CORNELL PUMP COMPANY

Agricultural Pumps

CORNELL
Energy Efficiency
Cornell Pumps are designed to deliver best in class efficiency. Depending on operating hours, fueling, and horsepower required, you can save $3,000 per year (or more) in energy costs. Cornell manufactures more than 60 clear liquid and non-clog pumps that meet or exceed optimum efficiency standards for centrifugal pumps.

External Hydraulic Balance Line
Cornell’s external hydraulic balance line equalizes pressure between the impeller hub area and the pump suction to reduce axial loading acting on the impeller, shaft and bearings. The balance line also assists in moving sand and silt from the stuffing box to the low pressure area at the pump suction, reducing wear of the wetted parts.

Materials of Construction
All Cornell irrigation pumps are constructed with top quality materials. Cornell irrigation pumps are cast iron, bronze fitted or all iron construction. Optional materials are available for abrasive or caustic applications. Standard features include balanced impellers, heavy-duty shafts, replaceable shaft sleeves, and replaceable wear rings.

Double Volute
Cornell introduced the double volute as an industry first more than 30 years ago. The double volute system effectively balances forces within the pump to reduce radial load, shaft deflection and fatigue. This eliminates shaft breakage and extends the service life of packing and mechanical seals, wear rings and bearings while maintaining high hydraulic efficiency.

Select High Efficiency Pump Models:
- 8H – 88% efficient
- 6RB – 89% efficient
- 5RB – 86% efficient
- 4RB – 85% efficient
**CORNELL MANURE SLURRY PUMPS**

- Lip seals (for bearing protection—double seals on oil lube units)
- Oversized bearings
- Clean-out port
- Modular bearing frame (optional oil lubrication for extreme temperatures or wash-down environments)
- Heavy duty shaft
- Replaceable wear ring
- High efficient dynamically balanced impeller
- Double volute (on some models)
- Replaceable shaft sleeve
- Back pull-out design for ease of maintenance
- Double volute
- Cycloseal® with hard face seals

### Enclosed Impeller

- 600-1800 RPM
  - 1. 4NNTL
  - 2. 4NNT
  - 3. 4414T
  - 4. 4NHTB
  - 5. 6NNT
  - 6. 6NHTA
  - 7. 6NHTB
  - 8. 8NNT
  - 9. 8NHTA
  - 10. 8NHTB

### Semi-Open Impeller

- 900-3600 RPM
  - 1. 1.25YML
  - 2. 2.5HM
  - 3. 2.5YM
  - 4. 3HM
  - 5. 4HM
  - 6. 4614M

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**Capacity**

- U.S. Gallons Per Minute

- Cubic Meters Per Hour

- Feet

- Meters

- Total Dynamic Head
Materials of Construction
Cornell manure slurry pumps are all iron construction with stainless steel shaft sleeves and hard face mechanical seals for extended seal life. Optional materials are available for abrasive applications.

Impeller Options
Cornell offers three unique impeller designs for liquid waste slurry applications (shown left to right). The Delta™ style impeller is excellent for handling straw, twine, and heavy sludge where there is a low to medium head requirement. Cornell’s two- and three-port enclosed impellers are designed to handle large solids with high efficiency and high head requirements. The three or four bladed, semi-open impeller has a cutting action which allows it to handle the worst slurries at high heads.

Submersibles
Cornell uses the same high efficiency pump-ends for our submersible pumps that have been proven time and again in municipal, industrial and agricultural applications. Coupled with the highest quality motors, Cornell’s submersible product line provides the best possible value.

Delta™ Impeller

High Volume Transfer
Mounting Configurations & Modular Design
Cornell irrigation and manure slurry pumps are available in a variety of mounting configurations, including horizontal and vertical close-coupled pumps, vertical and horizontal frame-mounted pumps, and pumps with an SAE bell housing mounting directly to an engine. Submersible pumps are available for a wide range of applications with capacities ranging from 80 to 20,000 GPM and heads to 350 feet TDH.

Cycloseal®
Ideally suited for water and waste water applications, Cornell’s patented Cycloseal® (U.S. Patent # 5,489,187) is a self-contained single mechanical seal with a dished backplate. This configuration requires no external flushing and eliminates the need for a water flush line. The Cycloseal® uses stationary deflector vanes cast into the pump backplate in conjunction with contoured impeller back vanes and a dished backplate to create pressure gradients that moves solids and entrained vapor away from the seal faces. The service life of a Cycloseal® mechanical seal can be as much as 10 times longer than a typical mechanical seal.

Run-Dry™ System
For applications where there is the possibility of the pump operating in a dry condition, Cornell’s Run-Dry™ system is the answer. 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.

Redi-Prime®
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. With suction lifts of up to 28 feet, heads to 470 feet and flow rates exceeding 20,000 GPM, all Cornell pumps can be readily fitted with the Redi-Prime® system.
ADDITIONAL PRODUCTS

Hydro-Transport Food Pumps
Cornell’s innovative single port impeller configuration with its unique offset volute provides the end user with a food handling pump capable of transporting even the most delicate food products such as cranberries, cherries, lettuce, potatoes, carrots or even live fish; reducing product damage and ensuring product integrity. The single port impeller features a large and rounded leading vane edge designed specifically for handling whole or processed foods.

WARRANTY
We believe in our products and services. We work hard to develop a one-on-one relationship that will carry you through your purchase experience and continue to support your after market needs.

Cornell Pump Company warrants equipment of its manufacture to be free from defects in material and workmanship for an industry-leading period of two years from the date of shipment.

Hydro-Turbines
With power production available from 1KW to 300 KW, Cornell’s range of high-efficiency turbines can generate enough power to pay for themselves in a very short time. The key to our system is the recovery of excess head from a river, stream, or pipeline to drive a Cornell turbine. The turbine may be used to drive a pump, a generator or other power requiring device. Whether you require a single turbine or multiple turbines operating in parallel, Cornell engineers and sales personnel can provide specialty application assistance.

PUTTING IDEAS TO THE TEST

Test Lab
Cornell’s test lab is the proving ground for all of our pumps where our goal is to engineer and manufacture the best performing, most efficient pumps on the market. Test Lab technicians, under the supervision of Registered Professional Engineers, perform research and development as well as conduct certified performance, NPSH, and vibration testing.

The focal point of the test lab is an 80,000 gallon open loop testing system with calibrated flow meters from 2.5” through 20” in size. In our closed loop testing system, with flow meters up to 36” diameter, we can test pumps up to 60,000 gallons per minute.

The test lab is also equipped with an 800 HP VFD and multiple transformers to test motors with voltages ranging anywhere from 120 to 4160 volts. For motor sizes above 800 HP we use a portable generator.
The Cornell Product Line:

Agricultural

IRRIGATION & SLURRY

Industrial

PROCESSING

Food

Refrigeration

Municipal

CONSTRUCTION & SEWAGE

Hydro-Energy

All Markets

Rental

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

Cornell pumps and products are subject to 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; 3,743,417; 4,113,886; 4,523,900; 5,489,187; 5,591,001; 6,074,554; 6,036,434; 6,079,958; 2,222,730; 799,534; and are the subject of pending U.S. and Foreign Patent Applications.

CERTIFIED TO ISO 9001:2000