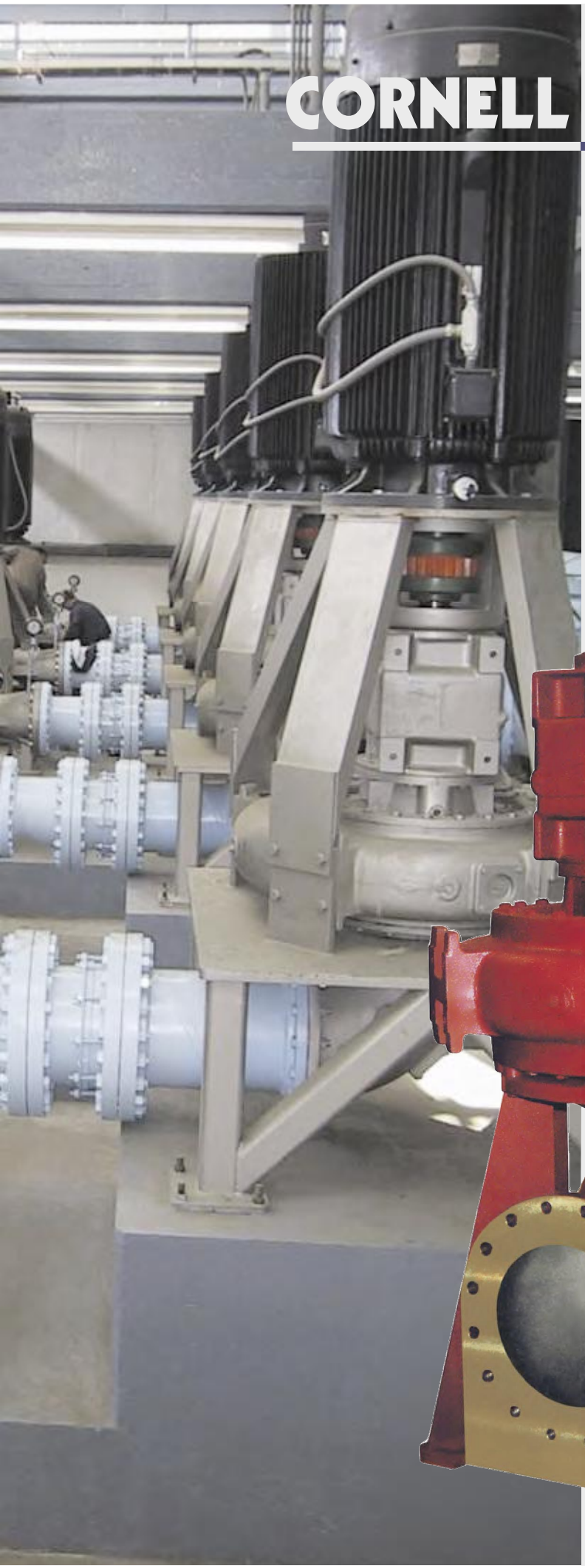
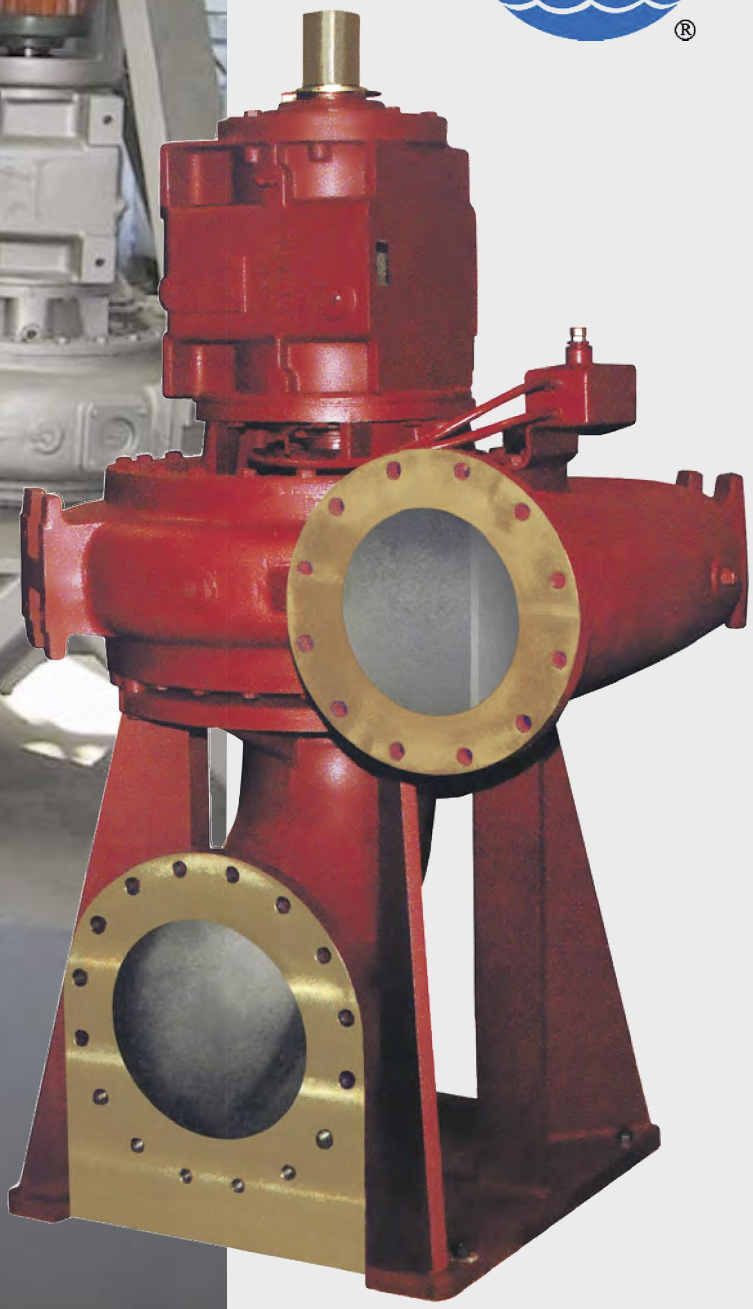
CORNELL PUMP COMPANY

Municipal Pumps

CORNELL®



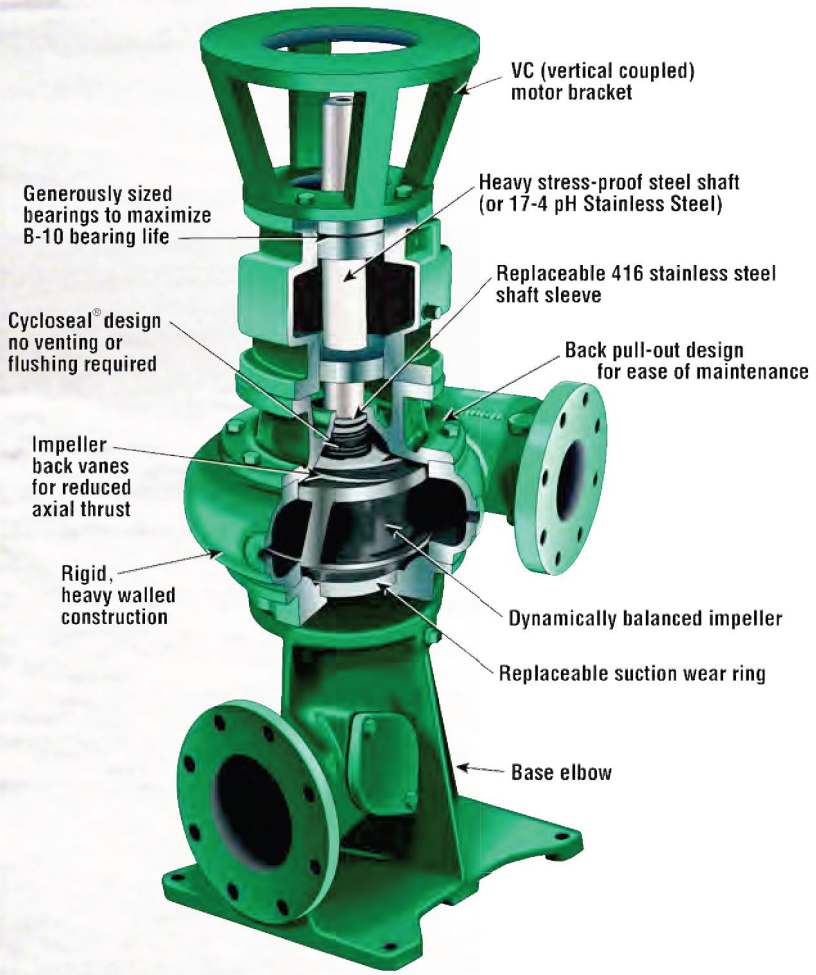


Cornell Solid Handling Pumps

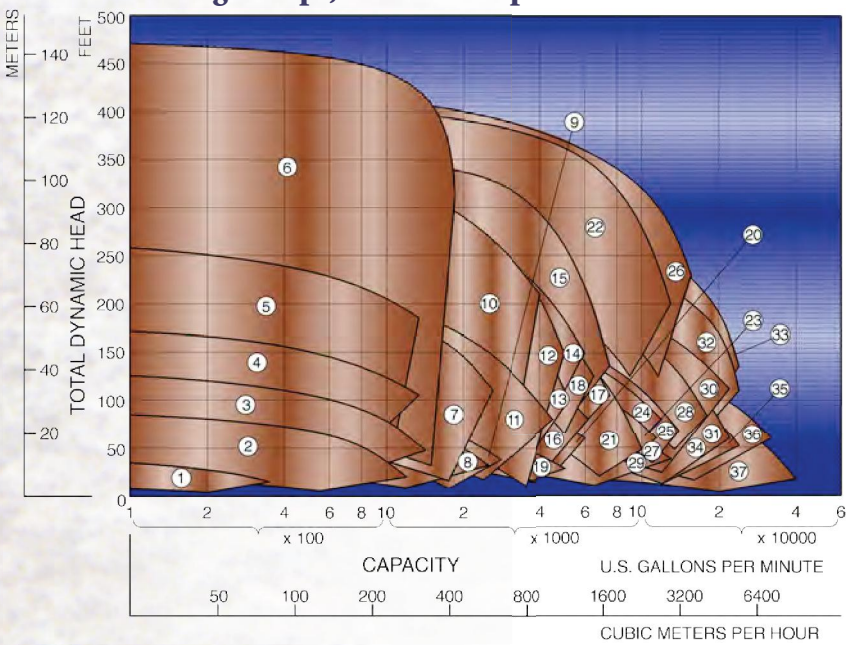
SOLIDS HANDLING PUMPS

Cornell Solids Handling pumps are used for waste water, sludge, sewer systems, stringy material, de-watering, abrasive transfer, canneries, construction, dredging, lumber mills, slush ice, reclamation plants and foundry or mill slag.

Available with Delta™, Semi-open, Enclosed, and Chopper impellers, Cornell pumps are offered in various discharge sizes ranging from 3 to 30 inches, with heads to 470 feet TDH, and flow rates of up to 38,000 GPM.



Solids Handling Pumps, Enclosed Impeller

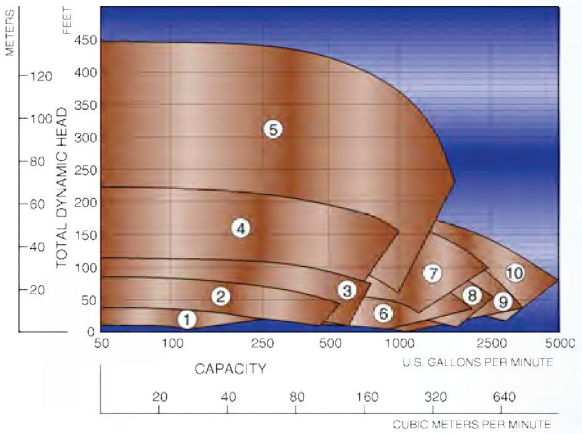


1.	3NLT	8.	6NNT	15.	8NHGA	22.	12NHG28	28.	16NHG22	33.	18NHG34
2.	4NNTL	9.	6NHT/TH	16.	10NHTB	23.	14NHG	29.	16NHG32	34.	20NHFL
3.	4NNT	10.	6NHTB	17.	10NHTBH	24.	14NHGA	30.	18NHG	35.	20NHF
4.	4NHTA	11.	8NNT	18.	10NHTA	25.	14NHGH	31.	18NHFL	36.	24NNG
5.	4414T	12.	8NHTA	19.	12NHTL	26.	14NHG28	32.	18NHF34	37.	30NNT
6.	4NHTB	13.	8NHTH	20.	12NHTM	27.	16NHGH				
7.	6NHTA	14.	8NHTR	21.	12NNF						

Delta™ Style Pumps

The trailing edges of Cornell's Delta™ impeller vanes extend continuously across the pump's suction entrance to reduce low pressure areas. Two distinct vortices are created which pass solids through the impeller. The absence of sharp impeller edges prevents hang-up of stringy materials. Many of our enclosed impeller type pumps can be retrofitted with Delta™ style impellers. Delta™ pumps are available in 3 x 3", 4 x 4", 6 x 6", 8 x 8" and 10 x 10" sizes. Capacities range from 50 to 5,000 GPM and heads range from 10 to 450 feet.

Solids Handling Pumps, Delta™ Impeller



1. 3NLA
2. 4NLDL
3. 4NNDH
4. 4NHDH
5. 4NHM
6. 6NHDH
7. 6NHM
8. 6NNDH
9. 8NNDH
10. 10NNDH

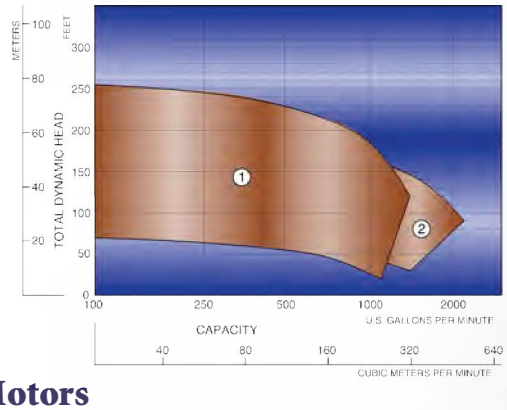
SUBMERSIBLES

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

Chopper Pumps

Cornell Chopper pumps, constructed of ductile iron with replaceable cutter bars of heat treated T1 tool steel are ideally suited for chopping solids. Back to back angular contact ball thrust bearings and single ball radial bearings make for smooth operation. TDH ranges from 30-200 feet with flows to 1,500 GPM.

Solids Handling Pumps, Chopper Impeller

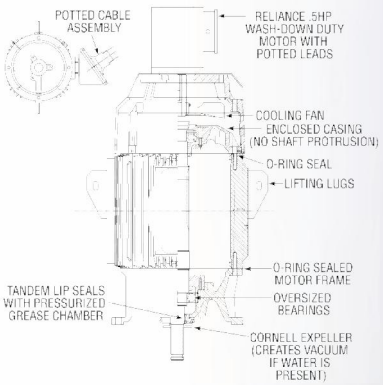


1. 4NC
2. 6NC

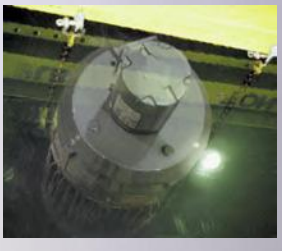
Immersible Pumps and Motors

Ideal for drypit applications where there is the possibility of flooding; our Immersible motors can withstand up to 30 feet of submergence for a two week period, far exceeding industry standards.

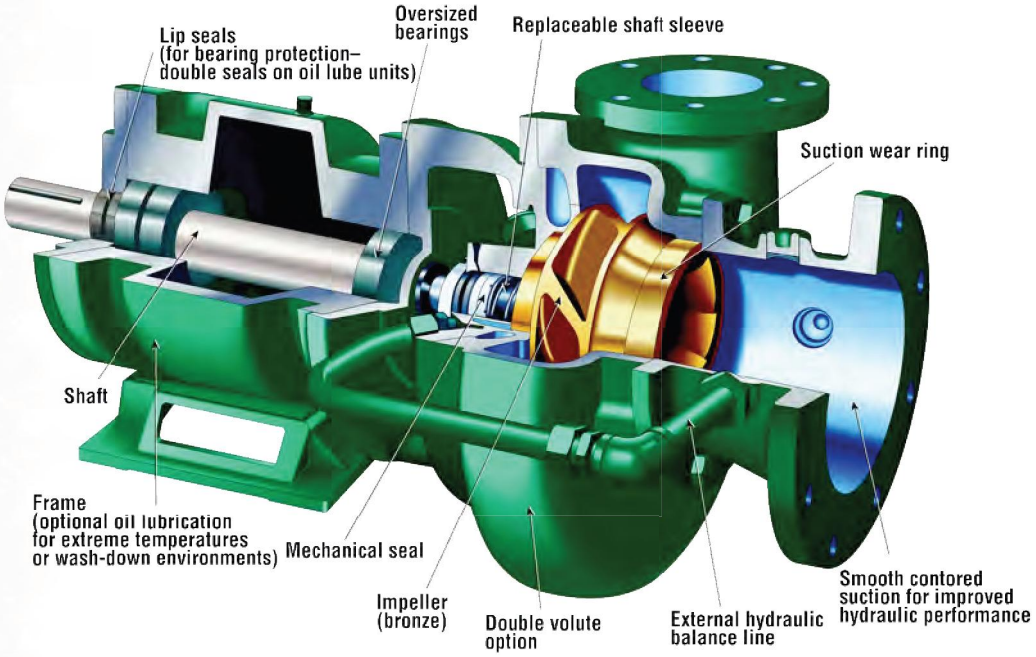
Cornell's immersible bearing frames can be submerged without causing damage to the pump's bearings and can be serviced by any authorized pump house. Immersible bearing frames with heavy duty bearings allow for exceptional shaft and bearing life.



Immersible Motor Testing



Cornell Clear Liquid Pumps



CLEAR LIQUID PUMPS

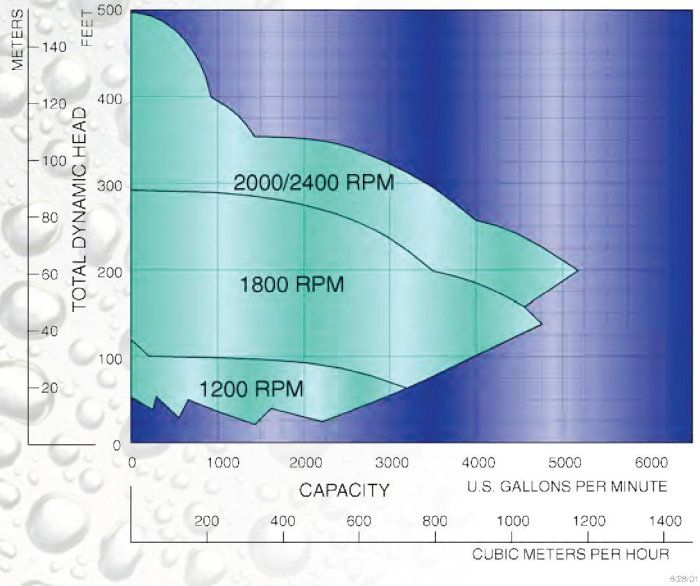
Cornell Clear Liquid pumps are used for commercial and residential irrigation, golf course and lawn maintenance, aqua culture, fountains, breweries, laundries, cooling towers, fire fighting, reverse osmosis feed, and water boosters.

The W, Y, R and H series pumps are available in a wide range of materials with discharge sizes ranging from 1 to 10 inches, heads to 450 feet TDH, and flow rates up to 7,000 GPM.

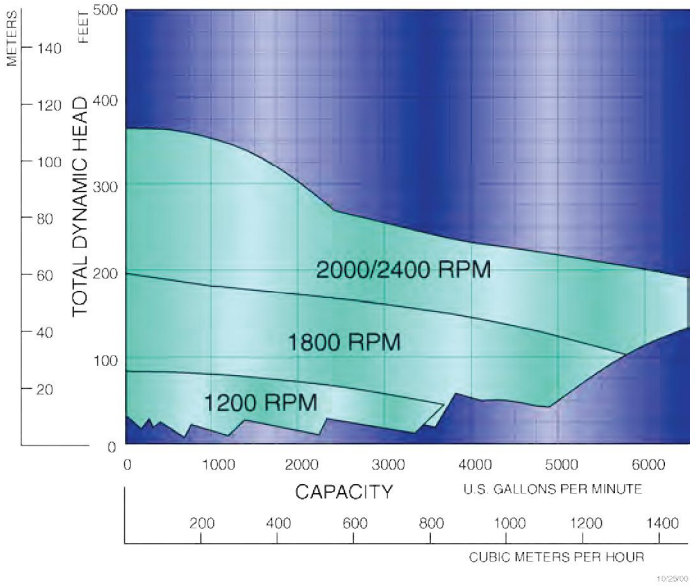
Materials of Construction

All Cornell clear liquid pumps are constructed with top quality materials. Cornell water 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.

H-Series



R-Series

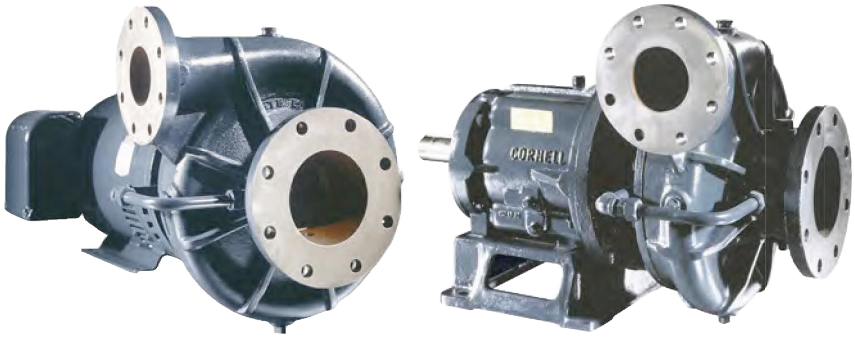


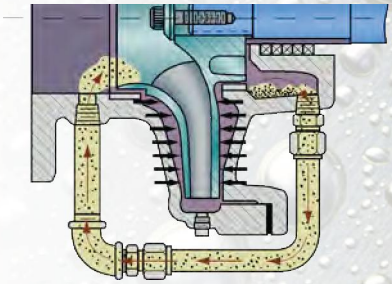
Energy Efficiency

Cornell pumps are designed to deliver ***best in class efficiency***. Depending on operating hours, fuelant, 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.

Select High Efficiency Pump Models:

8H – *88% efficient*
6RB – *89% efficient*
5RB – *8 % efficient*
4RB – *85% efficient*





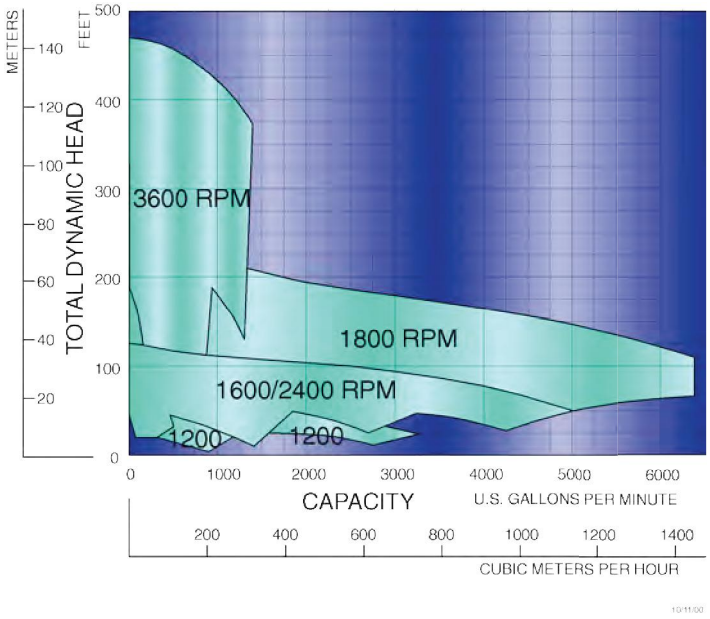
External Hydraulic Balance Line

Cornell's external hydraulic balance line equalizes pressure between the impeller hub area and the pump suction. It also assists in moving debris from the sealing chamber to the low pressure area at the pump suction as well as reducing axial thrust which prolongs bearing, shaft and seal life.

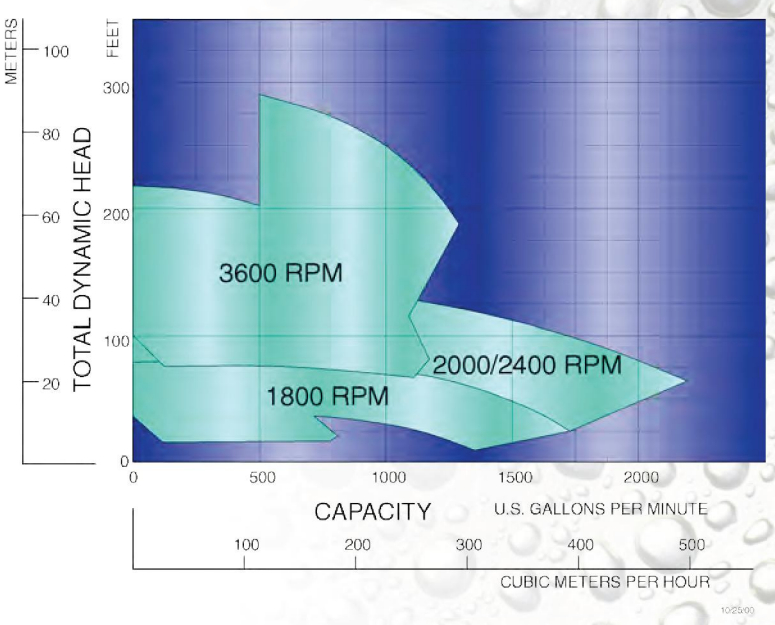
Double Volute

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.

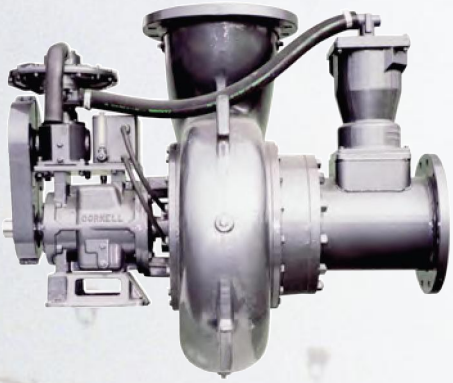
Y-Series



W-Series



Pump Station Bypass & Energy Recovery



MANUFACTURING

Cornell pumps are top quality, with each part machined and built to our exacting standards.
Our team of exceptional machinists, craftsmen and assembly mechanics work with some of the most modern manufacturing machinery and hydraulic testing equipment in the world to bring our customers a state-of-the-art product.

Pump Station Bypass

Cornell Redi-Prime® pumps are designed with the suction larger than the discharge. This provides more flow due to reduced friction losses. Cornell's priming system was specifically designed with the environment in mind. By using a positive sealing float box and a diaphragm vacuum pump, there is absolutely no water carry over to contaminate the environment. Suction lifts of 28 feet and heads of up to 470 feet are possible depending on suction losses and operating points on the pump curve.

Redi-Prime© System

The Redi-Prime® system includes a vacuum assisted diaphragm pump, Cycloseal® and Run-Dry™ features. It is a compact, fully automatic, self-priming system, and delivers high hydraulic efficiencies.

Hydraulic Energy Recovery

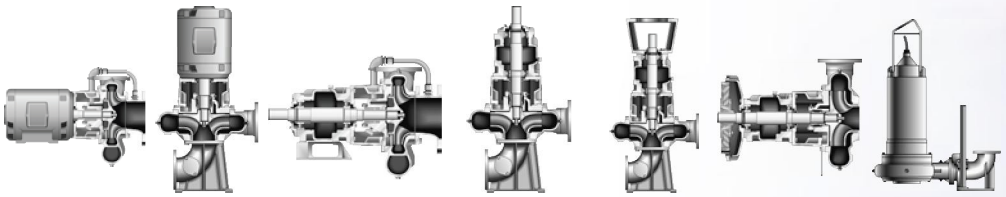
Industrial plants, municipalities, HVAC installations, and farms are tapping potential hydraulic energy sources to produce electric power as a revenue source or as a means to reduce overall energy demands. Cornell turbines can handle heads up to 600 feet and flows up to 18 cubic feet per second.

10 TR2s and 5TR4s in the city of Burbank, California - Energy Recovery Project

Available Options

Mounting Configurations

Cornell's modular frame design allows for easy adaptability. Choose a pump, then pick the mounting configuration best suited to your application. Right hand and left hand rotation along with tangential or centerline discharges are available for most pumps.

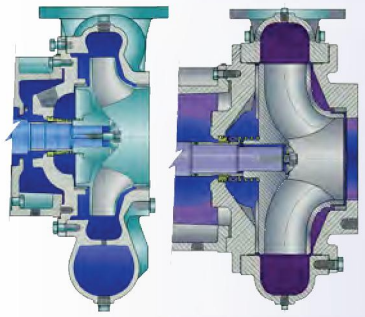


CC Horizontal Close-Coupled | **VM** Vertical Close-Coupled | **F** Horizontal Frame Mounted | **VF** Vertical Frame Mounted | **VC** Vertical Coupled | **EM** Engine Mounted (SAE Size) | **SUB** Submersible (available on select models)

Cycloseal®

Cornell's Cycloseal® (U.S. Patent #5,489,187) lasts many times longer than a typical mechanical seal. This saves on the installed cost of a seal water system and its on-going maintenance not to mention the savings of thousands of gallons of seal water over the life of the pump. No seal flush, no vent line and no lubrication are required for this seal. The Cycloseal® design is available in all waste handling pumps and many clear liquid pumps.

CYCLOSEAL®

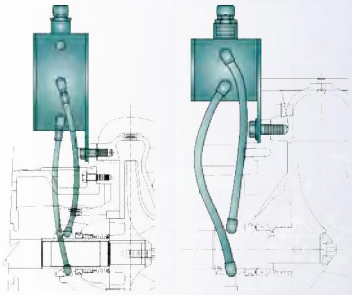


Clear Liquid | Non-Clog

Run-Dry™ Option

Run-Dry™ is a great feature for protecting your mechanical seal. It allows your pump to run dry without the use of expensive water systems and without mechanical seal damage.

RUNDRY™



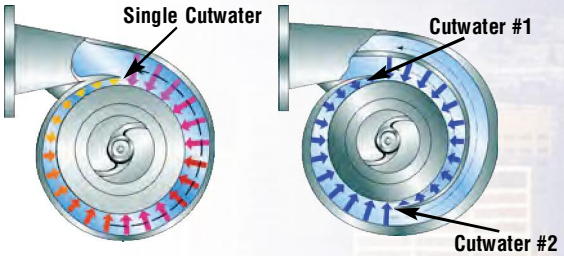
Clear Liquid | Non-Clog

Material Options

Cast iron, Ductile Iron, Heat-Treated Ductile Iron, Bronze, Navy Bronze, various Stainless Steel grades including Duplex and Super Duplex Stainless Steel, and other materials are available to meet your application needs.

Double Volute Design

The Double Volute system enables Cornell single-stage, end-suction centrifugal pumps to easily perform big volume and high pressure jobs. On single volute pumps, the increasing pressure acts against the impeller area and creates unbalanced radial forces. By contrast, the Double Volute system effectively balances these forces around the impeller to reduce shaft flexure and fatigue for longer seal life, bearing life and shaft life. The Double Volute is a standard feature on our larger pump models.

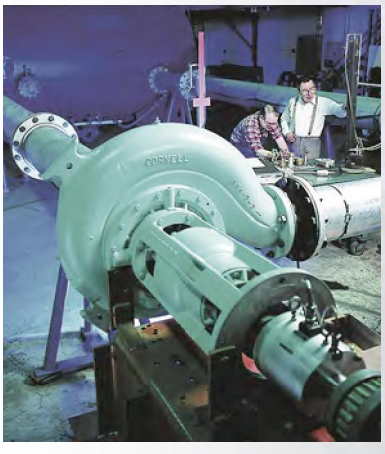


SINGLE VOLUTE | DOUBLE VOLUTE

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.