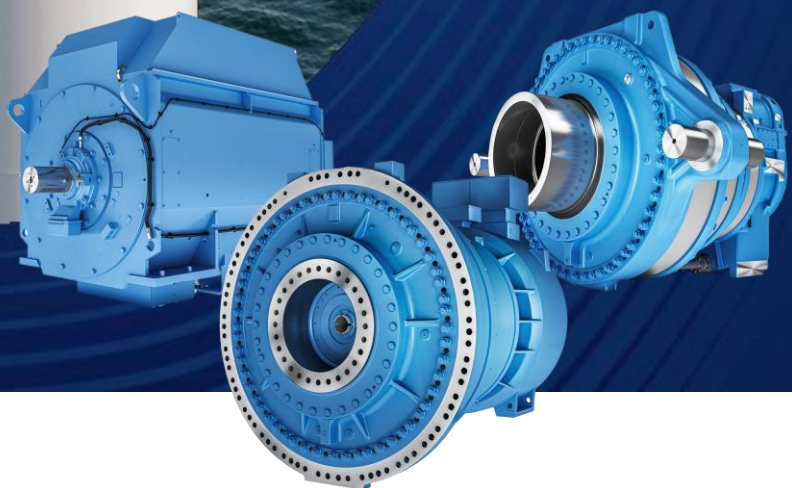


Winergy Training Program



Welcome to the training program at Winergy



At our Winergy training center located in Voerde, Germany, we can offer different types of trainings to you. If it is an endoscopic training or a practical gearbox training, that includes the change of different parts – you can learn all this at one of our three training gearboxes.

At our Winergy training center located in Ruhstorf, Germany, you can learn more about generators. Independent if an investigation training or a practical generator training for changing parts is wanted – these topics will be trained on real generators.



Our training concepts are designed in a way, that they show the works on the turbine as realistic as possible. For this you'll get additional assistance by our extensive working manuals, that will be handed out to you at the end of the training together with a certificate of attendance.

Contact for Gearbox training requests:

Sabrina Strunz
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Mail: sabrina.strunz@flender.com

Contact for Generator training requests:

Christoph Weiß
Tel.: +49 (0) 173 57 15 803
Mail: weisschristoph@flender.com

Theoretical part:

- Introducing the Winergy Original Service
- Design of a wind gearbox
- Lubrication principles within a wind gearbox
 - *Forced lubrication within the planetary stage*
 - *Splash lubrication within the planetary stage*
 - *Flow of oil within the helical stage*
- Possible damages of geared parts
 - *Pictures of damages & definition*
 - *Damage report*
- Possible bearing damages
 - *Pictures of damages & definition*
- Endoscopic inspection (theoretical)
 - *Preparations*
 - *Inspection of geared parts*
 - *Inspection of bearings*
- The endoscope
 - *Overview*
 - *Controls*
 - *Which parts are possible to inspect ?*
 - *Saving the damage pictures*
 - *Naming the pictures – Planetary stage*
 - *Naming the pictures – Helical stage*

Practical part:

- Endoscopic inspection (practical)
- Outer parts of the gearbox
- Maintenance of the gearbox



Notes:

- If you got your own endoscope, you can bring it to the training
- The training also includes a factory tour on the first day
- A combined training (endoscopic & gearbox training) is possible. Please ask for more information.

Theoretical part:

- Introducing the Winergy Original Service
- Design of a wind gearbox
- Handling the up-tower-tools
- Crane instruction



Practical part:

Option 1: Gearbox PZAB 3541

- Change of the HSS-pinion
- Change of the HSS-bearings
- Pitch pipe (Theoretical)

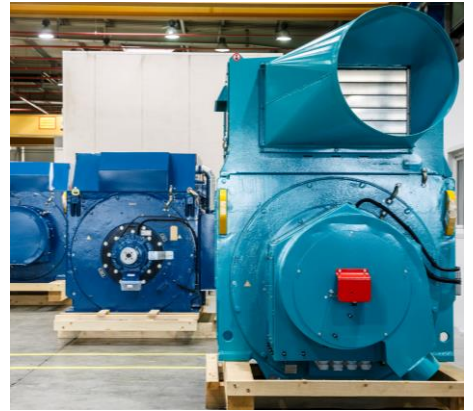
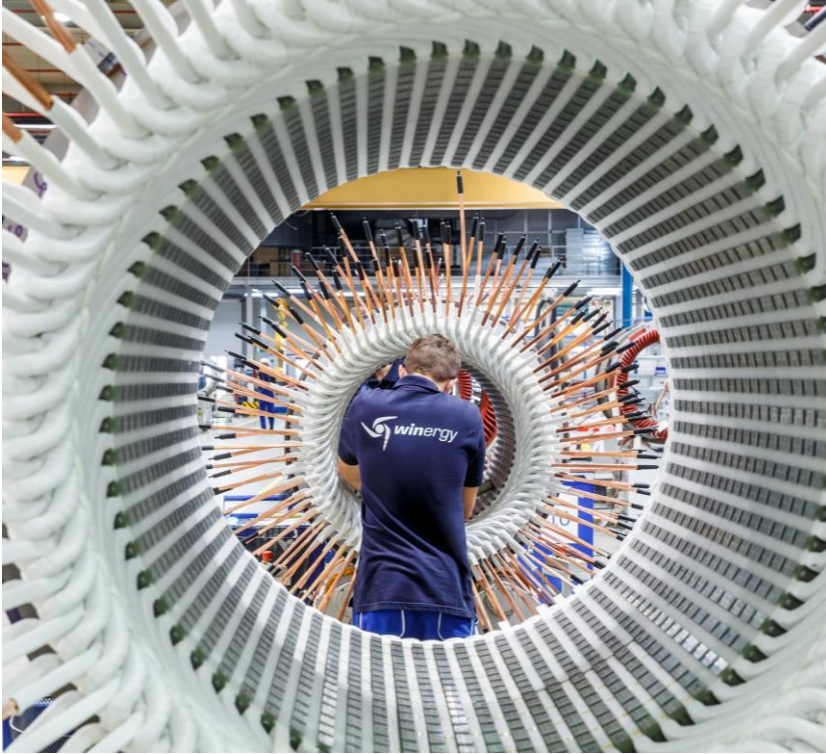
Option 2: Gearbox PEAB 4435

- Change of the HSS-pinion
- Change of the HSS-bearings
- Change of the GS-IMS-bearing



Notes:

- The training also includes a factory tour on the first day
- A combined training (endoscopic & gearbox training) is possible. Please ask for more information.



Practical part:

- Investigation inspection (practical)
- Auxiliary parts of the generator
- Maintenance of the generator



Notes:

- The training also includes a factory tour at the first day
- A combination with other trainings in one go is possible. Don't hesitate to contact us for more information.

Theoretical part:

- Introducing the Winergy Service
- Design of a wind generator
- Handling the up-tower-tools
- Crane instruction



Practical part:

Option 1: Asynchronous Double fed induction generator

- Change of bearings
- Change of slip ring



Option 2: Asynchronous induction generator

- Change of bearings

Option 3: Synchronous Permanent magnet generator

- Change of bearings



Notes:

- The training also includes a factory tour at the first day
- A combination with other trainings in one go is possible. Don't hesitate to contact us for more details.



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