# CHLORINE PUMPS, DIAPHRAGM VERSES PARASTALTIC

As one of the Circuit Riders for Nebraska Rural Water Association, I have worked with a lot of water operators throughout the state. We offer technical assistance in numerous ways. Often there are request form operators to stop by when we are in the area. Then there are request from operators that are in panic mode. Normally it is late in the week, they go to the clerks office to get their mail and you guessed it, a letter from the Department of Health and Human Services System informing them that they have a positive coliform sample. This letter is usually accompanied with a box of initial repeat samples. That's when we get the panic call. Usually our response is, do you have a chlorinator.

The Department of Health and Human Services System requires every water system to have a chlorinator available within 24 hours. As you all know Nebraska Rural Water has several chlorinators available that we loan out as needed, but if you decide to purchase your own pump here are a few things to consider.

What type of pump would work best for your water system? Years ago about the only choice anyone had were diaphragm pumps. Diaphragm pumps can be difficult to prime until you get the hang of it. This type of pump often looses prime. This may be from gas given off by the chlorine, the foot valve may not be set in the upright position, the suction line may be to long, the suction lift may be to high or the check valve balls may be coated with calcium. There are usually four check valves associated with these types of pumps. There is a foot valve that sits in the container of chlorine. There are 2 check valves in the head, one above and one below the diaphragm and an injection valve at the point where it enters the water stream. Make sure all of the check valves are clean and working properly. To clean the checks you must first disassemble them, paying close attention as to how they came apart, so you can reassemble them properly. Vinegar works well to clean the balls within the check valve. The foot valve must be positioned vertically in the container of chlorine. The pumps will not normally lift the chlorine very high, which means the pump must be positioned directly over the chlorine container. These pumps are also difficult and expensive to overhaul. On the positive side if you are working with a high-pressure system in excess of 100 psi these pumps have no trouble pumping against this pressure.

Within the last couple of years the trend for chlorine pumps has moved to peristaltic pumps. NeRWA has purchased several of these pumps. They are simple to set up, easy to work on and give us very little trouble. The peristaltic pump uses rotating rollers that press against special flexible rubber tubing to create the pressurized flow. After a time this flexible rubber tubing will start to leak, when it does it is time to replace the tube. This is a simple process and takes approximately five to ten minutes. Always mount these pumps on the wall with the head in a downward position. This is to prevent chlorine from getting into the pump and ruining the motor when the tubing is wore out and starts to leak. Unlike diaphragm pumps, no foot valve, air bleed or bypasses are needed. The suction line does not have to be straight. Only one check valve is needed at

the injection point. Peristaltic pumps do not need to be primed and can pass gas (sorry) without losing prime. You can mount the pump in a convenient place because the pump is able to draw the chlorine a considerable distance.

Before you purchase that little peace of mind, there is one other thing to consider, what size will work best for your particular well. I would suggest if you have a well that is large enough to supply your system with water that you purchase a chlorine pump for that well. If you need more than one well to satisfy the demand then you will likely need to purchase more than one chlorine pump.

If you would like help in determining which type and size of pump you need please, as always, feel free to give us a call.