Product datasheet

Deoiling Hydrocyclones

Advanced design
The L40-gMAX® delivers finer separations at higher unit capacities, this latest generation deoiling hydrocyclone features a unique inlet geometry that helps minimise turbulence and reduces inlet wear.

The L40-gMAX® was designed using advanced engineering tools to produce finer, sharper separations at higher unit capacities, enabling you to achieve optimal performance with fewer cyclones – a significant cost saving. The cyclones are made of Duplex SS and are fully replaceable, thus providing a cost effective wear solution.

Principles of operation
Feed enters the deoiling hydrocyclone through an involute inlet. Its velocity is converted into tangential velocity in the inlet area, imparting a centrifugal force on the fluids. As the feed moves down the conical section, tangential velocity increases, as does the centrifugal force.

The heavier water phase, which is subjected to higher centrifugal forces, moves to the outer wall of the cyclone. The lighter phase, primarily oil droplets, are displaced towards the inner core of the cyclone. The water phase exits the tailpipe as the deoiling hydrocyclone underflow.

Due to back pressure on the underflow, the core of the light phase (oil) moves axially up the cyclone and exits out the reject orifice as overflow. By maintaining a certain backpressure on the underflow, the oil core is forced out through the overflow outlet, where the reject orifice is sized to achieve a flow of approximately 3-4% of the total inlet flow.

Pumped Hydrocyclones
When the existing process pressure is too low (<60psi), a low shear booster pump can be used to increase inlet pressure. To ensure that minimal shearing of oil droplets takes place, strict guidelines

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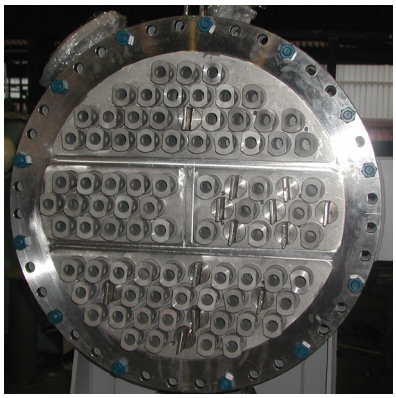
on pump selection, piping configuration, and system operation must be followed. With many existing pumped hydrocyclone systems in operation, we have the experience and knowledge to help you design a successful pumped system.

Produced water systems
In addition to a standalone vessel, the L40-gMAX® hydrocyclone system can be incorporated into a complete produced water treatment system. The L40-gMAX® hydrocyclone reduces the oil in water concentration to manageable levels for downstream polishing equipment. We partner with companies that can produce complete packages for treatment of produced water from the production separator to overboard discharge or reinjection. Typical process equipment in this package includes gMAX® hydrocyclones, followed by flotation units and nutshell filters.

The system can use natural pressure or pumps to boost inlet pressure. Operation can be automated or manual and the equipment can be constructed of almost any material.

TurnDOWN™
In order to accommodate large turndown requirements that exceed 50:1, we developed TurnDOWN™. TurnDOWN™ allows for continuous operation without ever shutting down the vessel. This is accomplished by compartmentalizing the overflow and underflow of the deoiling vessel.

Isolation valves are opened or closed to adjust the number of liners in operation depending on the system flow rate and pressure drop.



TurnDOWN™ benefits Include:
- Compact design for reduced footprint and weight
- Wear resistant materials of construction for increased reliability and low maintenance
- Flexible operation for variations in rates
- Manual or fully automated
- Integral part of a complete Produced Water Treatment System.

Tucson, Arizona USA
Tel. +1 520 744 8200
E-mail: krebs@flsmidth.com

Queensland, Australia
Tel. +61 7 5519 5700
krebsaustralia@flsmidth.com

Sao Paulo, Brasil
Tel. +55-15-3416-7400
krebsbrasil@flsmidth.com

Beijing P.R. China
Tel. +86-10 8468 9100
krebschina@flsmidth.com

Manila, Philippines
Tel. +63-2-687-9251
Krebs-Philippines@flsmidth.com

Neusiedl am See, Austria
Tel. +43 2167 3345
krebseurope@flsmidth.com

Western Australia
Tel. +61 8 6258 4800
krebsaustralia@flsmidth.com

Santiago, Chile
Tel. +56 2 2463 8350
krebschile@flsmidth.com

Chennai, India
Tel. +91 44 4748 1000
krebsindia@flsmidth.com

Johannesburg, South Africa
Tel. +27 (0)10 210 4750
krebsafrica@flsmidth.com