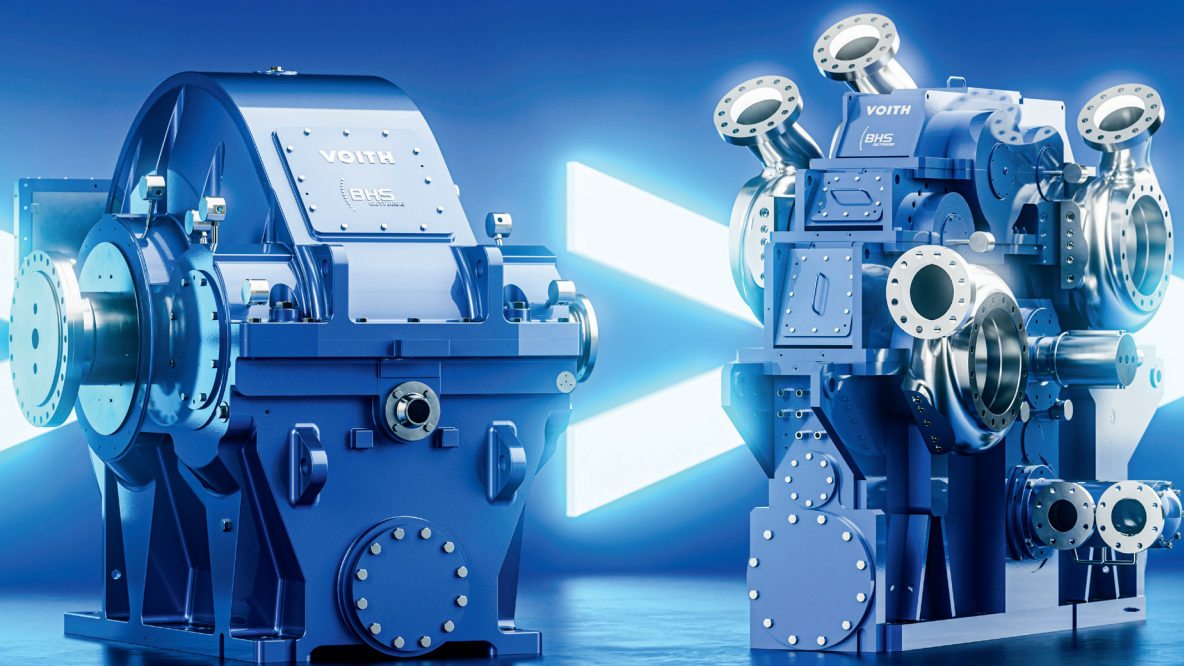


# Reach highest efficiency Voith BHS PerformanceLine





# Dedicated portfolio for efficient operations

As a comprehensive new concept that focuses on efficiency, Voith BHS PerformanceLine features a variety of components such as bearings and housings. It is available for parallel shaft gears (PSGs) and integral gears (IGs), with further options set to be unveiled in the future.

Not only has this technology been validated on Voith's own high-performance test bench, it is easy to retrofit on Voith gears and is maintenance-friendly. Rising energy prices and the objective of reducing CO<sub>2</sub> emissions make optimized efficiency essential. Voith BHS gearboxes target the highest efficiency on the market.

Voith BHS PerformanceLine is tailored to your individual setup to deliver economical performance, operational efficiency, substantial CO<sub>2</sub> savings and a swift return on investment (ROI).

Inner housing and bearing  
combine for up to

# 27%

more efficient operations

Delivers fast

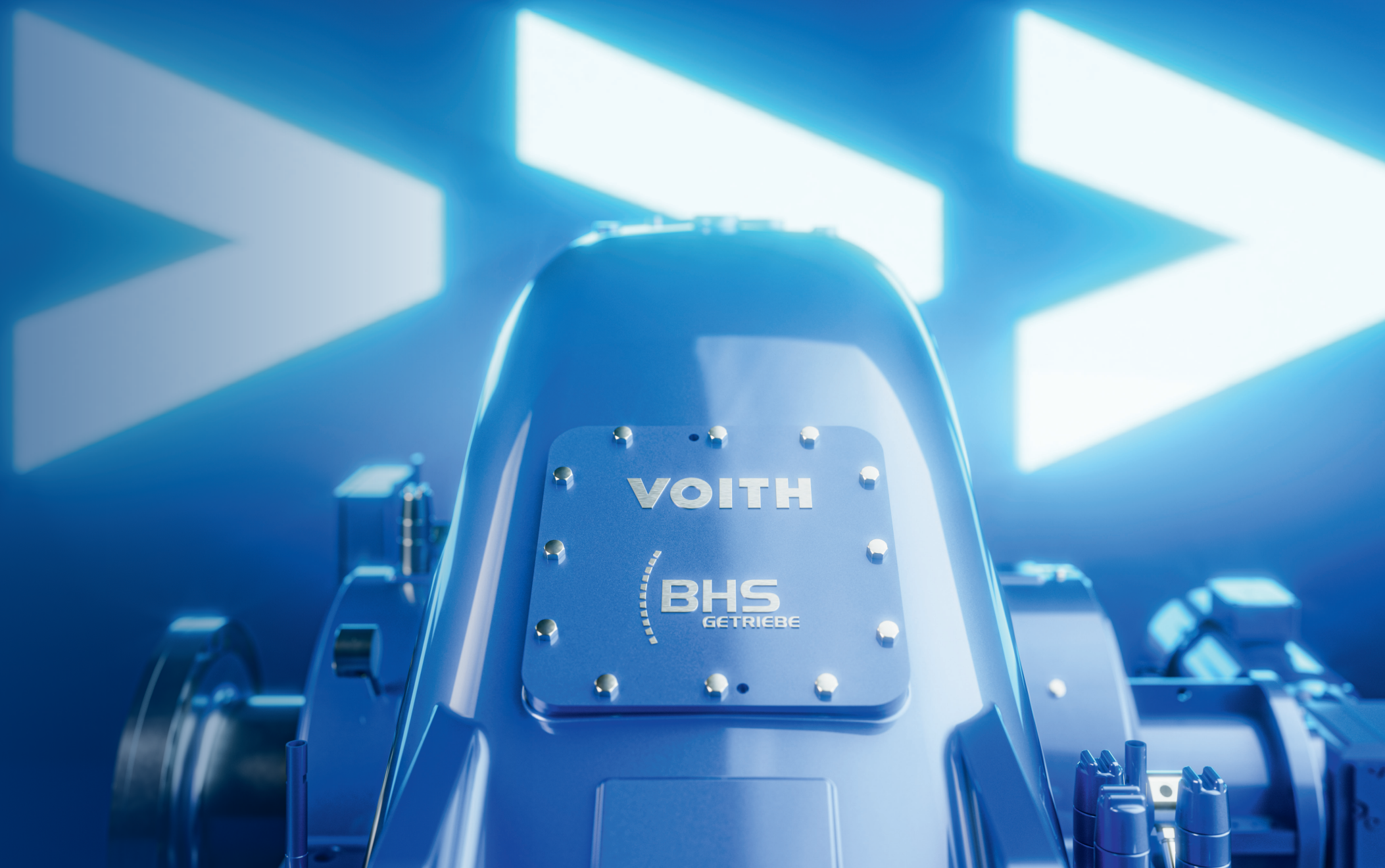
# ROI

CO<sub>2</sub> ↓  
footprint down

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Voith BHS PerformanceLine is a new phase of cross-product optimization within the BHS turbo gear portfolio. The key goal: to deliver increased efficiency.

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# Integral gear unit

## Tilting pad journal bearing

This tilting pad journal bearing has been developed and designed by Voith especially for integral gear units. It is able to significantly reduce power losses by as much as 25%. In addition, its exceptional damping properties expand the scope of potential applications to include integral gears with a demanding rotordynamic layout.

Not only does the tilting pad journal bearing reduce bearing oil consumption by up to 15%, its efficiency gains shrink its carbon footprint and deliver lower operating expenses (OPEX).

### Smooth operation and easy to retrofit

The tilting pad journal bearing improves the overall efficiency of the drivetrain. Featuring the same nominal interface diameter as standard bearings, it ensures easier upgrades and retrofits without any need for gearbox adjustments. A rotor dynamics check is required prior to retrofit.

Ensure smooth and efficient equipment operation with minimized downtime and maintenance costs. A durable performer, the tilting pad journal bearing provides long-term benefits and savings.

### Example for gearbox WGC4-170

Significant 22% reduction in power losses compared to standard tilting pad bearings (46 kW)

Oil savings of 15% compared to standard tilting pad bearings (59 l/min)



Annual reduction in CO<sub>2</sub> emissions: ~ **84.6 tons\***

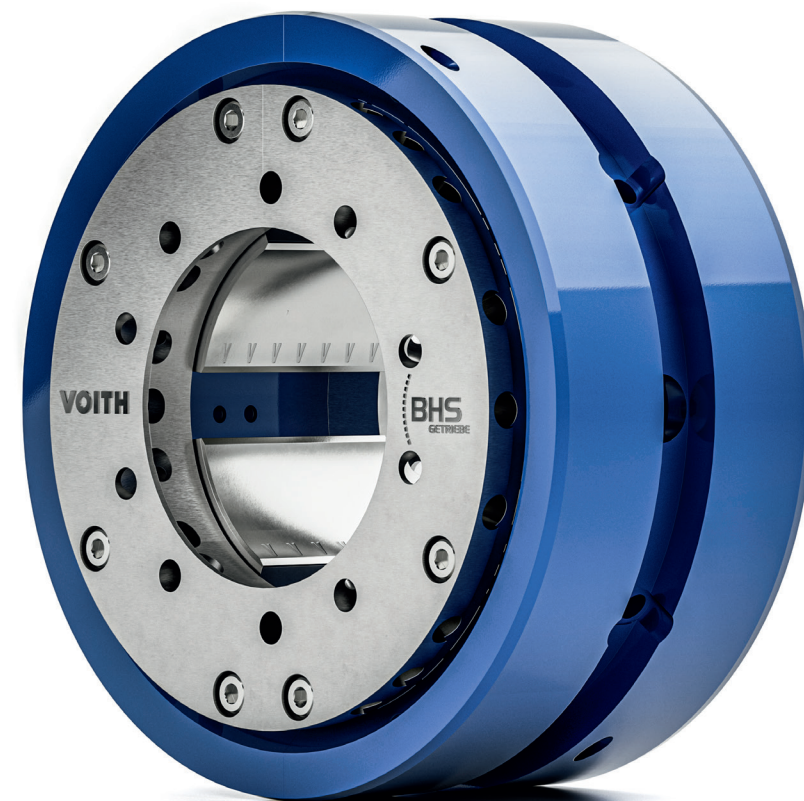
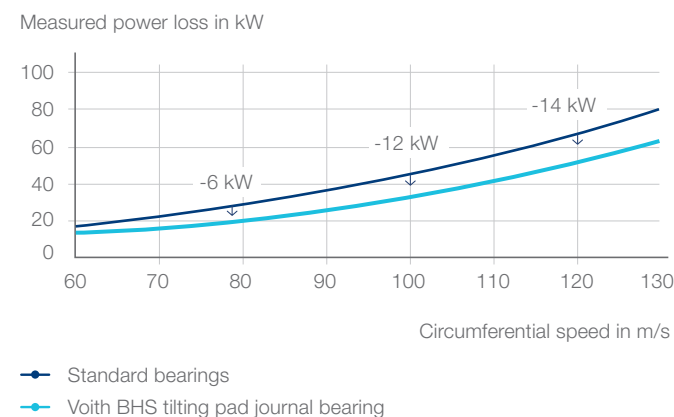


Annual electrical savings: ~ **€55,200\***

\*Calculation based on 0.23 kg of CO<sub>2</sub>/kWh,  
€150/MWh and 8,000 h

### Comparison of standard bearings and Voith tilting pad journal bearing with a nominal diameter of 100 mm

The new tilting pad journal bearing successfully reduces power losses. It was developed by Voith in collaboration with the Institute of Tribology at Clausthal University of Technology, a world leader in research on this topic.



Up to

**25%**  
lower power losses

**15%**  
lower oil consumption

**130 m/s**  
circumferential speed

Lower ↓

**OPEX**

Easy  
**retrofit**

# Integral gear unit

## Inner housing

Voith has developed a maintenance-free inner housing that is specifically optimized for the geometrical requirements of an integral gear. This robust solution supports circumferential gear speeds of up to 200 m/s and achieves a substantial reduction in power losses. Its purely passive operation means it is maintenance-free and there are no additional interfaces to the system operator.

The inner housing is optimally adapted to each project so as to achieve the best possible savings.


### Simple, compatible, accessible


The inner housing does not impair the availability of the gear or the system as a whole, preventing issues that could lead to expensive periods of downtime. Its lower section always remains present in the gear housing. Since only the upper part needs to be raised for disassembly, this reduces the corresponding workload.



### Greater operational efficiency


Compared to a final drive unit without an inner housing, the inner housing can:


 Reduce ventilation-related power losses by **30%**

 At a circumferential speed of up to **200 m/s**

### Example for inner housing WGC3-210

29% reduction in ventilation losses compared to gearbox without inner housing (31 kW)

 Annual reduction in CO<sub>2</sub> emissions: **~ 57 tons\***  
\*Calculation based on 0.23 kg of CO<sub>2</sub>/kWh and €150/MWh

 Annual electrical savings: **~ €37,200\***  
\*Calculation based on 0.23 kg of CO<sub>2</sub>/kWh and €150/MWh

Up to

# 30%

lower ventilation losses

Lower ↓

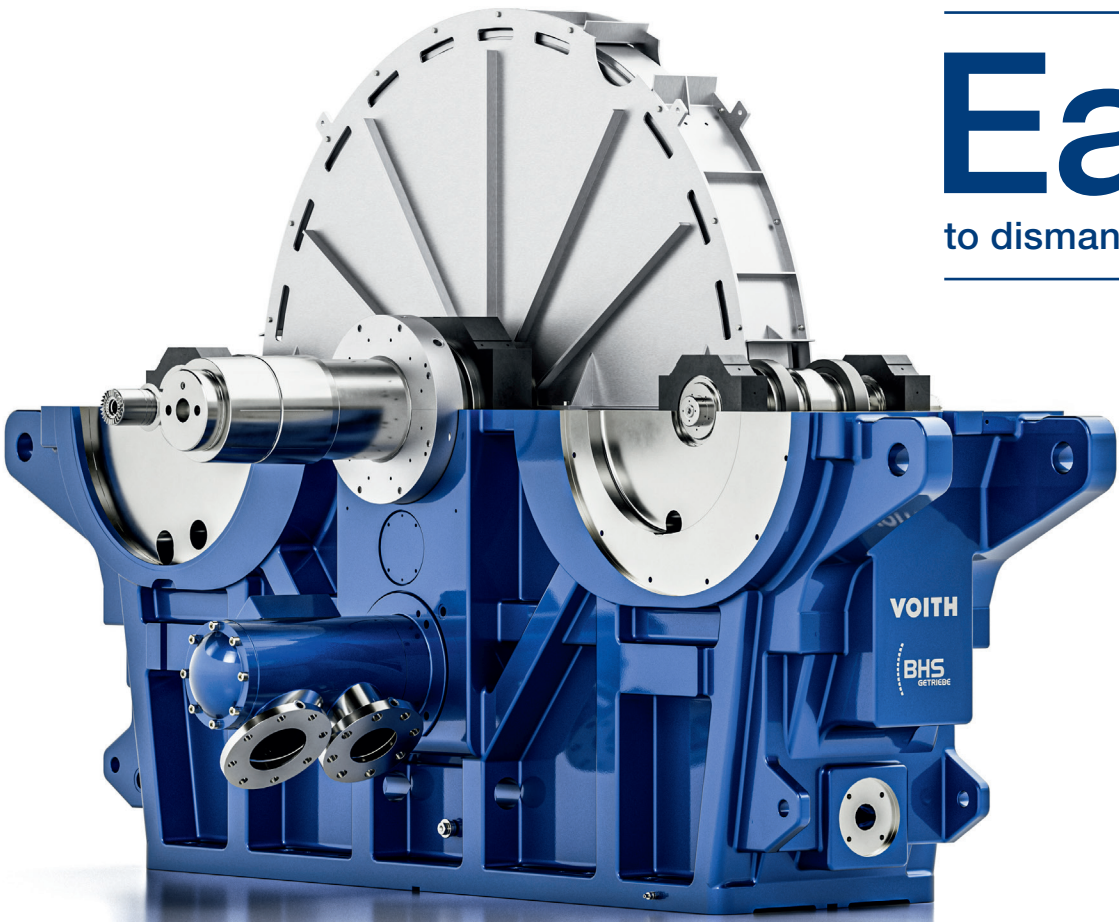
# OPEX

# Zero

maintenance

# Easy

to dismantle





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