CORNELL PUMP LLC

BLENDER PUMP

HEAVY DUTY FRAC FUSION PUMP

CORNELL®
EFFICIENT BY DESIGN

BLENDER PUMPS

CORNELL'S HEAVY DUTY FRAC FUSION BLENDER PUMP

PART OF THE SB SERIES

The Cornell SB Series Frac Fusion Blender Pump is a highly efficient and reliable piece of equipment that has been designed to cater to the demanding needs of Frac sand blender applications. These applications are known to be inherently abrasive and corrosive, making it difficult for standard centrifugal pumps to handle them. However, the Cornell SB Series Frac Fusion Blender Pump is different.

The pump is constructed using a specially formulated high chrome white iron that offers superior resistance against erosion, corrosion, and cavitation, making it an ideal choice for even the most demanding applications. This pump can easily handle more than 500 million pounds of sand before the impeller or wear plate needs to be replaced, which makes it stand out from the competition.

The Cornell SB Series Frac Fusion Blender Pump is designed to withstand extreme applications. It includes replaceable front and rear wear plates with easy external adjustability to maximize pump performance, wear life, and extended run time. This feature eliminates the need to remove the pump from service, making it a reliable and efficient choice for Frac sand blender applications.

Overall, the Cornell SB Series Frac Fusion Blender Pump is a robust and high-performing piece of equipment that guarantees efficient handling, mixing, and deployment of Frac sand in demanding applications.

PUMP SPECIFICATIONS	
FLOWS	Up to 200 BPM / 8,400 GPM / 1905 m3/h
HEADS	Up to 440'/ 134M (188 PSI) - 300 psi case pressure rating
WIDE OPERATION RANGE	Operable from 1,000 to 1,500 RPM with 250 to 1,500 HP drive

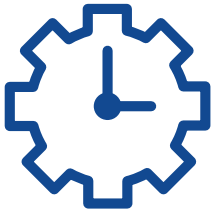
OIL & GAS APPLICATION STORY

PUMP KEY FEATURES

Popular Sizes: 12" & 14" suction (dual drill option available) and 8" discharge are dimensionally compatible with the Mission Magnum XP 12x14 and Curflo 350XL to facilitate blender retrofits.

Remote Monitoring & Control: Ready to accept Cornell's suite of IoT products to monitor & prevent premature failure due to cavitation, run-dry, and dead head operation.

Better Hydraulics: Flows up to 200 BPM, 35% higher pressures to 188 psi, and operating speeds 15% lower than the competition. Erosion rates are reduced by >30% to extend operating life and move more pounds of sand.

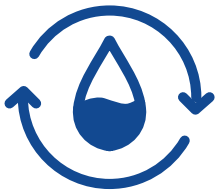


Efficiencies: Up to 74% and a low NPSHR at 10' (3.1M) are the result of a more resilient pump capable of withstanding upsets in suction conditions and generating higher performance with less power.

Robust Construction: Double-row bearings on both the pump and drive end provide the ultimate protection against high radial and axial thrust loads. An extra heavy shaft with a low L/D ratio maximizes seal reliability and uptime by minimizing deflection at the seal face.

No Flush Water and Long Seal Life: Cornell's patented Cycloseal® system requires no external flush water and expels both air and solids to prolong seal life.

Maintenance friendly: Back pull-out design allows for maintenance to be performed more easily in the field—though with Cycloseal® you'll need less maintenance than the competition. Less time spent on maintenance means more uptime and less operating expense. And the pump is simple to get into if needed.

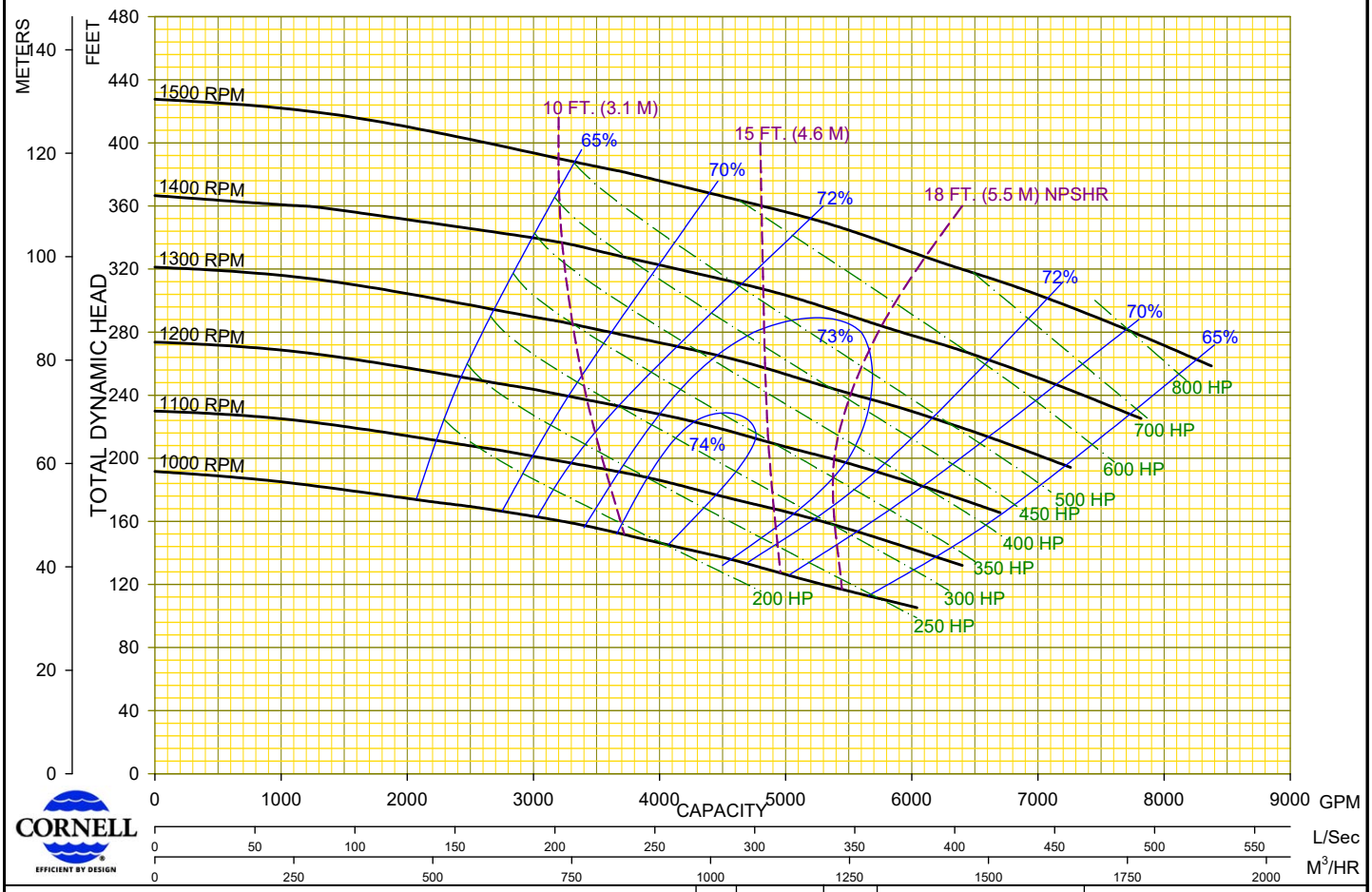


Run Dry: Includes Cornell's oilfield-proven Run-Dry® system to ensure constant lubrication and maximum protection of the mechanical seal during extreme operation, thermal shocks, and intermittent dry run conditions.

Ease of operation: NPSH and curve characteristics allow for a wide range of flows, and impressive BEP affords you a large operating range envelope. Users can run Frac Fusion more efficiently under wide conditions than the competition.

BLENDER PUMPS CURVES

Performances shown are for S.G. 1.0 60°F water, frame mounted configuration. Other mounting styles or S.G. may require curve adjustments.	Speed	Impeller Dia.	Style	Volute	Solids Dia.	N_s	Suction	Discharge	No. Vanes
	VARIOUS	22.00"	ENCLOSED	SINGLE	3.50"	1480	14"	8"	3



BEP: 74%

Operating Range: 1000 - 1500 RPM

Solids Size: Up to 3.5”

Prime Mover: 200 HP - 1500 HP

PSI: Up to 188 PSI/BAR

Learn more about this heavy-duty blender pump today and how it can be perfect for your application:

BLENDER@CORNELLPUMP.COM

CYCLOSEAL® SEALING SYSTEM

HOW CYCLOSEAL® WORKS

The Cycloseal system is not merely a seal but a comprehensive sealing solution. Initially created by Cornell engineers in the 1990s and continually improved since, the system's brilliance lies in the fact that it employs a conventional Type I or II Mechanical Seal, resulting in significantly extended seal life compared to standard seals. By creating a pressure gradient, the Cycloseal system eliminates grit and other materials from the seal face, leaving it in an environment with fewer particulates than a typical seal.

The Cycloseal system achieves this by making the following modifications to standard sealing systems:

DISHED BACKPLATE

While most pump manufacturers have a small cavity around the seal, believing the smaller the space the less grit and material can attack the seal, in Cycloseal the area behind the seal is comparatively large. This gives the dirty water enough area to fling/cyclone debris away from the seal.

BACKPLATE DEFLECTOR VANES

Designed at particular pitches, these deflector vanes help create the cyclonic action.

QUALITY MECHANICAL SEAL

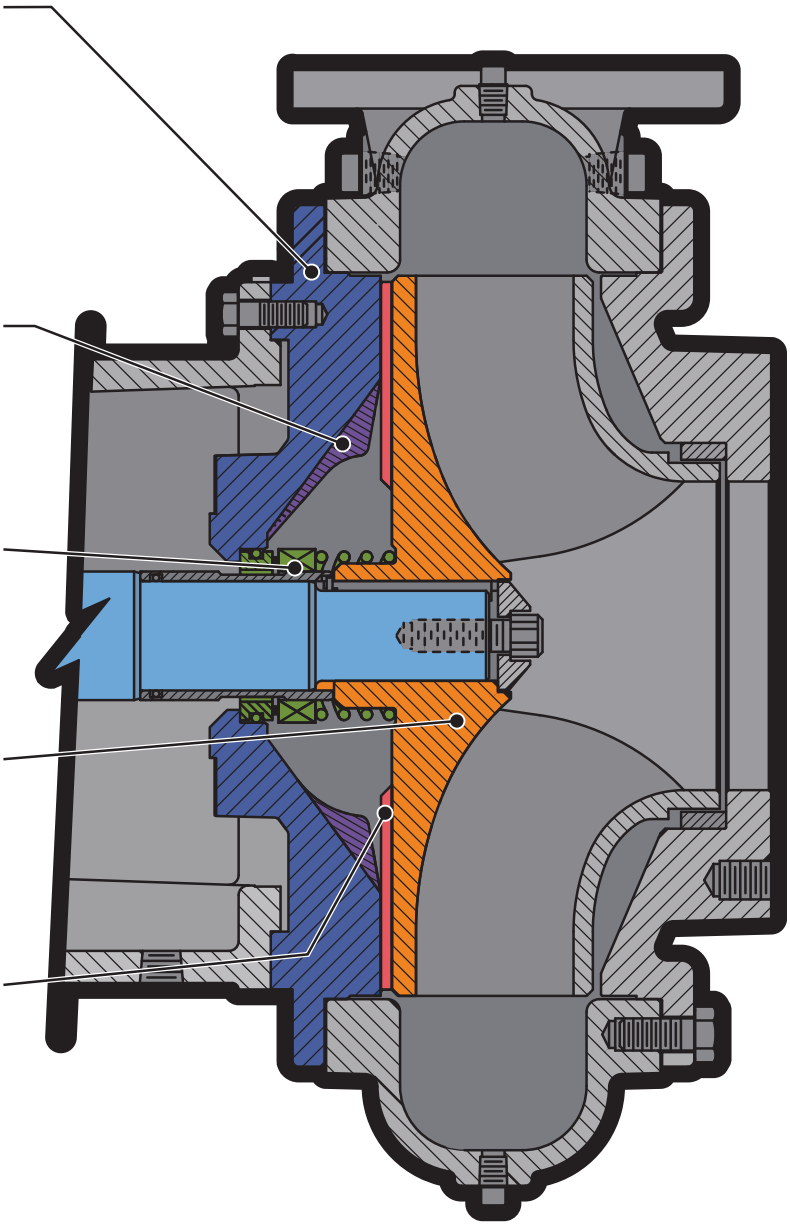
The seal is replaceable with a quality Type I or II mechanical seal.

SPECIFICALLY-CALIBRATED IMPELLER

Balanced to precise tolerances, Cornell impellers provide the kinetic energy needed to wisk away the particulates from the seal faces.

IMPELLER BACK VANES*

In solids handling applications the impeller back vanes work in conjunction with the stationary deflector vanes to redirect particles back into the pumpage stream, and away from the seal face.



*In clear liquid pumps the balance line serves a similar function by reducing pressure and improving hydraulic efficiency; increases the life of mechanical seals and bearings, and providing positive control of axial forces.

RUN-DRY™ SYSTEM

FLUID RESERVOIR

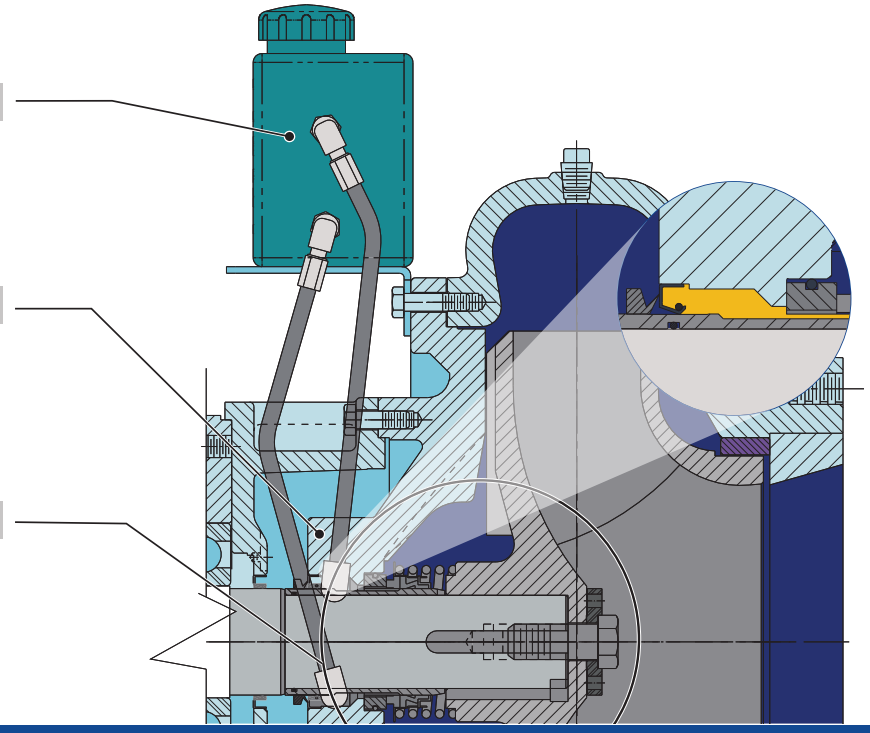
The heart of Cornell's Run-Dry™ system is the ability to deliver lubrication/cooling to the seal during periods of no flow operation. Natural circulation of the fluid in the reservoir removes heat from the seal faces to keep them in pristine condition.

RUN-DRY™ GLAND

With Cornell's Run-Dry system, seal face cooling is effected by providing for heat exchange/lubrication in the area immediately adjacent to the seal faces. This small cavity is created by adding a gland which is connected to the reservoir to complete the lubrication/cooling circuit.

CYCLOSEAL®

Cornell's Run-Dry is an addition to the same Cycloseal system that protects our pumps during normal operating conditions. Truly a system, this combination of backplate deflector vanes, impeller backvanes and a quality type I or II mechanical seal, can also run dry, when equipped with the Run-Dry system.



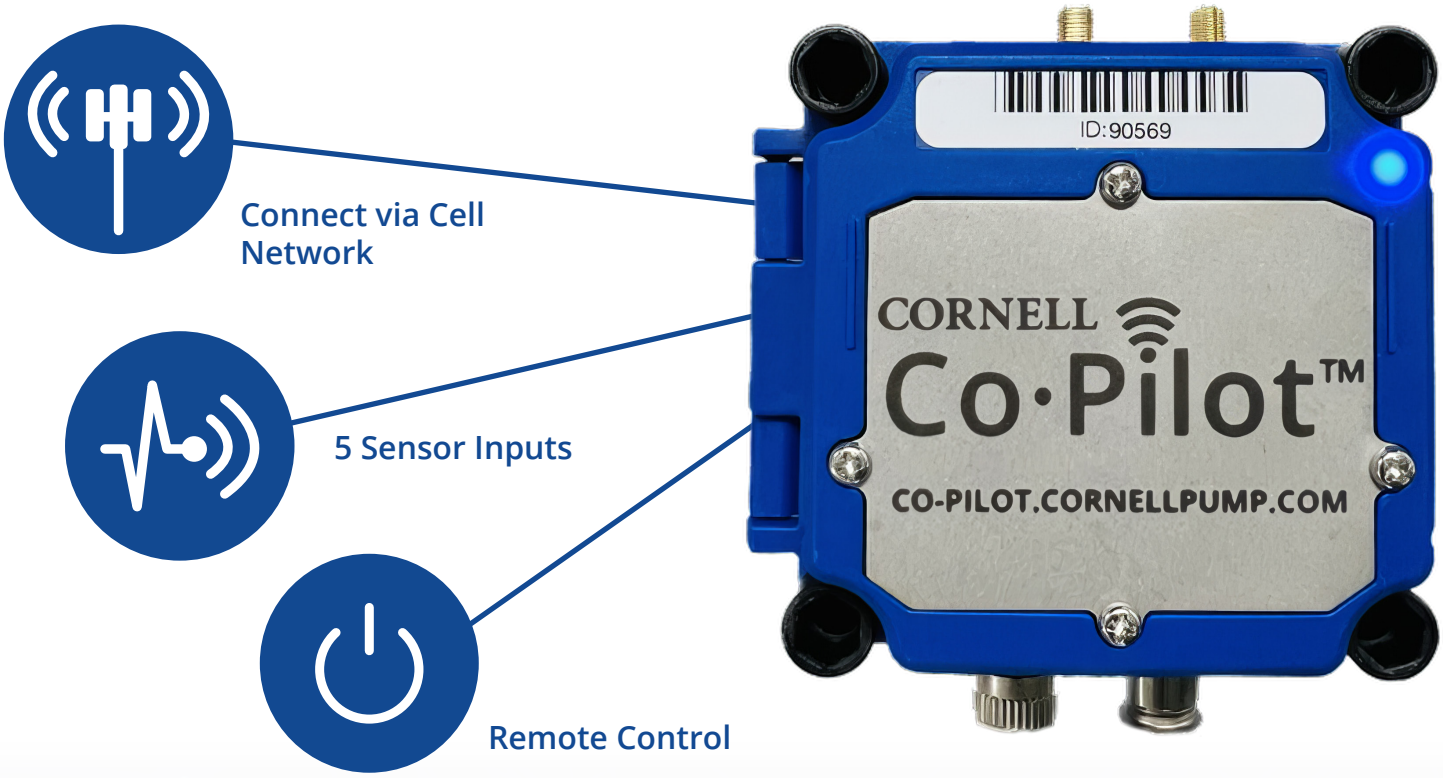
PROTECTS MECHANICAL SEALS FROM DAMAGE CAUSED BY OPERATING WITHOUT PUMPING FLUID—RUNNING DRY.

OPERATION

The Run-Dry system from Cornell is an innovative solution that ensures continuous lubrication of mechanical seals. The system works by using a flexible hose to transport lubricant from the lower portion of the reservoir to the bottom of the Run-Dry gland, which is housed within the pump backplate and sealed on the drive end with a lip seal. The mechanical seal at the pump end of the gland is also protected by this relationship.

The Cornell Run-Dry gland features two ports that allow for the continuous flow of lubricant from the reservoir to the gland and back through the upper and lower ports, thanks to the pumping action of the rotating shaft. Additionally, heat generated by the mechanical seal is transferred back to the reservoir through lubricant circulation, which helps to dissipate the heat and ensure that there is always enough lubricant available for the Run-Dry gland.

CORNELL CO-PILOT™



CORNELL Co·Pilot™

THE POWER OF IOT

Cornell Co-Pilot is a monitoring system that connects to your pump to track temperature, vibration, and location. Co-Pilot can also be powered with a wired connection for continuous monitoring and control system integration. Our Internet of Things (IoT) platform reflects our dedication to cutting-edge design and meeting customer needs.

USE THE CO-PILOT TO:

- Plan maintenance
- Check operation
- Reduce manual inspections
- Track pump location
- Demonstrate run conditions to customers on warranty claims
- Improve run time through the maintenance program

MONITORING AT YOUR FINGER TIPS

Easily monitor your pump's performance with desktop and mobile apps available for iOS and Android. Receive alerts for out-of-condition operations and view the last GPS location of the pump, all in one convenient platform.

CORNELL CO-PILOT ALLOWS YOU TO:

- Monitor pumps using the cloud and IOT
- Monitor temperature, vibration, and GPS location
- Additionally monitor pressure, flow, start/stop operations, and more*
- Track data over time via web-based and mobile apps
- Receive real-time pump data for performance and health monitoring
- Receive alerts for preset running conditions

PART OF RPM² ASSET MANAGEMENT SYSTEM RPM² REMOTE

*Requires external sensors; contact Cornell for details.

CORNELL PUMP COMPANY

MARKET & PRODUCT LINE

CORNELL
EFFICIENT BY DESIGN

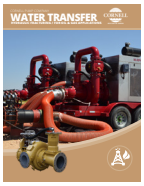
AGRICULTURE

FOOD PROCESS

INDUSTRIAL

MINING

MUNICIPAL



WATER TRANSFER

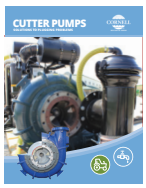
REFRIGERATION

CONSTRUCTION

SLURRY

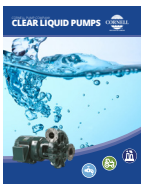
SLURRY SM

MANURE



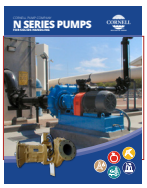
CUTTERS

SELF PRIMING

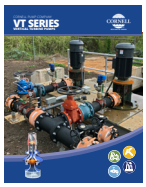


CLEAR LIQUIDS

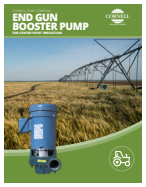
MX SERIES



N SERIES

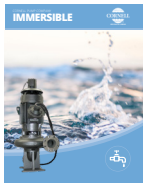


CYCLONE™



EDGE™

HYDRAULIC SUBS



IMMERSIBLE

CD4MCU

RUN-DRY™

PRIMING SYSTEMS

CYCLOSEAL®

24 - OL - BR - 101

CORNELLPUMP.COM

ANAB ACCREDITED ISO/IEC 17021-1 MANAGEMENT SYSTEMS CERTIFICATION BODY
Certified to ISO 9001:2015
TÜVRheinland® Precisely Right.

Cornell Pump Company
Clackamas, Oregon, USA
P: +1 (503) 653-0330
F: +1 (503) 653-0338

AUTHORIZED CORNELL PUMP DISTRIBUTOR