GIG KARASEK
A Member of Dr. Aichhorn Group

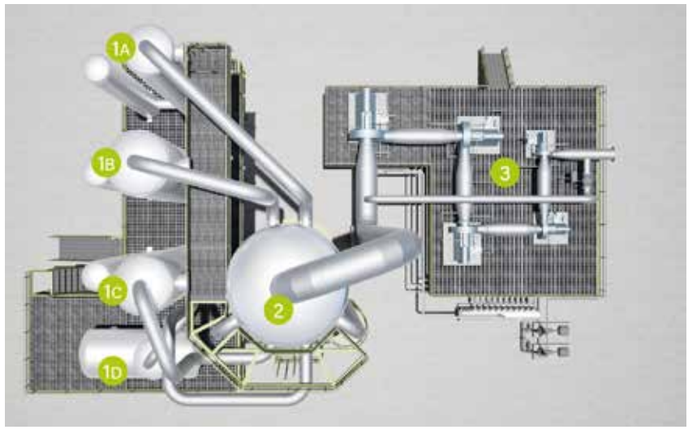
VarioVAP

Multi-Source Heat Recovery for a Zero-Waste Heat Future

www.gigkarasek.com

Diverse industrial waste heat streams centrally recovered with VarioVAP

One goal: Zero Waste Heat



1 Heat sources 1A - 1D 2 Plate falling-film evaporator
3 Multi-stage compressor system

Sample layout of a VarioVAP system with a plate falling-film evaporator and an open heat pump system © GIG Karasek

Rising energy costs, ambitious climate targets, and limited resources call for consistently efficient use of energy – especially in sectors where sustainable industrial processes are being strategically advanced.

In many areas, waste heat, often in the form of steam, remains unused, whether due to low energy content or temperatures, small partial streams or a lack of technical integration. The result: valuable energy is lost and primary energy is wasted.

Waste heat utilization with VarioVAP

With VarioVAP, GIG Karasek offers a **holistic solution for utilizing industrial waste heat**: heat streams from diverse sources are intelligently consolidated and made usable.

Zero Waste Heat through centralization

VarioVAP transforms both large and even the smallest waste heat streams that were previously not economically viable into valuable energy resources.

When integrating these diverse waste heat flows, differences in temperature, pressure or energy content are irrelevant.

With VarioVAP, the principle of Zero Waste Heat – maximizing the use of waste heat – becomes achievable for the first time.

Functional principle

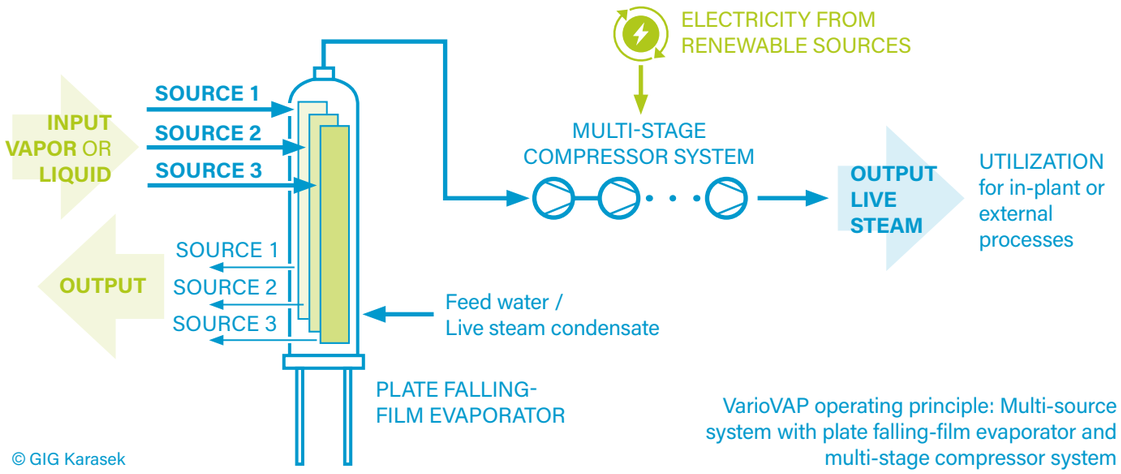
At the heart of the VarioVAP system is a **plate falling-film evaporator that functions as an innovative heat exchanger**. Each heat source – typically exhaust steam – is fed through a separate line into the fully welded evaporator, where it is "recycled" and converted into sustainable fresh steam.

Stand-alone heat exchanger or MVR combination

The system can operate either as a **stand-alone heat exchanger solution** or **in combination with an open heat pump system** based on mechanical vapor recompression (MVR).

In the latter case, the generated steam is raised to a **higher energy level** and can be fed as high-quality fresh steam into production processes or external networks, depending on demand.

Thanks to the separation of the individual lamellas, steam flows and condensates remain clean and separated – even explosive media can be processed safely. The compact, vertical design also allows for space-saving integration into existing systems.



VarioVAP operating principle: Multi-source system with plate falling-film evaporator and multi-stage compressor system

ADVANTAGES

- **Cost savings through reduced resource consumption** – less fossil energy and cooling water
- **Lower CO_2 footprint**
- **Centralized waste heat utilization** – one system for multiple sources
- **Zero Waste Heat** for maximum energy efficiency
- **High flexibility** – scalable and fail-safe
- **Compact design**, easy to retrofit and low maintenance

Application areas

The VarioVAP system is ideally suited for environments with multiple waste heat streams:

Industrial Plants: Especially effective in sectors involving thermal separation processes such as distillation, evaporation or drying – for example, in the chemical, food, pulp, paper or metal industries.

Industrial Parks: Joint utilization of diverse waste heat streams from multiple facilities, either for reintegration into internal processes or for feeding into district heating networks.

GIG Karasek manufactures its evaporators and heating elements in Austria. © GIG Karasek

Why GIG Karasek?

Our extensive expertise in plant engineering, thermal technology and forward-looking environmental solutions makes us a strong partner for sustainable process optimization. Whether as a stand-alone solution or an integrated system, we return your waste heat back into the process – efficiently, safely and sustainably.

Our services:

- Design and engineering of customized systems
- Manufacturing and delivery
- Integration into existing processes
- Optional: Flash tank systems for liquid media
- Installation, commissioning, maintenance and after-sales service

Maximum energy from waste heat – with VarioVAP for industrial plants and parks.

Interested in VarioVAP?

Get in touch with us:
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We develop ◆ efficient ◆ competent ◆ cooperative ◆ proactive ◆ goal-oriented ◆ reliable customized process solutions and systems according to your requirements.

Regardless of the scope of services, our aim is to optimize your production facilities with tailor-made solutions in terms of product quality and processes. Where other companies reach their limits, we find ways to process your material flows by combining various process steps that have been developed over decades. A high level of expertise and personal all-round service make GIG Karasek your reliable partner for unique challenges.

TÜV AUSTRIA ZERTIFIZIERT
TÜV AUSTRIA CERT GMBH
EN ISO 9001
2010032000252
ISO 45001
20116203007066

Hersteller zertifiziert
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EN 1090-1
EN ISO 3834-2

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