

PILLER VAPOFLEX – ENGINEERED-TO-ORDER

Piller Blowers & Compressors, the leader in Mechanical Vapor Recompression (MVR) presents the PILLER VapoFlex, a product of our VapoLine.

The PILLER VapoFlex concept is highly unique with one hundred percent variability. Each unit is Engineered-To-Order for a wide range of customization options. The possibilities for our design and manufacturing of a VapoFlex are nearly limitless.

With broad capabilities we provide a wide variety of options in the mass flow range of up to 250,000 kg/h with a temperature rise of 11 K per stage.

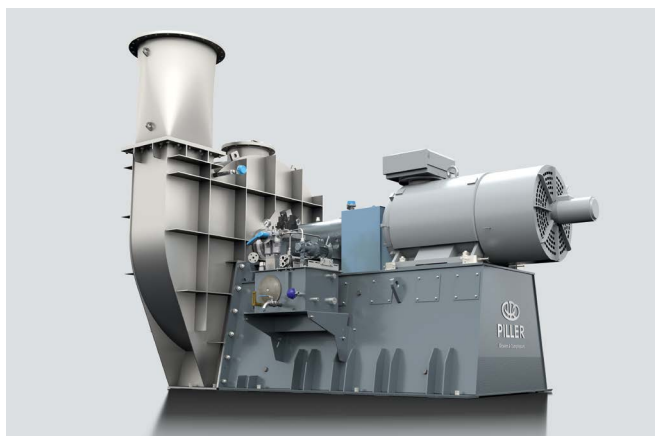
KEY FEATURES OF THE PILLER VAPOFLEX

Design Features

- Easy-to-install and effortless to use: simply bolt it down, plug it in, and start operating immediately
- 150 different impeller types for a wide range of variability
- Impeller tip speed up to 330 m/s
- Impeller material: Duplex 1.4462, SuperDuplex 1.4501
- Various shaft seal concepts ensure operation in high vacuum and overpressure applications
- Equipped with monitoring instruments for reliable operation
- Possibility for installation in hazardous areas

Our VapoFlex at a glance:

- Efficiency of up to 87 percent
- Designed for applications with mass flows up to 250,000 kg/h
- Ideal solution for any steam compression with system pressures up to 8 bar(g)
- Engineered-To-Order (ETO)
- For optimizing existing plant operations or processes, as well as for implementing in new installations

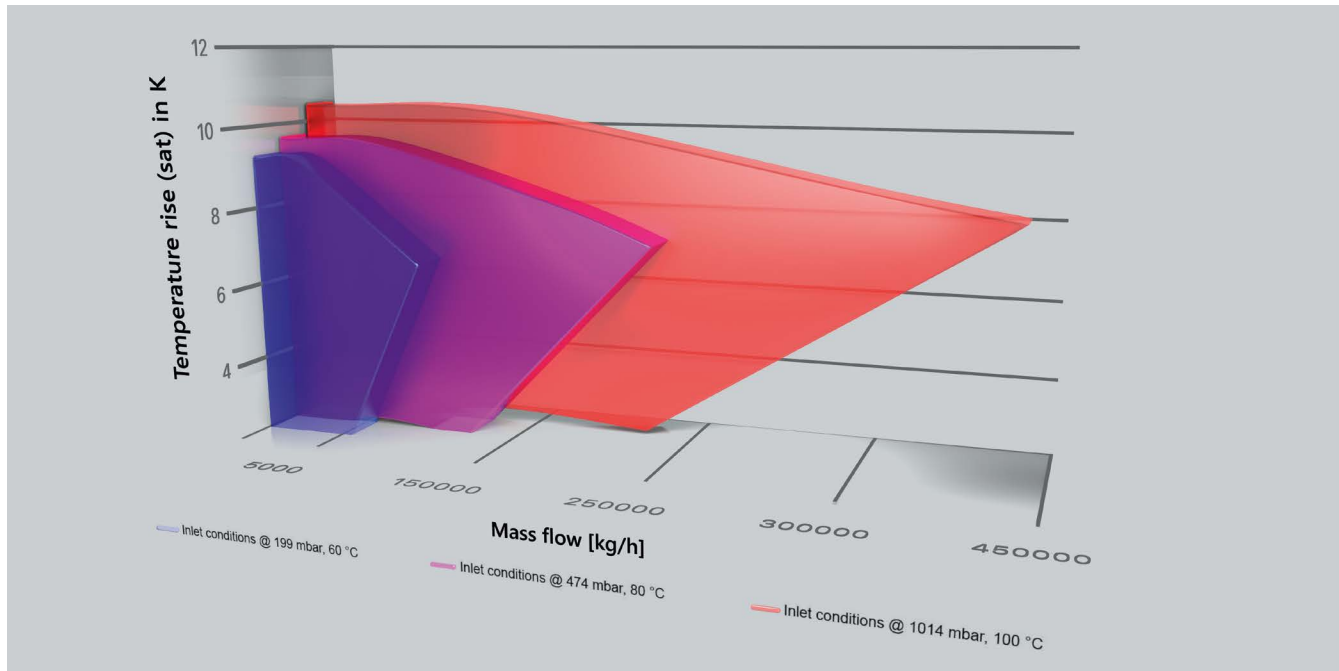


VapoFlex – Engineered-to-Order (ETO)

The Drive Concept

- Our patented squeeze oil bearing combines the simplicity of anti-friction bearings with the performance of hydrodynamic bearings
- VFD (Variable Frequency Drive) or D.O.L (Direct On Line, with inlet guide vane operation)
- Electric motors or steam turbines, according to customer specifications and technical requirements
- Motor capacity up to 6 MW

PERFORMANCE SUMMARY OF OUR VAPOFLEX PRODUCT RANGE



MAXIMIZE YOUR PROCESS PERFORMANCE

To find the ideal match for your process conditions we customize impellers, housings, materials, and bearings to accommodate the desired volume flow, required pressure and temperature rise for the ideal solution for your process requirements. Our customized VapoFlex are designed to support the reduction of operating costs and increase the lifetime of your plant.



Vapor Compression Heat Pump Technology: Vapor Compression with serial connection of eight VapoFlex

ETHANOL COMPRESSION WITH 8 VAPOFLEX:
A SAMPLE PROJECT

Inlet conditions	Outlet conditions	ΔT sat
53 °C, 340 mbar(a)	107 °C, 2900 mbar(a)	54 °C

Inlet mass flow	Outlet mass flow	Electrical power
60,000 kg/h (line 1)	67,500 kg/h (line 1)	3760 kW (line 1)
37,000 kg/h (line 2)	41,500 kg/h (line 2)	2310 kW (line 2)

Facts and figures

- 8 stages
- More than 60 t/h in one train
- Temperature rise of 54 °C
- Compression ratio of 9
- COP of 4.6
- 32 MW gas savings
- Cuts the plant's energy needs in 50 %

In this project, ethanol vapors were compressed in a 7-stage VapoFlex compression system to generate steam at a higher temperature level. An additional VapoFlex was used to boost a small portion of the compressed ethanol vapors to an even higher pressure level. This allows the vapors to be used in the downstream dehydration process. Our VapoFlex compression system achieved a significant reduction of 4.4 million euros in end energy costs and 50,000 tons of CO₂ emissions per year. Additionally, our solution also offers a short payback period of just 2.5 years, making it a smart investment.

Visit our website to find worldwide sales & service contacts

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Get more information

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