



# 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

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:

Implementation	Details
1. Project Management	In many global areas, we offer Project Management services tailored to your specific requirements.
2. Full installation work	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.
3. Basic product installation	Our service engineers can carry out installation of Spirax Sarco products (dependent on Spirax Sarco Company).
4. Commissioning and start-up	Our commissioning engineers ensure newly installed equipment operates at its maximum potential.
5. Installation advice	Our sales and service engineers can advise your maintenance teams on good engineering practices and on the installation of Spirax Sarco products.

## 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.

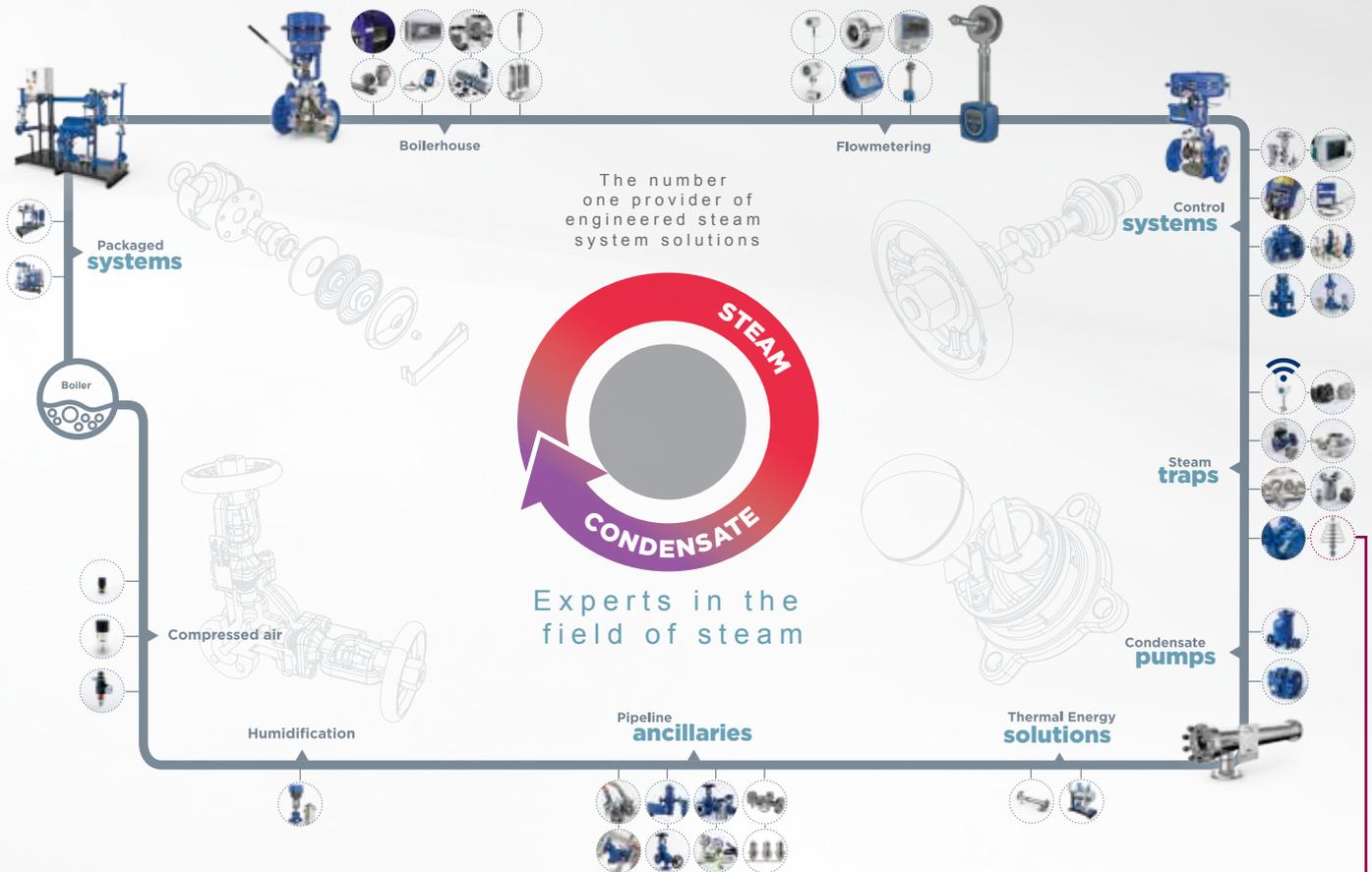
#### Results:

- 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

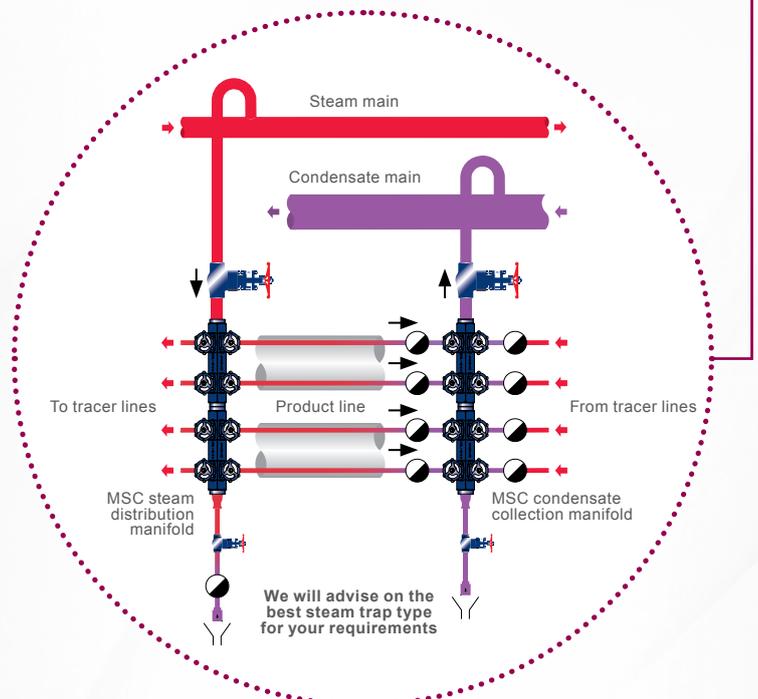
Our wide range of steam system components will keep your steam system running as efficiently as possible, delivering steam of the right quality and condition to your processes. Designed for quick and easy maintenance and long life, our products will help minimise breakdowns and maximum productivity.

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  
IECEX  
NACE  
GOST & RTNP  
CRN

Where available or applicable



For further information on our products and services please visit [www.spiraxsarco.com](http://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	East Africa	South Africa
Czech Republic	Maghreb	Spain
Denmark	Middle East	Sweden
Egypt	Norway	Switzerland
Finland	Netherlands	Turkey
* <b>France</b>	Poland	* <b>UK</b>
Germany	Portugal	
Hungary	Romania	
* <b>Italy</b>	Russia	

### Americas

* <b>Argentina</b>	Colombia
* <b>Brazil</b>	* <b>Mexico</b>
Canada	Peru
Chile	* <b>USA</b>

### Asia Pacific

Australia	New Zealand
* <b>China</b>	Philippines
Hong Kong	Singapore
* <b>India</b>	South Korea
Indonesia	Taiwan
Japan	Thailand
Malaysia	Vietnam

\* Manufacturing sites

## Sales Offices

### EMEA

Austria  
Greece  
Ivory Coast  
Jordan  
Kazakhstan  
Slovak Republic  
Ukraine

### Americas

Costa Rica  
Panama

### Asia Pacific

Cambodia  
Myanmar

## Distributors

### EMEA

Algeria	Iceland	Mauritius
Bahrain	Israel	Morocco
Bulgaria	Kuwait	Namibia
Cameroon	Latvia	Nigeria
Croatia	Lebanon	Oman
Cyprus	Lithuania	Qatar
Ethiopia	Madagascar	Saudi Arabia
Estonia	Malawi	Slovenia
Ghana	Malta	Sudan

### Americas

Bolivia	Guatemala	Nicaragua
Dominican Republic	Honduras	Paraguay
Ecuador	Jamaica	Trinidad and Tobago
El Salvador	Netherland Antilles	Uruguay

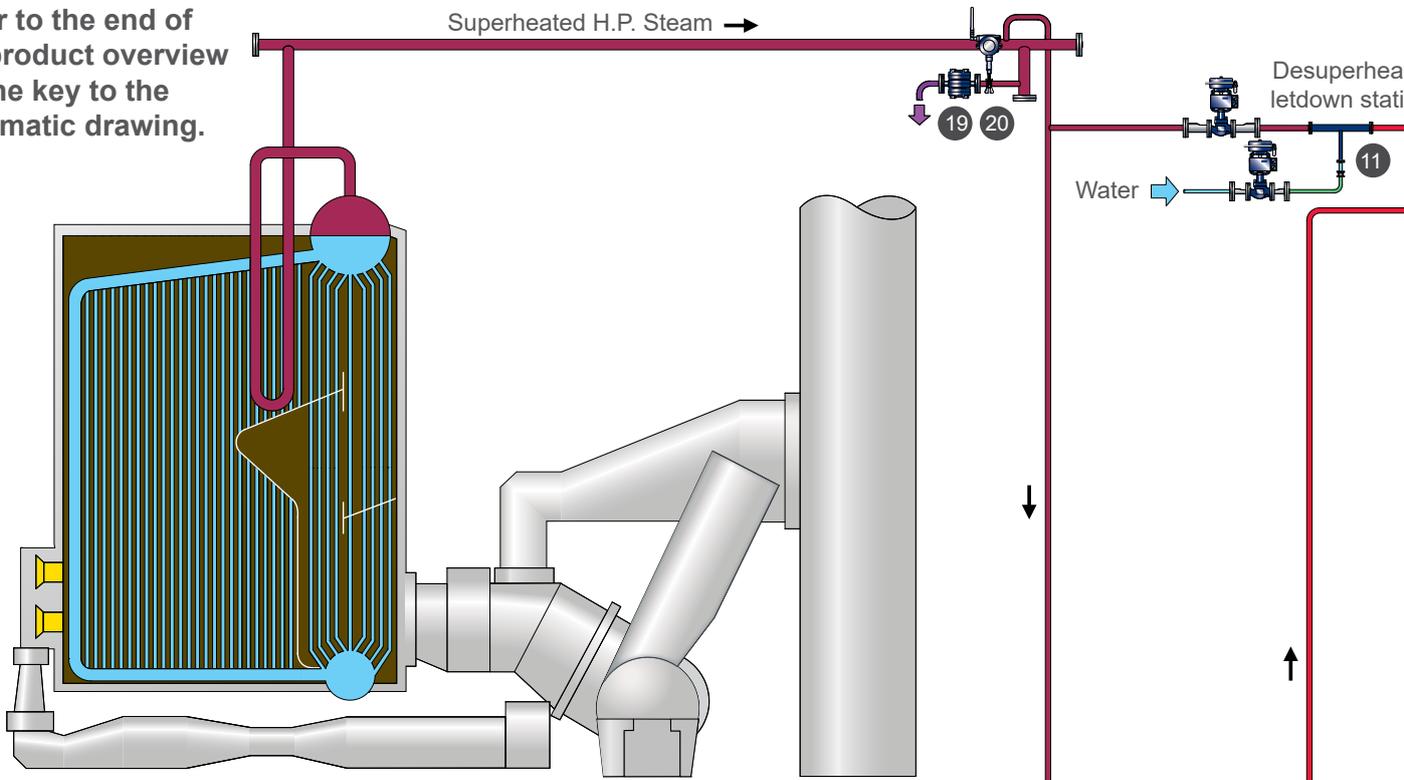
### Asia Pacific

Bangladesh	Fiji	Pakistan
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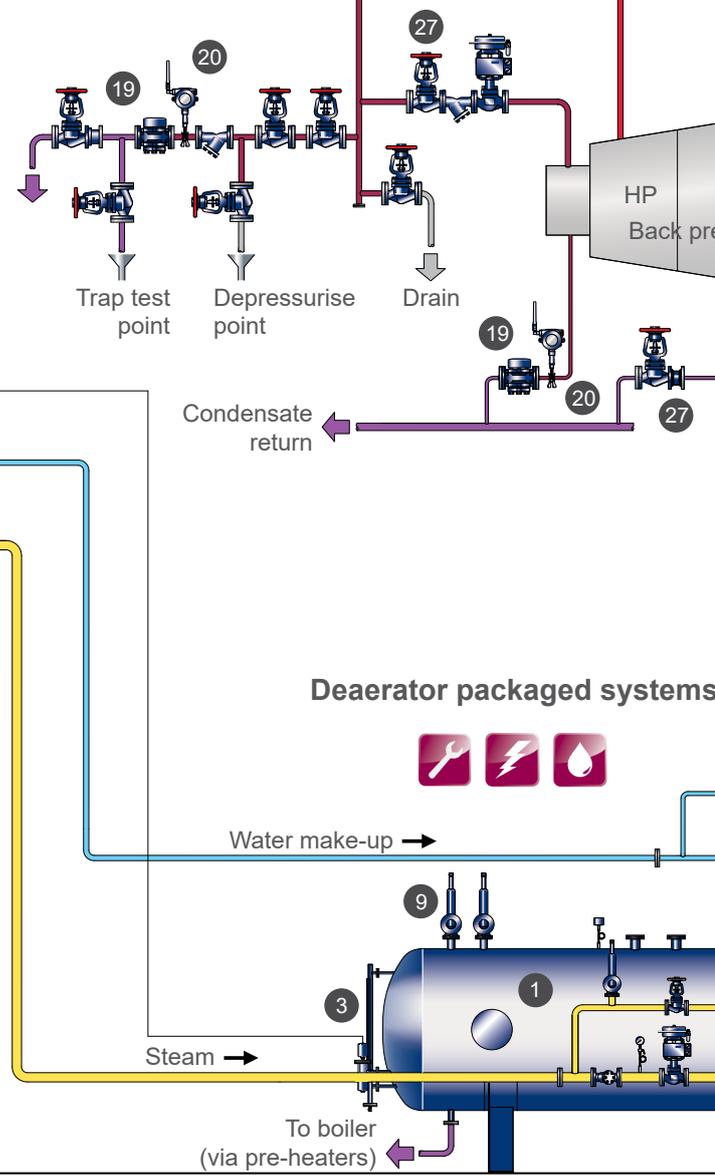
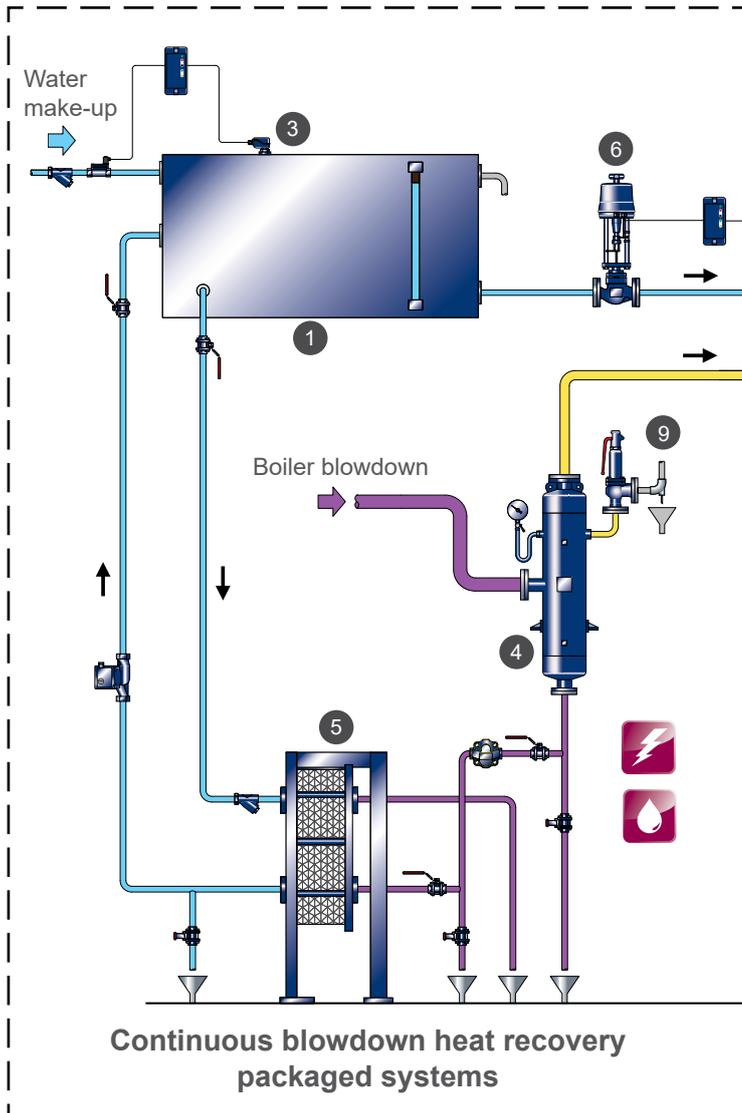


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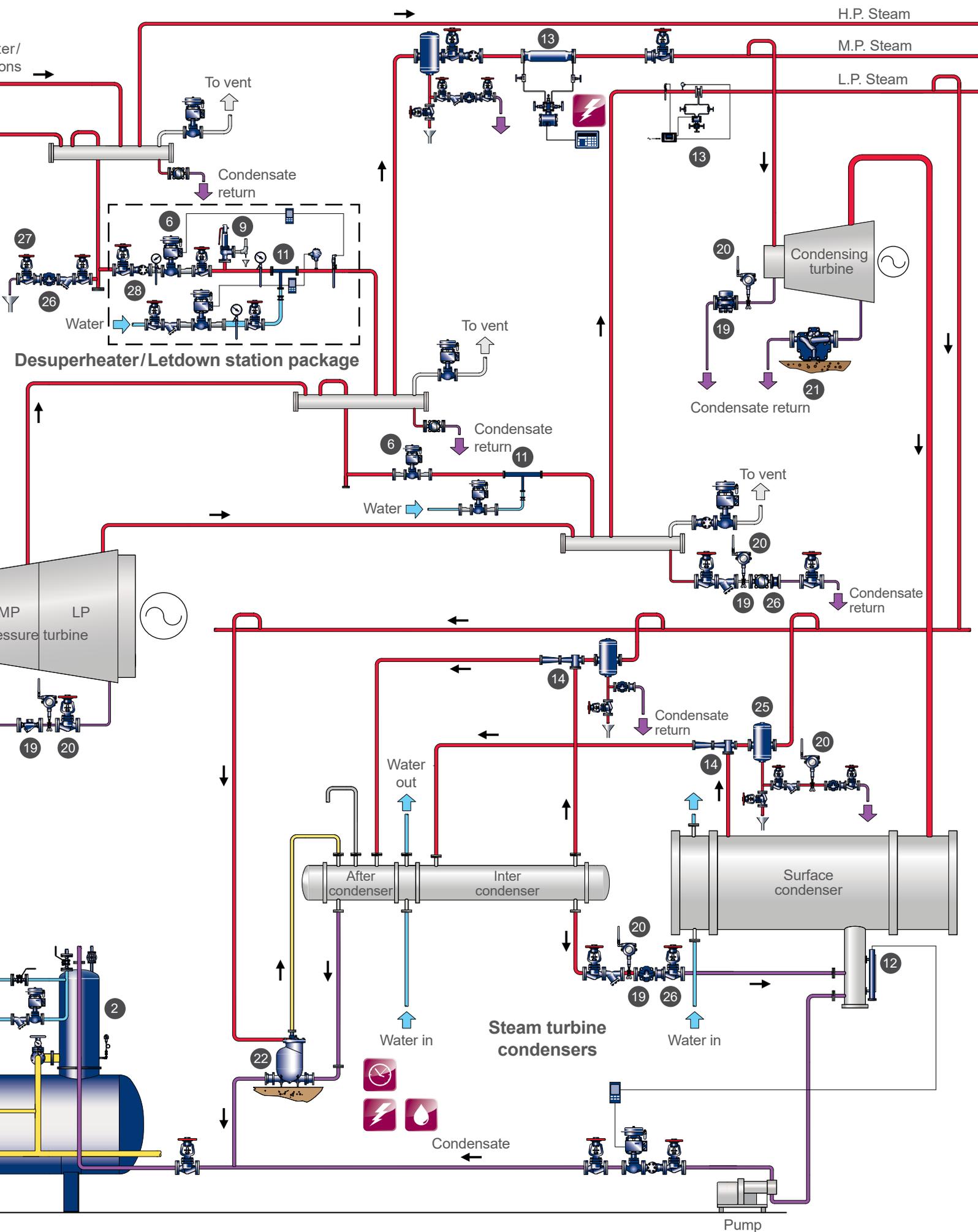
Refer to the end of the product overview for the key to the schematic drawing.



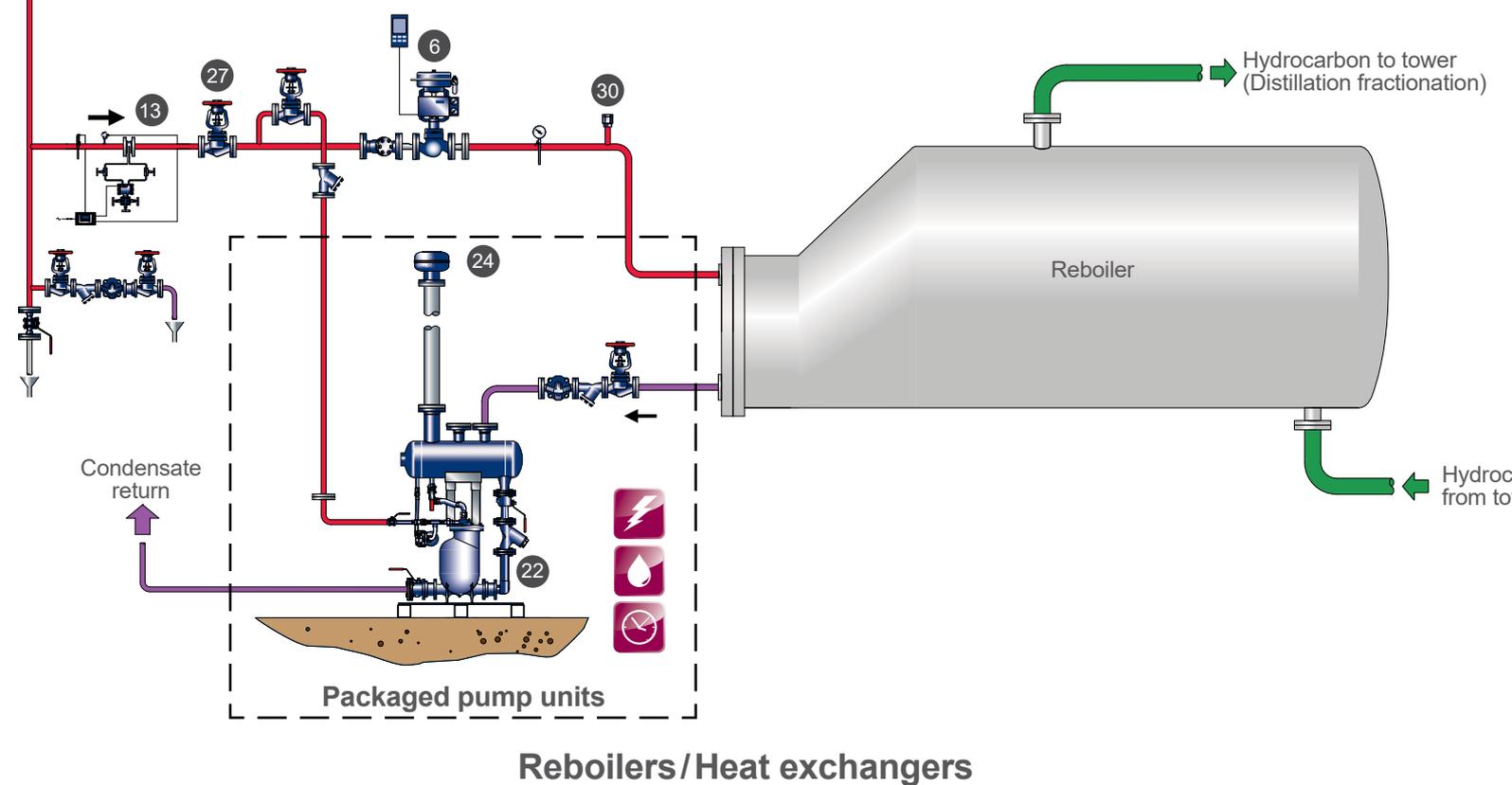
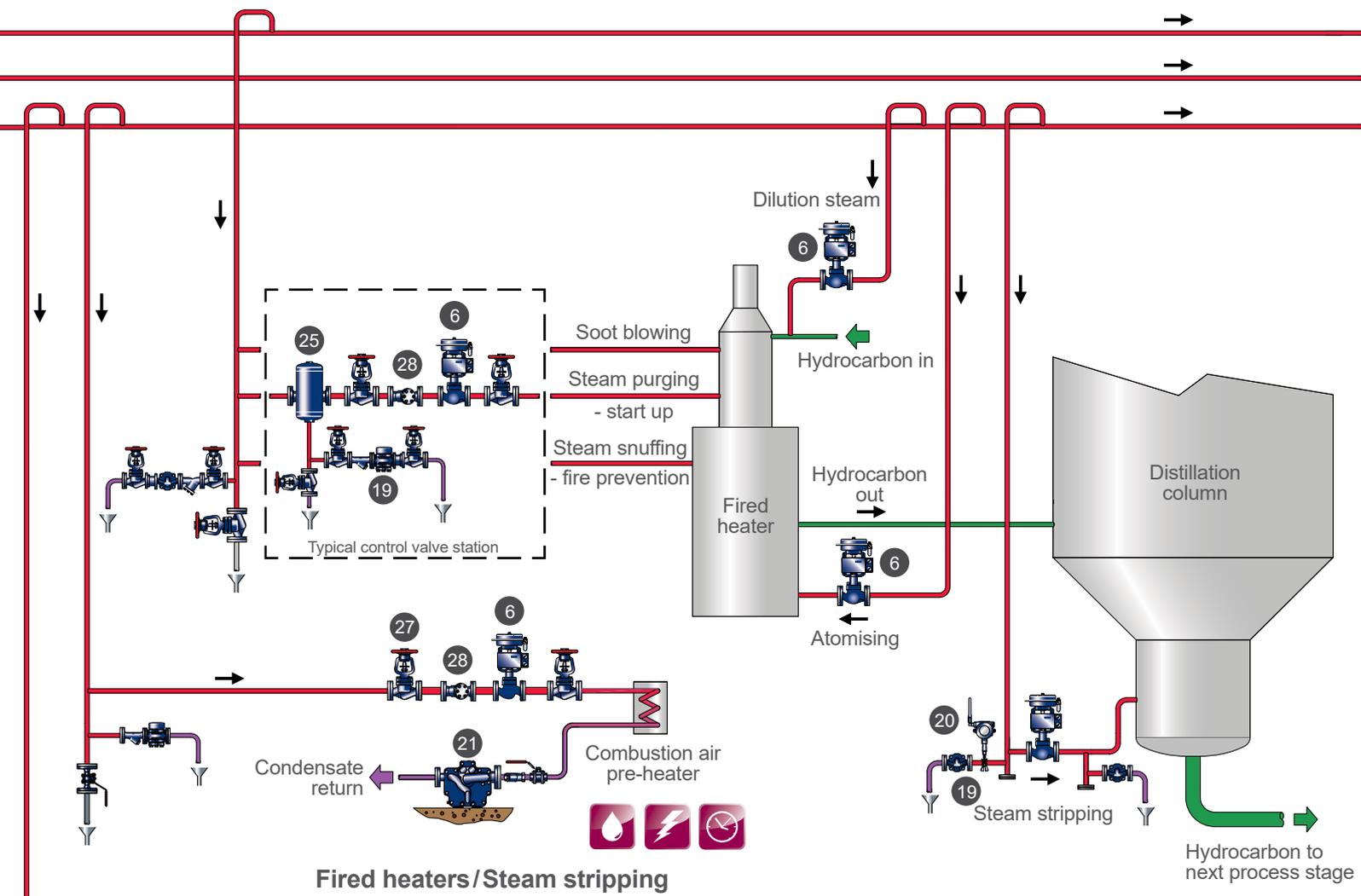
Water tube boiler



Power house and



turbine stations

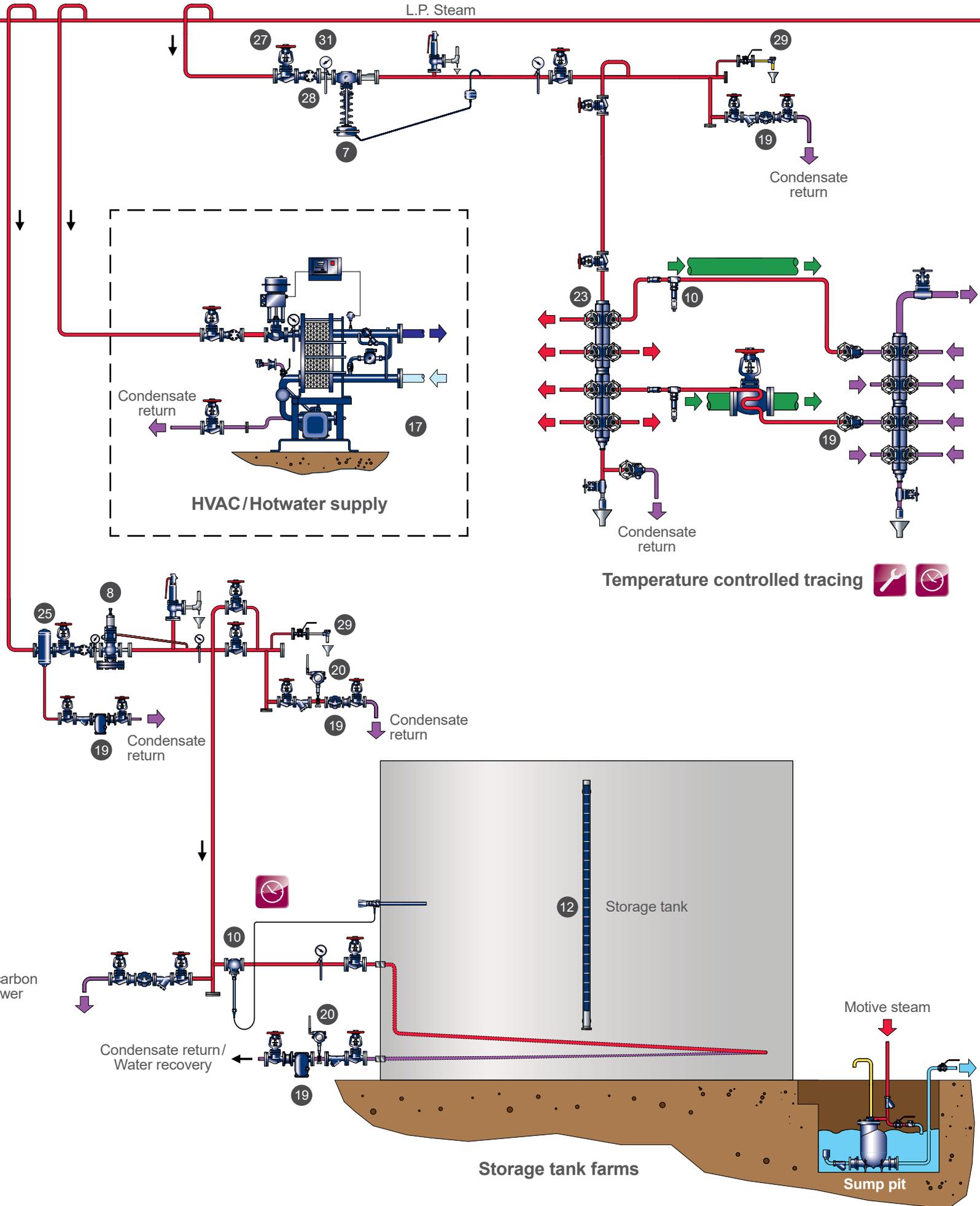


Typical steam

H.P. Steam

M.P. Steam

L.P. Steam



Condensate return

HVAC/Hotwater supply

Condensate return

Condensate return

Temperature controlled tracing



Condensate return

Condensate return

Condensate return/  
Water recovery

Storage tank

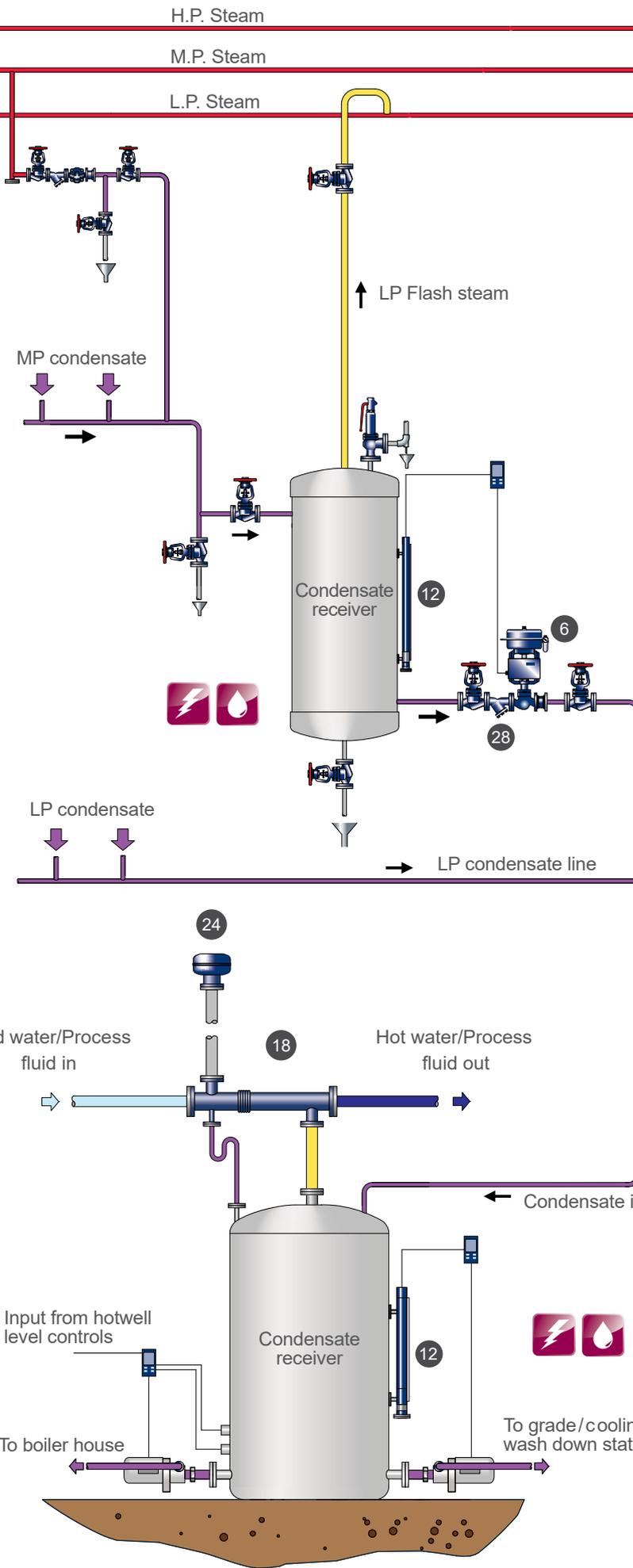
Storage tank farms

Motive steam

Sump pit

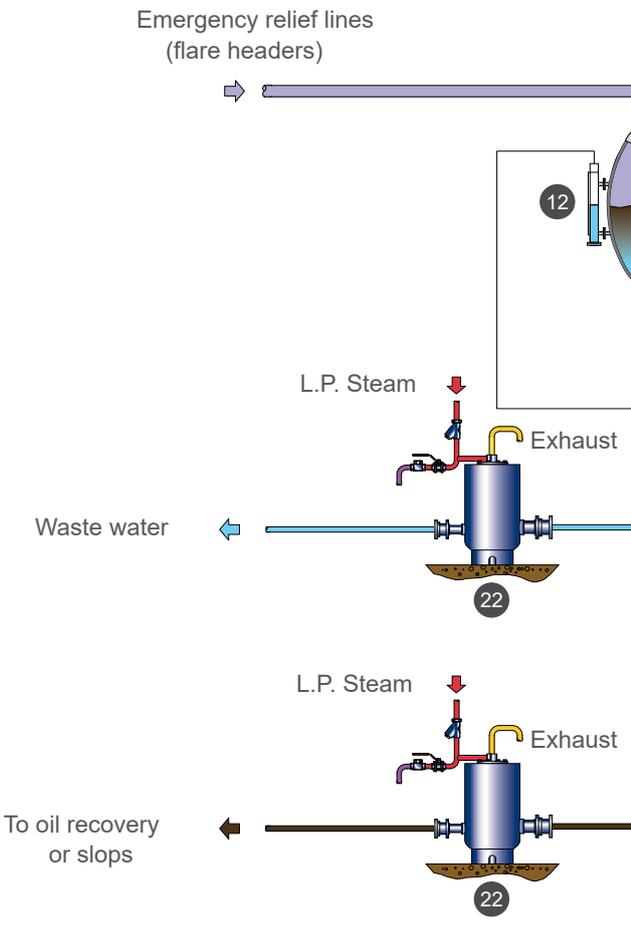
applications





**Pipe Colour Key**

	Plant Steam
	Superheated Steam
	Flash Steam
	Condensate
	General Water
	Hot Water
	Cold Water

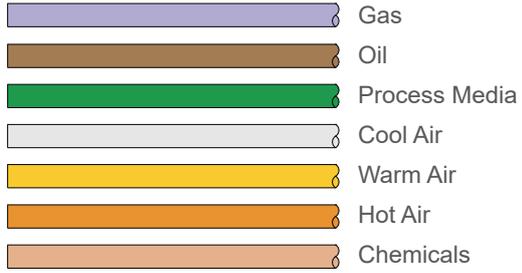


and condensate return

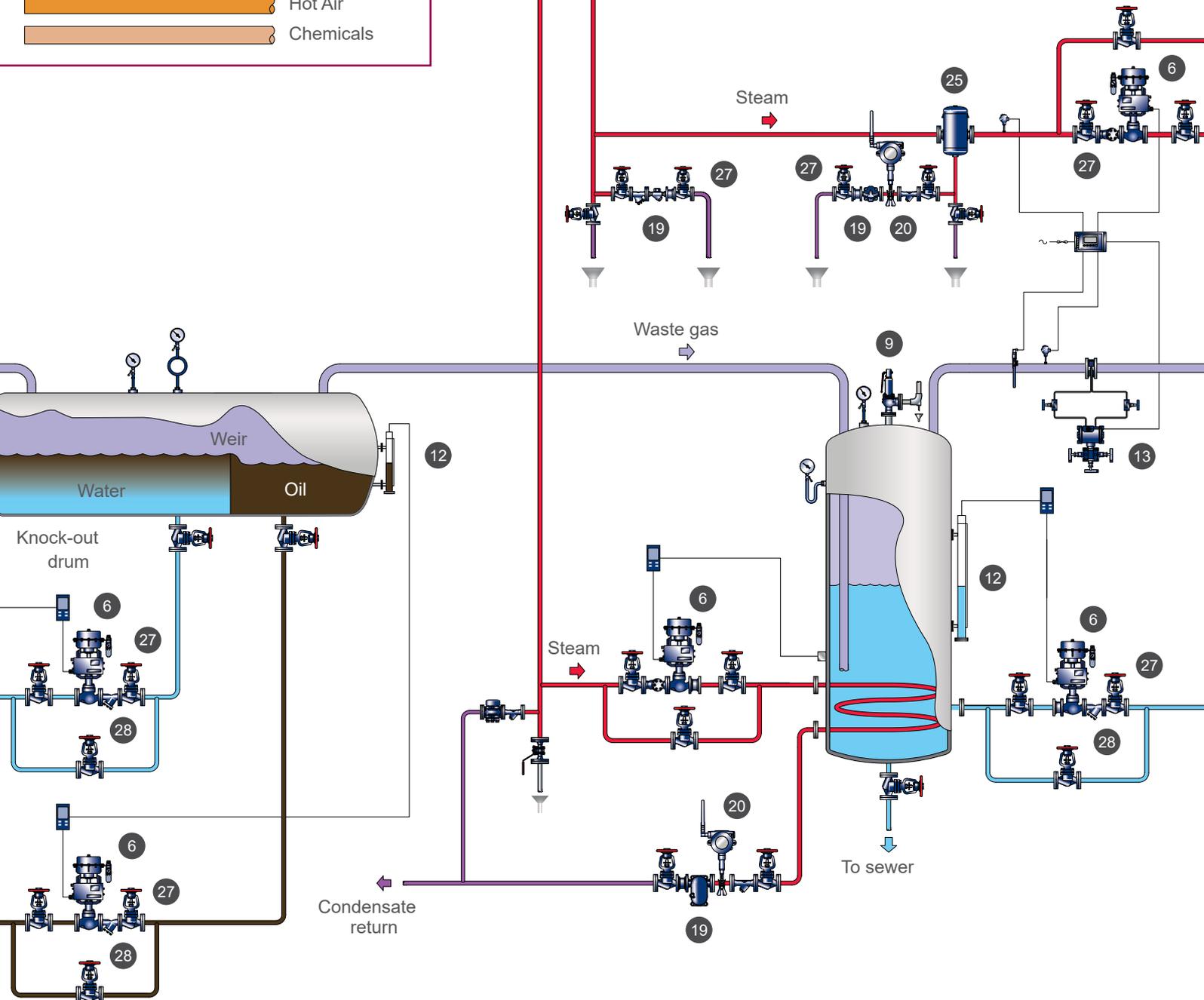
H.P. Steam

M.P. Steam

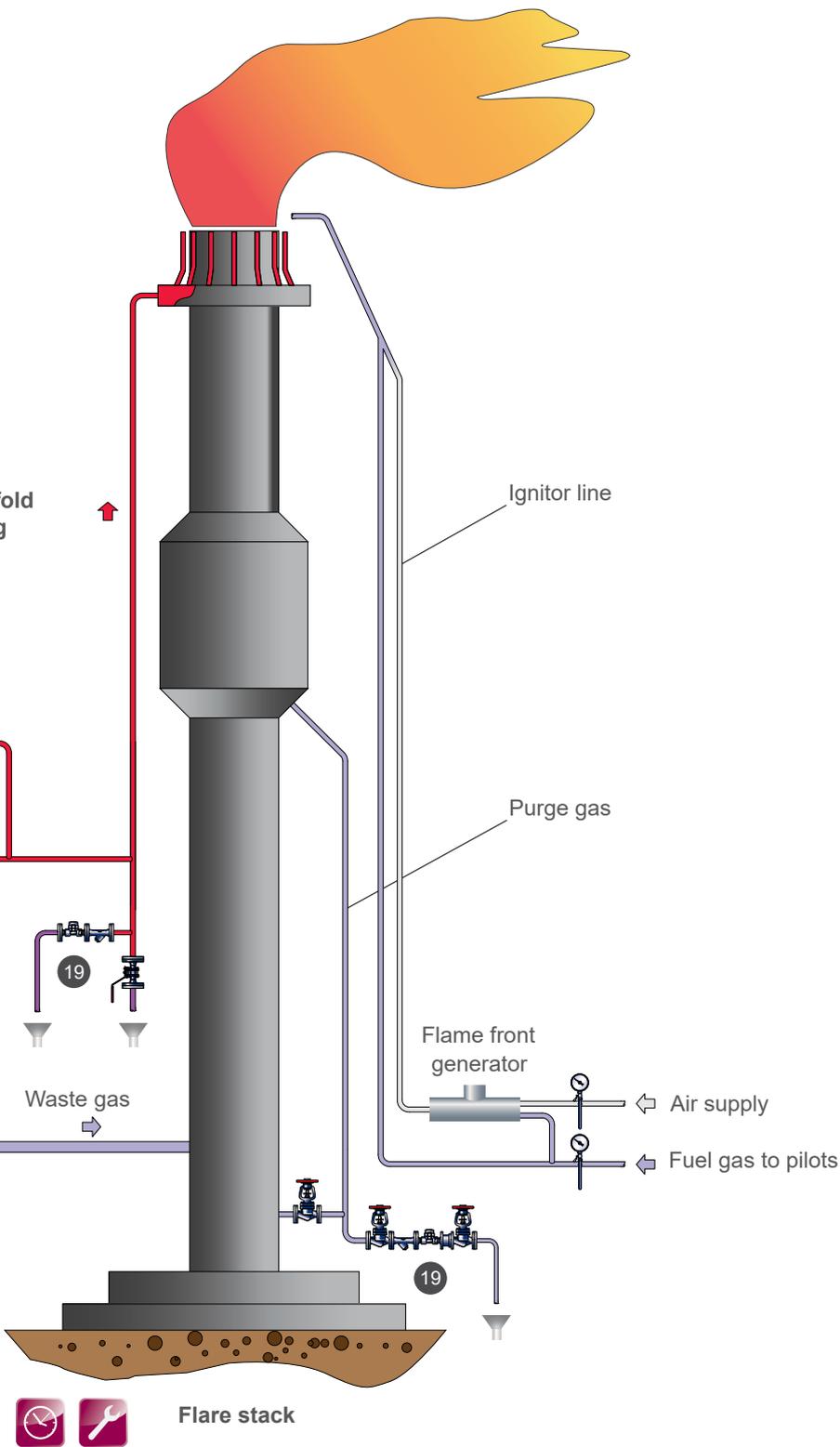
L.P. Steam



Steam to nozzle manifold for smokeless burning



Flare stack



## Icon Key



Energy saving opportunities



Process efficiency improvements



Water and treatment chemicals savings



Improved maintenance

## Product Key

### Boiler house

#### Feedwater storage:

1. Feedtanks
2. Deaerator heads
3. Level controls and alarms

#### Blowdown heat recovery

4. Flash vessels
5. Residual boiler blowdown heat exchangers

#### Steam conditioning and controls

##### Controls:

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

#### Heat exchange solutions

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

#### Condensate recovery

19. Steam traps:
  - Mechanical
  - Thermostatic
  - Inverted bucket
20. STAPS ISA100
21. Automatic pump-traps
22. Mechanical condensate pumps
23. Steam and condensate manifolds
24. Vent heads

#### Ancillary products

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