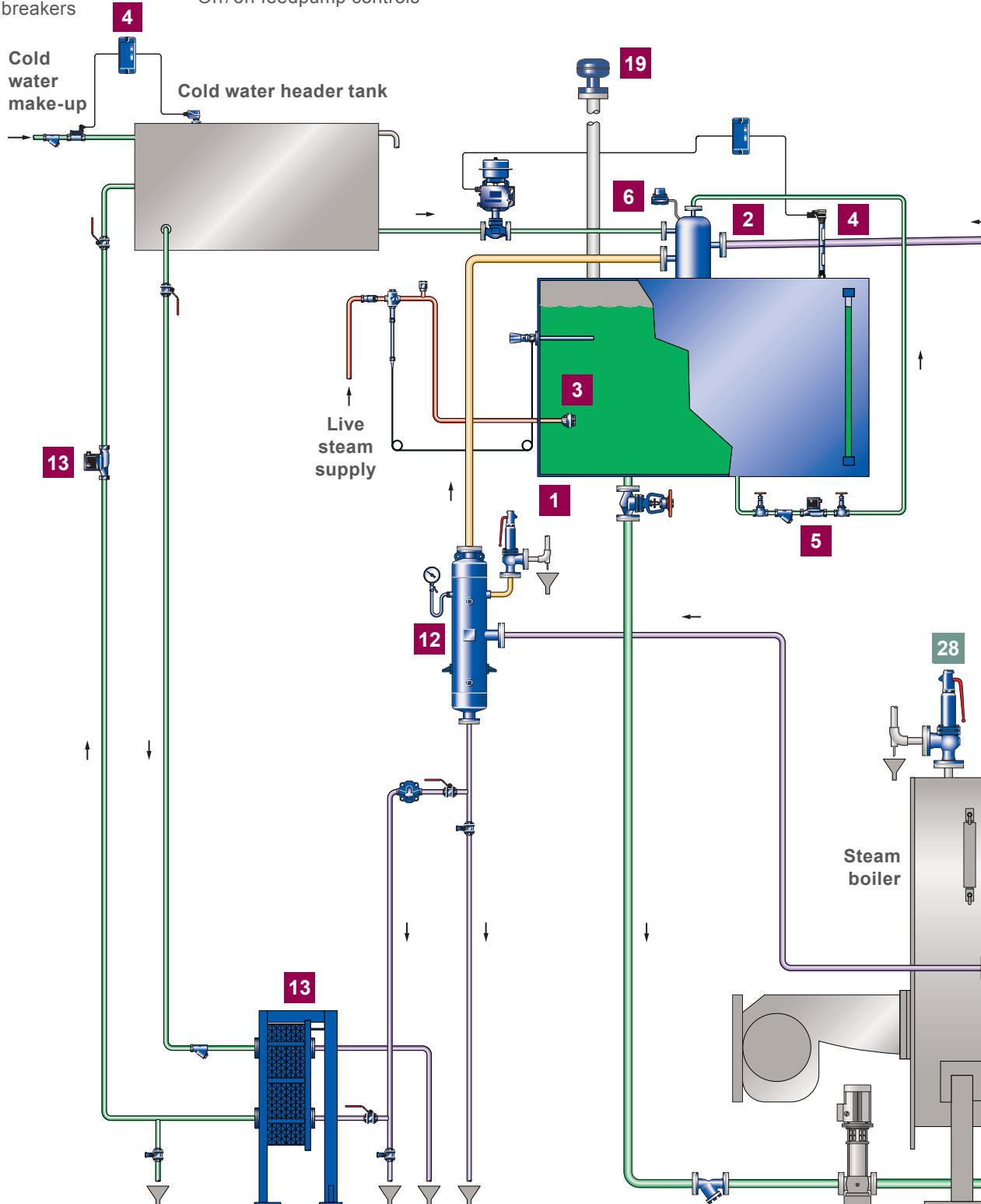
**Also available:**  
- On/off feedpump controls

## Boiler Blowdown TDS Controls

- 10 Auto TDS control systems
- 11 Sample coolers

**Also available:**

- Blowdown systems for coil and other boilers



General layout only, some of the detail has been omitted for clarity. Your local Spirax Sarco engineer will be pleased to advise.

## Blowdown Heat Recovery

- 12 Flash vessels
- 13 Residual blowdown heat exchangers and circulating pumps

## Bottom Blowdown Valves and Vessels

- 14 Timed, bottom blowdown valves
- 15 Inlet manifolds
- 16 Isolation and check valves
- 17 Blowdown vessels
- 18 Cooling water systems
- 19 Vent heads

### Also available:

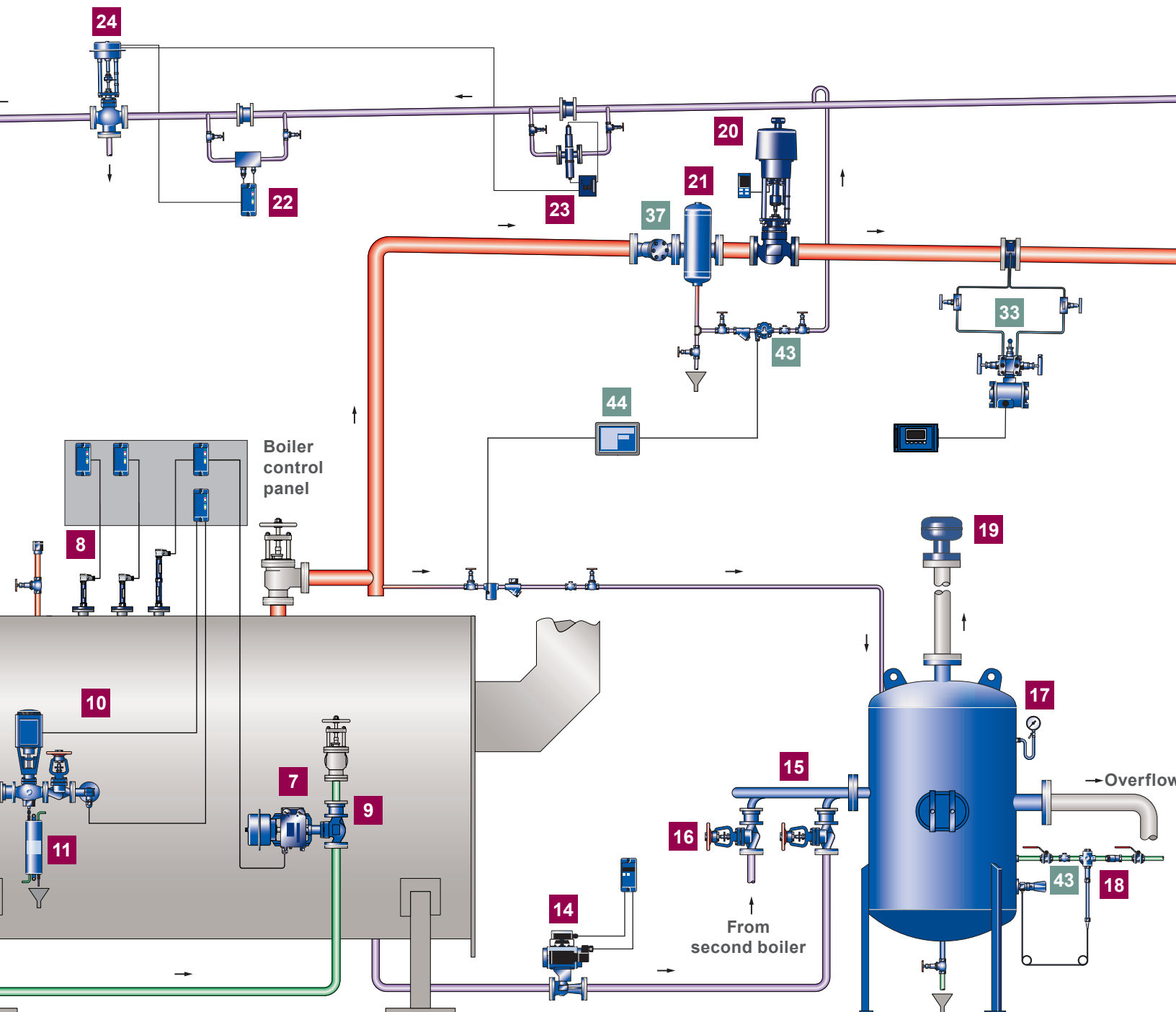
- Manual bottom blowdown valves

## Steam Start-Up

- 20 Steam main start-up systems
- 21 Steam separators

## Condensate Monitoring

- 22 Conductivity monitoring system
- 23 Turbidity monitoring system
- 24 Condensate dump valves



# Steam Distribution and Utilization

## Pressure Control

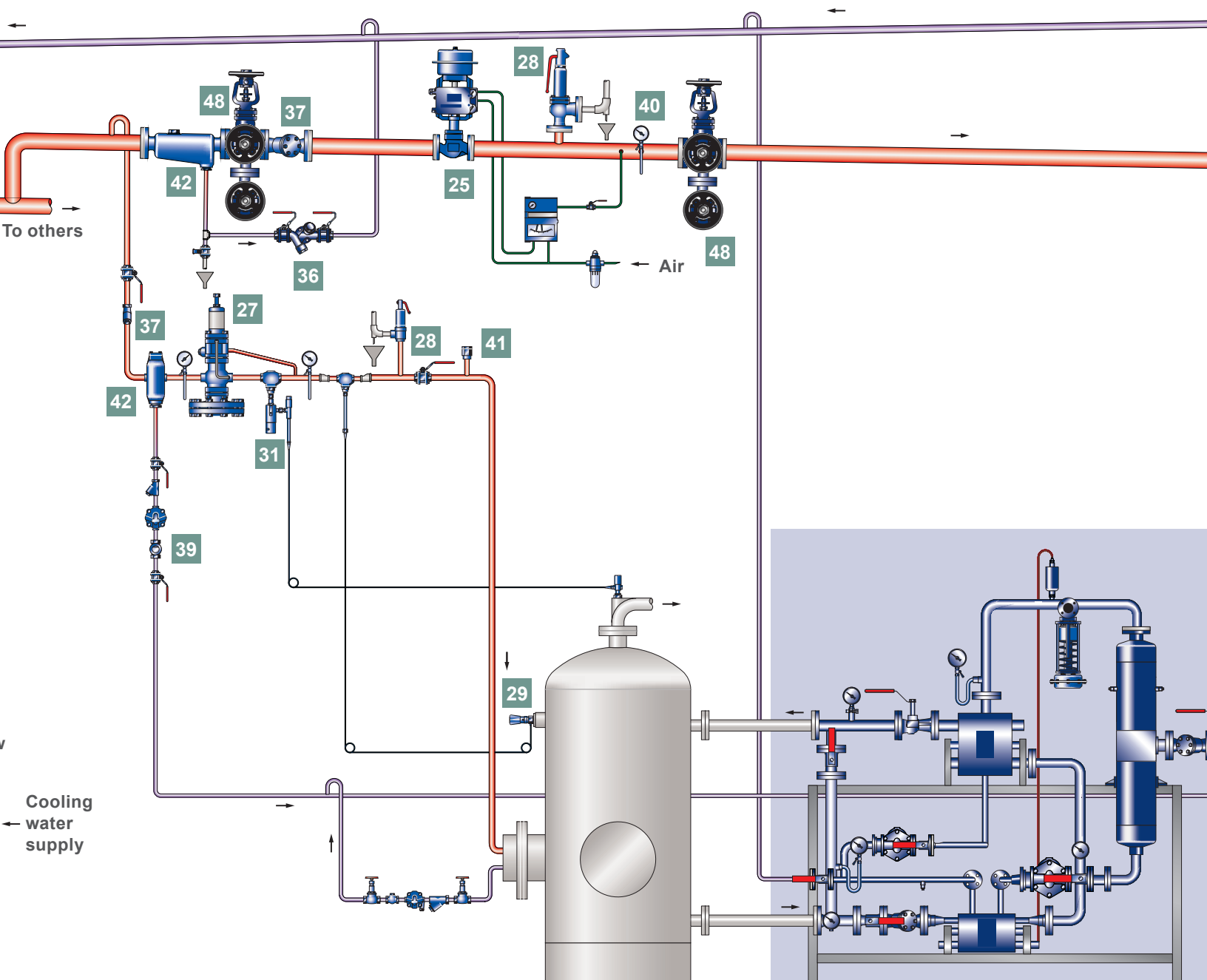
- 25 Pneumatic pressure control systems
- 26 Direct acting pressure reducing valves
- 27 Pilot actuated pressure reducing valves
- 28 Safety valves

## Temperature Control

- 29 Self-acting controls
- 30 Pneumatic temperature control systems
- 31 High temperature cut-off valves
- 32 Electric temperature control systems

## Flowmetering

- 33 Variable area flowmeter also available
  - Fixed area
  - Vortex
  - Orifice
  - Also see Wireless communication



General layout only, some of the detail has been omitted for clarity. Your local Spirax Sarco engineer will be pleased to advise.

## Steam Traps

- 34 Thermodynamic
- 35 Float

### Also available:

- Balanced pressure
- Bimetallic
- Inverted bucket

- 36 Steam trapping station

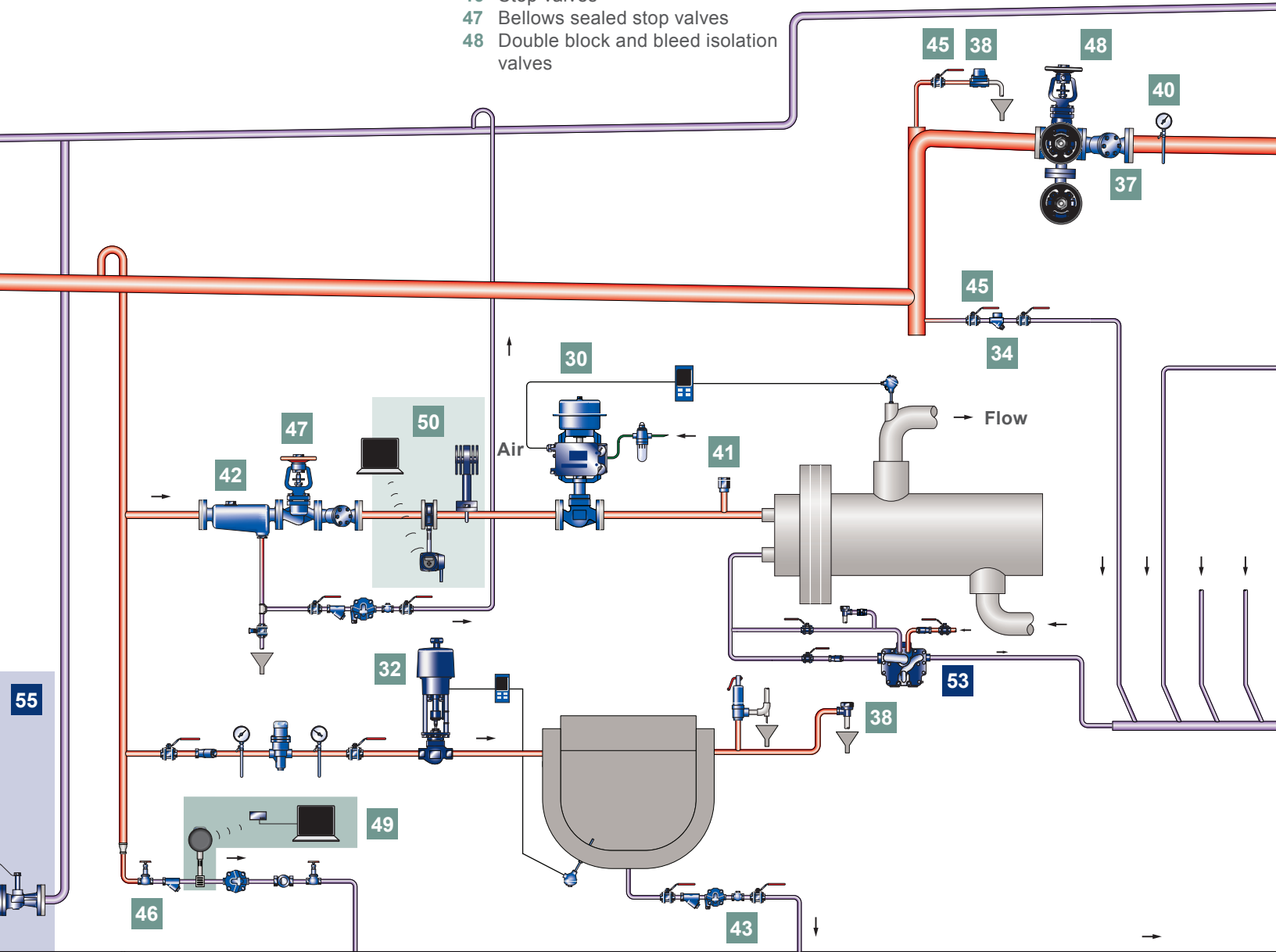
## Ancillaries

- 37 Strainers
- 38 Air vents
- 39 Sight glasses
- 40 Pressure gauges
- 41 Vacuum breakers
- 42 Separators
- 43 Check valves
- 44 Steam trap monitors
- 45 Manual and actuated ball valves
- 46 Stop valves
- 47 Bellows sealed stop valves
- 48 Double block and bleed isolation valves

## Wireless Communication

- 49 Wireless steam trap monitoring

- 50 Wireless flowmeter



# Packaged Solutions and Energy Recovery

## Humidification

**51** Steam injection humidifiers

**Also available:**

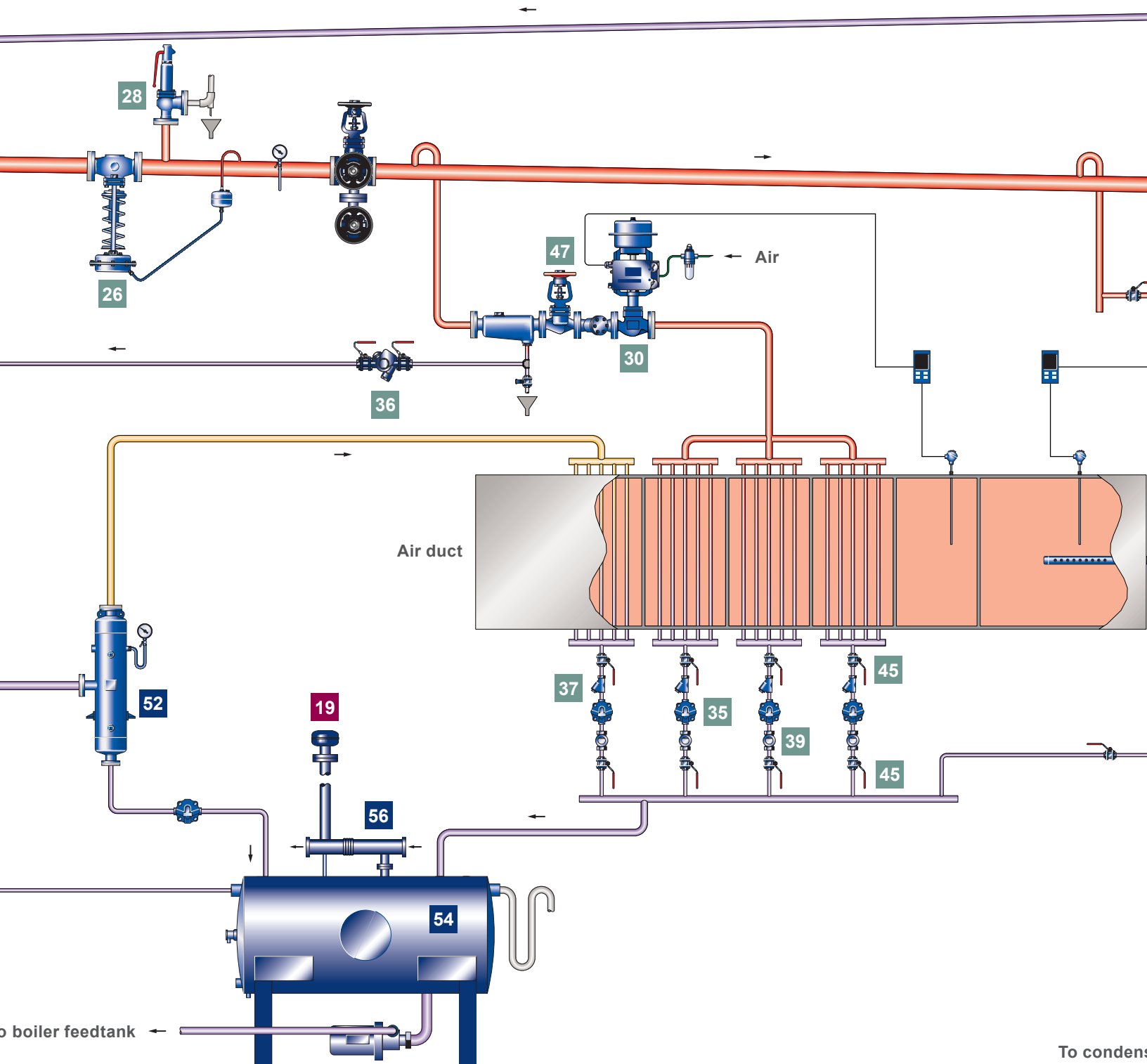
- Self-generative humidifiers

## Clean/Pure Steam

Many of the products shown are also available for clean or pure steam applications in the biotechnology, pharmaceutical, food and drink industries.

## Flash Steam Recovery

**52** Flash vessels are used to convert pressurized condensate into useful flash steam - used here on the first stage of an air heater battery.



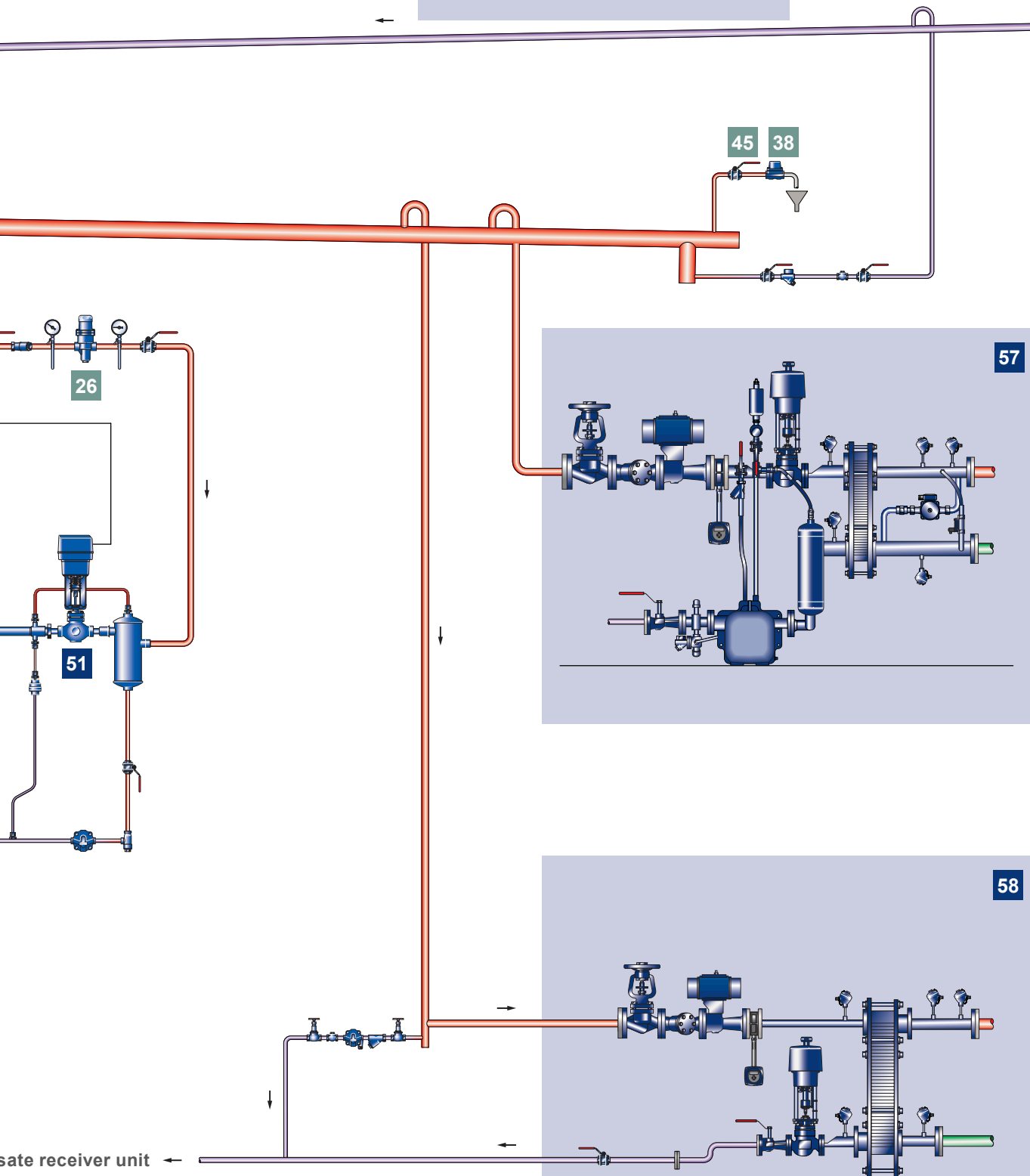
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## Condensate Recovery

- 53** Combined pump traps and pressure power pumps for condensate removal and return (no electrics).
- 54** Electric pump sets used where condensate can freely drain into a receiver.

## Heat Transfer Solutions

- 55** Flash recovery package
- 56** Exhaust vapor condenser
- 57** Domestic hot water package
- 58** Heating package



## Complete Integrated Solutions

Packaged heat exchangers, product assemblies, system audits, design, installation, maintenance and project management.



## Boiler Controls and Systems

Feedtanks, level controls and alarms, feedpump check valves, boiler blowdown valves, TDS control systems, steam injection systems, sample coolers, heat recovery systems, conductivity meters, condensate contamination detectors, blowdown vessels and vent heads.



## Flow Measurement

Variable area orifice, target variable area, inline and insertion vortex, insertion turbine, transit-time ultrasonic, thermal mass, electromagnetic flowmeters, and flow computers.



## Control Systems

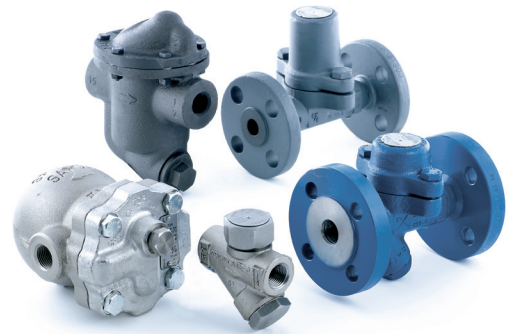
Pneumatically or electrically actuated two-port valves, positioners, programmable electronic controllers, pneumatic transmitter controllers, pressure reducing valves, surplussing valves, safety valves, self-acting temperature control valves and high limit temperature cut-outs.





## Steam Traps

Thermodynamic, float and thermostatic, balanced pressure, inverted bucket and bimetallic steam traps, sealed and quickfit steam traps, Spiratec steam trap performance monitors and steam trapping stations.



## Condensate Pumps and Energy Recovery

Automatic steam (or gas) powered fluid pumps, pump-trap combinations, electric powered condensate recovery units and flash steam recovery vessels.



## High Purity Products

Temperature controls, pressure control instrumentation, steam traps, sample coolers, ball valves, separators and filters.



## Pipeline Ancillaries

Manifolds, separators, bellows sealed stop valves, check valves, diffusers, strainers, sight glasses, pressure gauges, air vents, vacuum breakers, hosedown stations and ball valves.





Customer focused solutions partner



Ready assembled control systems



System audits



Steam condition monitoring

# Complete Integrated Solutions for You

With so much going on, businesses today are increasingly relying on outside expertise for management of energy sources. Allow us to help so you can concentrate more on your core business activities.

Spirax Sarco has the expertise and products you require regarding the use of steam and other related industrial fluids. Our offerings make us the perfect partner as a solutions provider. These solutions can range from simple product assemblies to major turnkey projects, such as boiler house upgrades.

## System Services

At Spirax Sarco, we offer a complete range of services to ensure the effective and safe management of steam, condensate and other industrial utility fluid systems.

### These Services Include:

- Tailored audits to identify areas for improving system efficiency, and ensure compliance with Health, Safety and Environmental legislation.
- Steam System Conditioning and Quality Testing programs that deliver reduced cost of ownership and optimized heat transfer throughout the system.
- Design of customer-specific energy saving solutions and strategies.
- Design of process improvement solutions to increase product quality and / or yield.
- Installation of new and replacement products to improve energy utilization, system reliability and reduce water and chemical usage.
- Commissioning and routine servicing, in addition to advice on Planned Preventative Maintenance programs, to fully optimize process performance and uptime.
- Project management to ensure seamless on-time, on-budget completion of large turnkey contracts.
- Equipment recalibration and repair facility to help maintain system safety and process availability.

# You need more than just the world's most comprehensive range of steam and condensate loop products.

It's a good starting place to know that we can offer every component found in your steam and condensate loops, 12,000 products! But that alone doesn't solve your challenges.

## Gain Total Control Over Your Steam Processes

By explaining your core business, and the steam processes it needs to your local Spirax Sarco contact, they acquire the foundation they need to think in plant-wide terms for your unique process solutions. Their proposals are site specific, tailored to your current operating conditions and focused on providing increased control.

- Higher quality, more consistent steam
- Enhanced energy savings and recovery
- Better system-wide metrics
- Easier commissioning, start-ups and balancing of systems
- Improved safety
- Full compliance to local and international regulations and your sustainability goals (e.g., learning your current CO2 emission levels)
- Streamlined and optimized maintenance programs
- Life cycle cost analysis (LCCA) to minimize your total cost of ownership
- Guaranteed performance

## Start Where You Are

Obviously, we're in it for the long haul. But your needs might be very immediate: troublesome boiler controls, inadequate flow measurements, premature failure of steam traps and so on. We'll start where you are, bringing a collective expertise of over 100 years of steam control to even the most basic equipment challenge.

For our complete product line, you can download our technical information at: [www.spiraxsarco.com/global/us](http://www.spiraxsarco.com/global/us)

Better yet, call us so you can begin leveraging the expertise of your local contact at: **1-800-883-4411**

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