SAVE ENERGY? BAELZ HAS THE SOLUTION.

Components and systems for energy efficiency and sustainability world-wide
Baelz is a family-owned enterprise with over 100 years of tradition. It is based in Heilbronn in south-west Germany and its products made in Germany are known for their quality. Its inventions have always produced new patents and new developments. Baelz technologies find their inspiration from the laws of nature and harness the power of innovation to achieve the economical use of energy and resources.

Starting from his parents’ copper forge, Wilhelm Bälz founded a company to design steam machines for industry in 1896. After World War II in 1945, Baelz launched control systems, heat exchangers, electric and pneumatic operated valves and the first weather-dependent controllers on the market. This was followed at the beginning of the 1950s by the world’s first vertical steam-water transfer station with a control system on the condensate side and in 1970, a controlled water jet pump.

Due to Baelz’s policy of continuous development, the company’s components and products for control, heat and cold engineering have been installed all over the world.

In-house production by BS Nova GmbH, Siegen for large apparatus and heat exchangers.

Baelz is also represented with its own subsidiaries on the market:
Baelz Automatic SARL, France
Baelz Wien GmbH, Austria
Baelz Heat Automation Equipments Co. Ltd., PRC China
Baelz North America, USA

Baelz is also present world-wide through partner companies.

Baelz will continue to seek solutions to world-wide energy efficiency problems based on its claim: Save energy? Baelz has the solution.
CONTROL VALVES for industry and building services

Baelz-electrodyn®

Electrically and pneumatically operated control valves from DN15 to DN300 for water, steam, thermal oil, hot water, condensate, oxygen, nitrogen and many other media.

Baelz control valves have a far superior design and long service life because they are built with decades of Baelz experience as developer of heat exchange systems. Baelz is therefore a competent consultant when it comes to selecting and designing valve housings and drives for specific applications.

2-WAY VALVES

Design examples – flexible modular design system: many valve types, nominal widths, nominal pressures and designs available

3-WAY VALVES

Housing materials: spheroidal graphite iron, cast steel, stainless steel and forged steel in designs conformant to DIN and ANSI combined with reliable electric or pneumatic drives

OVERVIEW OF BENEFITS

- Excellent price-performance ratio
- Long service lives, rugged, low maintenance
- Large selection and combinability
- Application-specific special features
- Custom-made versions on request
- Long-term deliverability of spare parts
- Standard very low leakage rates of 0.004 % and 0.0 % in soft sealing models
- Short delivery times, even for special fittings
Baelz-hydrodynamic®
Jetomat®

Baelz jet pumps, also known as three-way injector valves or jet pumps, are rugged and cost-effective with long service lives and low maintenance. They feature reliable availability, save energy and are cost-effective to run.

The potential energy in the nozzle (pressure level) is converted into kinetic energy (velocity). This causes a drop in pressure resulting in a suction effect. The propelled fluid mixes with the intake quantity and pressure is relieved in the diffuser down to the plant inlet pressure.

Same functioning principle for steam, controllable from 0 to 100%.

Only one main pump – no pumps in the heating circuits.

OVERVIEW OF BENEFITS

- Easy to control across complete load range from 0 to 100%
- Only one common main pump required
- Simplified plant installation
- No differential pressure regulator
- Low return temperatures
- Lower power costs
- Stabilised hydraulics within entire plant
CONTROLLED JET PUMPS for vapour

Baelz-vapodynamic®

Fields of application for baelz 590 controlled jet pump for vapour include recirculation, compression and pressure reduction in rotary drum dryers or waste steam compression.

RECIRCULATION

1000 kg/h vapour for condensation
425 kg/h vapour for recirculation

2 bar abs
1425 kg/h

1000 kg/h condensate
425 kg/h vapour

Vapour
1.5 bar abs
425 kg/h

Rotary drum dryer

BAELZ 590 steam jet pump

COMPRESSIO

Condensate 112°C
1000 kg/h

Condensate 150°C 4600 kg/h
Condensate 105°C 1000 kg/h
Condensate 100°C 6133 kg/h

1.5 bar abs
667 kg/h

1 bar abs
467 kg/h

1 bar abs
1134 kg/h

15 bar abs
667 kg/h

Primary side 01

Vapour
4 bar abs
1000 kg/h

Vapour
1.5 bar abs
425 kg/h

Water injection with special nozzle to produce injection cone

Secondary side

Applications of baelz 591 steam jet pump: Functions as desuperheater and saturated steam generator. No overheating and high precision for pressure regulation and temperature control.
Baelz-hydrodynamic®

**System solutions** consist of single components or they are **compact stations** in which single components are fitted and wired ready for hook-up depending on custom requirements. They are delivered to the customer ready to operate. This eliminates time-consuming installation work on site and saves money for the customer.

Combination of steam pump and plate heat exchanger (PHE): less calcification, longer service life of plant heat exchanger

![Diagram of steam pump and plate heat exchanger](image)

**EXAMPLES OF BAELZ COMPACT STATIONS:**

- **Hydropilot®,** a domestic station with two integrated jet pumps to heat drinking water and regulate the heating system.

- **Baelz Moduline** has an integrated controlled jet pump based on the continuous flow principle for heating drinking water in buildings. This saves storage losses.

**OVERVIEW OF BENEFITS**

- Longer service life of heat exchanger
- Lower connection load
- Low return flow temperatures
- High precision control in ranges up to 2 MW
- Savings in energy and maintenance costs
Wherever steam is used, there are potential energy savings which can be achieved by our versatile system solutions. They are completely piped and wired, heat insulated and, if required, mounted on a base plate.

STEAM-WATER TRANSFER STATION

This space-saving compact plant avoids energy wastage by preventing the useless escape of steam. Its energy can be used for domestic heating systems, hot water and numerous industrial processes.

MODULAR STEAM-WATER HEAT EXCHANGER

Plants equipped with the Modulo module heat exchangers in copper (baelz 147) and in stainless steel (baelz 150) are unique throughout the world. They offer flexible design, excellent plant availability and permit recycling with sorted materials at the end of their service life.

OVERVIEW OF BENEFITS

- Considerable savings from lower steam consumption
- Lower maintenance and repair costs
- Good condensate cooling by regulator on condensate side

CLEAN STEAM GENERATOR

Compact plants in a variety of designs which use primary steam, hot water or thermal oil as heating medium to supply clean steam from purified drinking water.

Applications:
- Sterilisation in autoclaves in medical sector
- Sterilisation systems in industry
- Air humidity regulation for air conditioning systems
SYSTEM SOLUTIONS absorption refrigeration system

Baelz-absorpdynamic®

These are compact, energy efficient, medium range and heat operated refrigeration systems. The use of low temperatures from 55°C allows the use of excess heat.

POSSIBLE HEAT SOURCES
- Heat from combined heat and power units
- Waste heat from industrial plants
- Local and district heating networks
- Heat from solar systems
- Heat from biomass and waste incinerators

POSSIBLE APPLICATIONS
- Cooling of industrial plants
- Room cooling
- Machine cooling
- Food cooling

The plants are eco-friendly since they use water as coolant and lithium bromide as absorbent. Due to their compact size, the plants can be transported through doors and are space-saving. Power outputs up to 500 kW.

OVERVIEW OF BENEFITS
- Thermal process efficiency – high level of efficiency
- Use of all local and district heating networks due to low primary temperatures
- Fast response to load changes, 25% to 100% power increase < 10 minutes
- Low maintenance and repair work
- Can be used in winter as heat pump for heating
- Flexible recooling technology, also dry recooling
- Compact design
Baelz offers a wide range of heat exchangers for all types of plants in HVAC, district heating and industry. They are suitable for steam, heating and hot water and thermal oil.

Thanks to our in-house production in Germany, we are capable of manufacturing special solutions due to the use of modular solutions which are unique world-wide. We supply heat exchangers, steam generators with straight, U-shaped and spiral tubing or fixed tube bundles, either vertical or horizontal.

**OVERVIEW OF BENEFITS**

- Optimum heat transfer by ingenious design
- Wide model diversity to fit practically any spatial conditions
- Special requirements on request
- Replacement parts available even after decades
- Compact design, low weight
- Easy to regulate in partial load range

Tube bundles made of spiral copper tubes
Baelz-electrodyn®
Pilot®

Baelz closed-loop controller from in-house developed hardware and software ensures intelligent control and automation in industry and building services.

They optimise efficiency in the generation, consumption and conversion of energy. All Baelz controllers are touch screen operated in the Touchpilot version.

Industrial controllers autonomous/parameterisable for industry

HVAC controller, also programmable

The baelz 7164i built-in controller for actuators clearly delimits delivery through decentralised intelligence, minimises installation and wiring work on site and replaces signalling wires between the controller and the drive motor.

The remote maintenance module ensures remote maintenance with site-independent access, expansion of functions at any time and centralised data backup.

INTERFACES
- Modbus
- Ethernet/IP
- Profibus
- OPC
- BACnet

INTERFACES
- Modbus
- Ethernet/IP
- Profibus
- OPC
- BACnet
- KNX
- Mbus
CENTRAL CONTROL SYSTEMS

Baelz-electrodyn®

The WinBAS universal software packet for Baelz central control is extremely flexible, adaptable and modular.

It offers all the options required for comprehensive automation concepts in industry and building automation.

The Baelz WinBAS visualisation and control system offers customised user interfaces.

INTERFACES
- Modbus
- Ethernet/IP
- Profinet
- OPC
- BACnet
Baelz energy saving solutions for:

- Chemicals
- Pharmaceuticals
- Papermaking
- Automotive
- Aviation
- Tyres
- Textiles
- Wood industry
- Building services
- Heating networks
- Power plants
- Food and beverages

Baelz in Germany

Germany
W. Baelz & Sohn GmbH & Co.
Head offices in Heilbronn
Berlin, Hamburg, Essen, Frankfurt, Nuremberg, Aalen, Ulm, Munich

Baelz subsidiaries

USA
Baelz North America
Atlanta, GA

Austria
Bälz GmbH
Vienna

France
Baelz Automatic SARL
Paris

China
Baelz Heat Automation Equipments
Beijing