Cornell Pump Company’s MP Pump Series combines 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, and manure.

- Run-Dry™ and Redi-Prime® compatible
- High-chrome white iron or heat-treated ductile iron pump-end
- Thick cross-sections for abrasive wear and high operating pressures
- Front adjustable wear plate to regain lost efficiency while in service
- Replaceable suction liner and wear plates at point of maximum wear
- Heavy duty construction for aggressive applications with 17-4PH Stainless shaft
- Hardness rating > 650 BHN provides better wear properties compared to standard cast or ductile iron
- Heavy duty bearing frame with double angular contact thrust bearing. Oil or grease lubricated

**MP SERIES PUMPS ARE DESIGNED FOR COARSE ABRASIVES**

The MP series offers exceptional wear resistance for reduced maintenance and long life in harsh environments.

<table>
<thead>
<tr>
<th>MP SERIES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCHARGE SIZE RANGE</td>
<td>4&quot;, 6&quot;, 8&quot;</td>
</tr>
<tr>
<td>MAX SOLIDS HANDLING</td>
<td>UP TO 3&quot;</td>
</tr>
<tr>
<td>MAX FLOW</td>
<td>9,000 GPM</td>
</tr>
<tr>
<td>MAX HEAD</td>
<td>625’</td>
</tr>
<tr>
<td>SEAL TYPE</td>
<td>MECHANICAL SEAL WITH CYCLOSEAL®</td>
</tr>
<tr>
<td>IMPELLER</td>
<td>ENCLOSED</td>
</tr>
<tr>
<td>CONFIGURATIONS</td>
<td>HORIZONTAL FRAME AND SAE MOUNT</td>
</tr>
</tbody>
</table>

Image courtesy of Bambauer Equipment
**MP SERIES PUMPS**

**BENEFITS:**
- Wear resistance directly correlates to the hardness of the material.

**MATERIAL OPTIONS FOR MP PUMPS**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>STANDARD MATERIAL HARDNESS</th>
<th>HARCER</th>
<th>HARDEST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cast Iron</td>
<td>Ductile Iron</td>
<td>Heat Treated Ductile Iron</td>
</tr>
<tr>
<td>TECHNICAL NAME(s)</td>
<td>ASTM A48, CL30</td>
<td>ASTM A536 100-70-03</td>
<td>ASTM A536 100-70-03 quench and temper</td>
</tr>
<tr>
<td>CORNELL MATERIAL CODE</td>
<td>CI</td>
<td>CV</td>
<td>ZY</td>
</tr>
<tr>
<td>RELATIVE COST</td>
<td>$</td>
<td>$</td>
<td>$$</td>
</tr>
<tr>
<td>HARDNESS</td>
<td>190-240 BHN</td>
<td>230-300 BHN</td>
<td>400-450 BHN</td>
</tr>
</tbody>
</table>

**Note:** Wear resistance directly correlates to the hardness of the material.
SLURRY PUMPS FOR TRANSFER, INJECTION & IRRIGATION

Cornell offers over 60 models of heavy duty Solids Handling Pumps for the toughest slurry applications.

<table>
<thead>
<tr>
<th>LEGACY MANURE PUMPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCHARGE SIZE RANGE</td>
</tr>
<tr>
<td>MAX SOLIDS HANDLING</td>
</tr>
<tr>
<td>MAX FLOW</td>
</tr>
<tr>
<td>MAX HEAD</td>
</tr>
<tr>
<td>SEAL TYPE</td>
</tr>
<tr>
<td>IMPELLER</td>
</tr>
<tr>
<td>CONFIGURATIONS</td>
</tr>
</tbody>
</table>

Cornell Manure Slurry pumps are iron or ductile iron construction with hard face mechanical seals for extended seal life. Optional materials are available for abrasive applications.

- High hydraulic efficiency
- Cycloseal® design
- Rigid, heavy walled construction
- Back pullout design
- Large bearings and shaft
- Impeller backvanes reduce axial thrust
- Replaceable wear rings and shaft sleeves
- Dynamically balanced impeller
- Low maintenance, long life
- Low power costs
- No seal venting or flushing required
- Ease of maintenance
- Smooth operating
- Solids handling capability
- Run-Dry®, Redi-Prime®, and cutter blades available
- Versatile mounting configurations
STX/H/L SELF-PRIMING PUMPS

STX/STL/STH Series of popular self-primers to have the best efficiencies in the industry. Using 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.
ENCLOSED TWO, THREE, AND FOUR PORT
SPHERICAL SOLIDS
Large spherical solids pass through the pump while offering optimal head and efficiency.
- 2” or larger solids
- 3” to 30” discharge sizes
- Flows to 40,000 GPM and heads to 450’

THREE OR FOUR BLADED, SEMI-OPEN
SLURRY
Cutting action allows the semi-open impeller to handle the worst slurries at high heads.
- 1” or larger soft solids
- 1.25” to 10” discharge size

DELTA STYLE
STRAW AND STRINGY MATERIALS
Trailing edges on impeller vanes reduce low pressure areas. Vortices are created which pass solids through the impeller. No “hair pinning” or hang-up of stringy materials. Larger solids are broken up.
- For difficult solids
- 3” to 10” discharge size
- Flows to 5000 GPM and heads to 400’

BLADE CUTTER
RAGGING MATERIALS
Rotating and stationary cutter blades mounted on the suction end break up clogs and rags before they reach the impeller while keeping efficiencies as high as possible.
- Minimal energy consumption (4% or less)
- Hardened, adjustable cutter blades
- Minimize flow restrictions

WASTE WARRIOR CUTTER
SEVERE RAGGING
A more aggressive solution to troublesome clogs and severe ragging issues. A scythe-like edge sweeps the area where the suction pipe meets the volute to keep materials from clogging in the impeller area.
- Limited energy consumption (around 8%)
- Hardened cutter blades
- Insignificant flow restrictions
CORNELL FEATURES & BENEFITS

**CYCLOSEAL® SYSTEM FOR GRIT REMOVAL**
Cycloseal is a patented system with a self-contained single mechanical seal with a dished line. 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

**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-primes completely unattended
- Environmentally safe priming system designed to prevent product leakage
- Premium hydraulic efficiency for reduced energy consumption

**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®

**VENTURI PRIME PRIMING SYSTEM**
The venturi prime system utilizes a compressor driven by the pump shaft and lubricated by engine oil to blow air through the venturi to evacuate air 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.

- Fully automatic priming and repriming
- Primes with reasonable speed
- Can operate unattended
- Available with manual valve for operation in colder climates
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.