

For Immediate Release

KSB F-max Impeller Combines Reliability and Efficiency

KSB, Inc.'s expertise in **Conquering the Clog** in wastewater pumping is enhanced with the U.S. launch of the state-of-the-art F-max impeller technology. KSB experts will be at WEFTEC 2016 Booth #4351 to demonstrate the superior effectiveness of this impeller design.

The F-max now incorporates different distances between its blades, which are arranged in groups with two small and two large distances. Thanks to this asymmetrical blade arrangement, the F-max offers impressively wide free passages, ensuring that even larger rigid solids pass easily and are reliably handled by the pump.

A focus for KSB's engineers when designing the blades was their ability to create a swirl in the hub area. This swirling effect shifts fibers away from the impeller hub and transports them to the outside. Based on decades of experience in free-flow impeller design, KSB's hydraulic experts employed the Computational Fluid Dynamics (CFD) method to gain detailed knowledge about the complex flow processes inside the pump, via computer-aided simulations. This led to the design of the F-max impellers, which are capable of achieving efficiencies that have previously only been reached by single-channel impellers.

Subsequent balancing is no longer required with the new impeller type. Since the radial forces and vibrations created by the new impeller are usually lower than those of single-channel impellers, the service life of shaft seals and rolling element bearings is increased. Pumps with F-max impellers require only minimal maintenance.

Replacing the impeller itself is also straightforward. When they rotate, free-flow impellers develop a strong swirl, which keeps the solids in the pump casing suspended and, in combination with the inclined suction area, generates an additional flushing action.

This significantly reduces the risk of clogging in the impeller's center caused by long fibers, in particular by wet wipes. These have become a major problem in wastewater transport as their use has significantly increased in the last few years.

As a result of the trend toward conserving drinking water and separating stormwater and wastewater, the wastewater to be handled has become "thicker." This is why operators now demand non-clogging impellers, which offer reliable operation without sacrificing high efficiencies, even for small wastewater pumps.

For transporting acid wastewater, KSB also supplies impellers made from stainless and acid-resistant duplex steel. It provides protection against pitting and stress corrosion. Stainless steel wastewater pumps are primarily used in industrial wastewater treatment. White cast iron variants for particularly abrasive media are also available.

For more information, please contact **Sherry Heinly**, KSB, Inc. North America/Oceania Region Marketing Manager | Tel: (804) 565-8353 | Cell: (804) 252-3764 | sheinly@ksbusa.com

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Photo: Thanks to the asymmetrical blade arrangement, solids of different sizes can easily pass the new F-max impeller.