



The new shhark and shhark continuum gear pumps by Turolla feature a special gear design that delivers noise reductions of 4 and 15 dB(A), respectively, for the two new pumps.

TAKING A BITE OUT OF NOISE

Turolla launches new low-noise/no-noise shhark gear pumps for wide range of machine applications

BY ROBERTA PRANDI

Turolla, a stand-alone business of Danfoss Power Solutions, has launched two new low-noise gear pumps that represent a first for the company in that they are the first low-noise products in the Turolla range. The Turolla shhark pump line covers three models with an overall displacement range of 1.0 to 90 cc/rev, while the Turolla shhark continuum pump line consists of six pumps offering a displacement range of 4.0 to 200 cc/rev (see related chart).

Massimo Dovesi, Turolla's Global Sales & Marketing director, said that the introduction is a milestone for its company and goes hand in hand with a new corporate identity and aggressive plans for the future.

"The new Turolla shhark gear pump features a simple but sophisticated design that delivers a 4 dB(A) noise reduction compared to conventional

gear pumps on the market," Dovesi said. "Our company has an exclusive patent for the gear design that defines a new standard in quiet gear pumps."

Dovesi explained that low-noise gear pumps usually incorporate dual-contact technology — also known as zero-backlash — to achieve noise reduction targets. However, a potential drawback is that the gear teeth are subject to wear, which in the long run can compromise the pump's noise performance.

"The new technology that Turolla patented, eliminates this problem," Dovesi said. "The special profile of the shhark's tooth ensures that the low noise level and maximum pump performance are maintained even after many hours in heavy-duty operation."

According to Turolla, the new pump is ideal for applications such as tractors, indoor lift trucks, aerial platforms, construction equipment and

material handling machinery, as well as in general, applications requiring low noise and high efficiency.

"Turolla shhark is also an economically attractive alternative to traditional gear pumps," Dovesi said. "In fact, shhark eliminates the need for additional noise reduction devices."

The other new gear pump, called shhark continuum, is essentially a no-noise pump, as Turolla reported a 15 dB(A) noise reduction compared to conventional gear pumps.

"The shhark continuum utilizes a more complex technology, based on a unique design of the gears," Dovesi said. "This pump originates from a special study on teeth profile, which assures a permanent tooth contact with a very smooth flowing of the fluid and no trapped volume in between tooth flanks."

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Turolla shhark Specs

Pump Model	Displacement cc/rev	Rated Pressure	Speed (Min-Max)
SHHP1	1.0 – 12	250 bar	800 – 4000 rpm
SHHP2	4.0 – 25	250 bar	600 – 4000 rpm
SHHP3	22 – 90	250 bar	1000 – 3000 rpm

Turolla shhark continuum Specs

Pump Model	Displacement cc/rev	Rated Pressure	Speed (Min-Max)
SHHCP28	4.0 – 13	250 bar	500 – 3500 rpm
SHHCP33	10 – 18	250 bar	500 – 3500 rpm
SHHCP38	16 – 28	250 bar	500 – 3000 rpm
SHHCP47	28 – 50	250 bar	500 – 3000 rpm
SHHCP55	50 – 90	250 bar	500 – 3000 rpm
SHHCP72	94 – 200	250 bar	500 – 1800 rpm

Information is from the manufacturer.

Dovesi explained that the continuous tooth contact results in a silent and quiet operation of the pump, while a sophisticated compensation system with enhanced axial force balancing prevents wearing of the parts.

"The gear design of shhark continuum reduces pulsation and vibrations in the pump and avoids pressure ripples that turn into noise," Dovesi said. "Moreover, the no-noise level is maintained over time."

The housing of the pump is similar to traditional gear pumps, so it is an interchangeable product on most machine types. Its noise reduction

level makes it possible to reduce the dampening equipment installed on the machine, which can result in a cheaper and easier to install solution, Dovesi said.

While no-noise pumps are not widely used in mobile applications at this point, Dovesi said there is clear interest from customers. Thus Turolla believes that the shhark continuum pump may become a very interesting choice for heavy-duty applications such as construction, material handling and agricultural machinery.

In parallel to the introduction of the two new pumps, Turolla is work-

ing at completing its product range. Although details have not yet been disclosed, Dovesi said that the intent is mainly differentiating the applications for the company's products. Turolla's main markets are construction machinery and agricultural equipment, but the company is aiming to improve its market share in the commercial vehicle market and in material handling.

Turolla currently utilizes three production sites: Bologna, Italy; Považská, Slovakia; and Ames, Iowa, U.S.A. Significant expansion plans for the near future include starting component production in Brazil this year and the opening of an additional production site in China in 2015. A facility in India in 2016 is still under evaluation.

Turolla has also recently carried out a complete re-branding of its company, based on the theme "fast forward thinking." Dovesi explained that the key message to convey is that Turolla is a completely new company with a very aggressive attitude toward the future in terms of growth, evolving technology, a worldwide base and an attention to sustainability and one that will deliver highly efficient solutions to its customers. **dp**

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