

WATT special gear unit with 14,000 Nm for high-end cable winders/unwinders

In the production of large power cables, cable drums of 2000 mm to 4000 mm in diameter are used, depending on the design and diameter of the cables. The total weight of these cable drums can be up to 20 tons. An important part of these units is the winding drive unit. The drive unit developed by Watt Drive permits the geared drive shaft to be used as a centre sleeve shaft at the same time, which means that additional storage can be dispensed with.

The Rosendahl Maschinen GmbH company with its headquarters in A-8212 Pischelsdorf, Austria develops and produces high-end machines and systems for the international glass fibre, wire and cable industry.

A developmental goal or target of the Rosendahl company was a series of winders and unwinders (RWH 10 – RWH 20) with load capacities of 10, 16 and 20 tons as well as the corresponding drum diameters. The winders and unwinders are designed as “suspended winders”, similar to an overhead crane with a trolley.

An important part of this system is the winder drive unit (see figure 1). This winder drive unit was developed in collaboration with Watt Drive and implemented to meet customer requirements.

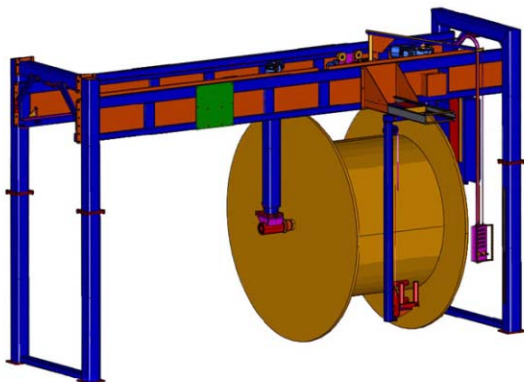


Fig. 1: Schematic diagram of a gantry winder

By combining different gear reductions with different drive outputs (11 and 15 kW motors), all applications can be realised using the same drive unit each time. The advantage here is the gear housing which always remains the same, and the geared drive shaft which can be used as a centre sleeve.

Cable drums of different sizes are used depending on the production line. The winder hoisting gear has been developed to allow various size ranges to be covered.

A significant advantage of this winder is that the individual modules, such as the hoisting units, and the width setting are always the same and can therefore be produced in greater volumes for warehousing. This flexible modular system means that shorter delivery times can be provided for customers.



Drive unit data:

- Output: 15 kW
- Drive speed: 16 rpm
- Output Torque: 8950 Nm

The gear unit is a 4-stage helical bevel gear unit with 14,000 Nm nominal torque. The housing is manufactured from ductile iron due to the extremely high lateral forces, and the drive shaft bearing is designed using spherical roller bearings.



Centre sleeve shaft

Fig. 2: Winder drive unit
KK 136A 161L4 BR150 IG FLTH

Motor design: (Figure 3)

- Incremental position encoder (-IG): HTL, 1024 imp/rot.
- Brake (-BR): 150 Nm
- Forced cooling (-FL)
- Thermal element (-TH)
- Protection rating/insulation class: IP55/F

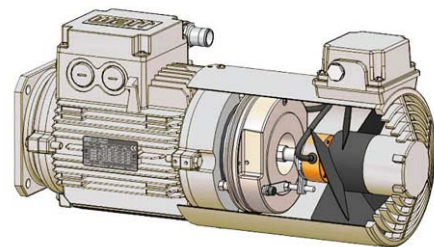


Fig. 3: WATT EUSAS system motor

Customer benefits thanks to the WATT drive unit:

- Gear housing can be used universally for all winder sizes
- Drive shaft can be used as centre sleeve shaft
- Ductile iron housing with robust bearing for absorbing the significant radial forces

For more information on the Watt product range, please visit our website at www.wattdrive.com.