Leistritz introduces new triple screw pumps

German screw pump manufacturer Leistritz Pumpen has launched a new series of pumps designed to comply with the 3rd edition of API 676. This standard covers the minimum requirements needed for rotary positive displacement pumps for use in the oil and gas, petrochemical and chemical industries.

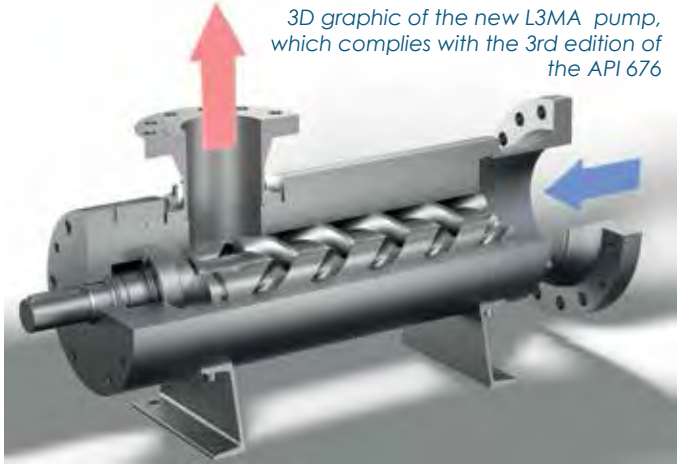
The need for triple screw pumps

Triple screw pumps are self-priming rotating positive displacement pumps suited to handle various oil types and other liquids with a minimum lubricating quality. The design simplicity makes these screw pumps intrinsically reliable and efficient. Only three moving parts – a driving spindle and two idler spindles – rotate inside a casing with close tolerances, forming sealed chambers and provoking the axial displacement of the fluid. The idler spindles rotate without contact with the driving spindle because of the fluid itself. The accurate hydraulic balance and the special profile of the screw thread guarantee a continuous flow with minimum pulsations and turbulence, resulting in extremely low noise levels even at high rotational speed.

L3MA features

To date, triple screw pumps have been adapted to comply with this standard as much as possible. Leistritz, however, decided to find the optimum solution and have come up with a new concept,' Heinz-Dieter Roß, MD at Leistritz Pumpen, explains. The new L3MA pump has no separate steel casing that contains an internal liner for the screw spindles to run in. A new spindle material makes it possible to have the spindles run directly in a steel casing and avoids the expensive construction of a coating kept in a separate liner.

Only three static seals are used and these are O-ring seals instead of flat gaskets. This eliminates the risk of leakage due to insufficient compressed flat gaskets. A single balanced acting mechanical seal has been chosen as a shaft seal, which has proved itself in other applications. A cartridge seal can be provided as an alternative option. Suction and discharge flanges are in accordance with ANSI B 16.5 class (300 lbs). The L3MA pump series is available in 12 different frame sizes with defined rotor pitch angles. The maximum operating conditions of the pump are defined with a maximum flow rate of 276 m3/h, a differential pressure of 20 barg and maximum speed of 3600 rpm. The pumping fluid's viscosity should be around a minimum of 10 cSt to consistently secure the required lubrication.



3D graphic of the new L3MA pump, which complies with the 3rd edition of the API 676

Technical highlights:

- API 676 compliant
- No special internal coatings required
- Axial inlet for ease of piping
- Single bearing
- Single mechanical seal subjected only to suction pressure, API 682 cartridge seal optional
- Hydrodynamically balanced rotors – no thrust bearing required
- Quiet operation - no pulsations
- Low fluid shear
- High reliability/long service life/low maintenance
- Low NPSH requirement
- Handles entrained gases (advantage versus centrifugal)
- Positive displacement maintains critical flow in case of back pressure increase (advantage versus centrifugal)
- High volumetric efficiency (advantage versus other PD's and centrifugal).

For more information:
This article was written by Peter Bader, area sales manager for the Benelux at Leistriz Pumpen,+31 (0) 85 -87 70 538, pumpen@leistritz.com, www.leistritz.com