

Efficiency to the MaXX Retrofit with the BHS AeroMaXX



Our Service—
Part of Your
Business.

Reliable technology for increased efficiency

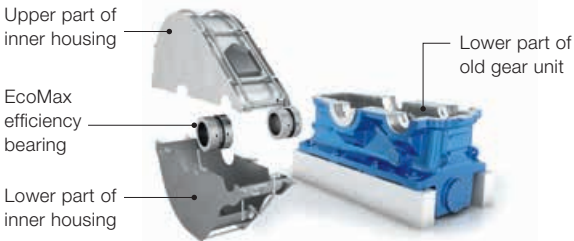
There are various options available on the market which allow you, as a system operator, to increase the efficiency of your gear unit within the drive train. All drive train efficiency increasing solutions have certain aspects in common: they are complicated, expensive and are often unreliable. Voith is different!

What is the BHS AeroMaXX?

The Voith BHS AeroMaXX is a purely passive mechanical solution comprising of optimized sleeve bearings as well as an inner housing for the gear set which separates the oil for heat dissipation from the lube oil for the gearing. This makes it possible to achieve a total reduction in efficiency losses of up to 30 % and oil requirements can also be brought down by 30 %.

This option is not only available for new gear units, but also as a retrofit solution for turbo gear units already in operation. Also it is simple, fast and reliable! Externally, a gear unit that has been retrofitted does not change in appearance – the connection dimensions, as well as operating behavior, remain verifiably unchanged.

Design of AeroMaXX



Advantages and benefits of a retrofit with the BHS AeroMaXX

+ Attractive prices and a short payback period

In combination with a pending standard overhaul of your turbo gear unit it is now possible for you, as a system operator, to obtain this technology and the required labor at particularly attractive prices. The break-even point can be reached in as little as two to three years.

+ A short time period is required

Thanks to thorough preparation, well-coordinated procedures and a generally low scope of effort, a complete retrofit of the gear unit can be achieved within the timeframe of a regular drive line maintenance shut down.

+ Warranty

Since Voith provides the entire scope of services from a single source, you can count on receiving the highest level of quality. We offer the user a warranty period of 12 months on functionality and materials, starting from the time of commissioning. In the unlikely event of a problem, please contact us.

When is a BHS AeroMaXX retrofit recommendable and feasible?

- **High circumferential speeds and transmission performance**

In general, installation is recommendable for gear units with a pitch line velocity at the gearing of more than 80 m/s or a bearing circumferential speed in excess of 50 m/s. In these cases, the power should be at least 10 MW in order to ensure economic efficiency and achieve a short payback period.

- **Suitable applications**

The above parameters apply primarily to gear unit applications for power generation, using gas or steam turbines. Parameters also apply to gas or steam turbine-driven compressors and, to a lesser degree, to electrically-driven compressors.

- **Sufficient installation space**

To install the inner housing, a minimum lateral clearance of 60 mm from the gearing to the internal edge of the housing is required. It should be noted that amended regulations (for example, previously AGMA421 and now AGMA6011) or improved material properties can make it possible to use a narrower gear train.

Fig. 1: Time required for a retrofit



Your needs met with Voith retrofit options

Keeping costs as low as possible in the shortest time frame, is what a Voith BHS retrofit will achieve. The retrofitting proposed can be undertaken on any turbo gearbox, i.e. irrespective of the manufacturer brand, in an average time period of 90 days (refer to Fig. 1).

To begin, an initial first assessment is required. Suitability in terms of the power and speed of the turbo gear will provide an indication on the savings potential. When another brand of gearbox is in use, the required installation space needs to be established. Two options are available in this instance (refer to Fig. 2):

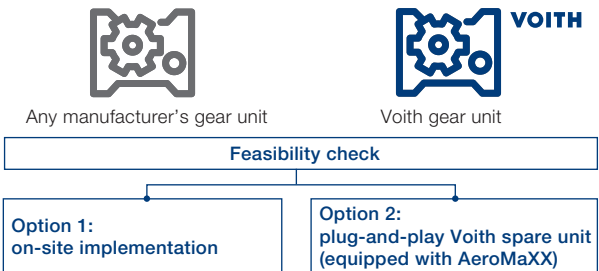
- **An on-site retrofit:**

With a focus on high precision and cleanliness, a bearing and inner housing retrofit is carried out by qualified Voith personnel, usually during a regular shutdown. When a retrofit is combined with a gear unit overhaul, the most is made out of the time period. Optionally, a spare parts package can also be supplied and installed.

- **A plug-and-play retrofit:**

If retrofitting is not possible with the existing gear, e.g. insufficient space, a new gear unit containing AeroMaXX can be installed as a replacement. The previous gear unit can then be used as an emergency spare unit. This option is quicker than an on-site retrofit.

Fig. 2: Retrofit concepts



To further access your needs, we would be happy to visit you directly on site.

You can also find more information in the separate BHS AeroMaXX brochure and at:

www.voith.com/bhsaeromaxx

An approximate calculation can be made there to calculate your efficiency gain and savings.



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