Pumps & Wet-End Conversion Kits for Severe Duty Slurry

millMAX™ PUMPS
The millMAX™ Pump has a unique patented design developed exclusively for mill discharge duties and adapted for other severe abrasive slurries.

The same wet end components can be offered as a conversion kit to existing pumps, without the need to disturb the foundation or existing bearing frame assembly.

The millMAX™ Pump features a patented on-line wear clearance adjustment, which minimizes the cost per ton pumped compared to conventional hard metal and rubber lined slurry pumps through:

- Increased wear life
- Even wear life of all wet end parts
- Less down time
- Lower power consumption
- Increased mill throughput
- More consistent cyclone separation

**Heart of the Design**

The patented on-line suction side wear clearance adjustment permits the initial clearances to be maintained throughout the life of the pump. This extends the life of the impeller and suction wear faces to near, or equal that of, the casing for a one time maintenance rebuild.

The reduction of solids grinding between the impeller and suction side reduces power consumption and wear. The millMAX™ Hybrid Suction Sealing System maintains constant flow and pressure, without increasing speed or the danger of motor overload.

**millMAX™ Solves This Kind of Problem**

*Competitor’s suction liner and impeller - 550 hours*

*millMAX™ after 1500 hours of wear*
Krebs millMAX™ Pumps treat the cause of pump wear and loss of efficiency, whereas competitive pumps treat the symptoms through materials or predictive uneven wear rates.

In most established millMAX™ installations, wear life of parts has been even and in the majority, overall wear life has generally improved by 50% to 100%. This increase in wear life is achieved together with a reduction in power, generally in the 10% to 20% or lower range.

The reduction in power can then be taken as a cost savings, or through additional pumping capacity with the same installed motor.

With the millMAX™ Hybrid Suction Sealing System, the front clearance is adjusted while the pump is running, and takes only five minutes to perform. This clearance is adjusted normally six to eight times throughout the life of the wet end parts.

The millMAX™ design can be applied to an existing pump through a wet end conversion kit, including impeller, casing, backliner, and gland seal.

The millMAX™ conversion kit is supplied with an adapter ring, seals, and all hardware to adapt to a variety of power frames. This achieves the same results as a complete pump — on a maintenance budget.
**TECHNICAL**

**SPECIFICATIONS**

Slurry pumps are Krebs millMAX™ design and include the following:

**CASING** - designed for minimum slurry turbulence and even wear. Includes (14x12 and smaller) integral wear ring, carrier, and adjustment screws for on-line adjustment and elimination of suction side recirculation.

**WEAR RING** - adjustable wear ring assembly to permit closing of suction side impeller clearance during operation. This reduces slurry recirculation and lowers pressure at the suction area, thereby maintaining flow and reducing wear.

**IMPELLER** - designed for high slurry efficiency and hydraulic performance. Machined surface at the eye for wear ring adjustment and high expelling vanes.

**BACKLINER** - designed for close clearance at the back (14x12 and smaller), or **SUCTION LINER** with integral wear ring (16x14 and larger). Matching full impeller diameter and profile for close operating clearance.

**WEAR PARTS** - designed hydraulically to wear evenly. Constructed of high chrome at 680/720 Brinell hardness.

**POWER FRAME** - heavy duty cast iron pedestal with external bearing assembly adjustment mechanism. Drilled for overhead motor mounting assembly.

**FLANGES** - loose intake and discharge flanges drilled to suit various pipe requirements.

**BEARING ASSEMBLY** - heavy duty shaft and indirect fitted taper roller bearings rated at 100,000 hrs B-10 life minimum. Bearing arrangement designed to prevent over greasing and ingress of slurry.

** millMAX™ Power Frame**

- Heavy duty cast pedestal.
- External bearing assembly adjustment.
- Wide bearing centers.
- Heavy duty shaft and bearings.
- Double clamp.

**SHAFT SEAL OPTIONS**

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**WATER FLUSH GLAND**

**High Performance Centrifugal Dry Gland Seal**

- Large expeller diameter generates high suction level sealing capacity.
- Zero leakage while operating.

**Reverse Taper Roller Bearings**

- Increases effective load span to improve life.
- Main bearing failure is due to over greasing.
- Pumping action of taper rollers discharges grease to the outside, preventing ingress of slurry or over greasing of bearing cartridge.
**High Radial Vanes**
- Clears large solids.
- Prevents solids from being crushed.
- Reduces casing slurry pressure at the eye of the impeller.

**External Wear Adjustment Screw**
- Four screws for on-line wear clearance adjustment.
- Adjusted while the pump is operating.
- Adjusted six to eight times during the life of the pump.

**Adjustable Wear Ring**
- Wear ring takes up clearance at the impeller.
- Adjusted during operation.
- Reduces suction side recirculation.
- Maintains hydraulic performance.

**Narrow Clearance**
- Reduces pressure at gland to assist centrifugal dry gland seal or reduce gland water pressure.

**driMAX™ Mechanical Seal**
- Operates in extreme abrasive environment.
- Individual seal wear parts are easily replaced on-site without special tools.
- Ability to adjust for wear if required.
- Impeller suction wear clearance adjustment without touching seal.

**Wide Clearance**
- Dramatic reduction in crushing of solids.
- Increased wear life.
- Reduced power consumption.
Standard millMAX™ Discharge Positions

*NOTE: CONSULT FACTORY FOR OTHER DISCHARGE POSITIONS.

**DRIVE ARRANGEMENTS**

Reverse Overhead
### Table: Flanges

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<th>L</th>
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Flanges can be supplied to ANSI, DIN, or BST "D" specifications.

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**Diagram:** BARE SHAFT PUMP

**Text:** Direct Inline  Side-by-Side

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MM-ENGINEERING-DIM-BARE-PUMP (R9)
FLSmidth Krebs' expertise in the process industries spans more than five decades. Our innovative technologies meet the high-performance demands of today – and in some of the most challenging process environments. FLSmidth Krebs is the leading provider of hydrocyclone technology and is quickly becoming the leader in severe duty slurry pumps worldwide.

With the main office in Tucson, Arizona, FLSmidth has worldwide offices in Australia, Austria, Brasil, Chile, China, the Philippines, and South Africa.

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