Voith launches new VECO-Drive: Most Efficient Variable Speed Drive for Compressor Pumps

- Peak component efficiency of 97 percent saves energy costs
- Easy motor start protects the grid from high inrush currents
- Smaller main motor rating saves capital expenditures

Crailsheim, Germany: Voith introduces the first member of a new product family in the field of speed control for compress pumps: the VECO-Drive. It is an electric superimposing gear and is inspired by the established principle of the Voith Vorec more than 600 installations. The VECO-Drive combines a mechanical planetary gear with frequency-controlled servo mote electrical superimposing gear is the most efficient way to make speed variable. Servo motors are used to drive a planetary Since they only need a small part of rated power, an overall component efficiency of more than 97 percent is reached. This valuable energy and reduces operating expenditures every day.

The VECO-Drive is installed between a constant speed motor and a variable speed compressor or pump. With the new VE Drive, Voith combines the reliability of mechanical gears with the outstanding productivity of low voltage VFDs. Since addid power is supplied to the drive train, a smaller main motor can be used. This saves capital expenditures. Moreover, the ser can be used as a starter to protect the electric grid from high inrush currents.

For the functional demonstration of the VECO-Drive, a prototype system was built and tested in Crailsheim, Germany, in 2 Voith engineers designed the system for compressor and pump applications with a maximum output speed of 15,000 rpm, maximum output power of 15 MW and a speed adjustment range from 50 to 100 percent. Compared to a typical full-scale voltage VFD train with a step-up gearbox, the measured system efficiency of a VECO-Drive is about two percent higher or whole speed range. Thus, the VECO-Drive system reduces annual energy consumption by more than 2,000 MWh compar comparable VFD system. With a typical energy cost of 50 EUR/MWh, these energy savings result in cost reductions of mc EUR 100,000 per year.

As a matter of principle, the VECO-Drive is designed as a modular system and thus offers individual specifications for different application types, classes of explosion protection and speed levels. Advanced functions like the integrated PLC-based out controller, user interfaces, condition monitoring and simplified maintenance are part of the scope of supply, whereas remo and remote diagnosis are available on demand.