



Are
all **GRINDER
PUMPS** created
equal?

Absolutely not!



Part 1: Grinding Mechanism

When it comes to choosing a Grinder Pump for your Low Pressure Sewer Station, the success of the entire collection system hinges on each pump's reliable performance. It must consistently grind and pump all the waste flushed and drained from the property.

The grinding mechanism is the essential element of the pump. It efficiently grinds solid and semi-solid waste into small particles, ensuring smooth flow through the entire collection system. Eliminating solids and clogs before they enter the system will minimize unscheduled service and repairs and minimize long-term maintenance and repair costs.

Each manufacturer relies on expertise and testing to create their best solution, but not all are created equal. At Southeastern Pump we understand the importance of pump selection, including the grinding mechanism. We proudly offer a variety of solutions including Zoeller Engineered Products (ZEP).



The ZEP revolutionary design features a rotating cutter bar with innovative geometry, specifically designed to address the challenges posed by stringy solids. By rotating across the strategically placed thru-holes in the cutter plate, it creates a powerful slicing action that greatly minimizes the risk of these solids rolling into the troublesome ropes and ponytails notorious for causing clogs and jams in competing products.

In addition to its unparalleled cutting capabilities, Zoeller's external design is engineered to efficiently deflect solids that are not properly cut. This dual-action system ensures optimum performance and prevents disruptive clogs.



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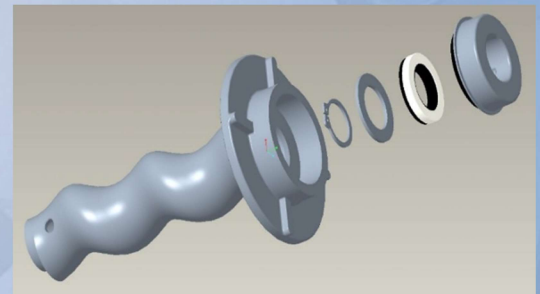
Part 2: Mechanical Seal Protection

Reliability under severe conditions is demanded from the mechanical seal in grinder pumps. This small, unassuming part can mean life or death for a grinder pump. It separates ground sewage in the high-pressure chamber from the dry zone housing the electric motor. Failure to keep the liquids separated from the electric motor will result in failure of the entire pump assembly.

All too often the focus of specifiers is on the materials of construction of the mechanical seal itself. While materials are important, the pump design features deployed to protect the mechanical seal is where reliability is gained or lost.

Zoeller Engineered Products (ZEP) deploys multiple strategic features to increase mechanical seal life:

- The high-pressure end of the rotor has an integral deflector plate to direct flow of ground solids toward the pump discharge.
- The deflector plate includes pump-out vanes to propel solids away from the mechanical seal faces and to minimize pressure at the sealing faces to minimize heat generation and prolong seal life.
- Materials of construction are Silicon Carbide vs. Carbon faces.





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Part 3: Level Controls

When it comes to specifying controls for inside a wastewater pump station, intricate and integral are not the best criteria when the goal is reliability and repeatability. Level controls are the monitors and messengers that control when the pump will perform its job, and also when the wet well threatening to overflow. Without reliable level controls, the danger of sewer overflow is imminent.



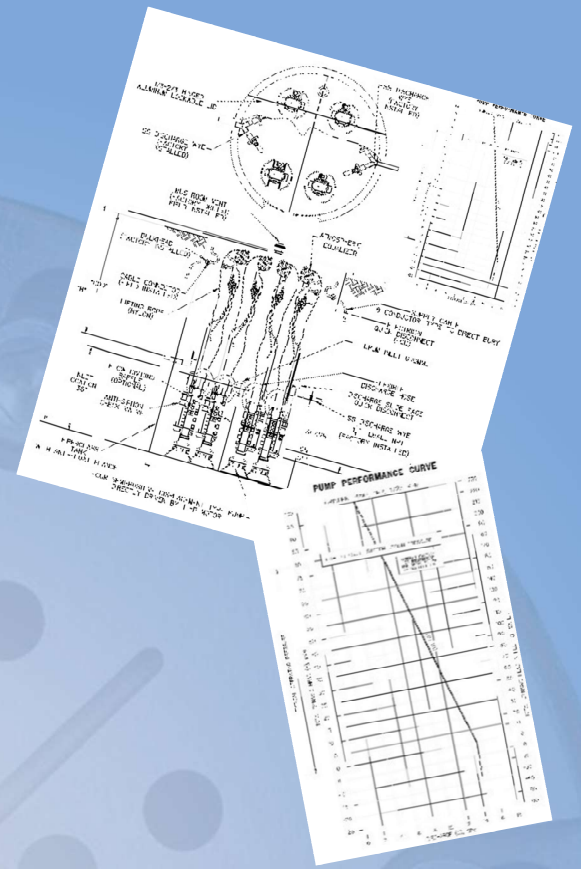
Non-Contact switches require an unobstructed path between the sewage and the switch. Non-Contact switches by nature are not submersible. When utilizing "air capture" type columns or chambers, the likelihood for grease obstruction is high. Non-contact switches are intended to operate in a dry environment; locating them inside a wet well or relying upon atmospheric pressure equalizing chambers (full of humid air) can be problematic. Cleaning usually requires skilled disassembly and reassembly.

Pumping performance is only as reliable as the level controls. When considering the full life cycle of Low Pressure Sewer Pump Stations, ease of maintenance is a must. While elaborate level sensing technology is available, simple and reliable are far more valuable. Southeastern Pump is proud to report that Zoeller Engineered Products (ZEP) relies upon mechanical float switches to signal the sewage level in our systems. Float switches are submersible, sealed-for-life, and can be cleaned from a distance without removing from the pump station!



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Part 4: Pump Performance Range

Many designers of Low Pressure Sewer Systems focus on a single, low flow pump for their pump performance curve. However, Low Pressure Sewer Systems include properties of various types and sizes; they are not limited to single family residences. Frequently this variety of property type will require design flow rates higher than the traditional 11gpm provided by the typical progressing cavity grinder pumps. Furthermore, all system designs also do not require the very high pressures available from positive displacement progressive cavity pumps.

While grinder pumps are available as positive displacement progressive cavity type, they are also widely available with centrifugal impellers. Centrifugal style grinder pumps are common from 1hp up to 15hp, and flow rates that exceed 120gpm. For many jurisdictions a minimum 2-inch force main is installed, and a single pump is required to provide 2fps "scouring velocity" – this is ideal for the Zoeller Engineered Products (ZEP) 2hp Centrifugal Grinder Pump. By comparison, a Duplex 2hp centrifugal grinder pump station delivers the required 22gpm with a single pump, leaving the second pump for 100% redundancy. Using only the Progressing Cavity pumps would require a Quadrex station to provide the same flow rate and redundancy.

Southeastern Pump is your single source for complete system design and equipment selection. Selecting the best pump for each portion of your Low Pressure Collection System! We offer expertise from design through manufacturing.

