

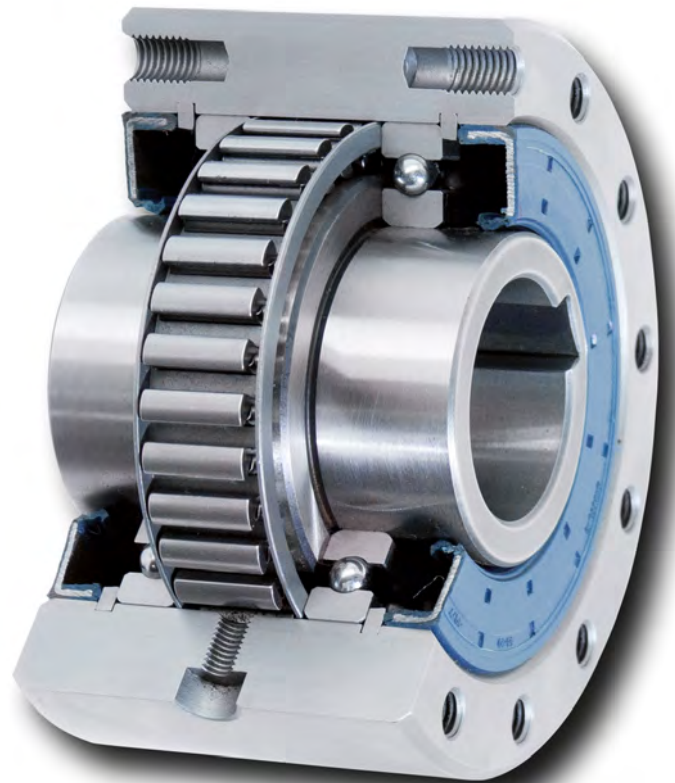
Greater sustainability in the powertrain

Worldwide, RINGSPANN freewheels are used in the propulsion systems of ships, harbour cranes and hydro, offshore and mining engineering, among other things. Specially tailored to the strict environmental regulations in these seawater and groundwater-related application areas, the company now supplies all freewheel series with biodegradable lubricants at the customer's request. This offers designers even more leeway for the realisation of sustainable drives, gears and hoists.

Minimising the ecological footprint of technical systems and improving the life cycle assessments of complex drive systems has long been one of the requirements that designers and development engineers must keep in mind when realising competitive drives, gears and hoists. The use of environmentally friendly and sustainable drive units is becoming increasingly important, especially in shipbuilding, in the manufacture of harbour cranes and in offshore, hydro and mining technology. RINGSPANN has therefore carried out an extensive series of tests in recent months, focusing on the use of biocompatible lubricants for freewheels. The result is now clear: From now on, the company is in a position to provide its customers with any freewheel type from its one-stop shop in addition to the standard version as a variant with a biodegradable lubricant. "In this way, we are significantly expanding the scope of action of the designers of drive trains in contact with seawater and groundwater – regardless of whether they use our freewheels for indexing or overrunning functions or as backstops," says Manuel Assmann, freewheel specialist at RINGSPANN.



Manuel Assmann
Engineering Freewheels
at RINGSPANN GmbH



Same price for the same performance

It is noteworthy that RINGSPANN freewheels with environmentally friendly lubricants are absolutely identical in construction to conventionally lubricated versions, that they have the same performance capacity and that they do not differ in price from the standard types. "Since all parameters remain identical except for the use of biocompatible lubricants, a problem-free 1:1 replacement of the freewheels can also be carried out during re-engineering, retrofitting or maintenance - without compromising on performance and with full cost transparency," emphasises Manuel Assmann.

To achieve this result, the freewheel experts at RINGSPANN tested various bio-lubricants in a specially built test stand and compared their performance data with that of conventional oils and greases. For example, several sealed complete sprag freewheels with ball bearings in the FB/FBE series, which is in use worldwide, were filled differently and subjected to a long-term test. Important: in the freewheel direction, the inner ring of these freewheels can be twisted towards the outer ring. In the opposite direction, however, the inner and outer rings form a force-fit connection

Ready-to-install and sustainable

RINGSPANN is the world market leader in the field of freewheel technology. The complete freewheels of the FB and FBE series mentioned in the text are ready-to-install sprag freewheels. They are available for nominal torques of up to 160,000 Nm and are suitable for indexing and overrun functions as well as for use as backstops. They are ball bearing mounted, sealed, filled with lubricant and supplied ready for assembly, and are used, for example, in the implementation of hybrid boat drives. Filled with biodegradable lubricants, they are an ideal solution for the realisation of drive trains near seawater and groundwater in shipbuilding and crane construction, as well as in offshore, hydro and mining technology.



through the sprags. This creates high radial forces between the raceways and sprags – and the lubricants. Loaded with a nominal torque of 200 Nm, the complete freewheels had to cope with a switching frequency of 4.5 strokes per second in the RINGSPANN test stand at all times. "In this typical scenario, the wheat was quickly separated from the chaff, and we were able to clearly see which biocompatible lubricants meet our quality standards," reports Manuel Assmann.

"Contemporary alternative"

With the option of now being able to provide all freewheels in its extensive portfolio with biodegradable lubricants, RINGSPANN is making a valuable contribution to the implementation of the sustainability concepts envisaged in many places in drive technology. As mentioned, in addition to designers in boat and yacht building, as well as crane construction, manufacturers of drive systems for hydropower, offshore and mining systems are likely to benefit from this. In addition, RINGSPANN freewheels with environmentally friendly lubricants are also likely to prove to be an ideal solution for the implementation of marine and submarine facilities – such as current power plants or lock systems. "Our biocompatible freewheel technology is a contemporary alternative in terms of sustainability wherever drive trains can come into contact with seawater or groundwater and the legislator prohibits or restricts the use of conventional lubricants," says Manuel Assmann. <<

