

## GLOBALLY ACTIVE AND STILL CLOSE BY

No matter where your market is, regardless of country, we are never far away. We are always happy to answer any questions you may have and meet your requirements. Even the largest, most successful project begins with an initial, profitable conversation. We look forward to hearing from you.

Global production footprint ●  
Global sales and service ●



Just scan this QR code with your smartphone or visit our website at: [www.jsgelan.com](http://www.jsgelan.com) - there you will find a highly competent contact in your immediate vicinity



+86-15961057777 [www.gelanpetro.com](http://www.gelanpetro.com) [Herman@gelan-arefar.com](mailto:Herman@gelan-arefar.com)

Product Line: Shell & Tube

# HEAT EXCHANGERS

+86-15961057777  
[www.gelanpetro.com](http://www.gelanpetro.com)  
[Herman@gelan-arefar.com](mailto:Herman@gelan-arefar.com)







# DESIGN & FUNCTION

## One: Heat Exchanger Design Philosophy

- 1. High Efficiency and Energy Saving: Adopting advanced design concepts to improve heat exchange efficiency and reduce energy consumption, saving you operating costs.
- 2. Precision Craftsmanship: Strictly adhering to national standards and using precision machining techniques to ensure product quality.
- 3. Compact Structure: Optimizing space layout to make the heat exchanger smaller in size and easier to install.

## Two: Functional Features of the Heat Exchanger

- 1. Temperature Control: Precisely controls the medium temperature to meet the temperature requirements cdifferent scenarios.
- 2. Energy Saving and Environmental Protection: Reduces energy consumption and environmental pollution through efficient heat exchange.
- 3. Corrosion Resistance: Made of high-quality materials, it has good corrosion resistance and extends the service life.
- 4. Easy Maintenance: Designed for ease of daily cleaning and maintenance, reducing operational and maintenance costs.
- 5. Wide Application: Suitable for air conditioning, heating, chemical, food processing, and other industries.

Choose our heat exchangers to bring comfort, energy saving, and environmental protection to your life and work!

# DESIGN & FUNCTION



OIL & GAS



CHEMICALS



ENERGY



MARINE



HEAVY &  
LIGHT INDUSTRY



REFRI-  
GERATION



TRANS-  
PORTATION



FOOD &  
BEVERAGE

Process safety increased

# CUTTING-EDGE TECHNOLOGY FOR OPERATIONAL SAFETY AND RELIABILITY

Gelan Air Fin Coolers: Your Optimal Choice for Efficient Heat Transfer!  
Are you looking for an effective solution for large-scale heat transfer?  
Look no further than Gelan air fin coolers! Our advanced technology and extensive experience make us the preferred choice among major industries worldwide.

## Why Choose Gelan Air Fin Coolers?

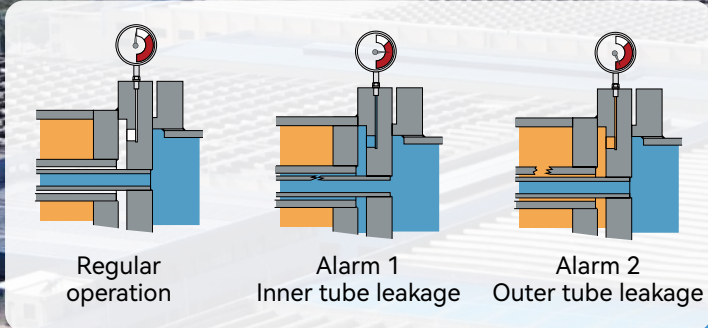
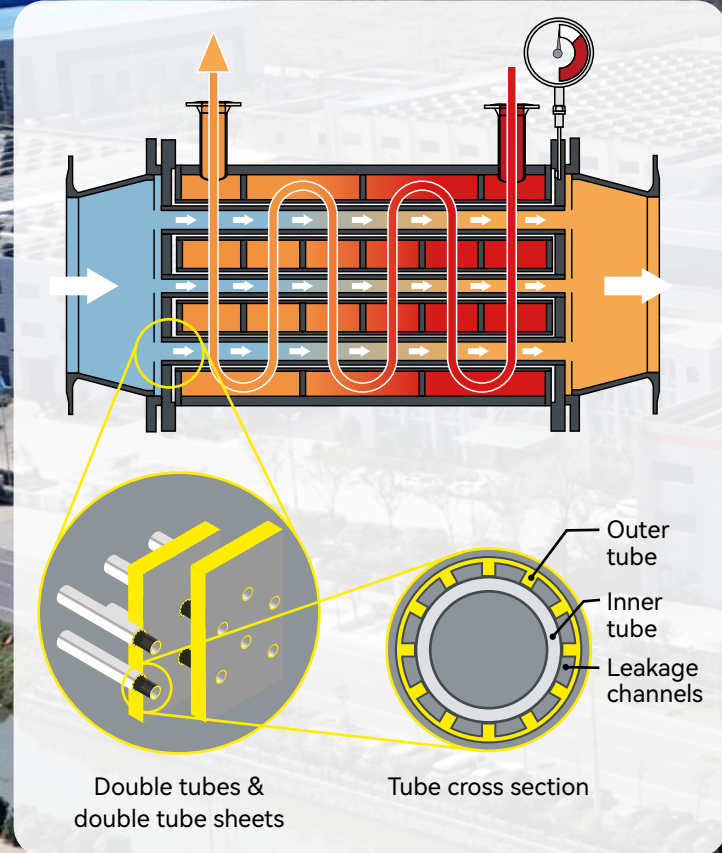
Enhanced Technology: Our state-of-the-art technology ensures superior performance and reliability.Wide Range of Options: We offer a comprehensive selection of fin shapes, tubes, headers, and materials to meet your specific needs.Leading Design and Manufacturing Technologies: Our innovative design and manufacturing processes ensure precision-engineered products that exceed customer expectations.Complete Service Packages: From installation to maintenance, we provide comprehensive service solutions tailored to your requirements.Fast Delivery: We understand the importance of timely delivery, so we strive to deliver our products quickly and efficiently.Long Life Cycle: Our durable construction and high-quality materials ensure a long-lasting product with minimal maintenance.ncy and save space. Multiple material tubes boost duty by 15% over standard tubes.

Applications: Our air fin coolers are widely used in power plants, refineries, chemical, petrochemical, geothermal, mining, and various other industries. A standard cooler is about 11 x 7 x 6 meters, and we have worked on projects covering several soccer fields.

Choose Gelan Air Fin Coolers for reliable, cost-effective, and non-corrosive heat transfer solutions. Contact us today to learn more about how we can help you optimize your operations and achieve your goals.







### LEAKAGE DETECTION SYSTEM

We offer a range of devices in our portfolio for the leakage detection system. These include:

- Level indicators
- Capacitive indicators
- Pressure indicators

These can be combined with display units and further armatures. In addition, we can supply air dehumidifiers and diaphragm tanks for isolation and pressure compensation in the leak chamber, if required.

## PRODUCT LINE OVERVIEW

Our product line Shell & Tube Double Safety contains various types and materials, all designed and precision-engineered to the highest standards to suit your application and process media.

### STANDARD

The standardized and cost efficient solution

### ADVANCED

Welded shell design for demanding requirements

### CUSTOMIZED

Sustainable solutions for special applications

## Leading Provider of Optimal Heat Exchange Technology

**World-leading engineering expertise**

With a full team of thermal and mechanical design experts on board, our engineering department can take on your most complex heat exchanger design challenges. Working together with our welding and manufacturing experts, they push the design boundaries and come up with new, smart solutions that result in higher reliability and lower investment costs.

Our in-house resources for computer simulations of fluid dynamics and mechanical strength (including creep, fatigue and stress analysis) let us maximize the performance and durability of each design while keeping size and weight at a minimum.

**Metallurgy**

Choosing the right materials for heat exchangers operating at high temperatures and pressures is essential for reliable operation. Choosing the most appropriate alloy greatly

improves the life span and service intervals. Our engineers can advise you on the best materials to use based on your operating conditions and process media. They help you find the materials that offer an optimum balance between CAPEX and OPEX by performing a total-cost-of-ownership analysis.

API Standard 661    ME VIII Div 1, Div 2    ISO 9001 : 2015

<h3>Typical Media</h3> <ul style="list-style-type: none"> <li>Water</li> <li>Steam</li> <li>Oil</li> <li>Refrigerants and glycol</li> <li>Natural gas</li> <li>Solvents</li> <li>Chemical and toxic</li> <li>media</li> </ul>	<h3>Typical Applications</h3> <ul style="list-style-type: none"> <li>Machine Cooling</li> <li>Thermal oil heating/ cooling</li> <li>Natural gas heating and cooling</li> <li>LNG treatment</li> <li>Chlorine liquefaction</li> <li>Ammonia evaporation</li> <li>Polysilicon treatment</li> </ul>	<h3>Design Data</h3> <p>Pressure</p> <ul style="list-style-type: none"> <li>up to 100 bar, higher on request (shell side)</li> <li>up to 320 bar, higher on request (tube side)</li> </ul> <p>Temperature</p> <ul style="list-style-type: none"> <li>-200 to 550°C (tube side and shell side)</li> </ul>	<h3>Materials</h3> <ul style="list-style-type: none"> <li>Carbon steel</li> <li>Stainless steel</li> <li>Copper</li> <li>Non-ferrous metals (CuNi)</li> <li>Titanium</li> <li>Hastelloy</li> <li>Super Duplex</li> <li>Cladder</li> </ul>
<h3>Classification societies and institutions</h3> <ul style="list-style-type: none"> <li>Det Norske Veritas – Germanischer Lloyd (DNV-GL)</li> <li>American Bureau of Shipping (ABS)</li> <li>Lloyds Register of Shipping (LRS)</li> <li>Bureau Veritas (BV)</li> <li>Registro Italiano Navale (RINA)</li> <li>Russian Maritime Register of Shipping (RS)</li> <li>China Classification Society (CCS)</li> <li>TÜV</li> </ul>	<h3>Design Codes</h3> <ul style="list-style-type: none"> <li>AD 2000</li> <li>EN 13445</li> <li>ASME</li> <li>TEMA</li> </ul>	<h3>Regulations and certifications</h3> <ul style="list-style-type: none"> <li>PED</li> <li>ASME Code Stamp (U)</li> <li>KTA – Certificate</li> <li>EAC – Certificate (TR-TS)</li> <li>SELO (China)</li> <li>CRN (Canada)</li> <li>DIN 2303 Q2</li> <li>Euro Chlor</li> <li>DVGW</li> </ul>	



Advantages of Shell & Tube Double Safety

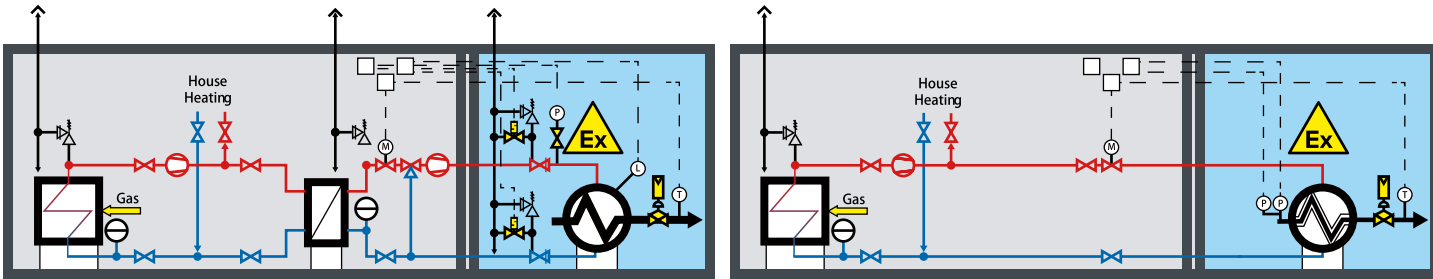
SAFE SEPARATION OF MEDIA IN ONE HEAT EXCHANGER



The double tube safety heat exchangers with a tube within a tube design have major benefits compared to single tube ones. Single tube heat exchangers are very efficient and meet strict quality standards, but there's a chance of product mixing if a tube leaks. To avoid this risk, plants often need to use two larger exchangers in an intermediate circuit for media separation. This setup also needs regulating systems, extra accessories, and consumes more energy. Double tube safety heat exchangers ensure the safe separation of two fluids within a single unit, eliminating the need for intermediate circuits. Any leaks are instantly detected by our online monitoring system, posing no risk to the process, products, machinery, or the environment. This means customers can conduct their operations continuously, dependably, and economically. Gelan's Shell & Tube Double Safety technology is more economical to run and uses less energy. Our systems also help you to comply with strict environmental regulations.

Advantages of Shell & Tube Double Safety

SINGLE TUBE VS DOUBLE TUBE



Natural gas preheating system without double tube safety heat exchanger      Natural gas preheating system with Kelvion Shell & Tube Double Safety

High availability of production plantsIn case of a leak, the detection system raises an alarm. The extra layer of protection from the second tube means critical processes don't need to be halted, providing customers with reassurance. Repairs can be scheduled for the next maintenance period. Leaks of hazardous substances pose threats not only to health and the environment but can also lead to financial losses and damage a company's reputation. Our products are designed to enhance the reliability of your processes, ensuring consistent high product quality.

Shell & Tube Double Safety – Advanced

WELDED SHELL DESIGN FOR DEMANDING REQUIREMENTS



If your application requires more than what our standard model offers in size, performance, or construction, our advanced solution is ideal. It's designed to handle temperatures from -29 °C to 400 °C and can withstand pressures up to 60 bar(g) on the shell side and 40 bar(g) on the tube side.

Our advanced series features a welded shell design and can be crafted from various materials and configurations. The inner tubes are smooth, and the outer tubes can be either smooth or equipped with low fins to enhance the outer surface area.

The outer tubes are made of copper for the low-fin version or carbon steel for the plain type. For the inner tubes, you can select from copper-nickel 90/10, copper-nickel 70/30, stainless steel, or carbon steel. Additionally, an optional phenolic coating on the inside is available.

The advanced series of heat exchangers is available as individual units or as a complete set with changeover valves and pipes. This series is ideal for machine cooling, thermal oil heating/cooling, and combined heat and power systems.

Shell & Tube Double Safety– Standard

THE STANDARDIZED AND COST EFFICIENT SOLUTION



The Shell & Tube Double Safety heat exchanger is an affordable choice for low to medium temperature and pressure conditions. It features a modular shell design, compliant with AD 2000 standards, and comes in sizes from 130 mm to 280 mm. It's ideal for use with clean water, open water, and seawater.

This model's tube bundles come in lengths from 250 mm to 3600 mm. The outer tubes are usually copper, with either a plain or low-fin design. If copper isn't suitable for the shell side medium, carbon steel is used. The inner tube material can be chosen separately and is often copper-nickel, carbon steel, or stainless steel. This heat exchanger is mainly used for machine cooling.



# OUR SERVICE IN THREE WORDS: PEACE OF MIND

## START-UP SERVICES & ONSITE SERVICES

We guarantee the safe delivery of our products and their full validation to ensure robust and reliable performance throughout their extended lifecycle. In the event that you experience any issues with your equipment after it has been fully commissioned, our team of skilled Field Service technicians is ready to visit your location to diagnose and fix any malfunctions.

- ▶ Assistance with assembly and disassembly, as well as shipping and transportation, is available to ensure your equipment is handled correctly and efficiently throughout the process.

## MONITORING, CONSULTING & TRAINING

Understanding the condition of your equipment is key to ensuring reliable production, enhancing safety and energy efficiency, extending equipment lifespan, and preventing failures. We provide expert consulting services that consider the unique aspects of your process, leveraging our deep expertise in heat exchanger design. We collaborate closely with you to craft the perfect solution tailored to your specific requirements. Additionally, we offer training to ensure your team is well-equipped to operate and maintain the equipment effectively

- ▶ Function test of leakage switch and maintenance
- ▶ Thermal and hydraulic measurements at test stand (oil-water or water-water)
- ▶ Tightness test and refurbishment / repair
- ▶ Assessment of operating conditions
- ▶ Examination and assessment of operating conditions
  - ▶ Endoscopic examination of tube side regarding pollution, corrosion and erosion
  - ▶ Examination of shell side regarding pollution, corrosion and erosion
  - ▶ Analysis of water and other product samples
    - ▶ Investigation of corrosion problems (destructive testing and sample analysis with specialists)
  - ▶ Assessment of deposits or corrosion products which may possibly occur on the tube side
  - ▶ General visual inspection and documentation of results
  - ▶ Pressure test (tube and shell side)
    - ▶ Repeating pressure tests acc. to PED / DVGW (category I+II)
    - ▶ Repeating pressure tests acc. to PED / DVGW (category III+IV, Kelvion together with 3rd party)

## REPAIRS, OVERHAULS & MAINTENANCE

Unexpected downtime can have serious consequences. Our skilled engineers are prepared to act swiftly in emergencies, providing review and repair services with minimal disruption to your operations. Overhaul work is performed with a focus on quality, either in our service centers or on your premises, under the watchful eye of our qualified team. Regular inspections and maintenance are essential for reducing costs, prolonging the life of your Kelvion equipment, and ensuring consistent, reliable performance.

- ▶ Complete overhaul, repair or new production
- ▶ Renewal of corrosion protection and exterior painting
- ▶ Internal cleaning (tube side: at factory or on site, shell side: at factory)
- ▶ Cleaning and flushing of shell and tube side including documentation of results
- ▶ Brush cleaning tube side including documentation of results (if screwed headers)

## SPARE PARTS AND SPARE PARTS SOLUTIONS

Even the most reliable equipment will eventually show signs of wear. We stock only the highest-quality spare parts, meticulously designed to meet the standards of the original components. This ensures that the precise interaction between parts is preserved, maintaining peak performance. By committing to the integrity of the original design, we provide maximum protection for your investment, ensuring its longevity and reliability.

- ▶ Delivery and assembly of spare parts

## UPGRADES AND REPLACEMENTS

To maintain the smooth operation of heat exchangers and avoid costly downtime, we replace components as needed. When parts or components become outdated due to age, we recommend appropriate upgrades. In such instances, we frequently propose the latest technology advancements that can further enhance the performance and reliability of your process. Our goal is to ensure that your equipment remains at the cutting edge, optimizing efficiency and reducing the risk of future disruptions.

- ▶ Analysis and assessment of performance bottle-necks

# COOPERATIVE PARTNER

