

Pull of magnetic drive

Pres-Vac, the Danish company known for its tank venting systems, has recently added a cargo pump line to its product portfolio. The lead unit in this pump range is the EL-CHEM deepwell pump for chemical tankers, the most notable feature of which is the sealless drive system based on a magnetic coupling.

This approach was taken to overcome the problem of excessive wear and tear of shaft bearings and seals and to obviate the risk of oil contaminating the cargo. The so-called MAG-drive on the new Pres-Vac EL-CHEM pump replaces the traditional shaft coupling with a magnetically coupled configuration in which magnetic forces pass through the can and drive the inner rotor.

"The design of the EL-CHEM pump is based on computational fluid dynamics, resulting in the most modern technology commercially available today," states Eric Sorensen, Pres-Vac's managing director.

EL-CHEM is an electrically driven cargo pump that operates at relatively low speeds, i.e. in the 1,400-1,700 rpm range and that would be typically supplied as multistage units, although a single-stage variation is available. It is designed for use with chemical and product tankers, including the smaller coastal tanker and inland barge configurations of these ships.

The magnetic drive ensures contact-free torque transmission which, in combination with the relatively slow running speed, serves to reduce maintenance costs and increase service life.

Pres-Vac have been working on the project for four years and an essential part of the development work was the installation of a test EL-CHEM pump on the chemical tanker Marianne Theresa several years ago. That pump has recorded a trouble-free performance and, more recently, full shipsets of EL-CHEM pumps have been specified for five new chemical tankers on a one pump-per-cargo tank basis. The first of these ships has now been in service for almost a year and, again, the pumps have performed without a problem. The last of the five new chemical tankers is due for delivery shortly.

Pres-Vac has also developed a new deepwell cargo pump for use on LPG carriers. Because this multistage unit, which is called the EL-GAS, relies on the cargo itself to lubricate the bearings, it does not utilise the magnetic drive arrangement of the EL-CHEM.