



CORNELL PUMP COMPANY
MINING



EFFICIENT BY DESIGN



PUMPS FOR THE MINING INDUSTRY

WHAT SETS CORNELL MINING PUMPS APART

Cornell Pump has been producing robust, high-efficiency pumps since 1946 and our innovative pumps have provided unmatched value.

A WIDE VARIETY OF SIZES AND CONFIGURATIONS

Models range in size from 2" to 30" and a range of configuration options are available for each model – including frame and engine mount options and Cornell features like Run-Dry™ and Redi-Prime®.

OUTSTANDING EFFICIENCIES

We put our experience and knowledge to work to produce tested designs with some of the highest efficiencies of any pumps on the market—up to 85% in our mining series.

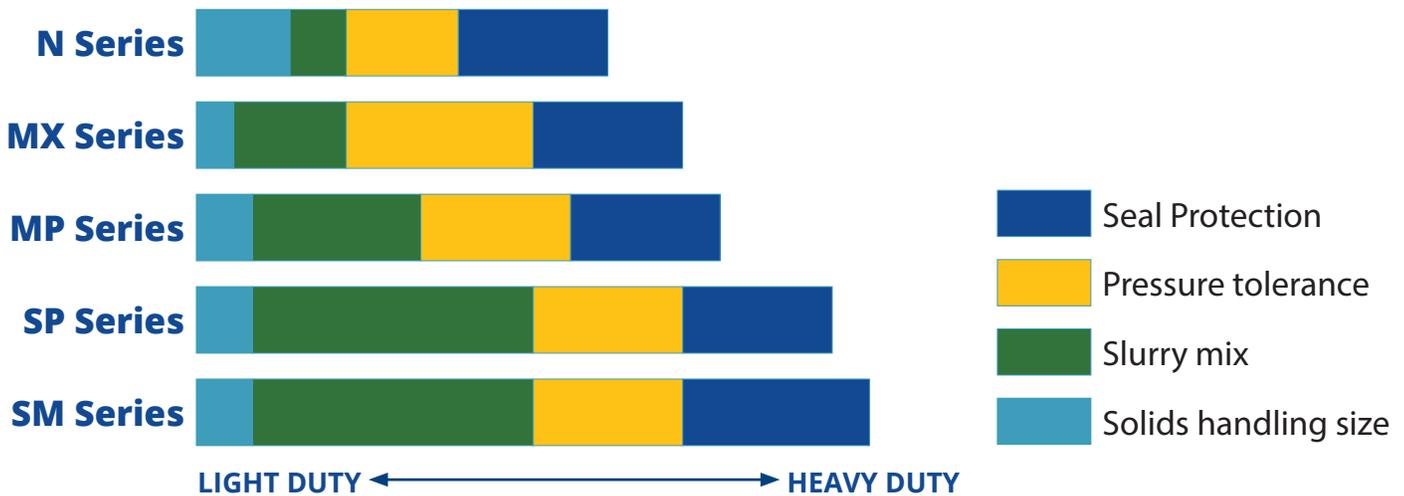
CYCLOSEAL

Innovative sealing system eliminates leaks from pumps on mining sites. No need for flush water—and no area contamination.

ROBUST CONSTRUCTION

Cornell pumps are built using superior materials selected for their suitability to each pump's intended application. Heavier casting walls, thicker shafts, and fully-machined impellers are part of what make Cornell pumps more rugged and durable than other pumps.

Compare the Ruggedness of Cornell Series Pumps



QUALITY ASSURANCE

Cornell Pump proudly maintains its ISO 9001:2008 certification that validates Cornell is in compliance with all necessary processes to meet customer requirements.

The elements associated with ISO 9001:2008 certification include such areas as contract review, design and development, production, purchasing, quality control and service.



Proudly designed and manufactured in Oregon, United States of America.

PUMPS FOR THE MINING INDUSTRY



SOLIDS HANDLING PUMPS



SP SLURRY PUMP GOING STRONG AFTER FOUR YEARS IN SERVICE

An Australian sand quarry began using a Cornell 6SP rubber-lined slurry pump in May of 2012, and it has run without a seal leak since! The sand quarry extracts approximately 50 tons per hour of materials, fed through the Cornell 6SP as a slurry, which is then spun in a cyclone separator to extract the usable sand. The detritus is separated from the sand and returned to the quarry area.

The operation is active five days a week about nine hours each day, pumping a slurry of approximately 30% solids. The 6SP has been subject to more than 1,600 start and stop instances since its installation. The pump has worked flawlessly. General wear parts such as impeller and liner have been replaced in the four years of operation, but the Cycloseal® sealing system has not had to be replaced once. No leaks in the sealing system have occurred, and the pump has been in operation more than 7,000 hours.

For more information about this and other application stories, visit cornellpump.com



N SERIES

DISCHARGE SIZE RANGE	3" TO 30"
MAX SOLIDS HANDLING	10.2"
MAX FLOW	38,000 GPM
MAX HEAD	500'

IMPELLER CHOICES: choose from the Delta style impeller for heavy sludge, two and three port enclosed impellers for large solids, and three or four bladed, semi-open impeller with cutting action for the worst slurries/solids.

MATERIALS OF CONSTRUCTION

- Ductile or cast iron pump casings
- Some models available in CD4MCu
- Ductile, cast iron, or CD4MCu impellers
- Stressproof or heat treated steel shafts (stainless on CD4MCu)
- 420HT wear rings and shaft sleeve available

FEATURES

- Cycloseal® grit removal system
- High-efficiency design
- Run-Dry Option
- Redi-Prime Option
- Excellent NPSHr
- Ruggedness and durability
- Two-year warranty



PUMPS FOR THE MINING INDUSTRY

HIGH HEAD PUMPS



MX SERIES

DISCHARGE SIZE RANGE	2" TO 8"
MAX SOLIDS HANDLING	2.38"
MAX FLOW	8,000 GPM
MAX HEAD	800'

Cornell's **MX HIGH HEAD PUMPS** provide heads up to 800', long service life, and industry-leading efficiency.

MATERIALS OF CONSTRUCTION

- Ductile iron casings
- 17-4PH stainless steel shafts
- CA6NM impellers
- Optional hardened wear ring and shaft sleeves.

FEATURES

- Cycloseal® grit removal system
- High-efficiency design
- Run-Dry and Redi-Prime Options
- High operating pressures
- Two-year warranty



PUMPS FOR COARSE ABRASIVES



MP SERIES

DISCHARGE SIZE RANGE	2" TO 8"
MAX SOLIDS HANDLING	3"
MAX FLOW	9,500 GPM
MAX HEAD	625'

MP SERIES PUMPS are an unlined slurry pump designed for coarse abrasives and solids up to 3". The MP series offers exceptional wear resistance for reduced maintenance and long life in harsh environments.

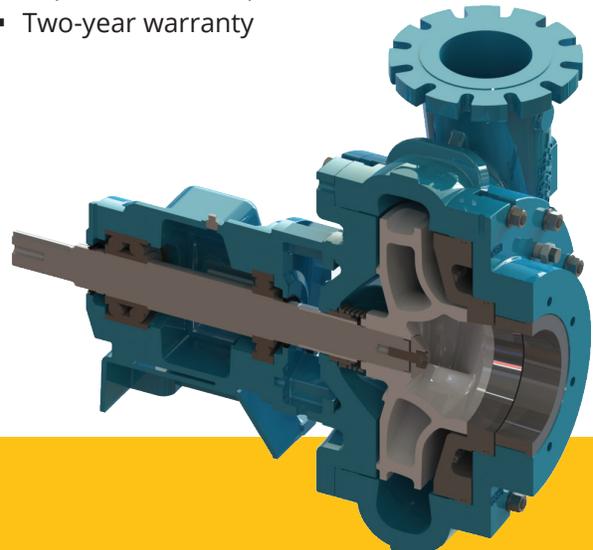
ADJUSTABLE WEAR PLATE: to regain lost efficiency while in service.

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



PUMPS FOR THE MINING INDUSTRY

PUMPS FOR SLURRY



SM SERIES PUMPS



**COMING
SEPTEMBER
2016**

SP SERIES

DISCHARGE SIZE RANGE	2" TO 12"
MAX SOLIDS HANDLING	4.1"
MAX FLOW	18,000 GPM
MAX HEAD	290'

SP-SERIES PUMPS are rubber or metal lined and handle pH from 1 to 14 depending on configuration. Capable of pumping slurries that are up to 40% solids by volume.

MATERIALS OF CONSTRUCTION

- Chrome iron impellers
- Ductile iron volute casings
- Volute lining either chrome iron or rubber
- 4140 steel shafts
- Ductile iron bearing housing & cast iron bearing frames

FEATURES

- Cycloseal® grit removal system
- Enclosed impeller for higher efficiency
- Run-Dry and Redi-Prime Options
- Superior abrasive and corrosive wear life
- No seal flush, vent line or lubrication required
- Various materials of construction
- Flexibility in System Design
- Ruggedness and durability
- Two-year warranty



SM SERIES

DISCHARGE SIZE RANGE	1.5" TO 14"
MAX SOLIDS HANDLING	4.5"
MAX FLOW	14,000 GPM
MAX HEAD	300'

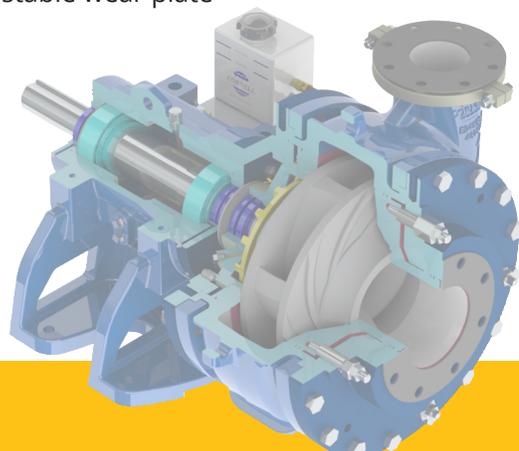
SM Series pumps have unlined high-chrome white iron wet ends for a wide range of slurry applications. All pumps have a maximum working pressure of 600 PSI and are specifically designed for series pumping.

MATERIALS OF CONSTRUCTION

- Chrome iron impeller, volute, wear plate, backplate and expeller
- Ductile iron suction cover, bracket and frame
- 4140 steel shaft and 420 stainless steel shaft sleeve

FEATURES

- Cycloseal® grit removal system and Cycloguard to reduce inlet recirculation
- Back pull-out design for ease of maintenance
- Six vane impeller for high efficiency
- Infinitely variable volute position
- 600 PSI rated pressure
- High-capacity bearings available
- Adjustable wear plate



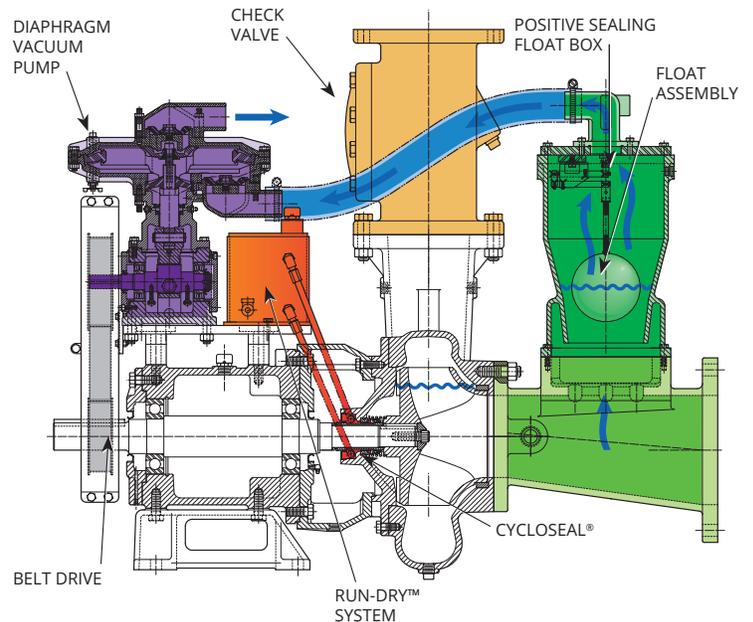
SELF PRIMERS/ VENTURI/ REDI-PRIME

REDI-PRIME® DRY-PRIMING OPTION

Cornell Redi-Prime pumps are designed with oversized suctions to provide more flow, reduced friction losses, and higher suction lift. 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.

Redi-Prime is offered on all Cornell industrial pumps, and is available on virtually every other pump we design as well.

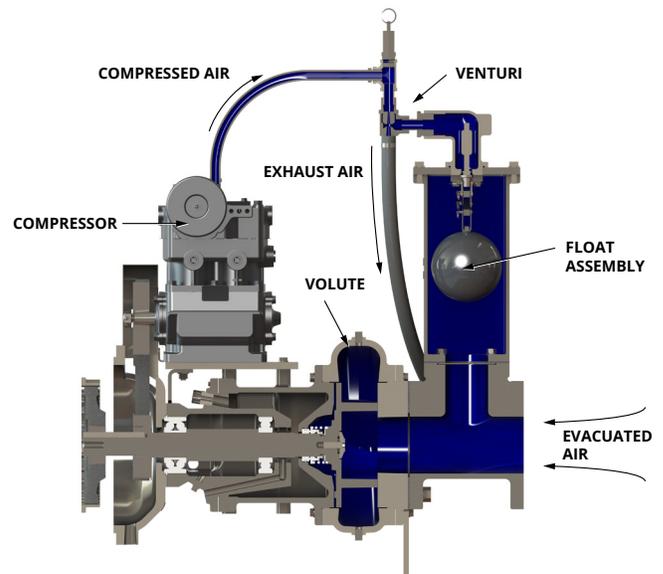
- Fully automatic priming and repriming
- Handles air/liquid mixtures with ease
- Rapidly primes and re-primers completely unattended
- Environmentally safe priming system designed to prevent product leakage
- Premium hydraulic efficiency for reduced energy consumption



VENTURI PRIME

The Cornell venturi prime system relies on a compressor driven by the pump shaft and lubricated by engine oil to blow air through the venturi and evacuate it from the suction line and pump casing. The venturi prime is an economical design and is compatible with any Cornell Pump where Redi-Prime® is an option.

The venturi prime system is slower to prime than Redi-Prime, but it has superior performance in freezing temperatures and can be tailored to the application. Where cost is key but quality is important, Cornell's Venturi Prime System provides a great solution.

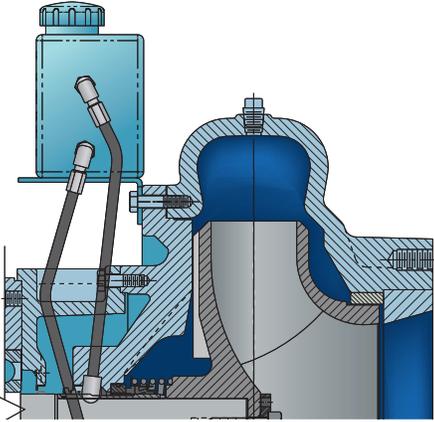


STX/STL/STH SERIES PUMPS

STX/STL/STH Series of popular self-primers to have the best efficiencies in the industry. Combined with our patented-Cycloseal® back plate technology, the pumps are durable, powerful, and energy efficient. Heads up to 253' and efficiencies to 68%. Simple to operate, Cornell Self Priming series are wet-primed (fluid in the pump cavity at initial operation), then self-priming as long as there is water above the eye of the impeller. Known as trash pumps, self-primers handle some solids generated in mine dewatering.



CORNELL FEATURES & BENEFITS



RUN-DRY™ SEAL PROTECTION SYSTEM

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.

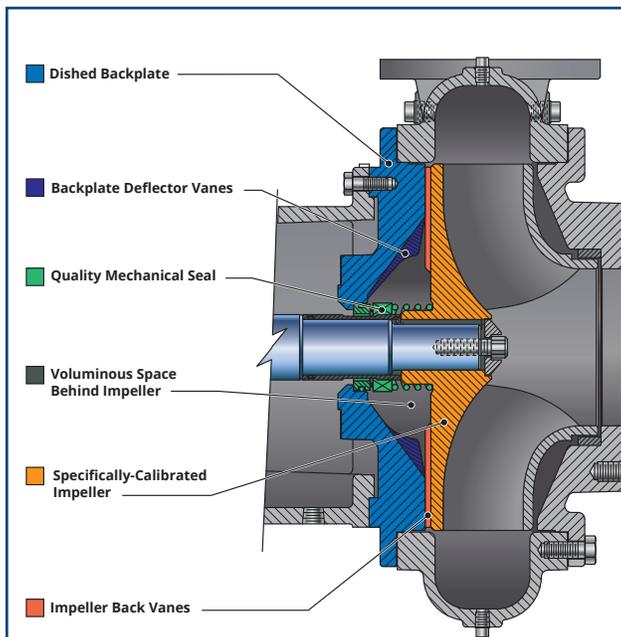
- Run dry for hours without damaging the seal
- Cools and lubricates seal faces
- Ideal for applications that could operate in a dry condition
- Useable in conjunction with Cycloseal® and Redi-Prime®

CD4MCU OPTIONS

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.

- Higher strength than standard stainless steel
- Improved ductility and weldability
- Better resistance to embrittlement
- High-grade, clean, duplex stainless steel
- Usable in PH levels of 2 to 13.5
- Brinell hardness up to 275
- Corrosion and pitting resistance
- Optional material on most pumps



CYCLOSEAL® SYSTEM FOR GRIT REMOVAL

Cycloseal is a patented system with a self-contained single mechanical seal with a dished backplate. The Cycloseal pattern cast into the pump backplate in conjunction with contoured impeller back vanes and a dished backplate creates pressure gradients that move solids and entrained vapor away from the seal faces. The Cycloseal system is only available on Cornell pumps.

- Removes grit from pump seal compartment
- Extends pump seal life three times standard mechanical
- No drips/mess at application site
- Reduced maintenance costs
- Increased uptime and reliability

MARKET AND PRODUCT LINE



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.