

# KREBS® slurryMAX™

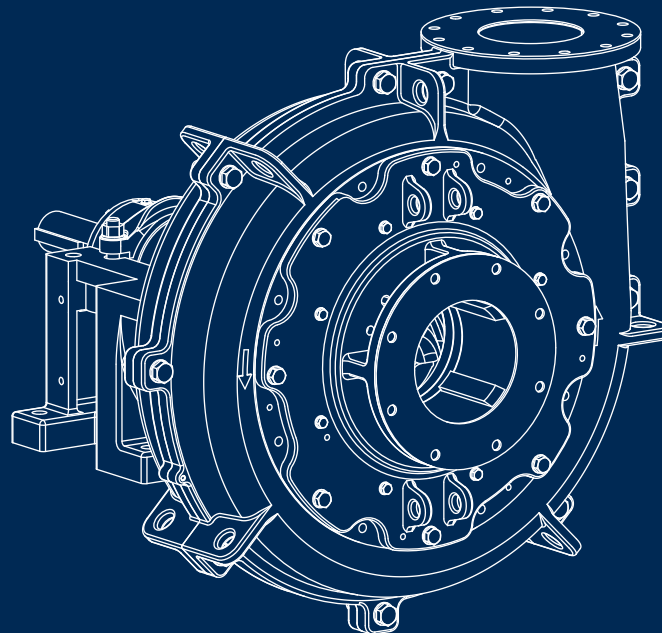
## Tough & versatile slurry pump



**FLS**

# Split-case design multiple material options

You asked for a split-case pump with longer wear life and better efficiency, which can easily and safely be installed throughout your plants. That's why we designed our newest KREBS® offering—the slurryMAX™, with multiple liner and impeller material options.



## Benefits

- Even and predictable wear life for wet end parts
- Significant energy savings
- Constant hydraulic performance
- Highly effective centrifugal seal
- Long-lasting bearings that cannot be over-greased
- Multiple liner and casing materials for a wide range of applications
- Eliminate gland water requirements

## Suction-side recirculation

Following the dramatic success of the millMAX™ metal slurry pump, we have incorporated its patented features into our slurryMAX split-case design pump product range. slurryMAX pumps include the same proven wear ring feature of our millMAX, with its externally adjustable wear ring that closes the clearance between the wear ring and the impeller eye.

The ability to control the suction-side clearance reduces the recirculation, and helps maintain the design performance over the life of the pump without increasing the pump speed. Over time, a conventional pump will have to increase the operating speed to maintain performance, causing it to wear out even faster.

The wear ring advantage also allows for a wide clearance between the impeller and suction liner. This eliminates the mechanical grinding of solids between the two components. Conventional pumps without the wear ring advantage experience this grinding of solids which consumes power and causes significant wear in the suction liner and impeller.

The unique advantage to our design is that we solve both the grinding and the recirculation problems within the pump while our competitors can only solve one or the other.

## Versatile options to fit your application

All wear components include multiple metal and elastomer material options. We also offer the slurryMAX XD with high-pressure casings for applications requiring multiple pumps in series.

## Safety benefits

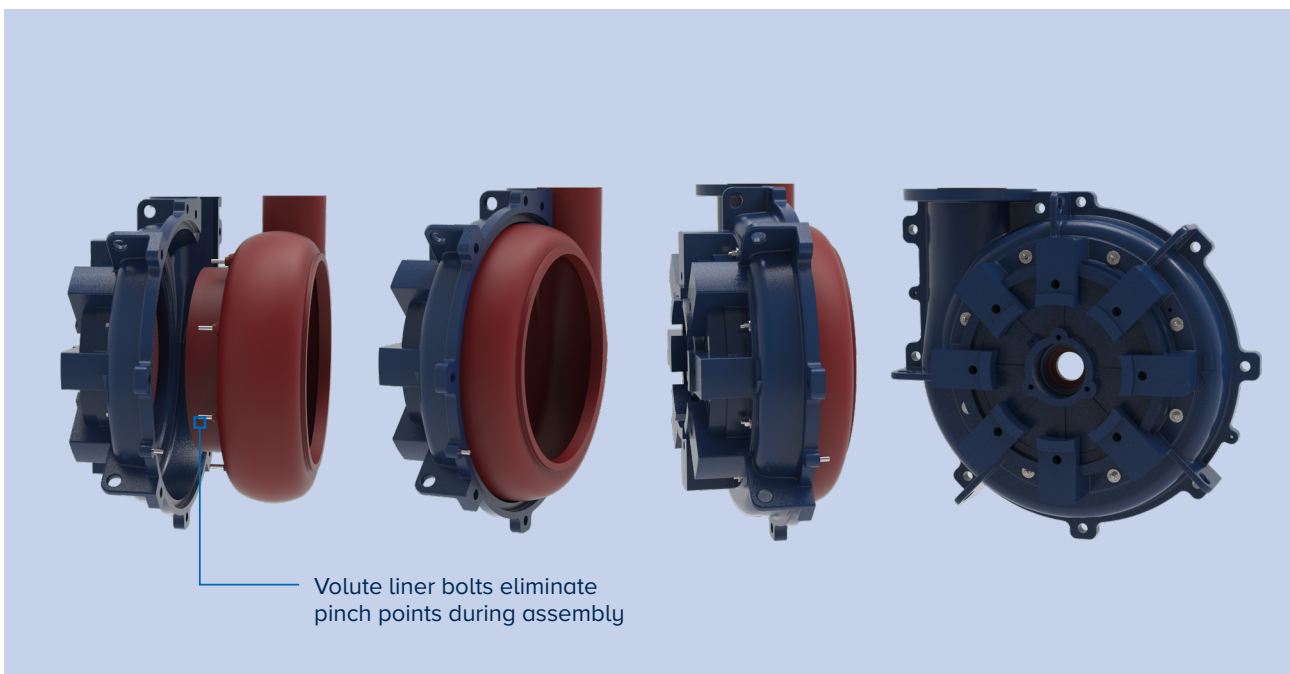
Our 8×6 and larger size slurryMAX pumps feature a simple removable suction liner assembly for the inspection of internal components and the replacement of the impeller without removing the discharge pipe. Easy-to-use lifting jigs allow for safe and rapid rebuilds.

## We think that the safety of your fingers gives you ten great reasons to try a slurryMAX!

We designed a volute liner with an integrated back liner that bolts securely to the outer drive-side casing for ease of assembly and hands-free safety. No longer do you have to worry about pinching your fingers during installation of the suction liner.

### Designed for multiple applications in the following industries:

- Coal
- Copper
- Iron-ore
- Gold
- Oil sands
- Aggregates
- Diamonds
- Numerous other mineral processing industries





# slurryMAX™ Product range

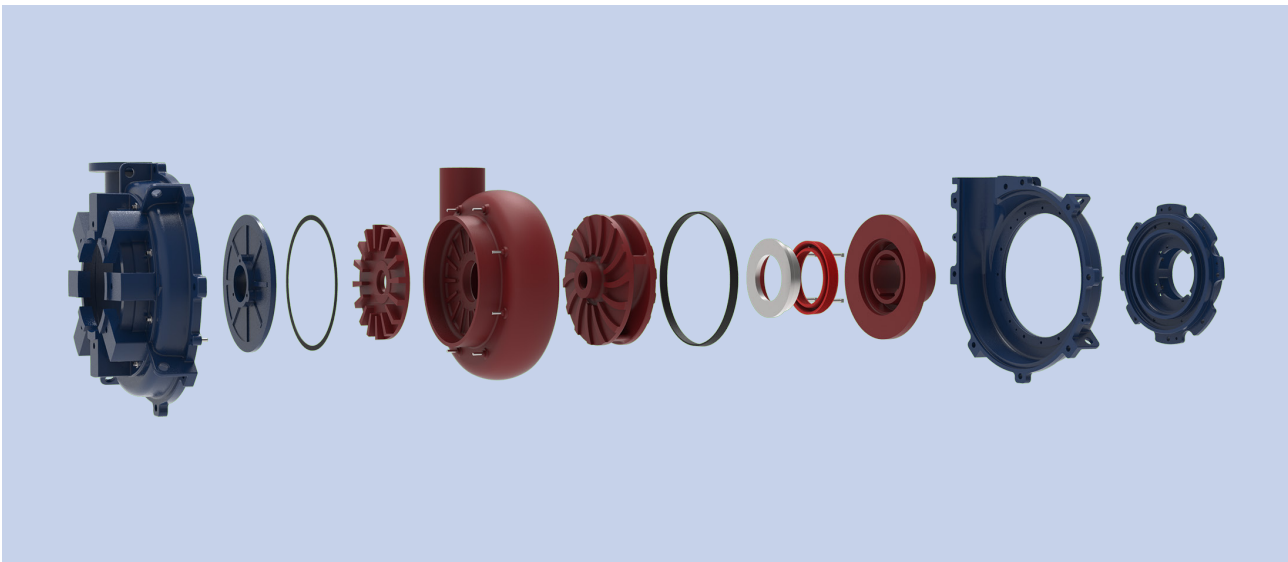
## slurryMAX™

Our heavy-duty, split-case design pump incorporates hydraulic efficiency and our proven millMAX wear ring technology to create the most efficient and longest-lasting slurry pump of its kind. With multiple liner and impeller material options, we've designed the slurryMAX to handle the majority of applications for any plant across multiple industries.



## slurryMAX™ XD

The slurryMAX XD has found success all over the world, in the most aggressive applications, for more than a decade. Extremely thick elastomer liners and a heavy-duty impeller provide this pump with extended wear life, in addition to all of the advantages gained from the millMAX suction-side sealing system.



Assembly view of our slurryMAX™ pump major components

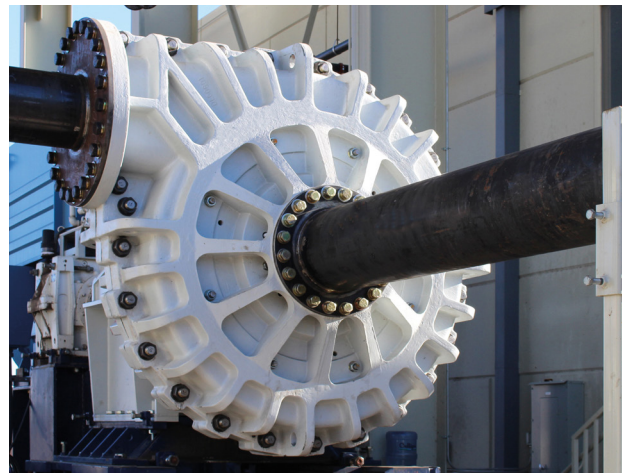
## slurryMAX™ HP

This high-pressure version of the slurryMAX XD is ideal for multi-stage high-pressure pumping systems. Within the high-pressure outer casing and added rib reinforcement, the slurryMAX HP uses all of the same extreme wear parts as the XD, delivering long life and consistent performance



## slurryMAX™ XHP

We added the slurryMAX XHP to our slurryMAX range to provide our customers with pumping system options for multiple stages and a higher final discharge pressure. As with the HP, the XHP uses the same wear parts as the XD, but with an even more robust outer casing.



### KREBS® slurryMAX™ pump product range

| slurryMAX™ | slurryMAX™ XD | slurryMAX™ HP |
|------------|---------------|---------------|
| 3×2        | 2×2           | ---           |
| 4×3        | 3×3           | ---           |
| 6×4        | 4×4           | 4×4           |
| 8×6        | 6×6           | 6×6           |
| 10×8       | 8×6           | 8×6           |
| 12×10      | 10×8          | 10×8          |
| ---        | 12×10         | 12×10         |
| ---        | 14×12         | 14×12         |
| ---        | 16×14         | 16×14*        |
| ---        | 20×18         | ---           |

\* 16×14 slurryMAX™ XHP available

# slurryMAX™

## Design and material options

We designed the slurryMAX pump to replace less efficient pumps easily and safely, providing you with a path to plant process modernisation, significant water savings, less downtime and better energy efficiency.

### Multiple material options

Multiple elastomer, alloy and polyurethane material combinations available. Thick elastomer liners are reinforced to prevent deflection. All liner materials are interchangeable within common housings.

### High-efficiency impeller

High-efficiency impeller design, available with or without expelling vanes on the shroud. Elastomer or metal options available.

### Wear ring

Proprietary suction side sealing system. This allows the impeller to be adjusted to the back to boost centrifugal seal performance while limiting suction side recirculation.

### Removable suction plate

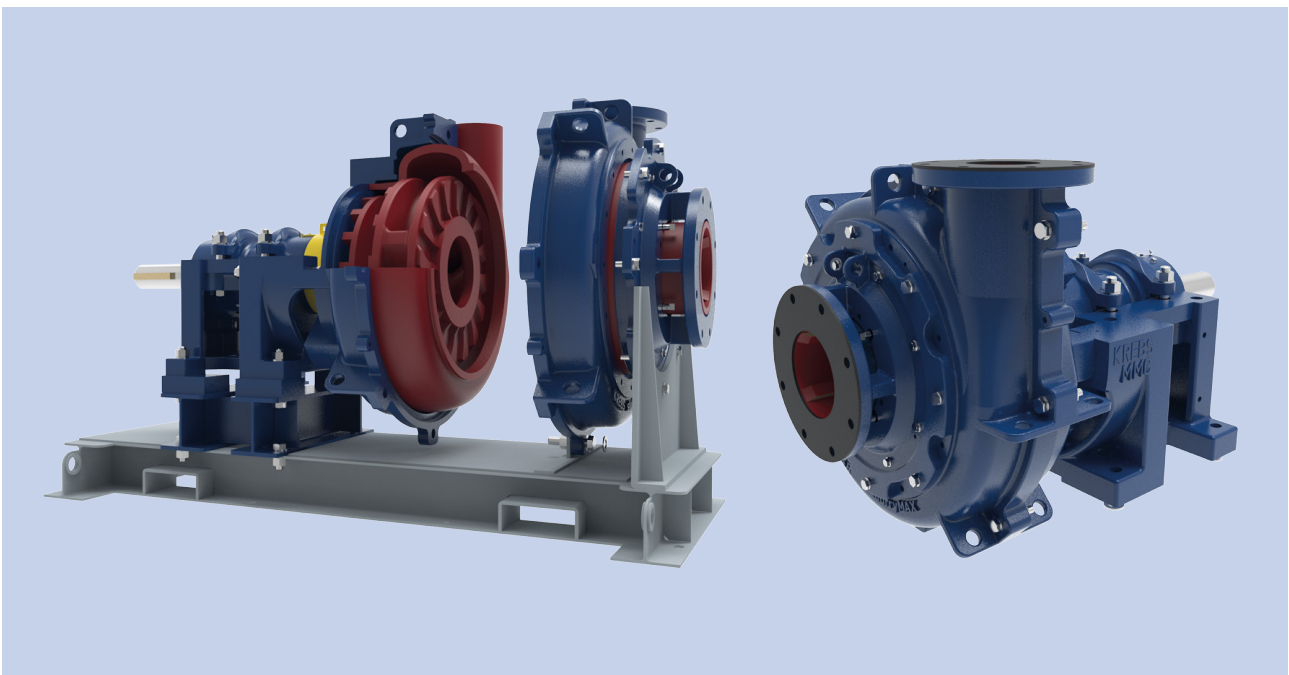
Impeller and suction-side liner assembly replacement without disturbing the casing and discharge piping. Available in sizes 8x6 and larger.

### Drain port with plug

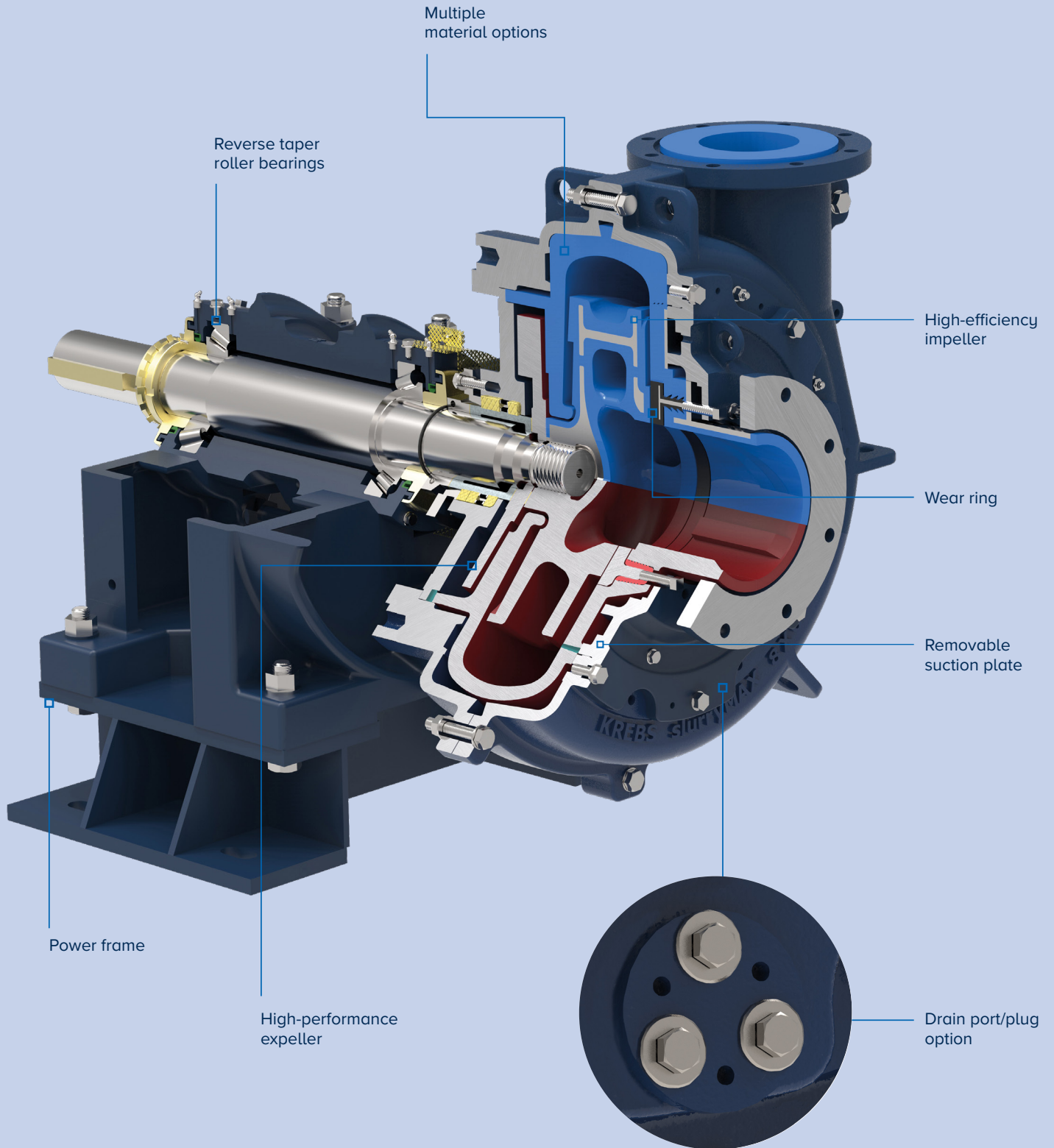
Optional casing feature may be added to allow water drainage.

### High-performance expeller

Cutting edge centrifugal dry gland seal design allows for use in a new broad range of applications, including thickener underflow.



Cutaway image of KREBS® slurryMAX™ pump with metal liner and highly effective centrifugal seal





# slurryMAX™ XD, HP & XHP

## Design and material options

The heavy duty designs of the slurryMAX XD, HP and XHP are suitable for high wear applications such as primary cyclone feed and tailings. With tough spheroidal graphite iron casings, thick rubber liners and added external ribbing, we can handle the high pressures of multistage applications.

### Reverse taper roller bearings

- Increases effective load span to improve life
- Pumping action of taper rollers discharges grease to the outside, preventing influx of slurry and eliminating possibility of failure from over-greasing
- Heavy-duty shaft and taper roller bearings rated at 100,000 hours minimum of B10 life

### Power frame

- Heavy-duty cast iron pedestal with external bearing assembly adjustment mechanism
- Drilled for overhead motor mounting assembly

### Impeller

- Designed for high slurry efficiency and hydraulic performance
- High-expelling vanes and machined surface at the eye for wear ring adjustment
- Multiple options available, including high-efficiency and elastomer options

### Elastomer liners

- Thick rubber liners increase wear part operating life
- Right-angle shape prevents liners from collapsing into the impeller
- Designed to withstand slurry turbulence and allow for a wide operating flow range
- Natural rubber is standard due to its ability to withstand abrasion
- Multiple elastomer material options available

### Reinforced plates

- Steel reinforcing plates provide stability to rubber liners and prevent deflection under vacuum conditions

### Adjustable wear ring

- Reduces suction-side recirculation
- Adjustable under operation
- loses clearance at the impeller
- Maintains hydraulic performance
- Bearing assembly movement not required to adjust impeller clearances within the pump

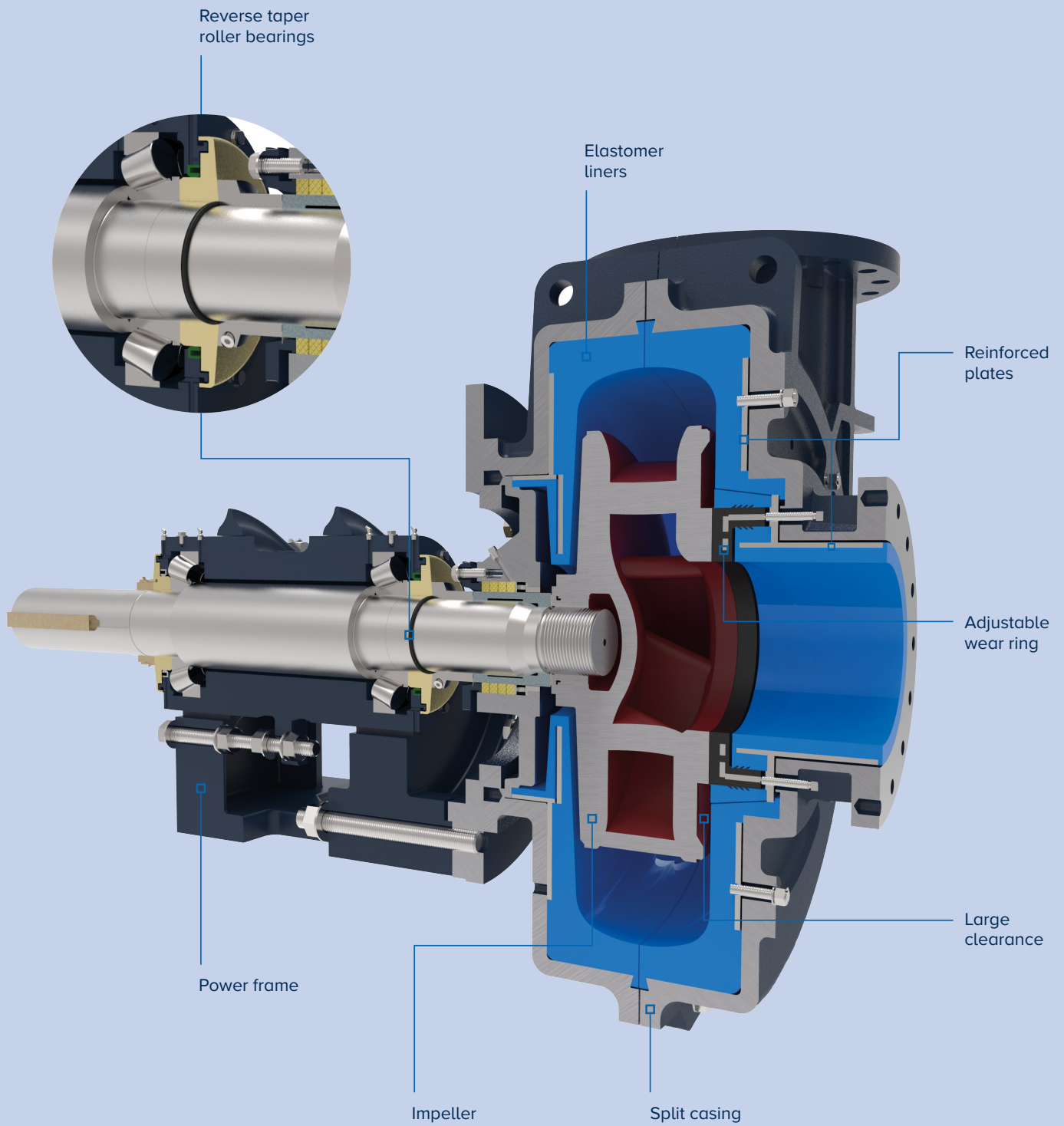
### Large clearance

- Increases suction liner wear life
- Reduces power consumption
- Allows pump to operate at higher speeds and generate higher heads without liner devulcanisation

### Split Casing

- Rib-reinforced iron can contain wide range of operating pressures
- High-pressure casings available for HP and XHP models





# FLS provides full life-cycle service for all our slurry pumps

## Pump Selection

Selection of the appropriate pump for a specific application is the work of an expert, as is the proper operation and maintenance of the pump when installed and in service. FLS offers this industry-leading pump expertise, assisting in selecting the most suitable pumps for our customer's specific needs.

## Lab Testing

Our full-service lab provides performance testing and customer specific testing. The knowledge gained from the test work and slurry analysis help lay the foundation for successful projects. We also utilize this facility for product development test work to ensure we are always providing our customers with the highest quality and cutting-edge technology.



## Site Support

Once the pump is installed, our team of site support engineers closely monitors the pump's operation on-site, ensuring that it is consistently operating within the designated parameters. This is particularly important as mines and mineral processing plants are not static operations: they develop and change over time, which can result in pumps operating outside of their BEP zone, with negative impacts on performance, energy consumption, and wear rates.

A site support engineer will note any changes to the operating conditions and be able to recommend upgrades or changes to practice that will ensure the pump continues to deliver the best-possible performance. They can also offer training to mine personnel on the correct operation and maintenance, including how to properly adjust the wear ring.



## Condition Monitoring

FLS offers a variety of digital services including our mobile application and condition monitoring reports. Customer signal/sensor data is connected to FLS Cloud through our Field Agent box or through customer OSI-PI system. Advanced KPI's are then provided through our mobile application. Weekly insight reports look at performance and identify potential failure modes.

## Service Centers and Rebuilds

To guarantee top-notch products for our customer at every service centers worldwide, all pump assemblies are uniformly constructed with the same precision and quality. These service centers are strategically located around the world, allowing us to provide fast and efficient offsite rebuilds.



## Aftermarket

By working closely with our customers, we ensure that our products are readily available whenever they are needed. From casting to finished painted parts, We have the equipment and expertise to deliver the best material options to our customers. Not only that, but our engineers are continually innovating to give our customer the best solutions.

We have a wide range of elastomers that can handle various chemicals, pH/concentrations, and temperatures ranges. Additionally, we offer proprietary high chrome irons specially designed to provide outstanding abrasion and/or corrosion resistance. Beyond that, in the most abrasive applications we offer tungsten carbide laser cladding to significantly extend the wear life. New to our material offering is our range of urethane liners capable of operating at higher tip speeds and able to withstand fine particle wear.



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### KREBS® product offerings for Mining and Industrial

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- KREBS® Knife Gate Valves
- KREBS® DeSanders
- KREBS® Vessels

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