

WHEN IT COMES TO IRRIGATION, DEMAND QUALITY.



Extremely worn lineshaft bearing.



Coupling that has been rubbing on the oil tube.



Bearing wear on the lineshaft.

Product/Service Information

What is that rattling sound?

The nice thing about turbine pumps is that they will almost always tell you when something is not right. More times than not, your first warning is a rattle of some sort. The causes of these rattling noises can be very diverse, so we thought we'd take some time to point out the most obvious ones in case your pump decides to start talking to you.

MOTORS:

Bearings: Most vertical shaft motors have a thrust bearing located at the top of the motor that rides in a turbine oil bath. These are usually fairly expensive bearings because the heavy weight of the pump shaft and impellers hang on this bearing. Any wear at all on the race or ball bearings will create noise.

The lower bearing is normally a sealed ball bearing that is pressed onto the rotor shaft and into a bearing housing on the motor. Not only can this bearing go dry or wear and create noise, it can "spin out" when the outer race starts turning freely inside the bearing housing instead of being held tight and also create noise.

Out of Balance: Any vibration will cause noise and ultimately end in pump failure. Most rotors inside the motor are weighted for balance. Occasionally a motor will lose a balance weight and start vibrating. The Mud dabbler wasp is notorious for knocking motors out of balance by building their mud nests on the cooling fins of the rotor. Having almost identical symptoms, a bent head shaft, which runs through the center of the motor, will make you think your motor is out of balance. Loose mounting bolts can sometimes exaggerate all of these problems so be sure your motor is tied down tight.

INNER COLUMN:

Line Shaft and Bearings: Line shafts are kept turning true (not whipping like a rope) by being held in place by a 3" long brass bearing mounted every 5 ft. in the oil tube. Depending on the brand, the gap between the steel shaft and brass bearing is rarely more than a few thousandths of an inch. This gap is supposed to be filled with drip oil causing the shaft to ride on a film of oil instead of the bearing. When this fails the shaft will start riding on the brass bearing and cause both to wear. This allows room for the shaft to start slapping the bearing (whipping) which greatly speeds up the wearing process. As this escalates, the shaft can actually whip enough that the shaft couplings will start hitting the inside of the oil tube and ruin it also.

Spiders: The line shaft turns inside a larger oil tube that is stretched to a specific tension to keep it true. Spiders, spaced every ten to twenty feet, are a three or four-armed device that centers the stretched oil tube in the column pipe. The oil tube absorbs energy from the spinning shaft and tends to try to whip also. The spiders and the tension help to eliminate this. Occasionally a spider will break allowing the oil tube to start vibrating and moving thus creating noise.

BOWLS and IMPELLERS:

Bowl Sets: Bowl sets are simply an impeller attached to a pump shaft and a seat mounted in a cast iron bowl stacked one after another on top of each other. There is water lubricated brass bearings similar to shaft bearings that hold everything centered. As these bearings wear the vibration will create noise. Impellers can occasionally break (usually by pumping up a rock) and knock the pump out of balance. Snakes and anything else that fall into the well and get sucked up by the pump can also knock bowls out of balance so always keep your wells sealed tight. For the record- this is a State and Federal law.

Vibrations, and the rattles that vibrations cause, are your pump's way of telling you something is not right. If diagnosed early, the damage can be very minimal and the repair costs fairly inexpensive. If ignored, the entire pump can be destroyed and quite costly. Next time you hear your pump talking to you...listen to her. If you're not sure what she's telling you, call us...we speak her language.



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