EFFICIENT BY DESIGN

SELF-PRIMING PUMPS
STX, STL & STH SERIES

INDUSTRY LEADING EFFICIENCY WITH CYCLOSEAL® SYSTEM

FIVE-YEAR WARRANTY

EFFICIENT BY DESIGN
EFFICIENT, DURABLE, INNOVATIVE and dependable are all words that people use to describe Cornell pumps. The Cornell STX, STL & STH Self-Priming Lines are the newest products from Cornell Pump following a tradition of building world-class pumping equipment.

Efficient by Design is not only our mantra, but it is also our priority when designing our equipment. The Self-Priming Line exceeds the efficiency ratings of the competition by multiple efficiency points, without sacrificing lift capability. This improvement translates into energy cost savings over the life of the pump.

In addition to being focused on efficiency, Cornell Pump is also known for its innovative features. The Self-Priming Pumps follow this tradition by the addition of the Cycloseal® sealing system, which will extend your seal life.

Have an existing self-primer installed? Contact Cornell Pump regarding the retrofit program, which allows the Cornell STX rotating assemblies to retrofit into your existing pump volute.

SELF PRIMING PUMP FEATURES AND BENEFITS

CORNELL CYCLOSEAL® SEALING SYSTEM with Run-Dry™, Type 2 silicon carbide seal and grit removal system.

CORNELL PUMP FIVE-YEAR WARRANTY is standard on all STX STL, & STH pumps.

17-4 PH STAINLESS STEEL SHAFT and oversized bearings extends the operating range and reduces shaft breakage.

HIGH-EFFICIENCY DESIGN pumps more liquid using less energy for substantial savings over the life of the pump.

ADJUSTABLE WEAR PLATE is abrasion resistant and easily accessible for replacement.

MODULAR DESIGN rotating assembly for easy conversion to SAE engine driven applications.

DOUBLE-LIP SEALS with atmospheric vents provide added protection for bearings.

DUCTILE IRON CONSTRUCTION for increased durability and resistance to wear.

HIGH RPM CAPACITY for high-head and engine driven applications.

DROP-IN REPLACEMENT for many existing installations.

OVERSIZED OIL RESERVOIR provides superior bearing cooling.

THREADED IMPELLER for increased strength.
SELF-PRIMING PUMPS

INNOVATIVE FEATURES

STX/STH/STL

SPECIFICATIONS

<table>
<thead>
<tr>
<th>HOUSING MATERIAL</th>
<th>DUCTILE IRON ASTM A536</th>
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</thead>
<tbody>
<tr>
<td>IMPELLER MATERIAL</td>
<td>DUCTILE IRON ASTM A536</td>
</tr>
<tr>
<td>BACK PLATE</td>
<td>DUCTILE IRON ASTM A536</td>
</tr>
<tr>
<td>DISCHARGE SIZES</td>
<td>2&quot;, 3&quot;, 4&quot;, 6&quot;, 8&quot; AND 10&quot;</td>
</tr>
<tr>
<td>FLOW RATES</td>
<td>UP TO 4,200GPM / 954 M³/H</td>
</tr>
<tr>
<td>TDH</td>
<td>UP TO 253' / 77 M</td>
</tr>
<tr>
<td>SEAL TYPE</td>
<td>TYPE II, MECHANICAL</td>
</tr>
<tr>
<td>SOLIDS HANDLING DIAMETER</td>
<td>UP TO 3&quot;</td>
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<tr>
<td>IMPELLER TYPE</td>
<td>SEMI-OPEN</td>
</tr>
<tr>
<td>SHAFT</td>
<td>17-4 PH STAINLESS STEEL</td>
</tr>
</tbody>
</table>

STX/STH/STL OPTIONS

- Discharge check valve
- CD4MCu pump end
- Self-cleaning wear plate
- Complete replacement rotating assembly
- Optional hardened ductile impeller
- Optional hardened steel wear plate
- V-belt drive
- SAE engine mount
- Air-release valve

REMOVABLE COVER PLATE
Cornell STX, STL & STH Pumps have a removable coverplate that provides quick access to the pump’s impeller.

SOLIDS HANDLING IMPELLER
Ductile iron two-blade impeller handles solids up to 3" in diameter. Impeller backvanes reduce the buildup of foreign matter and pressure in the stuffing box.

THE INNOVATIVE CORNELL CYCLOSEAL® SEALING SYSTEM
Eliminates air and gas pockets and keeps solids away from the seal area, extending seal life up to 3 times the industry average.
### STX Series

- **Discharge Sizes**: 3", 4", 6", 8", & 10"
- **Flow Rates**: Up to 4200 GPM / 954 m³/h
- **TDH**: Up to 205' / 62 m
- **Solids Handling Dia.**: Up to 3"

STX pumps offer better efficiency than competitors, while maintaining flange-to-flange interchangeability. More robust than standard self-primers, the oversize bearing frame and Cycloseal® design mean longer pump life and less maintenance than industry standards.

### STH Series

- **Discharge Sizes**: 2", 3", & 4"
- **Flow Rates**: Up to 2000 GPM / 454 m³/h
- **TDH**: Up to 253' / 77 m
- **Solids Handling Dia.**: Up to 3"

STH series is high head WITHOUT requiring a booster pump. With heads up to 253', excellent efficiencies and flow, the STH series is able to tackle the most demanding applications. No booster pump means reduced maintenance and a simpler, more reliable solution.

### STL Series

- **Discharge Size**: 8"
- **Flow Rates**: Up to 2400 GPM / 545 m³/h
- **TDH**: Up to 140' / 43 m
- **Solids Handling Dia.**: Up to 3"

The STL series offers large flow rates, while maintaining lower head. The small form factor of the STL can fit into tight work areas, while delivering flows up to 2,400 GPM. Good solids handling capability, Cornell Quality, and Cycloseal® design set it apart.

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**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 (302,833 liters) closed loop system for running accurate low pressure tests. It can circulate up to 60,000 gallons (227,125 liters) 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.
CYCLO SEAL® DESIGN

The patented, premium mechanical seal system that distinguishes our pumps from all others.

One of the main reasons STX pumps have a distinctive edge on competitors is Cornell's patented Cycloseal design that 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.

EXTENDED SEAL LIFE: Cornell's Cycloseal® design has proven itself in the toughest applications — in some cases more than tripling the normally expected mechanical seal life.

SYSTEM SAVINGS: The Cycloseal® system requires no external water flush, filters, grease cups, piping or instrumentation normally associated with packing or double mechanical seals.

MAINTENANCE SAVINGS: Longer seal life which translates into less pump down time and lower maintenance costs.

TYPE II SEALS

Part of the Cycloseal system

SELF-ALIGNING SEALS compensate for shaft movement, primary sealing wear, and machine tolerances.

NON-PUSHER DESIGN has no dynamic O-rings to hang up. All seal movement occurs in the bellows.

NON-CLOGGING SINGLE COIL SPRING is more dependable than multiple spring designs.

NO SET SCREWS to mar the shaft or sleeve.

<table>
<thead>
<tr>
<th>TEMPERATURE LIMITS</th>
<th>-40°F/-40°C to +160°F/70°C (Buna); -40°F/-40°C to +400°F/200°C (Viton®).*</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEAL FACES</td>
<td>Silicon carbide vs. silicon carbide.</td>
</tr>
<tr>
<td>ELASTOMERIC BELLOWS</td>
<td>Buna-N, Viton®.</td>
</tr>
<tr>
<td>HARDWARE</td>
<td>Stainless steel.</td>
</tr>
</tbody>
</table>

*Consult Factory for high temperature applications

Watch the Cycloseal video online to see it in action: [http://www.cornellpump.com/support/videos.html](http://www.cornellpump.com/support/videos.html)
FEATURES A FIVE YEAR WARRANTY

DUAL PROTECTION OF BEARINGS
Atmospheric barrier and double lip seals provide bearing protection in the event of seal failure.

BACK PULL-OUT DESIGN
The rotating assembly can be removed without dismantling the pump or disturbing the piping.

ROTATING ASSEMBLY
Cornell’s STX rotating assembly allows for retrofits of existing installations to upgrade your existing pump with Cornell Pump quality and features.

HEAVY-DUTY BEARINGS
Heavy-duty thrust bearings with Separate Oil Reserve sized for V-belt drive loads. Separate oil filling plugs for bearings and mechanical seals with sight gauges.
SELF-PRIMING PUMP CURVES

Performance shown are for S.G. 1.0 60°F water, close-coupled configuration. Other mounting styles or S.G. may require curve adjustments.

3STH
BEP 59%
12.38" IMPELLER DIA.

4STH
BEP 60%
12.38" IMPELLER DIA.
SELF-PRIMING PUMP CURVES

6STX

BEP 62%
1900 RPM

Speed | Impeller Dia. | Style | Voyd | Solids Dia. | N_s | Suction | Discharge | No. Vanes
-----|---------------|-------|------|-------------|-----|---------|------------|--------
VARIOUS | 12.38" | SEMI-OPEN | SINGLE | 3" | 1940 | 6" | 6" | 2

BEP 69%
1800 RPM

Speed | Impeller Dia. | Style | Voyd | Solids Dia. | N_s | Suction | Discharge | No. Vanes
-----|---------------|-------|------|-------------|-----|---------|------------|--------
VARIOUS | 14.75" | SEMI-OPEN | SINGLE | 3" | 2000 | 8" | 8" | 2
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.