



CORNELL PUMP COMPANY

INDUSTRIAL



EFFICIENT BY DESIGN



CORNELL'S INDUSTRIAL PRODUCT LINE



WHAT SETS CORNELL INDUSTRIAL PUMPS APART

Cornell Pump has been producing robust, high-efficiency pumps for the Industrial market since 1946 and our innovative pumps have provided unmatched value. Cornell clear liquid, solids handling, and grit/slurry pumps provide the reliability and inter-changeability demanded in industrial applications. Cornell offers a wide range of pump models and configurations to fit into existing installations. We'll also work with you to create a custom system to satisfy your needs. Our technical and engineering staff is the best in the business at providing high quality, innovative pump solutions.

PUMPS DESIGNED FOR SPECIFIC JOBS

Our team of expert engineers design pumps to meet the varying demands of industry applications, such as solids handling, slurry, and head requirements.



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.



SELECT HIGH-EFFICIENCY PUMP MODELS

8H	88% efficient
6RB	89% efficient
5RB	86% efficient
4RB	85% efficient

A WIDE VARIETY OF SIZES AND CONFIGURATIONS

Models range in size from 1" 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®.



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.



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 9001:2015 certification include such areas as contract review, design and development, production, purchasing, quality control and service.

PUMPS FOR INDUSTRY



Z SERIES ANSI PROCESS PUMPS

Cornell's ANSI standard dimensions pumps combine the robust, high efficiency design for which Cornell is renowned with a form that is easy to use and replace in industrial processes. ANSI construction makes these pumps easy to swap in place of existing applications-- and the ductile iron or CD4MCu construction combined with the strong bearing frame, will allow these pumps to operate longer than the competition. Integrated balance line allows for great impeller efficiency and hydraulic balancing.

Offered in open and enclosed impeller designs, 21 models available.

PERFORMANCE

DISCHARGE SIZE RANGE	1.5" TO 10"
MAX SOLIDS HANDLING	2.5"
MAX FLOW	5,000 GPM
MAX HEAD	320'

MATERIALS OF CONSTRUCTION

- Ductile Iron (DI) wet ends
- Cast iron bearing frames
- Shafts of carbon steel or stressproof steel
- Cast iron wear rings
- CD4MCU Material Std.
- Cartridge or Cycloseal

FEATURES

- ANSI standard dimensions
- Centerline construction
- Frame Mounted, Engine Mounted or Close Coupled
- Enclosed impeller
- High-efficiency design
- Hydraulic balance line
- Cornell Co-Pilot™ pump monitor ready
- Two-year warranty
- Ready-Prime available
- Hydraulic Balance Lines
- Large Oil Sump for Cooling

CLEAR LIQUID PUMPS

Cornell Clear Liquid pumps work in a variety of applications from agriculture, irrigation, municipal potable water and industrial water transfer, to refrigeration and specialized food processing. Our Clear Liquid pumps are able to handle some solids in the mix, and depending on the pump can manage a solid up to 1.25".

EXTERNAL HYDRAULIC BALANCE LINE: Helps reduce axial thrust which prolongs bearing, shaft, and seal life. It equalizes pressure between the impeller hub area and the pump suction to reduce axial loading acting on the impeller, shaft and bearings.

PERFORMANCE

DISCHARGE SIZE RANGE	1" TO 10"
MAX FLOW	10 TO 10,000 GPM
MAX HEAD	400'

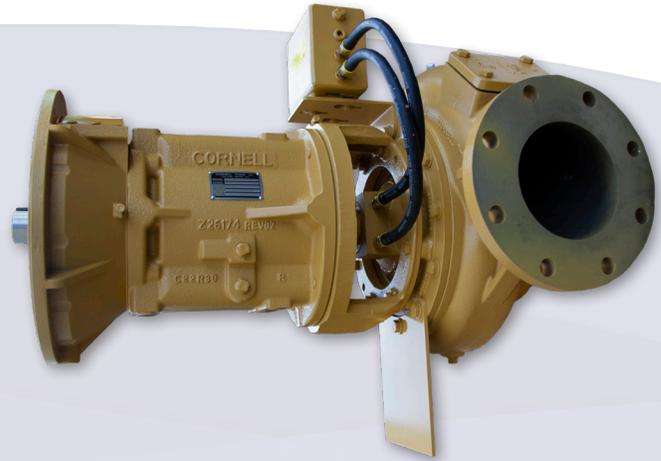
MATERIALS OF CONSTRUCTION

- All iron pump end construction
- Cast iron bearing frames
- Shafts of carbon steel or stressproof steel
- Cast iron wear rings
- Single Component or Cartridge Seals available

FEATURES

- Excellent hydraulic efficiencies
- Exceptional shaft and bearing life
- Replaceable wear rings and shaft sleeves
- Fully-machined impellers
- Shower curtain shield
- Double volute design
- Two-year warranty
- Frame Mounted, Engine Mounted or Close Coupled
- Redi-Prime available

PUMPS FOR INDUSTRY



REDI-PRIME® PUMPS

Many Cornell Pump models can be outfit with our patented priming and repriming system, Redi-Prime, that allows the pumps to be operated without an attendant. 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 in virtually every other pump we manufacture as well.

PERFORMANCE

DISCHARGE SIZE RANGE	1.25" TO 30"
MAX SOLIDS HANDLING	10.2"
MAX FLOW	38,000 GPM
MAX HEAD	850'

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)
- SAE 1144 stressproof steel
- 420HT wear rings and shaft sleeve available

FEATURES

- Fully automatic priming and repriming
- Handles air/liquid mixtures with ease
- Rapidly primes and re-primed completely unattended
- Environmentally safe priming system designed to prevent product leakage
- Handles large sized solids
- High suction lift capability up to 28 feet
- Premium hydraulic efficiency for reduced energy consumption

N-SERIES SOLIDS HANDLING PUMPS

Discharge sizes up to 30", flows up to 38,000 GPM, and solids up to 10.2".

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.

PERFORMANCE

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

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)
- SAE 1144 stressproof steel
- H20HT wear rings and shaft sleeve available

FEATURES CONTINUED

- Cycloseal® grit removal system
- High-efficiency design
- Run-Dry Option
- Redi-Prime Option
- Excellent NPSHr
- Ruggedness and durability
- Two-year warranty
- Minimum 3 inch solids handling

PUMPS FOR INDUSTRY



PUMPS FOR COARSE ABRASIVES

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 maintain lost efficiency while in service.

PERFORMANCE	
DISCHARGE SIZE RANGE	2" TO 8"
MAX SOLIDS HANDLING	3"
MAX FLOW	9,000 GPM
MAX HEAD	625'

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 Option
- Redi-Prime Option
- Heavy-duty construction for aggressive applications
- Replaceable wear plates
- Two-year warranty

SELF-PRIMING PUMPS

STX, STL, and STH pumps offer rugged construction and efficiencies up to 68%.

MODULAR DESIGN: Easy conversion to SAE engine-driven applications.

OVERSIZED OIL RESERVOIR: superior bearing cooling.

PERFORMANCE	
DISCHARGE SIZE RANGE	2" TO 10"
MAX SOLIDS HANDLING	3"
MAX FLOW	4,500 GPM
MAX HEAD	275'

MATERIALS OF CONSTRUCTION

- Ductile iron volute casing, backplate, and impeller
- 17-4PH stainless steel shafts
- Optional CD4MCu on 3STX, 4STX, and 6STX pump models

FEATURES

- Cycloseal® grit removal system
- High-efficiency design
- High RPM capacity for engine driven applications.
- High head capacity
- Modular design
- ANSI, NPT, and DIN flanges available
- Five-year warranty

HIGH HEAD PUMPS

Cornell's MX high head mining pump series provide heads up to 825', long service life, and industry-leading efficiency.

PERFORMANCE	
DISCHARGE SIZE RANGE	2" TO 8"
MAX SOLIDS HANDLING	2.38"
MAX FLOW	8,000 GPM
MAX HEAD	825'

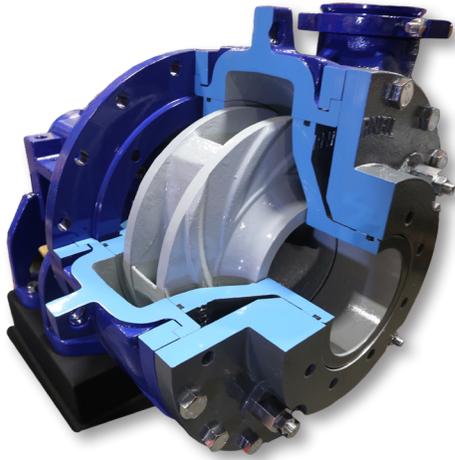
MATERIALS OF CONSTRUCTION

- 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 Option
- Redi-Prime Option
- High operating pressures
- Two-year warranty

PUMPS FOR INDUSTRY



SM SERIES HEAVY DUTY SLURRY PUMPS

Robust slurry pumps, especially good for series pumping, with Cycloguard® and Cycloseal® innovations. The SM Series of pumps are unlined high chrome white iron wet ends for a wide range of slurry applications. All pumps are design to a maximum working pressure of 600 PSI.

PERFORMANCE	
DISCHARGE SIZE RANGE	2" TO 10"
MAX SOLIDS HANDLING	4"
MAX FLOW	12,000 GPM
MAX HEAD	330'

MATERIALS OF CONSTRUCTION

- Chrome Iron Impeller, volute, volute casing, wear palte, backplate, and expeller
- 4140 Steel Shaft
- 420 Stainless Shaft Sleeve
- Ductile Iron suction cover

FEATURES

- Back pullout design to simplify maintenance
- 600 PSI rated pressure
- CycloGuard™ to reduce inlet recirculation
- Infinitely variable volute and discharge position
- Axially adjustable suction wear plate = no frame adjustment needed or realignment of belts/piping

FEATURES CONTINUED

- Available in any pipe flange standard
- Standard CycloSeal® – no flush water required
- Other shaft seal arrangements available
- Grease or oil lubricated bearing frame
- High-capacity bearings available
- Ideal for series/multistage pumping applications
- Handles high solids concentrations

PUMPS FOR SLURRY APPLICATIONS

SP-SERIES PUMPS pass up to 4.1" solids. Rubber or metal lined, handles pH from 1 to 14 depending on configuration. Capable of pumping slurries that are up to 40% solids by volume.

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

MATERIALS OF CONSTRUCTION

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

FEATURES

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

PUMPS FOR INDUSTRY



WASTE WARRIOR AUGER CUTTER PUMP

Cornell offers cutter pumps to break up solids and ranges in the waste stream. Can tackle aggressive plugging issues

PERFORMANCE

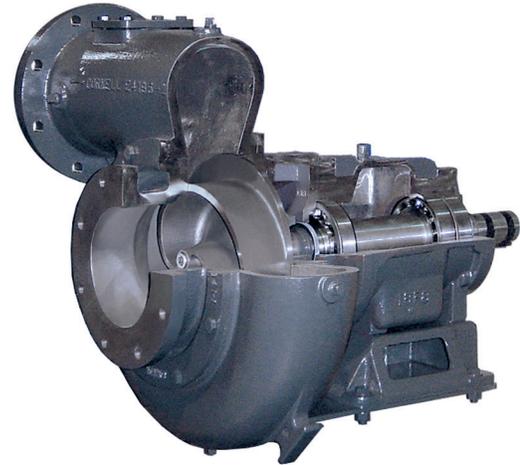
DISCHARGE SIZE RANGE	4" TO 16"
MAX SOLIDS HANDLING	5.2"
MAX FLOW	15,000 GPM
MAX HEAD	360'

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)
- SAE 1144 stressproof steel
- 420HT wear rings and shaft sleeve available

FEATURES

- Labor savings by reducing clean-out events
- Minimal energy consumption for solution
- Designed to break up clogs/ragging
- Hardened cutter material
- Adjustable clearances
- Minimal flow restrictions
- Does not change external pump dimensions
- Retrofittable



THE DELTA™ IMPELLER PUMPS

For reliable pumping of liquids with solids, rags, stringy materials and difficult to handle waste water, the **Cornell's Delta™ impeller** is a true non-clogging impeller.

Two distinct vortices are created by the impeller to weave and pass any solids through the pump. Solids are washed smoothly over the rounded vane edges, down the slope of the impeller, and into the pump discharge. Absence of sharp corners and edges on the impeller prevent "hair pinning" or hang-up of stringy materials. Larger solids are effectively broken up by the comminuting action of the impeller vanes.

PERFORMANCE

DISCHARGE SIZE RANGE	3" TO 10"
MAX SOLIDS HANDLING	4"
MAX FLOW	5,000 GPM
MAX HEAD	450'

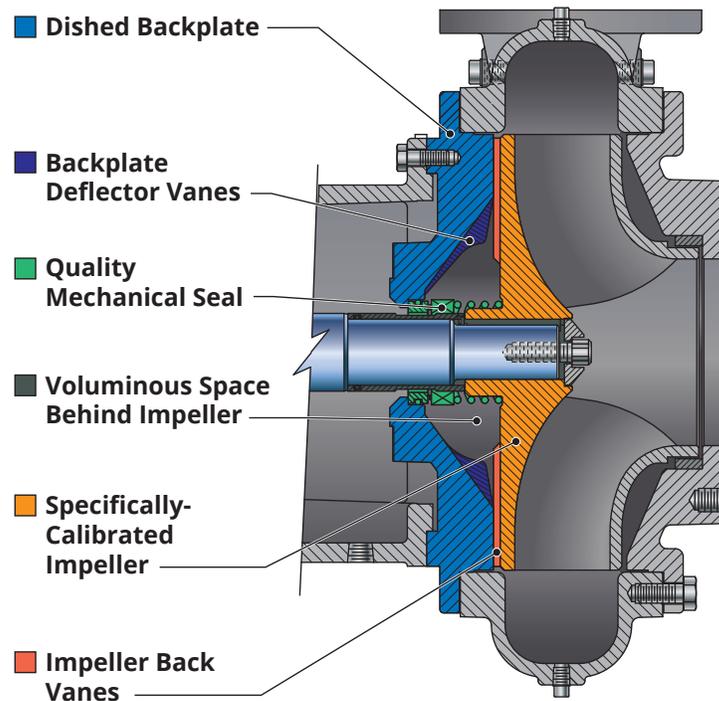
MATERIALS OF CONSTRUCTION

- 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)
- SAE 1144 stressproof steel
- 420HT wear rings and shaft sleeve available

FEATURES

- Handles light Slurries and Sludges with abrasive particles
- Interchangeable with Enclosed Impeller solids handling pumps
- Heavy duty construction
- No wear rings required
- No axial clearance adjustments are necessary
- A variety of Mounting Configurations
- Available in 2 or 3 vane Semi-open design

CYCLOSEAL®



CYCLOSEAL® — THE SEALING SYSTEM INTEGRAL TO CORNELL PUMPS

Many of our pumps from Cornell feature our patented 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.

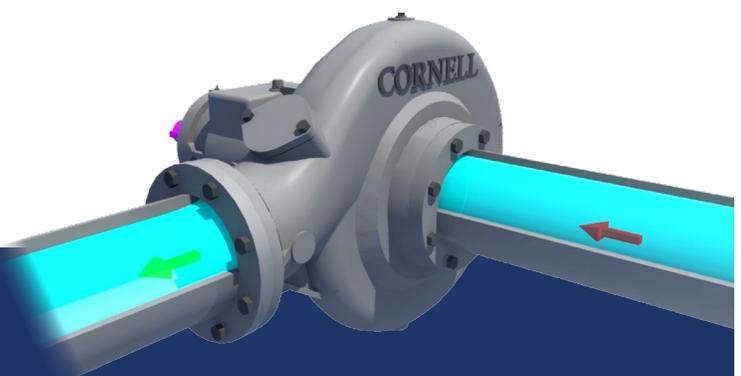
Run-Dry™ Option: All pumps with Cornell's Cycloseal system can be equipped with an optional Run-Dry feature, which serves to lubricate the seal faces even when there is no liquid in the pump casing. In situations where the pump must run dry for several hours, or where the pump may suddenly lose prime 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.

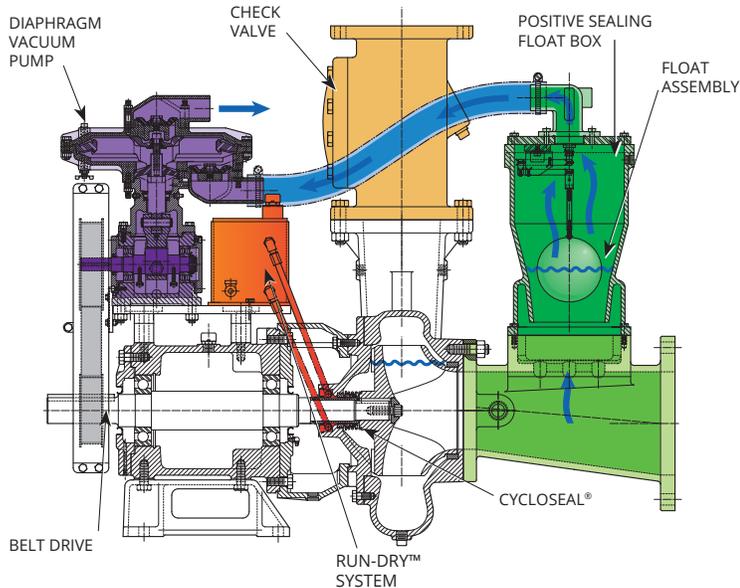
Maintenance Savings: The end result of a longer-lasting seal is less down-time and lower maintenance costs over the life of the pump.



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

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

REDI-PRIME & RUN DRY

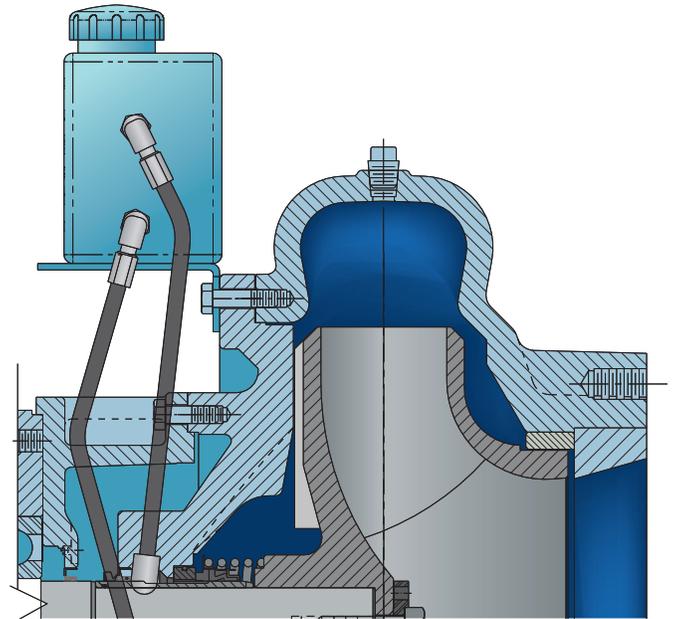


REDI-PRIME®

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.

- 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



RUN-DRY™

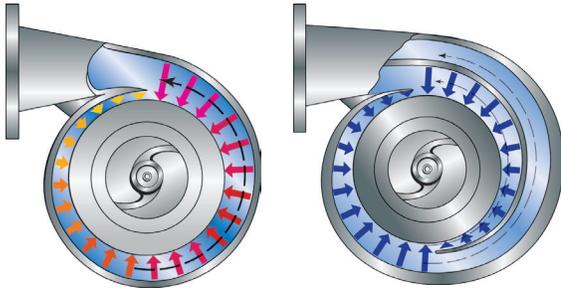
CORNELL'S RUN-DRY SYSTEM is the answer for applications where there is the possibility of the pump operating in a dry condition. Cornell's Run-Dry system consists of an auxiliary gland and oil reservoir that keeps the seal faces lubricated and prevents dry running of the seal faces during priming, re-priming, 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 Cycloseal® and Redi-Prime®

61017MP with Run-Dry™



CORNELL FEATURES & BENEFITS



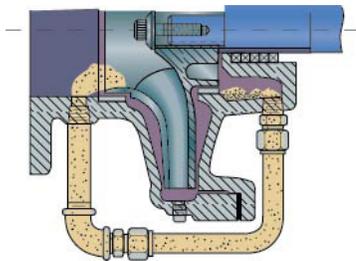
Single Volute

Double Volute

DOUBLE VOLUTE DESIGN

Cornell's double volute system minimizes radial thrust loads common with high capacity, high-head centrifugal pumps, by balancing the radial forces around the impeller.

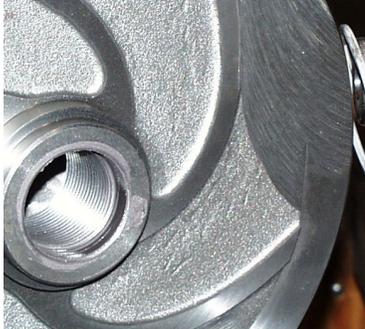
- Minimizes radial thrust load
- Eliminates shaft flexing and fatigue
- Greatly extends life of packing/seal, wear rings and bearings
- Effectively meets high pressure and high volume requirements
- Increases bearing life



EXTERNAL HYDRAULIC BALANCE LINE

Instead of boring large holes in the impeller to lower pressure in the stuffing box, Cornell employs a more effective solution; the external hydraulic balance line.

- Reduces turbulence and improves hydraulic efficiency
- Increases life of packing (or mechanical seal) and bearings
- Provides positive control of axial forces
- Reduces pump wear because abrasives aren't trapped behind impeller/near shaft



CD4MCU STAINLESS STEEL OPTIONS

CD4MCu is a duplex stainless steel, with greater corrosive resistance than 304 stainless steel. CD4MCu allows the pumps to be used in more abrasive applications, and it won't pit like 304 stainless steel, has a better stress/corrosive cracking resistance than 304 stainless, and higher strength than 304 stainless steel. And, compared with cast iron material, it is much more resistant to corrosion and much stronger.



WE PUT OUR BEST IDEAS TO THE TEST

Our modern hydraulics lab is the proving ground for all Cornell pumps. Our goal is to deliver the most efficient pumps at a time when energy costs are escalating. Technicians, under the direction of Registered Professional Engineers, conduct certified performance tests that precisely determine the performance and NPSH required for particular design conditions.

The focal point of the research facility is a 80,000 gallon closed loop system for running accurate low pressure tests. It can circulate up to 60,000 gallons of water per minute. All test motors are calibrated, and adhere to the Hydraulic Institute Standards in testing. A variable frequency drive will allow us to test pumps up to 4,000 horsepower at various speeds. Additional tests can be conducted upon customer request.

CORNELL CO-PILOT

CORNELL Co-Pilot™



Bluetooth®
Enabled



Connect
via Cell



5 Sensor
Inputs



Desktop
Monitoring



MONITORING AT YOUR FINGER TIPS

Cornell Co-Pilot allows you to monitor performance via desktop, iOS or Android apps. See GPS location of pump, receive alarms for out of condition operation, and reduce manual inspections.

CORNELL CO-PILOT ALLOWS:

Automation and Remote Monitoring/Management for your equipment...

- Telematics (GPS Location)
- Diesel Driven and Electric Drive Pumps
- Compatible with most all engine controllers that support modbus (RS-485)
- Compatible with most all VFD Panels that support modbus (RS-485)

Remote Control Features:

- Remote Start/Stop control from phone/computer/tablet
- Remote Speed (RPM) control from phone/computer/tablet

CONNECT TO MORE THAN JUST PUMPS!

Co-Pilot isn't just for Cornell branded pumps; it can be attached to Non-Cornell **Pumps, Generators, Light Towers, Compressors, Frac Tanks**, and more! Contact us about your application to review compatibility.

With Co-Pilot, you can additionally connect up to 4 Analog (4-20mA) sensors and 1 Digital Input. We have a full line of accessories including:

- Magnetic Flow Meters
- Pressure Transducers
- Submersible Level Transmitters
- Temperature Sensors
- Fuel Level Sensors
- Etc.

If you have a need to remotely monitor a specific parameter, let us know and we can help source a compatible sensor for you.



MARKET AND PRODUCT LINE



AGRICULTURE



FOOD PROCESS



INDUSTRIAL



MINING



MUNICIPAL



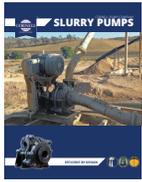
WATER TRANSFER



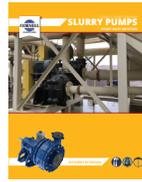
REFRIGERATION



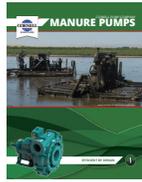
CONSTRUCTION



SLURRY



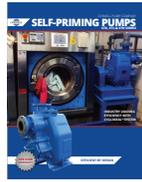
SLURRY SM



MANURE



CUTTERS



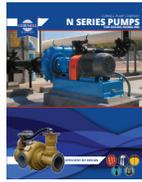
SELF PRIMING



HIGH FLOW



MX SERIES



N SERIES



CYCLONE™



EDGE™



HYDRAULIC SUBS



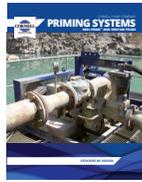
IMMERSIBLE



CD4MCU



RUN-DRY™



PRIMING SYSTEMS



CYCLOSEAL®

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:
6,074,554; 6,036,434; 6,079,958; 6,309,169; 6,104,949.

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