

One Source

Krebs® gMAX® Hydrocyclones



Krebs® gMAX® Hydrocyclone
Finer particle separation with
patented technology.

FLSMIDTH
KREBS

Krebs® gMAX® hydrocyclones

gMAX performance

- Finer, sharper particle separations at high capacities
- Fewer cyclones needed for optimal performance
- Easy maintenance
- Works with existing installations

gMAX applications

- Minerals processing
- Oil Sands
- Water Treatment
- Chemicals
- Pulp & Paper
- Automotive
- Oil Refining

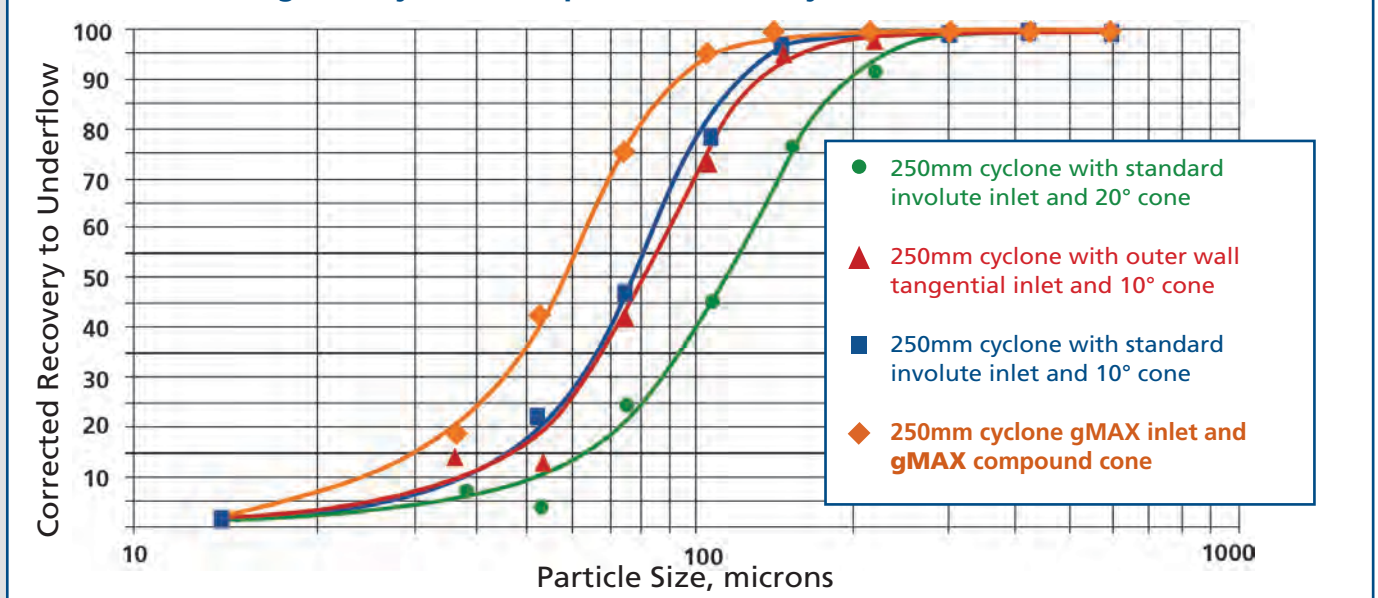


FLSmidth Krebs leads the separation technology for mining and industrial applications since 1952.

Optimum cyclone performance relies on minimizing turbulence while maximizing tangential velocity. The gMAX® cyclone focuses on these two important factors, significantly

advancing cyclone performance. To achieve these two design criteria, the gMAX incorporates performance-enhancing improvements to the inlet head, cylinder section, cones, and apex.

gMAX Cyclone Compared to Other Cyclones



Innovative hydrocyclone design

gMAX inlet head

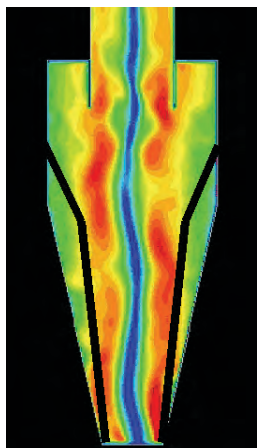
- Contoured ramped inlet pre-classifies feed and reduces turbulence
- Reduced turbulence minimizes coarse solids bypass to overflow
- Less turbulence reduces wear

Inlet head design

The innovative gMAX® inlet has replaced the former Krebs involute feed inlet design improving upon what had been the state-of-the-art design for over 30 years. A commitment to continuous improvement like this is why FLSmidth Krebs is the world leader in cyclones, and why we continue to push the limits of separation technology.

The outer wall involute design entrance pre-classifies the feed solids prior to entering the main body of the cyclone. The inlet head of the gMAX also includes an improved vortex finder and top cover plate liner design.

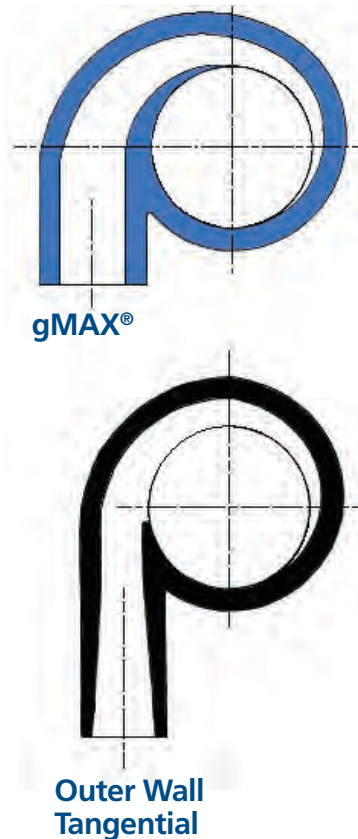
These improvements result in less misplaced material to the overflow and dramatically increased wear life. This longer wear life combined with premium ceramics in the lower parts of the cyclone, will greatly increase intervals between complete cyclone rebuilds.



Cone design

Through the use of CFD analysis, FLSmidth Krebs has designed the gMAX® cyclone with sharper upper cones followed by longer angled lower cones.

This combination maximizes tangential velocity in the upper part of the cyclone. It also provides a long residence time in the critical separation zones in the lower part of the cyclone. This results in a substantially finer separation with fewer fines in the underflow and less coarse bypass to overflow.



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Optional Liner Materials Available

- BPC rubber
- Neoprene
- Nitrile
- Chlorobutyl
- Alumina
- Nitride bonded silicon carbide ceramic
- Reaction bonded silicon carbide ceramic
- Sintered alpha silicon carbide ceramic

Fabricated/Cast/Molded Unlined Cyclone Materials

- 304L/316L SS
- Duplex 2205
- CD4MCU
- Monel
- Inconel
- Nickel
- Hastelloy
- Other metal alloys
- Polyurethane*

* see bulletin #9-201 molded polyurethane cyclones



PAINT WEAR TESTS: gMAX vs. Outer Wall Tangential

To validate the reduced turbulence and wear characteristics predicted using computational fluid dynamics (CFD) on the gMAX inlet head design, layers of paint in different colors were applied to the gMAX inlet head liner (left insert) and to a competitor's outer wall tangential inlet head liner (right insert). The components were assembled onto cyclones and slurry was pumped through them in FLSmidth Krebs' cyclone laboratory. The resulting wear patterns show a dramatic reduction and wear as a result of the improved gMAX geometry.

World-class Service & Hydrocyclone Test Facilities

FLSmidth Krebs has provided superior classification and separation solutions using hydrocyclone technology since 1952. Our unparalleled technical staff of experienced engineers will quickly and thoroughly evaluate your potential applications and provide detailed recommendations and performance estimates. In the event you have an application that requires testing for validation, our hydrocyclone test lab is equipped and staffed to provide prompt testing at low cost. Arrangements can be made to run test cyclones at your site.



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