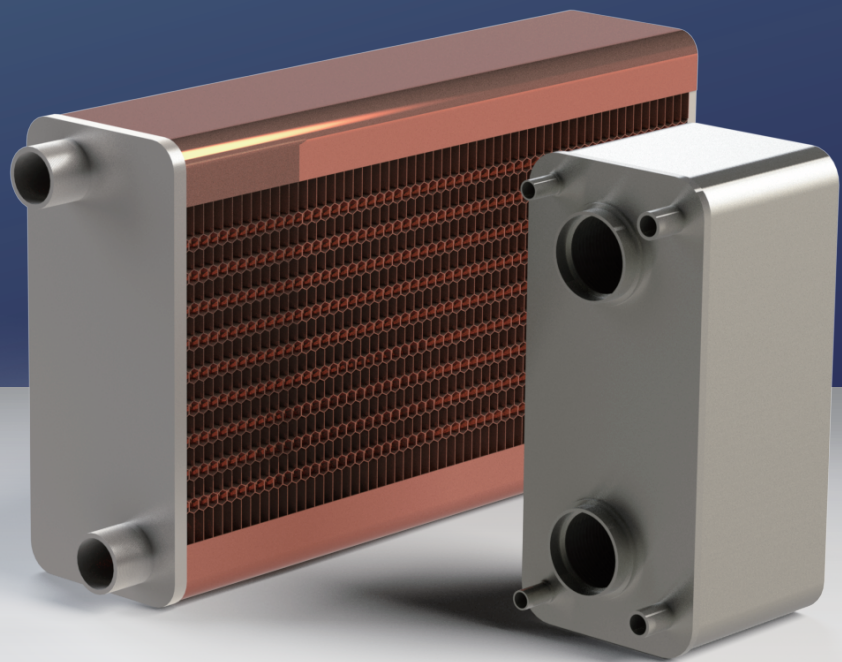


FLUE GAS HEAT EXCHANGER

-Gas Heat Recovery · Smart Energy Saving



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What is Flue Gas Heat Exchanger ?

This compact brazed plate heat exchanger is specifically designed for flue gas heat recovery. It efficiently transfers thermal energy from high-temperature exhaust gases to a liquid medium, enabling significant energy savings in industrial and commercial heating systems.

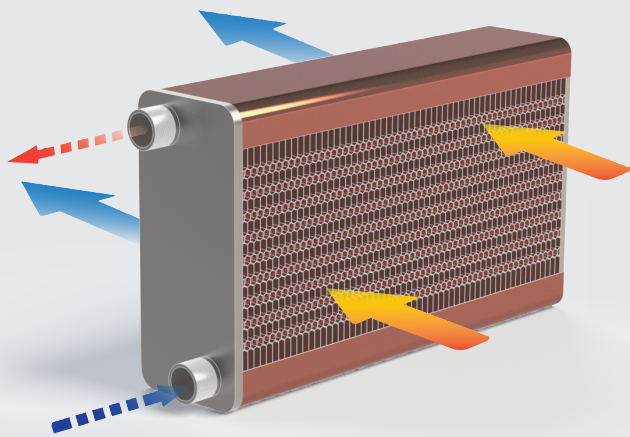
Why use our Flue Gas BPHE?

In conventional systems, flue gases often carry away a large portion of usable heat. By recovering this waste heat, the system improves overall thermal efficiency, reduces fuel consumption, and lowers carbon emissions—making it an essential component for energy-conscious operations and sustainability targets.

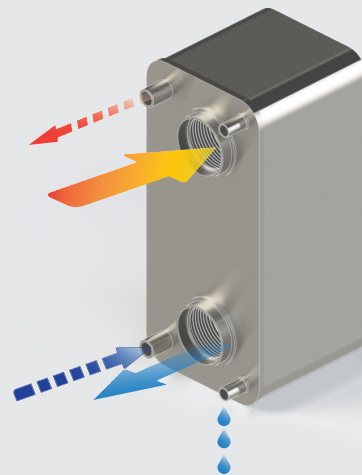
Features:

- **High-Temperature Resistance:** Handles flue gas temperatures up to 750°C (with selected material).
- **Asymmetric Channel Design:** Minimizes pressure drop on the gas side while maximizing heat transfer.
- **Compact Footprint:** Space-saving form factor allows easy integration into tight installations.
- **High Efficiency:** Special corrugated plate design ensures optimal thermal performance.
- **Durability:** Built from corrosion-resistant stainless steel, brazed with copper or stainless for long-term life

Flow Direction Legend



BY35 Air Cross

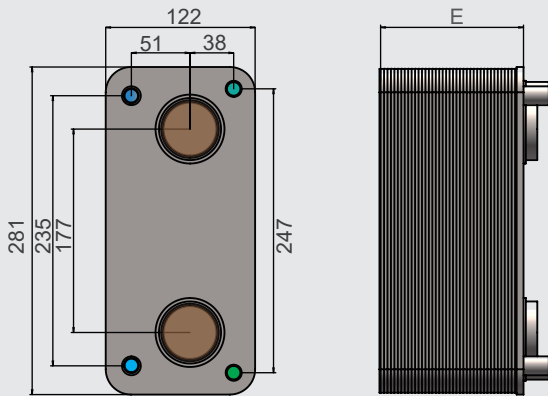


GL35 Core Block



This illustration compares two types of compact Liquid-Gas heat exchangers, clearly showing the counter-flow paths of hot gas and cold water. Standardized color-coded arrows indicate the direction and nature of each fluid involved in the heat exchange process.

GL35

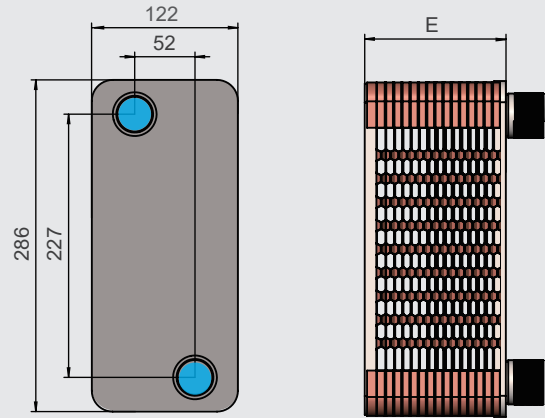


*Units: mm

$$E=4+4.0*N$$

- Max design pressure: 20 bar
- Max temperature: 250C°/400 C°/750C°
- Plate material available: 304, 316L, 904
- Brazing material available: Cu, SS, NI

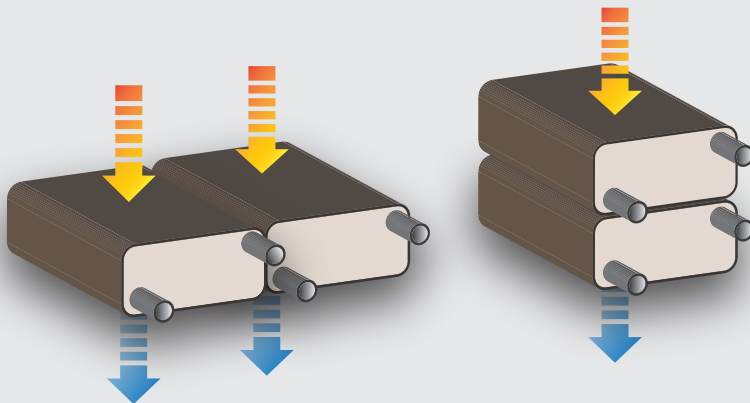
BY35



$$E=6+3.2*N$$

- Max design pressure: 15 bar
- Max temperature: 250C°/400 C°/750C°
- Plate material available: 304, 316L, 904
- Brazing material available: Cu, SS, NI

BY35



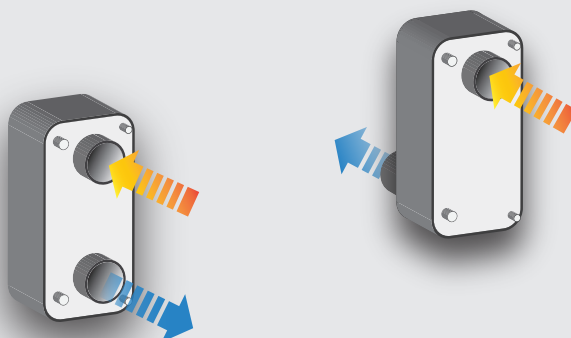
Modular Design

This configuration showcases a modular heat exchanger system (with shell)

The units can be combined horizontally or stacked vertically. Fully customizable to meet specific operating conditions.

Each module can be selected and arranged depending on flow capacity, installation space, and performance requirements. Ideal for scalable thermal management solutions.

GL35



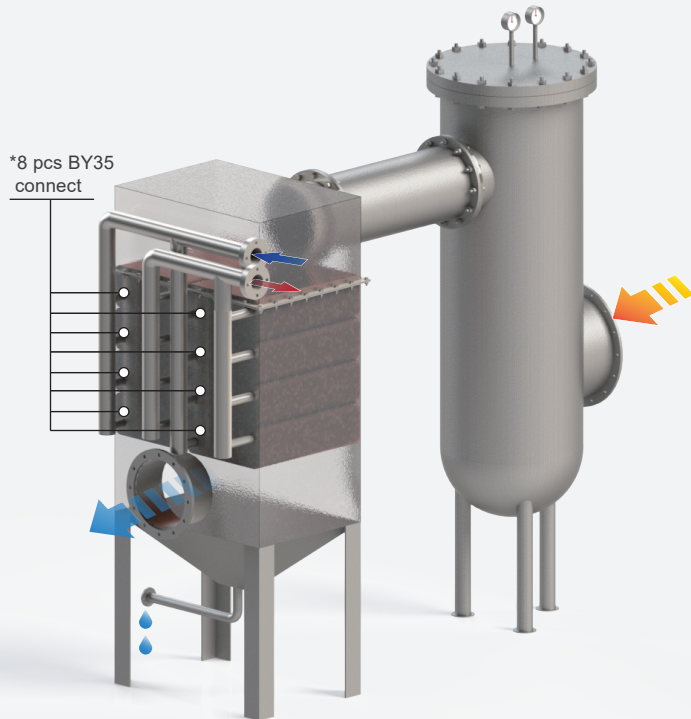
Flexible Inlet/Outlet Configuration

This design highlights the flexibility of gas inlet and outlet positioning:

Gas inlet and outlet can be placed on the same side for compact installation. Alternatively, they can be placed on opposite sides for counterflow or specific layout needs.

This design enhances adaptability in various installation environments.

BY35 Industrial Gas Heat Recovery Applications



** Typical BY35 modular application setup*

Flue Gas Heat Recovery from Boilers

Energy savings range from 8.7% to 12%

- Typical Flue gas : from 180–220°C down to 40–89°C
 - Water temperature: from 25–30°C up to 37–54°C
- Enhances boiler thermal efficiency and reduces fuel consumption

Biogas Dehydration

Used in anaerobic digesters for gas drying

- Biogas cooling: from 35°C down to 10°C
- Cooling water: from 7°C up to 12°C

Compact design, easy to install and transport, space-saving and energy-efficient

Condensation Recovery of Volatile Vapors

- Styrene: Two-stage cooling using 20°C water and 0°C glycol
 - Methanol: Used in pharmaceutical plants for solvent recovery
- Compact and efficient alternative to traditional shell-and-tube heat exchangers

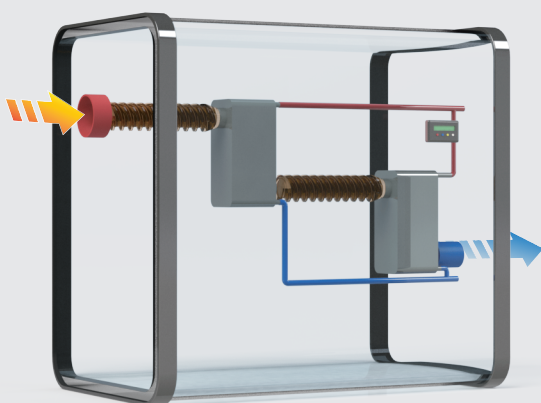
Electronics Industry – Gas Recovery

- SiF_4 vapor cooled from 650°C to 60°C
- Used in semiconductor etching off-gas treatment systems

Industrial Steam Heat Recovery

Recovery of flash steam or low-pressure exhaust steam

GL35 Gas - Liquid BPHE Applications



**Air Cooling Demonstration of an Oil-Free Compressor*

Fuel Cell Systems

Preheating, cooling, and condensing hydrogen, ammonia, and methanol. For PEM and SOFC

Electrolyzer Cooling

Cools hydrogen and oxygen during electrolysis. Applicable to Alkaline, PEM, and SOEC systems.

Compressors

Cools compressed gas for aftercoolers and dryers. Low pressure drop, oil-free compatible.

Waste Heat Recovery

Recovers heat from compressed air and flue gas. Used in industrial and micro-CHP systems.

CHP Units

High condensation rate for compact CHP up to 400 kWel. 90% fuel-to-energy efficiency.

Biogas Post-Treatment

Condenses moisture in biogas to improve gas quality.

Charge Air Coolers (CAC)

Water-cooled turbo cooling with low water use. Compact and efficient.