

# Oil & Gas and Chemicals Overview

Solutions for your steam and condensate system



*First for Steam Solutions*

EXPERTISE | SOLUTIONS | SUSTAINABILITY

**spirax**  
**sarco**

# Understanding your steam and condensate system

At Spirax Sarco we understand the pressures the Oil & Gas and Chemicals industries are under to meet increasing legislation to reduce emissions, improve energy efficiency, and reduce water consumption. Competition across the industries has also intensified as companies compete to produce refined oil and feedstocks at competitive prices.

With steam accounting for approximately 50% of the total energy consumption in a typical refinery, Spirax Sarco can help you by:



## Improving health and safety

Through audits and preventative maintenance, we can help minimize steam leaks to reduce the risks of scalding and the consequences associated with poor visibility in a plant. We can identify the root causes of waterhammer and eliminate it from your plant.

## Improving process efficiency and reliability

Ensuring that steam reaches your process at the correct:

- Quality
- Quantity
- Pressure and temperature

The efficient removal of condensate from the process, maximizing heat transfer and reducing corrosion and erosion, so minimizing downtime.

## Improving sustainability

We can identify opportunities for developing a solution for you that will enable condensate to be recovered and returned to the boilerhouse. This will give you savings in:

- Energy costs and emissions
- Water and water treatment chemicals used
- Effluent discharged from site

Our knowledge and understanding of utilizing flash steam, or re-energizing steam to higher pressures, will reduce the amount of steam vented to atmosphere.

Our Steam System Services approach allows us to identify opportunities, implement the solutions required, and offer on-going support to reduce the total cost of ownership of your steam and condensate system.

We are a multinational company with a direct presence in more than 40 countries. Our products are manufactured meeting recognized industry standard BS EN ISO 9001.

# Our steam system services allows you to focus on your objectives, while 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 with your existing maintenance team, our engineers will provide additional expertise and support to ensure you maintain and improve your plant's efficiency.



### The audit – identifying improvements through

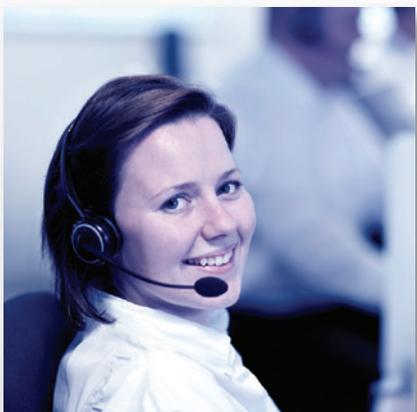
- Steam trap surveys
- Steam leak surveys
- Steam and condensate system audits

Our audit report on your plant will explain the benefits of implementing our recommendations, the estimated cost of implementation and the potential return on your investment.



### Installation and commissioning

We work with your maintenance teams or approved contractors to support them in delivering the recommendations identified in our audit. Alternatively, we can project manage the complete installation.



### 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/service requirements within your budget.

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

# Confidence that we will provide you with the right solution everytime

We work closely with all of our customers to ensure we fully understand their needs before we recommend which of our products or services, will provide the most effective solution for their plant.

We have worked with some of the largest names in the industry and have helped them to achieve significant cost savings while achieving their business objectives.

## Exxon Mobil reduces steam demand from 850 tonnes /h to 650 tonnes/h thanks to Spirax Sarco

The 'Steam Team', comprising of Spirax Sarco and Exxon Engineers, worked together to audit the steam plant and steam using equipment. By implementing the findings the Steam Team reduced steam demand by nearly a quarter.



## Petrobras saves over \$4.5 million through process improvements and energy savings

Spirax Sarco helps Petrobras meet their process quality and efficiency parameters with a return on investment of under 2 months.



“ Spirax Sarco was the only company to offer the **complete package**, from design, implementation and management. ”

Costain, Oil, Gas and Process Ltd

# Our products meet recognized industry standards

We work hard to ensure that all the products that we develop are fully accredited to recognized 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 deemed fit for purpose. Our products are fully accredited to Quality Management System Standards BS EN ISO 9001.

## Certificates of Conformity 2.1

Typical test reports (where applicable) including:

- Hydraulic test
- Steam test
- Air test

Inspection certificates to:

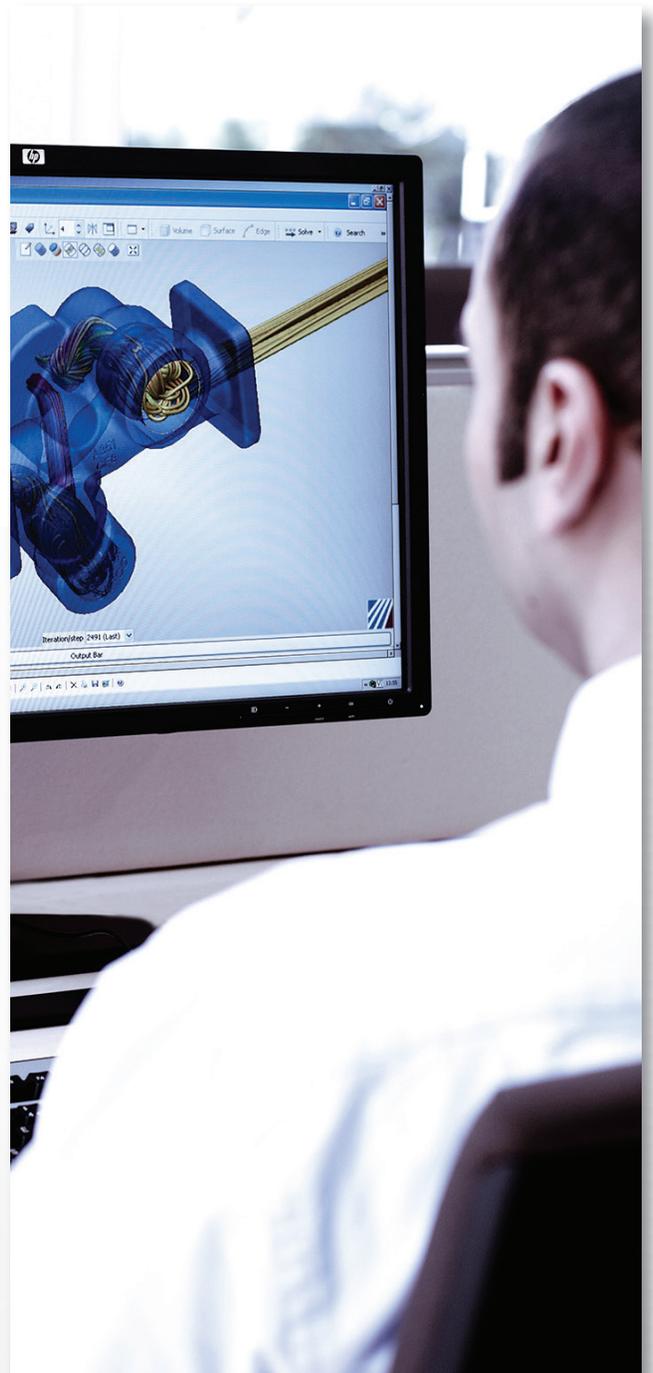
- 3.1 material ISO 10474 / EN 10204
- 3.2 material ISO 10474 / EN 10204

Welding dossiers including:

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

ATEX  
NACE  
GOST & RTNP  
CRN

Where available or applicable



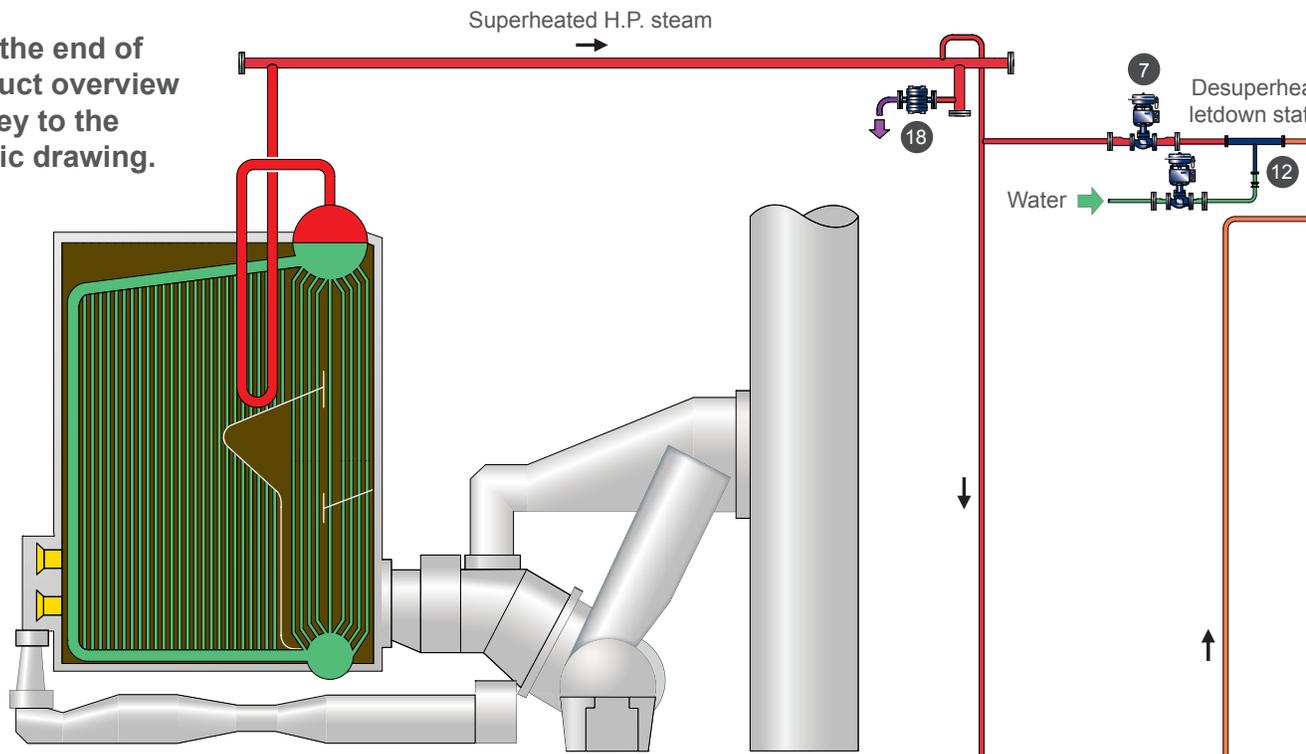
For further information on our products and services please visit [www.spiraxsarco.com/global/us](http://www.spiraxsarco.com/global/us)



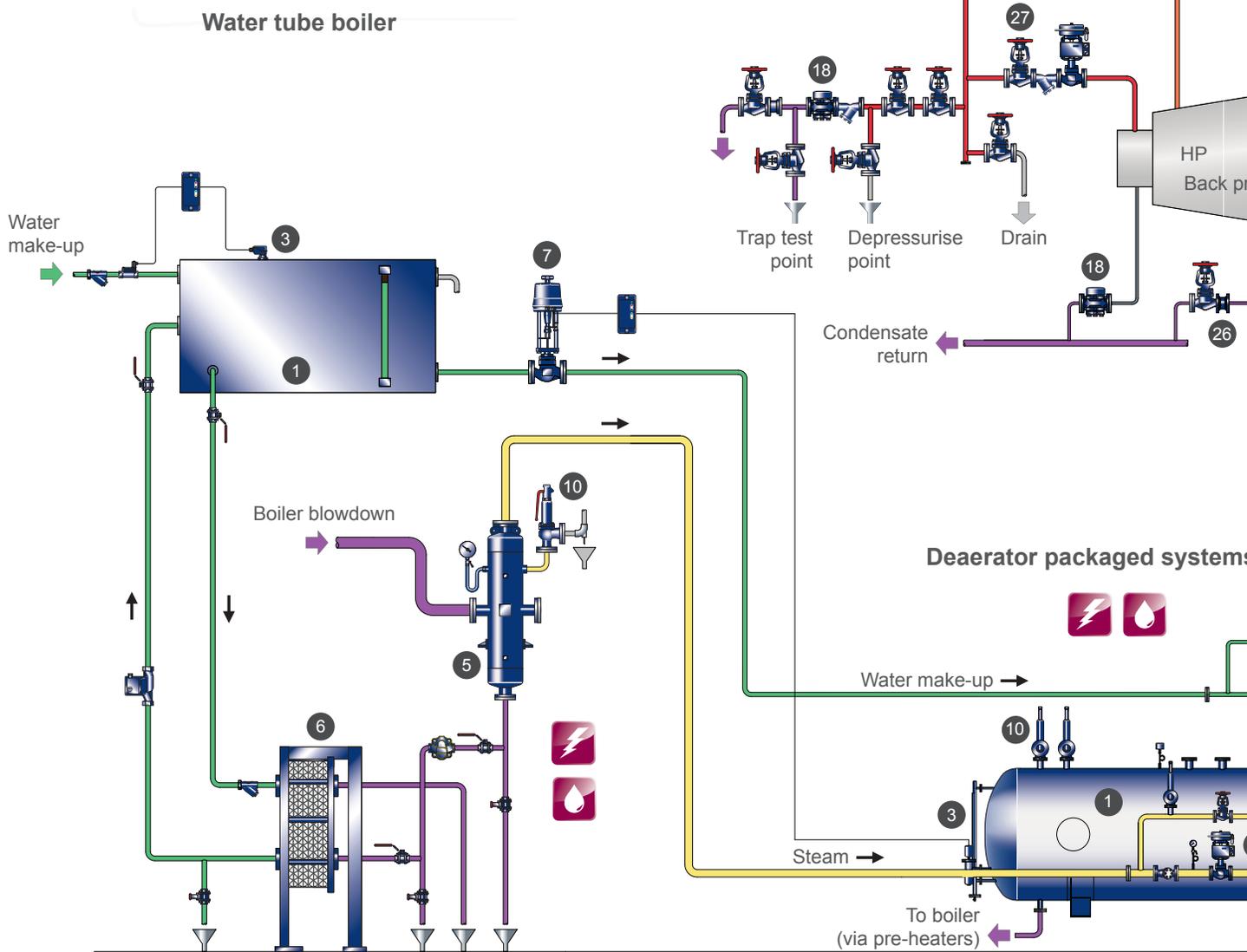
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Refer to the end of the product overview for the key to the schematic drawing.

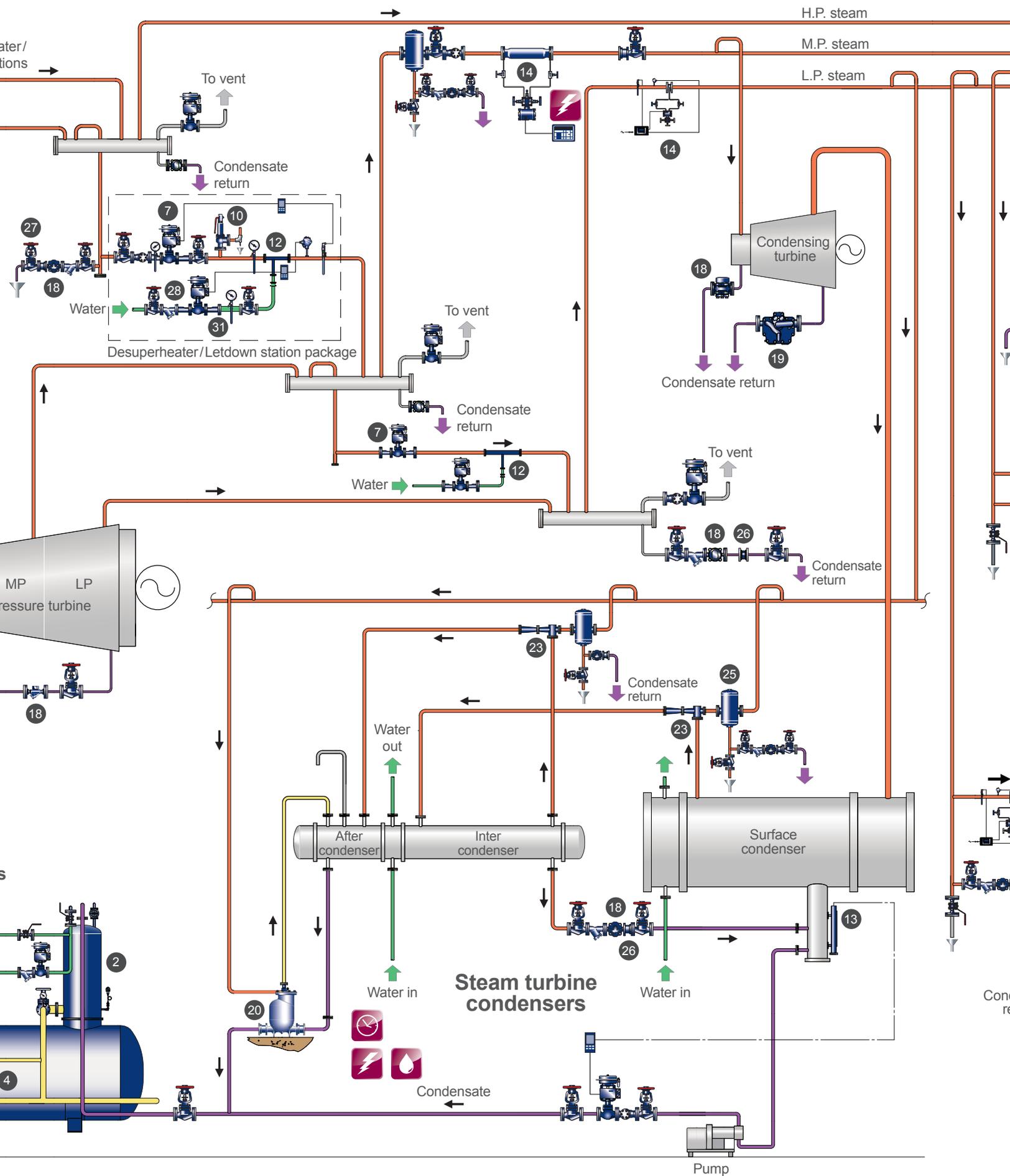


Water tube boiler

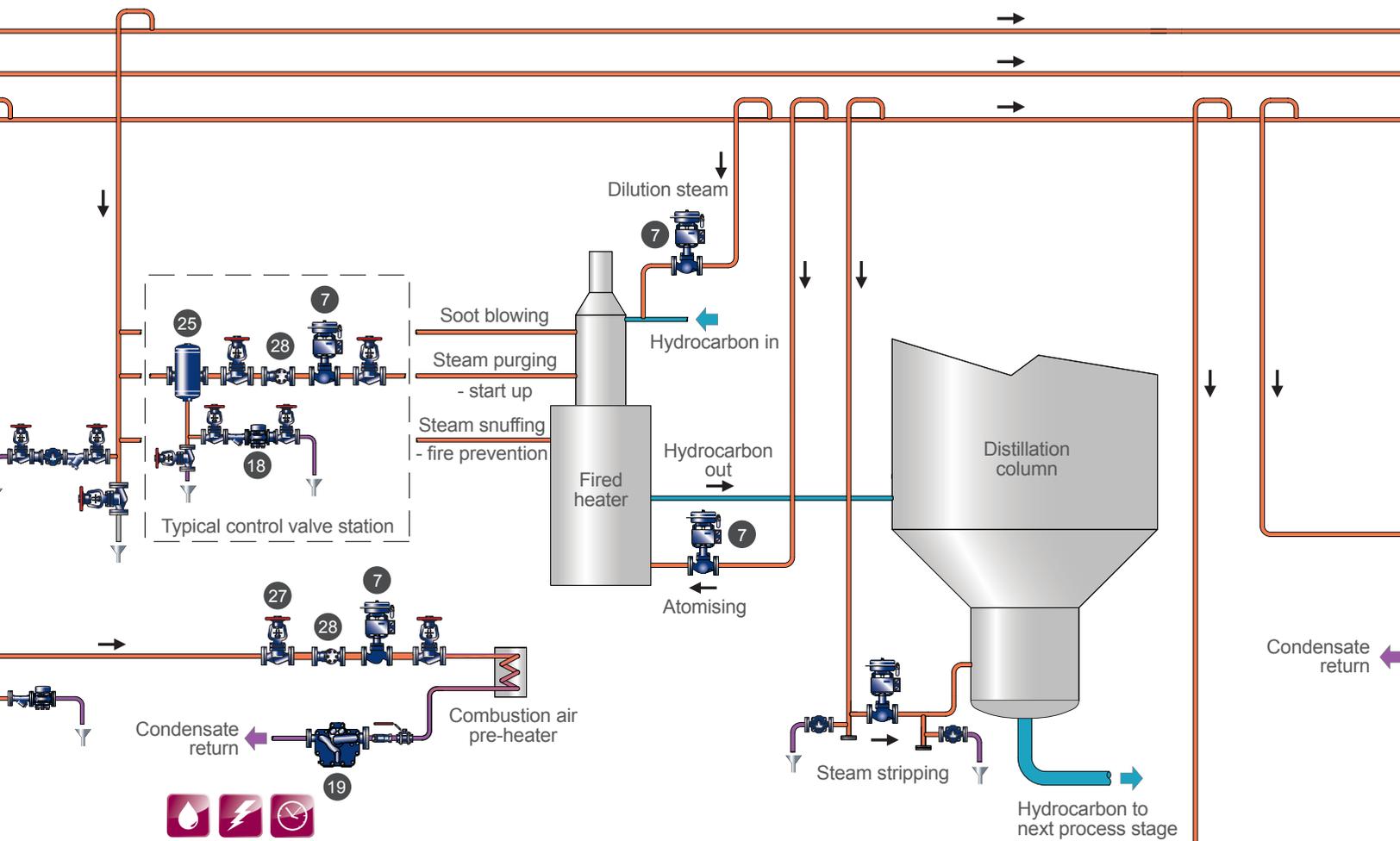


Continuous blowdown heat recovery packaged systems

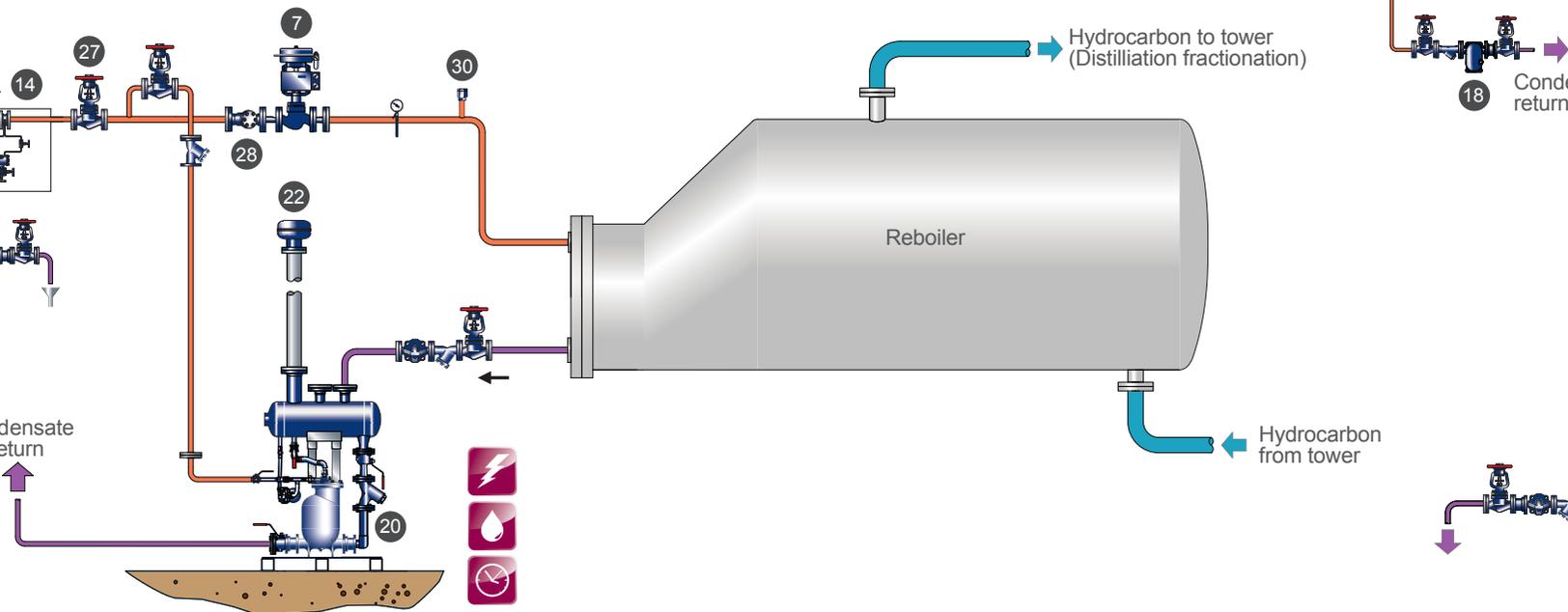
Power house and



Steam turbine stations



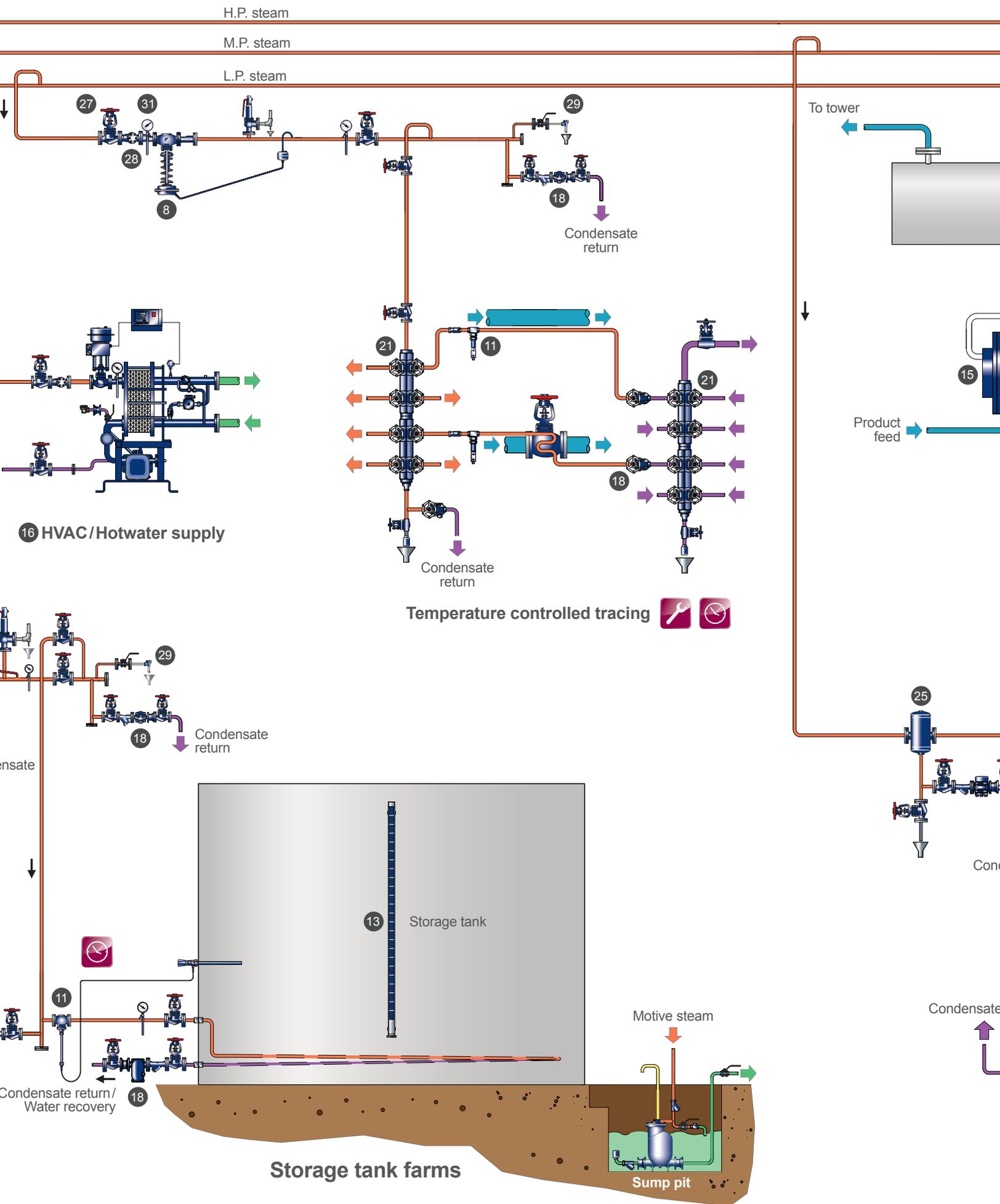
Fired heaters/Steam stripping

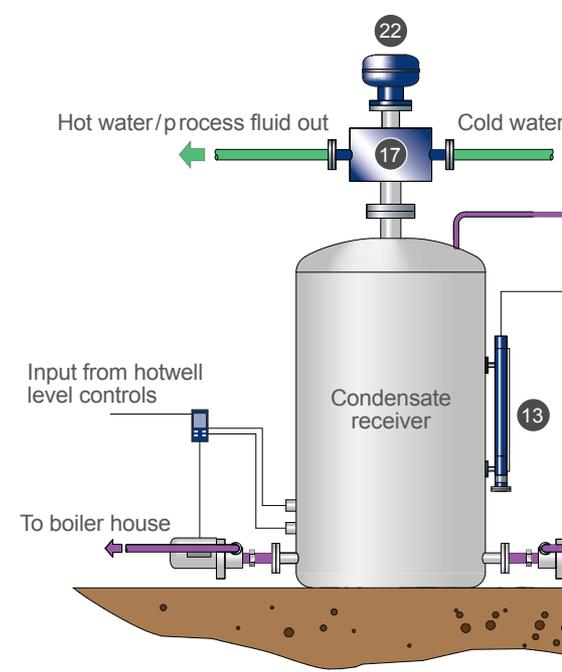
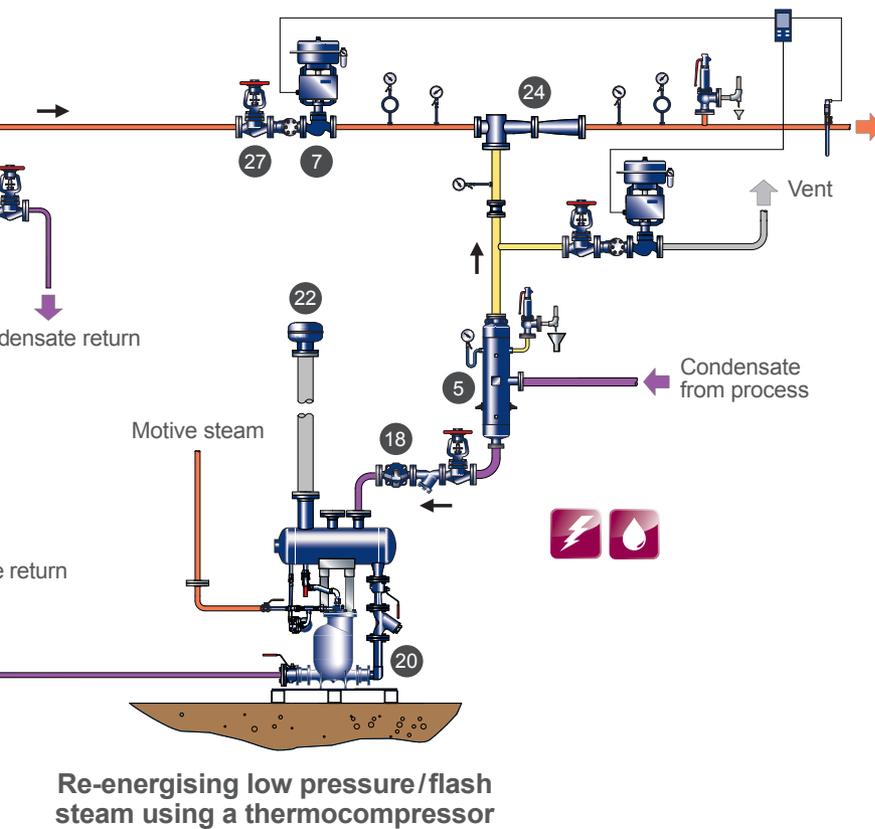
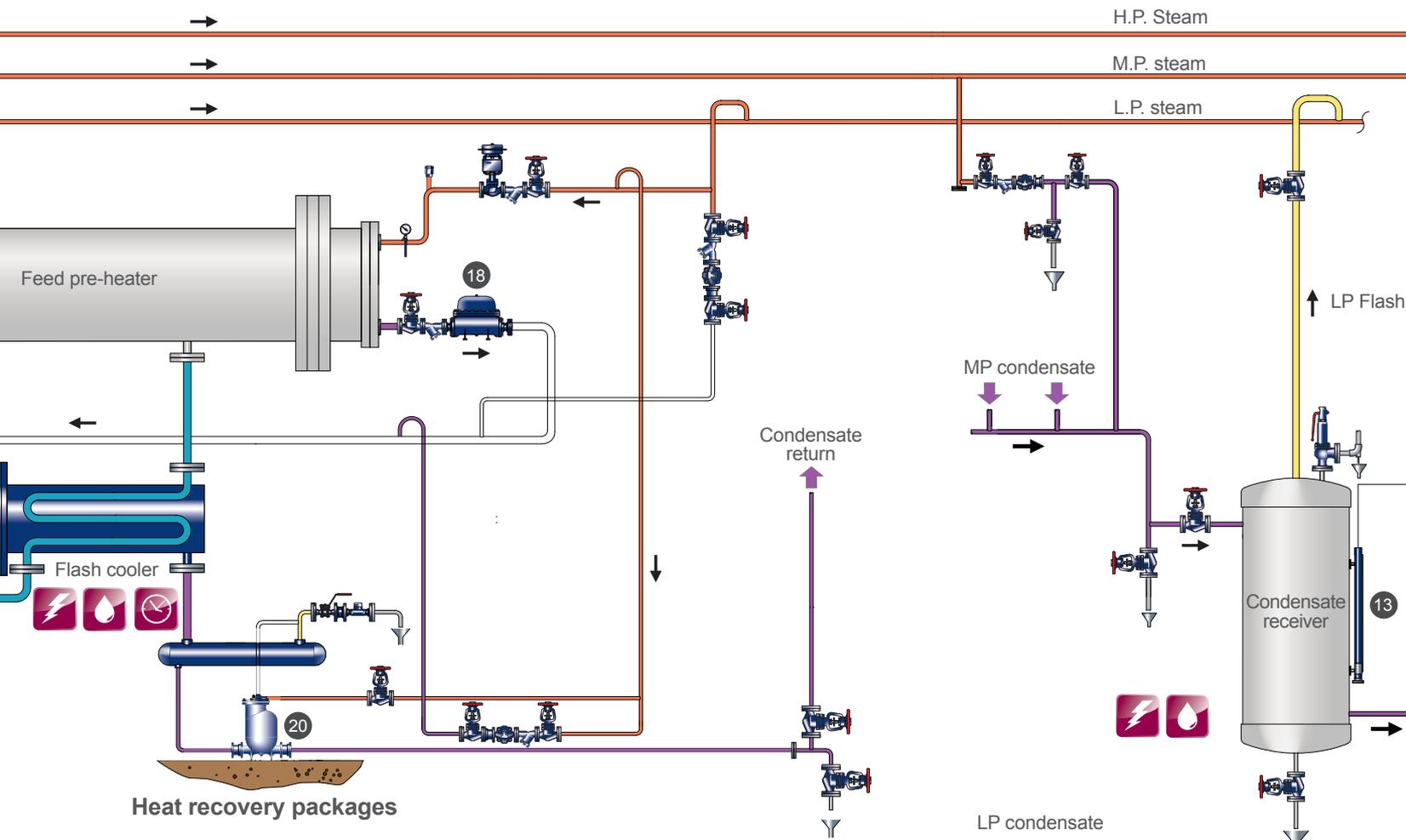


Packaged pump units

Reboilers/Heat exchangers

# Typical steam application

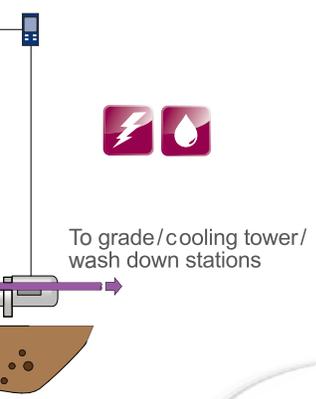




# Flash steam recovery and condensate return



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## Key



Energy saving opportunities



Process efficiency improvements



Water and treatment chemicals saving



Improved maintenance

## Product key

### Boiler house

#### Feedwater storage:

1. Feedtanks
2. Deaerator heads
3. Level controls and alarms
4. Steam injection and temperature controls

#### Blowdown heat recovery

5. Flash vessels
6. Residual boiler blowdown heat exchangers

#### Steam conditioning and controls

##### Controls:

7. Pneumatic and electric actuated control valves
8. Direct acting pressure control valves
9. Pilot actuated pressure control valves
10. Safety valves
11. Self-acting temperature controls
12. Desuperheaters
  - Conventional spray
  - Venturi
  - Variable area
13. Level controls/alarms:
  - Capacitance probes
  - Conductivity probes
  - Magnetic float switches
  - Level gauges
14. Flowmeters

#### Heat exchange solutions

15. Heat recovery/pre-heat systems
16. HVAC - Hot water generation
17. Exhaust vapour condensers

#### Condensate recovery

18. Steam traps:
  - Mechanical
  - Thermostatic
  - Thermodynamic
19. Automatic pump-traps
20. Mechanical condensate pumps
21. Steam and condensate manifolds
22. Vent heads
23. Ejector
24. Thermocompressors

#### Ancillary products

25. Separators
26. Check valves
27. Isolation valves:
  - Bellow sealed globe valves
  - Piston valves
  - Ball valves
28. Strainers
29. Air vents
30. Vacuum breakers
31. Pressure gauges