



KREBS® Cyclones for chemical separation applications

Our cyclones use gMAX® technology to give you simple, yet highly effective equipment that removes or concentrates solids in chemical and petrochemical processes. Cyclones, also called hydrocyclones, form the foundation of a high-quality separation process because they deliver proven, durable and reliable solids recovery and protection of downstream operations while minimising cost. Enjoy an improved profit margin when you let our cyclones get more out of your process for less.

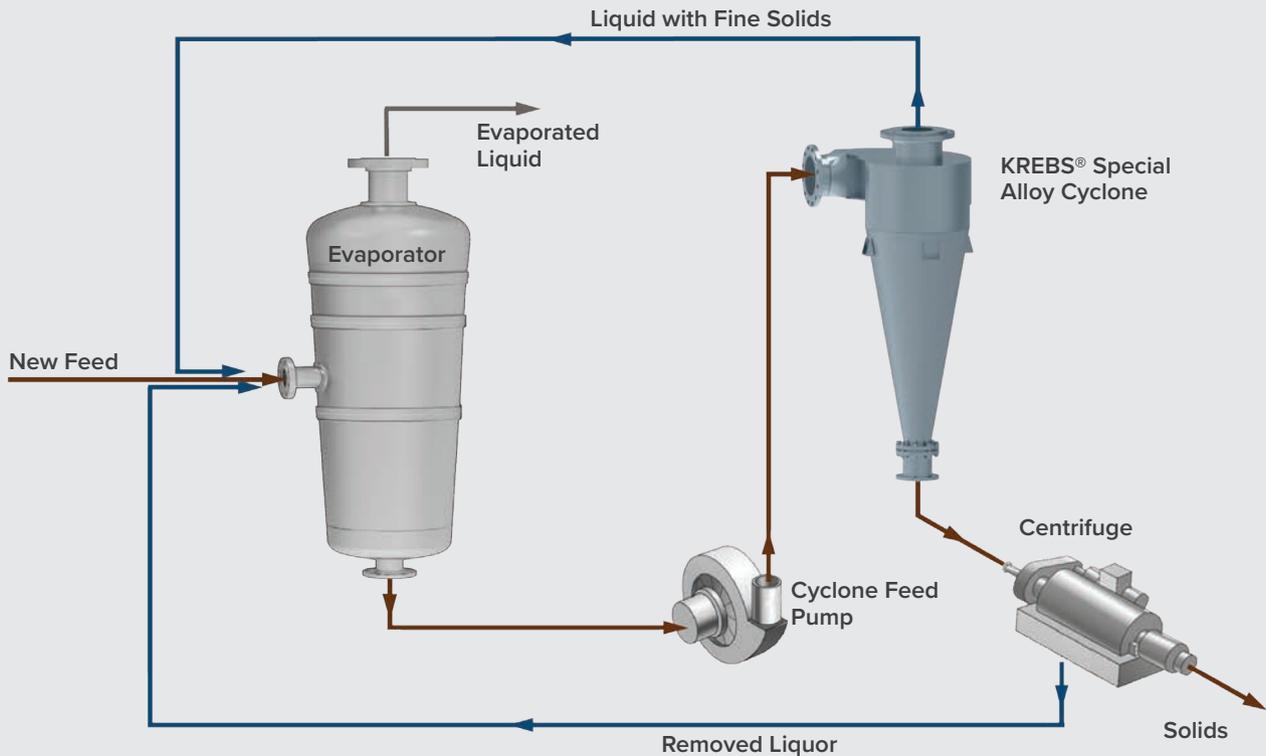
Benefits

- Protects downstream equipment
- Reduced size and capacity requirements of downstream equipment
- High capacity in a small footprint
- Very efficient separation
- No internal moving parts, low maintenance
- Low capital cost

Features

- gMAX® technology for maximum separation efficiency
- Custom-designed to meet your temperature, pressure and corrosion resistance requirements
- Wide range of hydrocyclone sizes, materials and customized features to match your specific needs

Crystalliser circuit diagram



The crystalliser circuit shown above is using a KREBS® gMAX® cyclone to classify and concentrate the solids before they enter the dewatering centrifuge. This allows the small crystals from the cyclone overflow to return to the crystalliser, increasing the average size of the crystals. Down the line, this use improves the operation of the later washing or filtration process. We put the same level of problem-solving customization into every system where we install cyclones.

Instead of selling equipment that you must change your process and specifications to use, we tailor every cyclone system that we sell to match your needs. Our engineers can help you select the ideal cyclone for your application. For more information, contact our sales team. We will be glad to assist you in determining the best urethane cyclone size and configuration for your separation needs.

Size and number of units

The size and number of cyclones required for your application depends on the material you are treating and your process objectives. In many applications, a single cyclone will provide the capacity you need. In general, a larger cyclone has higher capacity and a smaller cyclone recovers a finer particle size. We offer sizes that range from 12–2300 mm (0.5–90 in), and everything from single units to manifolds or Close-Packed (CP) Cyclone Vessels

Construction materials

We can construct our cyclones out of a variety of alloys so we can deliver equipment that will hold up under the conditions you need it to operate under. The most common materials are; stainless steel, Hastelloy, Nickel, Duplex 2205, Alloy 20 and CD4 MCU. Ask our sales team about other available alloys.

We have you covered with our wide range of technology

Our cyclones fill a large range of separation and concentration needs in chemical industries. Contact one of our specialists to learn more about how they can help with your specific processes. Some of the common applications are described below.

Evaporators and crystallisers:

KREBS® gMAX® Cyclones effectively recover and concentrate nucleated particles in evaporators and crystalliser circuits. By strategically placing the hydrocyclones before centrifuges or other crystal dewatering equipment, we can substantially reduce the load on your downstream operations. This results in a more stable operation for your dewatering process, as well as allowing you to either use of smaller dewatering equipment or increase your output.

Analysers:

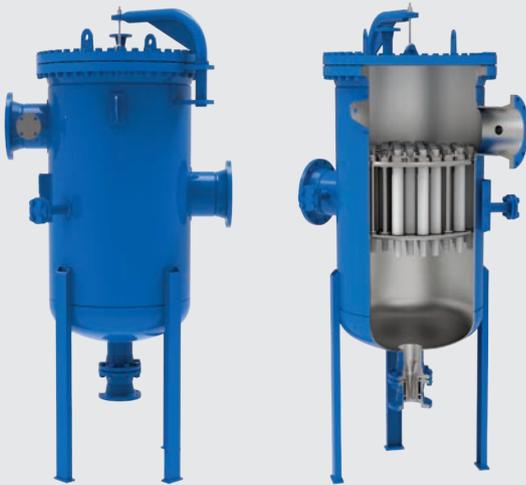
A cyclone placed in a side stream can remove solids ahead of your analyser. The clean cyclone overflow reports to the analyser, while the underflow is discarded or sent back to the main process.

Filtration:

Our cyclones effectively remove solids ahead of filtration equipment. Adding a cyclone to the process in front of your filter removes most of the solids to protect the filter from overloading. This inexpensive addition extends filter life and reduces maintenance.

Quench oil:

KREBS® cyclones efficiently remove coke particles from quench oil to protect heat exchangers from plugging. As with other applications, this decreases heat exchanger maintenance and increases the equipment life.



Applications for KREBS® gMAX® Cyclone Vessel

- Fine solids concentration ahead of centrifuges
- Removal of coke from cutting water
- Fine catalyst recovery



Applications for KREBS® P Series Alloy Cyclones

- Crystal concentration ahead of centrifuges
- Coke removal from quench oil

www.flsmidth.com

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

FLSmidth Austria
Neusiedl am See, Austria
Tel: +43 2167 3345
E-mail: krebs europe@flsmidth.com

FLSmidth - Chile
Santiago, Chile
Tel: +56 2 2463 8350
E-mail: krebschile@flsmidth.com

FLSmidth - South Africa
Johannesburg, South Africa
Tel: +27 11 474 8875/8876
E-mail: krebsafrica@flsmidth.com

Copyright © 2020 FLSmidth A/S. ALL RIGHTS RESERVED. FLSmidth is a (registered) trademark of FLSmidth A/S. This brochure makes no offers, representations or warranties (express or implied), and information and data contained in this brochure are for general reference only and may change at any time.

FLSmidth Australia
Pinkenba, QLD, Australia
Tel: +61 7 5519 5700
E-mail: krebsaustralia@flsmidth.com

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

FLSmidth - India
Chennai, India
Tel: +91 4 4748 1000
E-mail: krebsindia@flsmidth.com

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