

THE PUMP

A Major Component of a Water System

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Thein Well Co.

In the previous issue of *Hole Notes*, I discussed wells and some of the symptoms you should watch for to keep them healthy and producing as they are intended. The second major component of a water system is the pump. Although normally not as costly to repair or replace as a well, the well is useless without a pump that delivers the proper quantity of water your course requires for irrigation.

Since all of you use pumps of one description or another to deliver water from your source of supply to the areas that need regular watering, everyone should be concerned about pump operation and maintenance. The following checklist can help you determine if your pump is operating properly. Is your pump operating on its original design curve? Are there cavitation noises, or any other unusual sounds? Has cracking or uneven settlement of the pad or ground around the pump occurred? Do you have low pH water?

In booster pumps, centrifugal pumps, or lineshaft turbine motors and pumps, have you checked the bearings for vibration? A regular check of the bearings can give you an indication of the wear they are experiencing, and you can then plan to have your motors or pumps worked on during your off season.

Is there excessive heating of the motor? Has there been any change in the pattern of oil consumption of the motor? How about your pre-lube system? Is it operating as it should to lubricate your bearings before start-up of your pump? Has the corrosive action of the minerals in your water, or the dissimilar metals of your pump caused holes to develop near the couplings on your pump column? With submersible pumps, have you had the current, voltage and resistance checked recently to determine if your pump and motor are operating within safe limits? Are your check valves holding? Is the insulation on the submersible wire worn thin where it might be rubbing on the drop pipe or well casing? Are you providing balanced power for your submersible motors in order to get maximum life expectancy from them? How long has it been since your drop pipe was inspected? The action of air and water on metal encourages rust and a deterioration that can result in holes in the drop pipe. When sufficient deterioration occurs, your pump can twist off and drop down the well. These are just some of the questions you should routinely be asking yourself about the operation of your pumps and motors.

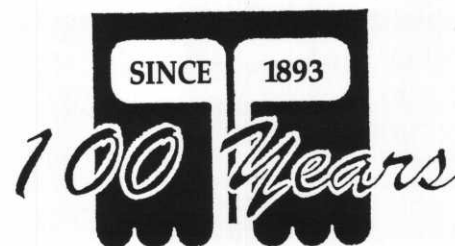
The purpose of all of these checks is to catch a problem while it is still small. The cost, for example, to replace a piece of drop pipe is insignificant when compared to the cost of fishing a pump out of the well after the drop pipe has rusted off. If the drop pipe twists off and the pump drops to the bottom of the well, it is possible that the well screen will be ruined. If the well screen is sufficiently damaged, it will either be very costly to repair, or it will require that

a replacement well be constructed. Pulling a lineshaft turbine pump to replace a few worn bearings will be simple and relatively inexpensive when scheduling during the off season as compared to waiting for a pump to quit delivering the water expected during those dry days in August. After all, a golf course pump in Minnesota never quits working in February.

While discussing proper maintenance and upkeep of wells and pumps, I would be remiss if I didn't touch on at least one add-on that can reduce the cost of pumping water in addition to extending the life of your system. A properly designed and installed variable frequency drive can give you great flexibility in the operation of your irrigation system. A drive will maintain constant pressures at varying volumes that will allow you to deliver the water just where and when you need it. A drive will also balance the input current levels and provide phase protection to your motors. An additional feature of the variable frequency drive is the soft start-soft stop capability which will greatly reduce or

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eliminate "water hammer," one of the major culprits causing breaks in your irrigation lines.

In some areas, the necessary or unnecessary replacement of a well could be the most expensive maintenance item with which a golf course may have to deal. The good news is that if you regularly check the specific capacity of your well and perform the necessary maintenance checks on your pumps, the costs to rehabilitate your well and repair your pump will be significantly lower, and your odds for a successful repair will be greatly increased.

Establish your own regular preventive maintenance schedule for your wells and pumps. If you don't have the proper equipment or feel you don't have the skills necessary to perform the checks, then contact a competent well contractor to set up a schedule for inspection. The cost for an annual check of your system will be insignificant when compared to some of the serious problems that can develop if they are left unattended.

I feel that some of the prettiest places in the country for a walk happen to be on golf courses. As a golfer, I appreciate a lush, well manicured course. But, if the grass isn't green and growing on your course because it is thirsty, and if the shrubs and flowers are suffering because of a lack of water, I will be looking for another course to play. Wells and pumps are an integral part of your golf course operation and can give many years of quality service, but like anything else mechanical, they need regular checkups. Don't starve your course of the water it needs to remain healthy and attractive when timely, inexpensive preventive maintenance on your system can help to keep your golf course in peak condition.