

Your expert for heat transfer components and complete systems



**LONGTIME  
KNOW-HOW**



**WELDED WITH  
FORWARD-LOOKING  
PLANNING**



# OUR TECHNOLOGY APPLIED.

## CHEMICAL AND PETROCHEMICAL INDUSTRIES

Our products fulfill critical functions of cooling, preheating, evaporating and condensing in the chemical and petrochemical industries. As a long-time partner and supplier for numerous world renowned companies in the industry, we have an extensive experience in a wide range of application areas.

- Process gas coolers with
  - › bare tube bundle
  - › finned tube bundle
  - › plate fin bundle
- Safety heat exchanger with
  - › safety double tubes
  - › double tube sheets
- High-pressure heat exchangers
- Condensers and evaporators
- Overhead condensers, falling-film evaporators and thermosiphon reboilers
- Product preheaters
- Product coolers
- Lubrication oil units

## ENERGY AND THE ENVIRONMENT

When it comes to energy and environmental technologies, enhanced efficiency, effectiveness, continual development and optimization are critical factors. For us, every detail counts – from the initial calculation to the last weld. Therefore, we often face new challenges, but bring successful results out of it to our customers. Some of our valuable customers come from these fields.

- Oil/water coolers with
  - › bare tubes
  - › turbulence internals
  - › low finned tubes
- Safety heat exchangers with
  - › safety double tubes
- Waste gas coolers
- Heating condensers
- Surface condensers
- Gland steam condensers
- Finned tube registers
- Condensation units
- Lubrication oil units

## COMPRESSOR INDUSTRY

We are your provider for the complete range of equipment required for oil and gas cooling. In the fields of mechanical and compressor engineering, we are one of the few companies worldwide with expertise in both areas. We offer you sophisticated designs with an enhanced surface for significantly efficient heat transfer.

- Gas coolers with
  - › bare tubes, gas flow through the tubes also with turbulence internals
  - › bare tubes (gas flow around the tubes)
  - › finned tube bundles
  - › plate fin bundles
  - › integral separator
- Oil coolers with
  - › bare tubes
  - › turbulators
  - › low finned tubes
- Lubrication oil units

## OUR SERVICE SPECTRUM

- Thermodynamic design
- Strength analysis
- Development, design, project management
- CNC-machining
- Manual, semi-automatic and automatic welding technology
- Surface treatment
- Quality testing
- Documentation
- Delivery and logistics
- Processing of a wide variety of metallic materials

## EXPERTS FOR INDUSTRIAL HEAT EXCHANGER

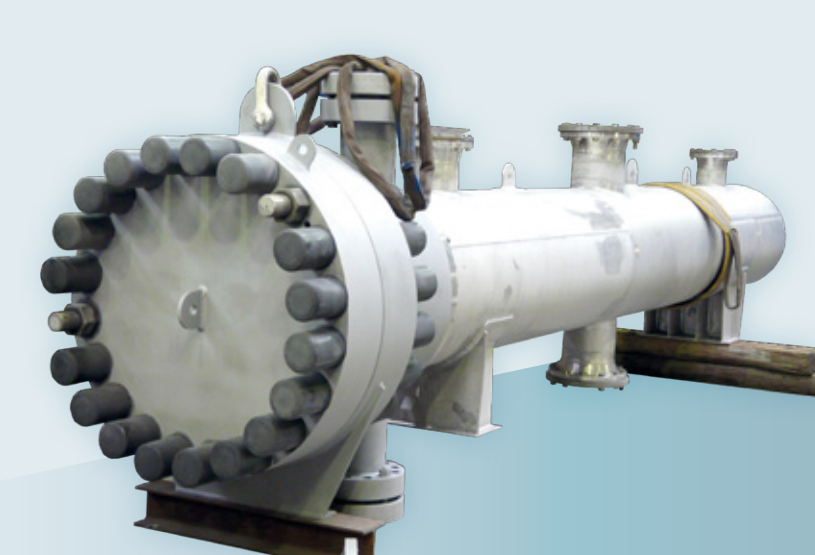
Whether a standard solution adapted to individual needs or customized design, we offer expertise for production of industrial heat exchangers and units from technical planning to highly specialized manufacturing.

Our company dates back to 1958 when it was founded under the name VEB Apparatebau und Eisengießerei Leisnig. At the time, it specialized in production of castings and mechanical parts of all kinds. In 1965, the company began manufacturing heat exchanger with a inside diameters of up to 1000 millimeters already. The company was

gradually privatized in the 90s and AEL Apparatebau GmbH Leisnig was founded.

Today, our products are used for industrial applications around the world – from individual heating components to complete systems. The development, design and production teams closely collaborate in order to guarantee successful results. Our engineers are experts in thermodynamic processes, strength calculations and vibration analysis. Our highly-qualified manufacturing specialists are experienced in welding technology and quality assurance.





## HEAT EXCHANGER

We develop and manufacture heat exchangers that meet specific customer requirements. Our engineers provide you with an optimized solution for all of your heat transfer applications.

- Available in all TEMA designs
  - › Stationary tube bundles including and excluding shell expansion joint
  - › Removable tube bundles including floating head, packing box
- For liquids and gases including and excluding phase transition
- Available in customized high pressure designs
- Element cooler (process gas cooler)
- Register design
- Straight tubes or U-tubes
- Bare tubes, finned tubes and plate-fins

### Size and Weight Capacity

- Diameters from 80 mm to 4500 mm
- Bundle lengths from 300 mm to 30000 mm
- Weight up to 125 t
- Other requirements at customer request

# OPTIMIZED PRODUCTS, OPTIMIZED PROCESSES.



## SYSTEM ENGINEERING / COMPLETE SYSTEMS

This is where everything comes together. In addition to individual components for specialized tasks, we also offer fully integrated system solutions. Including measurement and control technology, pumps, filters, piping and frame assembly.

- Lube oil units up to 8500 l/min
- Water cooling units and equipments
- Pump skids and instrument racks
- Natural gas packages
- Surface condensers with a condensate pump unit and evacuation
- Gland steam condensers including ejector, blower and water loop
- compressor & turbine packaging



# NATIONAL AND INTERNATIONAL STANDARDS AND APPROVALS.

Our integrated quality management system is certified in accordance with current guidelines DIN ISO 9001. Our production is also subject to the stringent environmental requirements of DIN ISO 14001. We offer the complete range of non-destructive examination directly at our facility at the time of the final acceptance.

## Certificates:

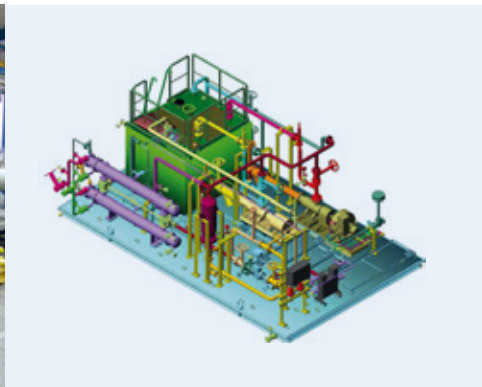
- Quality management in accordance with ISO 9001:2015
- Environmental management in accordance with ISO 14001:2015
- BS OHSAS 18001:2007
- WHG § 19I
- PED 2014/68/EU
- AD-2000 HP 0 / HP 100 R
- DIN EN ISO 3834-2

## Standards:

- EN 13445, AD-2000, EN 13480
- TEMA, API, HTRI

## National and international approvals:

- ASME VIII Div. 1 & 2 (U, U2-stamp)
- China manufacturing license (Level A1)
- EAC for pressure equipment and machinery
- Lloyds Register
- Bureau Veritas
- DNV – GL
- DIN 2303
- KTA 1401
- STUK
- The National Board (R, U, U2-stamp)



## CONTACT US!

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# EJECTOR TECHNOLOGY

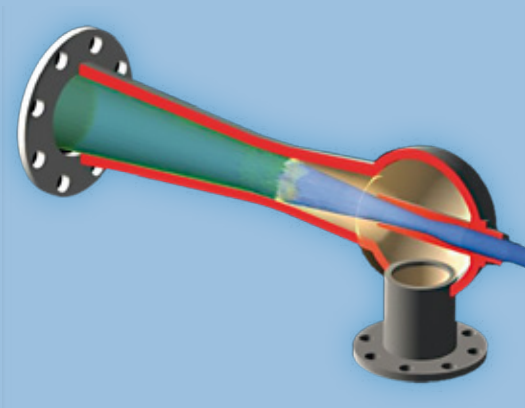


#### Advantages of Ejectors :

- Simple construction
- Simple maintenance
- Simple to use
- Long lasting reliability due to no moving parts
- Corrosion resistant through suitable selection of materials
- Requires little space
- Unrestricted usage in an explosive atmosphere

## EJECTORS AND STEAM JET VACUUM UNITS

Ejectors are apparatus used for conveying mixing or compressing of liquids and gases. They are put to use in almost all processes as single or multi-stage suction pumps to create vacuum where process stages take place below atmospheric pressure. The propellant is mainly water or steam.



#### Industrial fields of application:

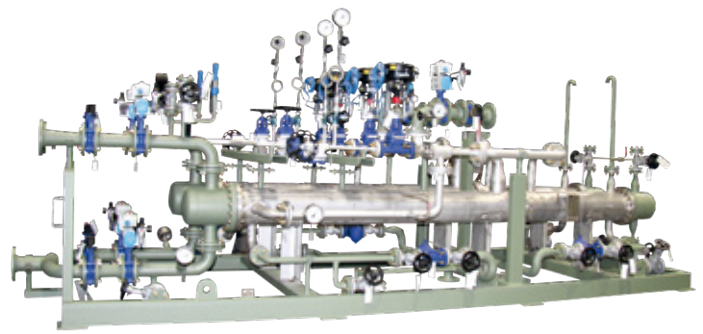
- Oil Refineries
- Steel Industry
- Power Stations
- Chemical Industry
- Shipyards
- Cooking Oil Industry
- Sea Water Desalination
- Cold and Icy Water Production

# STEAM JET VACUUM UNITS

## Industrial application for multi-stage steam-jet vacuum pumps:

- Condensation
- Evaporation
- Drying
- Sublimation
- Degassing
- Rectification
- Polymerisation
- Deodorisation

Just like other pumps, the attainable compression ratio of the counter-pressure to suction -pressure is limited. For this reason, in a process with a very low pressure, it is necessary to use a multi-stage steam-jet vacuum unit. Decisive factors for the design of multi-stage vacuum units are the suction pressure, the inlet temperature of the cooling liquid as well as the operating steam pressure. The more stages there are, the less the specific consumption of operative steam is. Depending on the customer requirements and needs, we supply optimized solutions. The inter- and after-condensers can be designed with surface and/or mixing condensers. Ejectors with a suction pressure below 6mbara are equipped with a heating jacket. Especially for such a low pressure, the connection of ejectors in series can be necessary, but this will increase the specific operating steam consumption.



Each unit is optimized based on the customer requirements and needs. Furthermore, combinations with other vacuum pumps such as water ring pumps are possible. E.g. for removal of air from turbine condensers mainly two-stage units are put to use. For applications in chemical, oil and fat industry, there are more complex solutions available.

Evacuation units for vacuum condensers can be, if required, designed according to VGB or HEI guidelines. The mechanical design and construction are carried out in accordance with EN 13445, ASME, AD-2000, PED 2014/68/EU or EAC. All manufacturing processes are monitored by our quality management system according to DIN EN ISO 9001:2015.



ANA Prozesstechnik GmbH is your partner for planning and design of vacuum systems and single ejectors for the chemical industry, oleochemistry as well as environmental and power plant technology.

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