



CORNELL PUMP COMPANY

# MP SERIES

MINING PUMPS DESIGNED FOR COARSE ABRASIVES



EFFICIENT BY DESIGN



# MP SERIES MINING



Cornell Pump was founded in 1946 by five friends who set out to design a more reliable, durable, and efficient pump. Over the years, Cornell engineers have contributed significantly to industry advances in centrifugal pump design with pump features like Cornell Redi-Prime®, Run-Dry™, and Cycloseal® systems.

## THE CORNELL MP SERIES: SOLID ENGINEERING, ADVANCED TECHNOLOGY

Cornell Pump Company's MP Mining Pump Series combines over 70 years of innovative pump manufacturing and design, with our highly-regarded, patented Cycloseal® technology. Offering high-operating pressures, the MP pumps are specifically designed for coarse abrasive slurry applications such as sand, gravel, coal, manure, and mine dewatering.

- **LONGER WEAR LIFE COMPARED TO STANDARD CORNELL SOLIDS HANDLING PUMPS**
- **SOLIDS HANDLING CAPABILITIES**
- **WORKS IN TOUGH ENVIRONMENTS**

## IDEAL FOR THESE MINING APPLICATIONS:

**MINE DEWATERING**

**COAL PRODUCTION**

**SAND PUMPING**

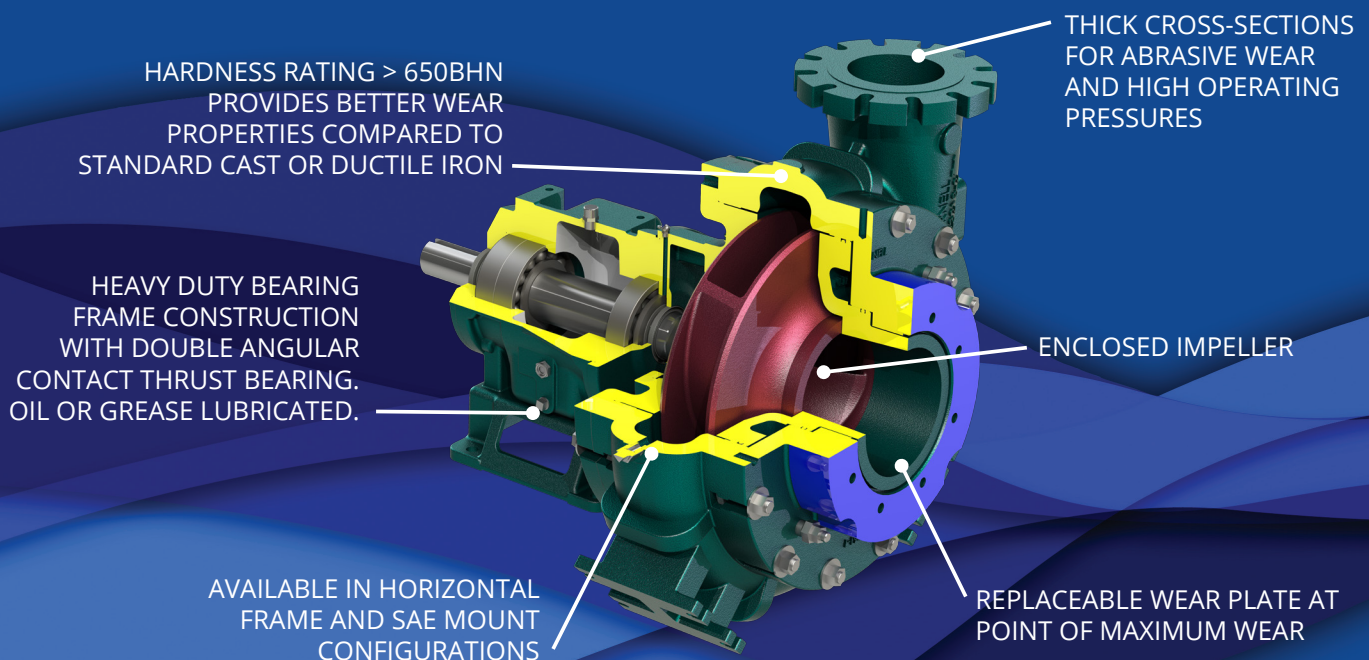
**GRAVEL TRANSPORT**

**MANURE SLURRY**

**AGGREGATE**

**TAILINGS**

**OIL SANDS**



# MP SERIES MINING

## MP SERIES MINING PUMPS DESIGNED FOR COARSE ABRASIVES



### MP SERIES

<b>DISCHARGE SIZE RANGE</b>	2" TO 8" (5 cm TO 20 cm)
<b>MAX SOLIDS HANDLING</b>	4" (10.16 cm)
<b>MAX FLOW</b>	9,000 GPM (2044 m <sup>3</sup> /h)
<b>MAX HEAD</b>	625' (190.5 m)

**MP SERIES PUMPS** are an unlined slurry pump designed for coarse abrasives and solids up to 4". The MP series offers exceptional wear resistance for reduced maintenance and long life in harsh environments.

**ADJUSTABLE WEAR PLATE:** to regain lost efficiency while in service. Externally adjustable without moving piping or bearing frame.

### MATERIALS OF CONSTRUCTION

- Available in a ductile iron, chrome iron, or hybrid construction
- 17-4PH stainless steel shafts
- Hardness rating > 650BHN

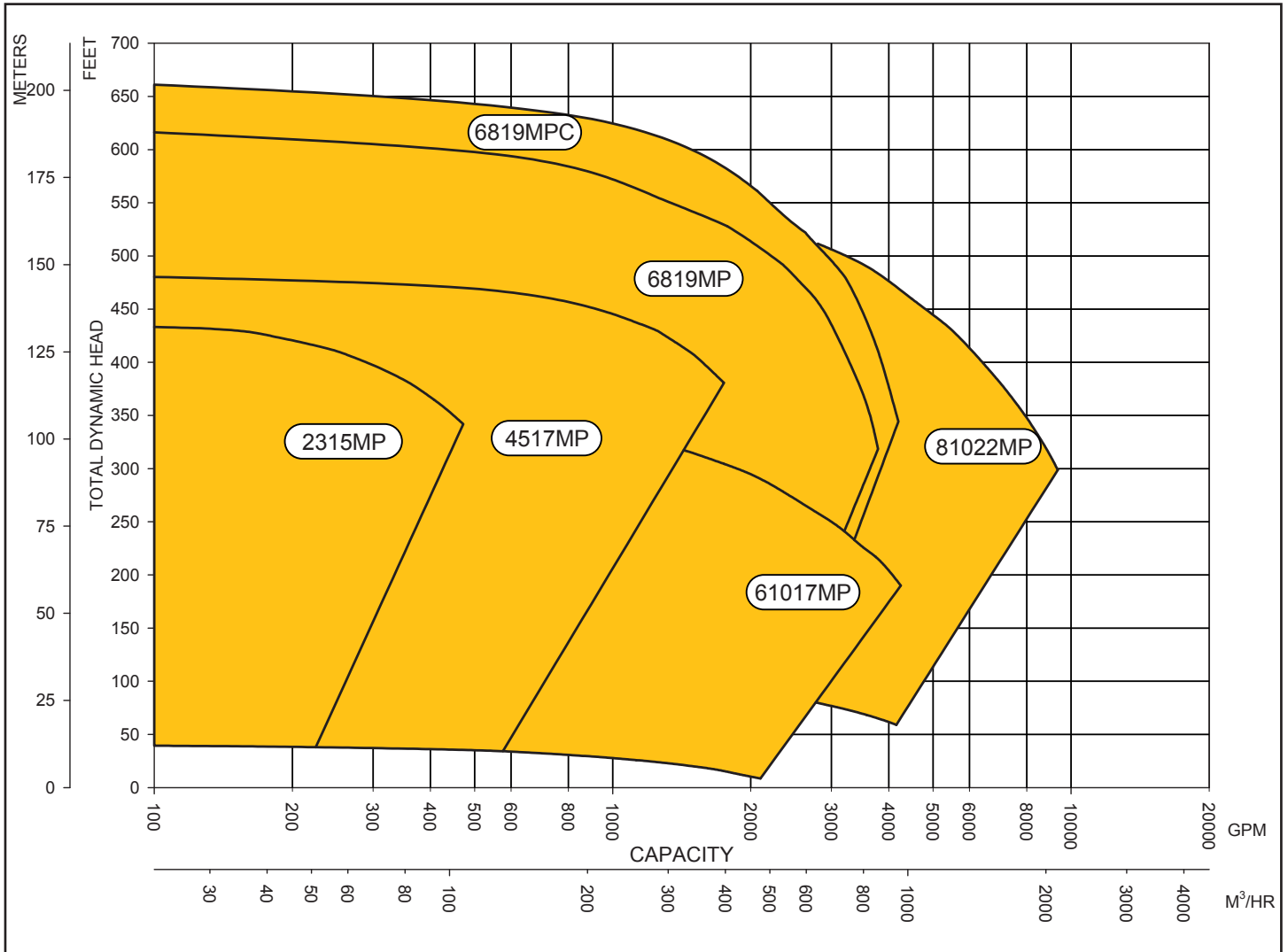
### FEATURES

- Cycloseal® grit removal system
- High-efficiency design
- Run-Dry™ and Redi-Prime® Options
- Heavy-duty construction for aggressive applications
- Replaceable wear plates
- Two-year warranty

RELATIVE HARDNESS	HARD	HARDER	HARDEST
<b>MATERIAL</b>	DUCTILE IRON	DUCTILE AND WHITE IRON (HYBRID)	HIGH CHROME HEAT-TREATED WHITE IRON
<b>TECHNICAL NAME</b>	ASTM A536	ASTM A536; ASTM 532, CLIII TYPE A 25% CR	ASTM A532, CL III; TYPE A 25% CR LEVEL 1
<b>CORNELL MATERIAL CODE</b>	CV	HYB	CAC
<b>RELATIVE COST</b>	\$	\$\$	\$\$\$
<b>HARDNESS</b>	230-300 BHN	Varies from 230 to >650 depending on component	BHN>650 BHN

# MP SERIES MINING

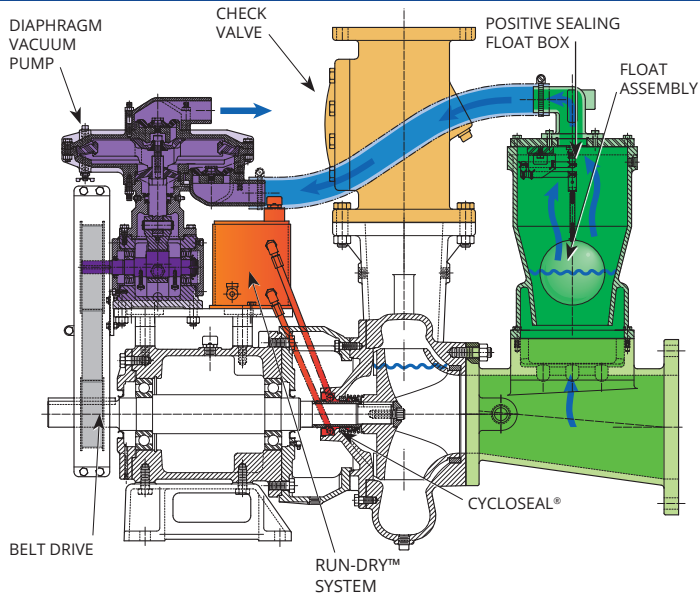
## MP SERIES FAMILY CURVE



	2315MP	4517MP	6819MP	6819MPC	61017MP	81022MP
<b>MIN. FLOW</b>	60 GPM	250 GPM	750 GPM	800 GPM	500 GPM	1400 GPM
<b>MAX. FLOW</b>	470 GPM	1750 GPM	3800 GPM	4300 GPM	4250 GPM	9000 GPM
<b>MAX PRESSURE</b>	250 PSI	250 PSI	375 PSI	375 PSI	250 PSI	300 PSI
<b>EFFICIENCY</b>	52%	70%	74%	77%	79%	83%

# MP SERIES OPTIONS

## REDI-PRIME®

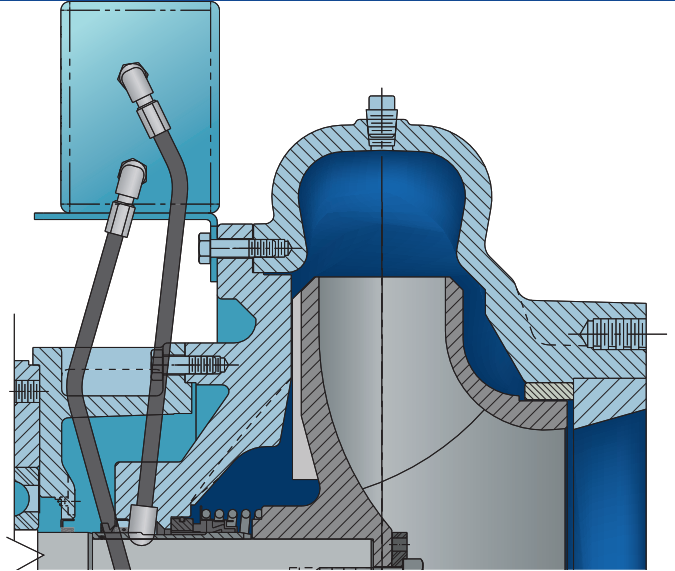


**A PATENTED SYSTEM** that allows the pump to rapidly prime or re-prime unattended; fully automated. Cornell Redi-Prime pumps are designed with oversized suctions to provide more flow, reduced friction losses, and higher suction lift. Redi-prime handles large size solids and air/liquid mixtures with ease, all while maintaining premium hydraulic efficiency to reduce energy consumption.

The priming system was designed with the environment in mind. By using a positive sealing float box and a diaphragm vacuum pump, there is no water carry-over to contaminate the environment. Most Cornell pumps can be readily fitted with the Redi-Prime system. Redi-Prime fitted pumps are capable of suction lifts of up to 28', heads to 800' and flow rates exceeding 38,000 GPM.

- Fully automatic priming and repriming
- Handles air/liquid mixtures with ease
- Rapidly primes and re-primes completely unattended
- Environmentally safe priming system designed to prevent product leakage
- Premium hydraulic efficiency for reduced energy consumption

## RUN-DRY™



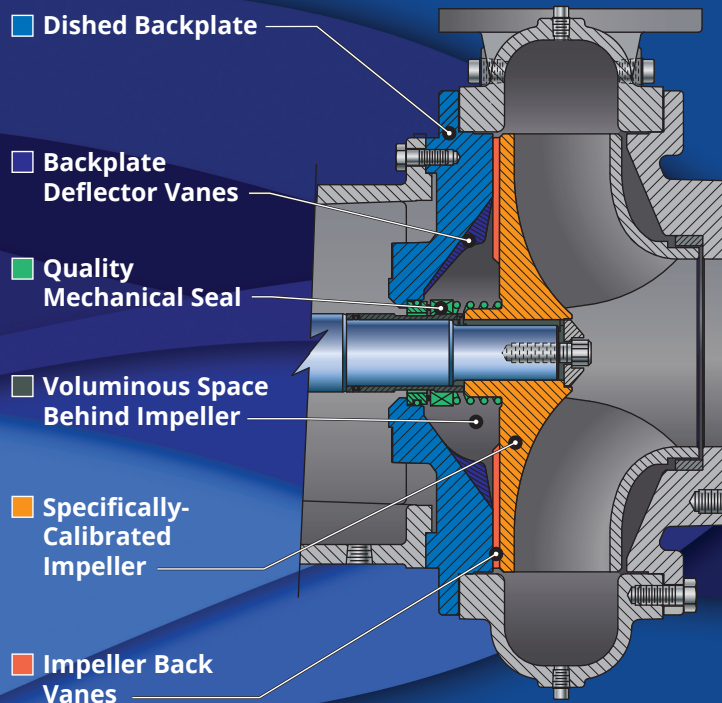
**CORNELL'S RUN-DRY SYSTEM** is the answer for applications where there is the possibility of the pump operating in a dry condition. Cornell's Run-Dry system consists of an auxiliary gland and oil reservoir that keeps the seal faces lubricated and prevents dry running of the seal faces during priming, re-priming, or standby operation. The Run-Dry gland is connected to a lubricant reservoir via inlet and outlet lines such that shaft rotation provides continuous circulation and cooling of the lubricant and seal faces. With the Run-Dry system your pump can run dry for hours without damaging the mechanical seal.

- Run dry for hours without damaging the seal
- Cools and lubricates seal faces
- Ideal for applications that could operate in a dry condition
- Useable in conjunction with Cyclo Seal® and Redi-Prime®

61017MP with Run-Dry™



# MP SERIES OPTIONS



## CYCLOSEAL® —THE SEALING SYSTEM INTEGRAL TO CORNELL PUMPS

The Cutter Blade or Waste Warrior cutter pumps from Cornell feature our patent Cycloseal sealing system, which removes solids and abrasive material from the seal area, while purging air and gas pockets. This innovative cyclonic action extends seal life and eliminates the need for venting or flush water.

**No Flush Water or Packing:** Through the backplate and sweeping vanes, Cycloseal requires no flush water or packing, saving expense, service time, and messy drips.

**Extended Seal Life:** Cornell's Cycloseal design has proven itself in the toughest applications, from manure slurry, starch recovery, and clear water, to food processing and self-priming applications – in some cases more than tripling the normally-expected seal life.

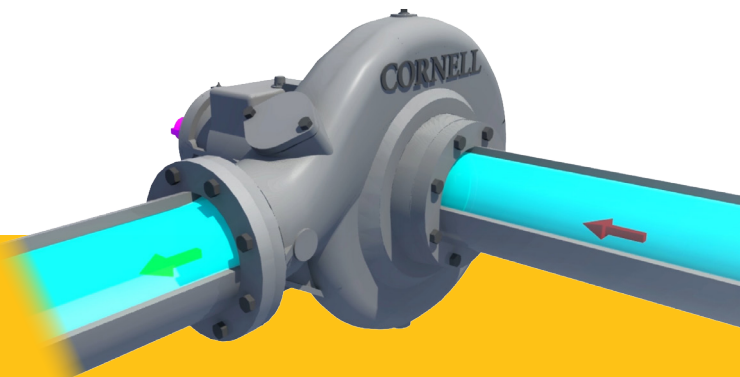
**Run-Dry™ Option:** All pumps with Cornell's Cycloseal system can be equipped with an optional Run-Dry feature, which serves to lubricate the seal faces even when there is no liquid in the pump casing. In situations where the pump must run dry for several hours, or where the pump may suddenly lose prime without being shut off, the Run-Dry feature is a must.

**System Savings:** The Cycloseal system requires no external water flush, filters, grease cups, or piping normally associated with packing or mechanical seals in other pumps.

**Better for Abrasive Applications:** More resilient than packing and standard mechanical seals bathed in grit and other materials, Cycloseal keeps solids away from the seal area for reduced seal wear.

**Greater Reliability:** Through positive seating, end users can tell when the seal is perfectly fitted. With greater ability to withstand to grit, the Cycloseal system results in longer intervals between service.

**Maintenance Savings:** The end result of a longer-lasting seal is less down-time and lower maintenance costs over the life of the pump.



**Watch the Cycloseal video online to see it in action:**

<http://www.cornellpump.com/support/videos.html>

# ADDITIONAL MINING PUMPS



## HYDRAULIC SUBMERSIBLE PUMPS

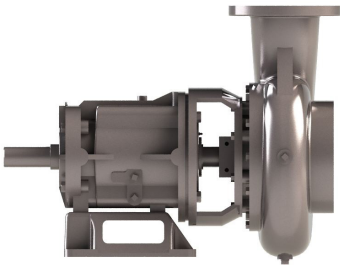
Cornell's DuraSub™ uses a heavy duty pump end and bearing frame for direct coupling to a hydraulic motor. The DuraSub™ has a modular design which allows standard Cornell pump ends to be used as a Hydraulic submersible pump.

- Available for most Cornell pump models
- Hydraulic motor driven
- Various adapter plates available for hydraulic motor fit
- Heavy duty shaft / bearing frame assembly and wet end construction
- Premium wet end efficiencies reduce horsepower requirements
- Heavy duty pumps ends for long service life and reliability



## MX SERIES HIGH PRESSURE PUMPS

**Pressures to 800 feet TDH and flows to 8000 GPM.** Designed to handle high head applications while providing a long service life. The new high head MX Series pumps have multi-vane, enclosed impellers designed for industry leading efficiency. The MX Series pumps have extra heavy wall thickness, high quality construction, CA6NM impellers and are available in a horizontal frame & SAE mounted configurations.



## CD4MCu

CD4MCu is a duplex stainless steel, with greater corrosive resistance than standard stainless steel. CD4MCu allows the pumps to be used in more abrasive applications, and it won't pit like regular stainless steel, has a better stress/corrosive cracking resistance than standard stainless, and higher strength than standard stainless steel. Compared with regular cast iron material, it is much more resistant to corrosion and much stronger.

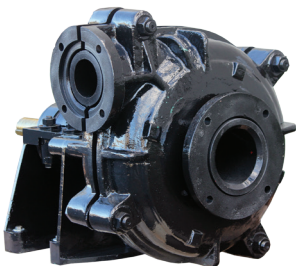
Most of our dealers have access to 13 of Cornell's most popular models in CD4MCu, allowing us to slash production time and price. Cornell can supply a CD4MCu pump in as little as one to two weeks.



## STX SERIES

Cornell has redesigned our popular self-priming line to have the best efficiencies in the industry. Combined with our patented **Cycloseal®** back plate technology, the pump is durable, powerful, and energy efficient.

- 5 year warranty
- Cycloseal technology
- Premium efficiency
- 8 percent better performance than leading competitor



## SP SERIES SLURRY PUMP

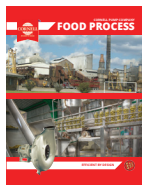
Cornell's SP Series Slurry pump brings patented **Cycloseal®** technology to the mining process industry. Adding to the diverse range of mine dewatering pumps, The SP Series Slurry pump offers a Cornell solution to abrasive applications throughout the mill process.



# MARKET AND PRODUCT LINE



AGRICULTURAL



FOOD PROCESS



INDUSTRIAL



MINE DEWATERING



MUNICIPAL



REFRIGERATION



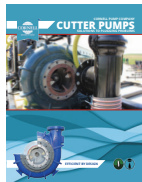
OIL & GAS



CYCLOSEAL®



CHOPPER



CUTTER



EDGE™



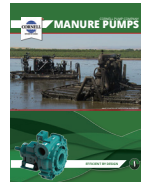
HYDRAULIC SUBS



HYDRO TURBINE



IMMERSIBLE



MANURE



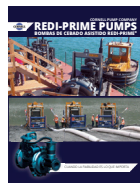
MP SERIES



MX SERIES



MX MINING



REDI-PRIME®



SELF PRIMING



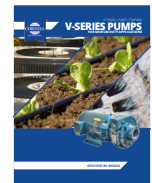
SLURRY



SUBMERSIBLE



WATER TRANSFER



V SERIES

Cycloseal® and Redi-Prime® are Registered Trademarks of Cornell Pump Company.

Cornell pumps and products are the subject of one or more of the following U.S. and foreign patents: 3,207,485; 3,282,226; 3,295,456; 3,301,191; 3,630,637; 3,663,117; 3,743,437; 4,335,886; 4,523,900; 5,489,187; 5,591,001; 6,074,554; 6,036,434; 6,079,958; 6,309,169; 2,320,742; 96/8140; 319,837; 918,534; 1,224,969; 2,232,735; 701,979 and are the subject of pending U.S. and foreign patent applications.

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