

## **Reverse Osmosis Process Improvements**

Using Reverse Osmosis for water treatment can save money, time, and improve quality in a number of ways. The process sanitizes the water used in a washer before it is added to the machine, eliminating a large number of contaminants and undesirable elements before they can interact with the cleaning chemistry that is going to be used in the washing process. Using clean water helps to save money in a variety of ways with the washer, and also increases the quality of the parts that are being washed.

### **The Process**

Reverse osmosis uses filters and air pressure to cleanse water and remove contaminants. The end result is water that is more pure than the standard water found in most applications. It is especially effective when dealing with a water system that provides hard water, or excessively contaminated water for any reason. Using this contaminated water in a parts washer causes problems. Think of a laundry machine. If hard water, or otherwise contaminated water, is used in the laundry machine it reduces the efficacy of the detergent. The detergent will need to work to first remove the contamination from the water before it can clean the clothes. As a result, more detergent is needed on a regular basis and costs of doing laundry rise.

The same principal exists in parts washing. If the water that mixes with the cleaning chemistry is contaminated, then the cleaning chemistry will have to work to remove that contamination along with the soil on the part left over from the production process. Cleaning chemistry will have to be changed more often, parts will be less clean, the process will take longer, and more maintenance will have to be conducted on a regular basis to keep the machine functioning properly. Using RO Water, these problems can be solved or at least minimized.

### **The Benefits**

The first benefit of using RO Water is seen in the efficacy of cleaning. Since the water is now clean instead of rife with contaminant, the cleaning chemistry is allowed to go straight to work on the parts instead of fighting the water. This allows more soil to be cleaned from the parts quicker than previously, when the water slowed the process down. The quicker cleaning can increase production and quality.

RO Water extends the life of cleaning chemistry as well. Since the cleaning chemistry is able to work more efficiently at cleaning the part, there is less used than previously. With the extended bath life, the maintenance schedule of the machine can also be altered. Changing the chemistry and water, along with cleaning the residue left behind, is a long and difficult process. It usually takes around 20 hours of labor to do the job completely and correctly. During this time, obviously the machine is not being used for production and that is time spent inefficiently for the manufacturer. By extending the bath life, this process is avoided for longer periods. When using regular water, the washer needs to be cleaned, on average, every 2 months. When using RO water, this can be

extended to a 3-month average between cleanings. Production time is saved, and soon the added cost of using RO water has been offset by the increase in production and decrease in labor to clean the washer.

### **Summary**

By cleaning the water used in the bath of the parts washer with an RO unit, the production quality of the parts washer increases. After being run through the filtering process of the RO unit, the water is purified and more conducive to cleaning. The purified water extends the bath life of the unit by making the cleaning chemistry more effective. The extended bath life results in less production downtime for maintenance throughout the year, allowing the owner of the washer to recoup the cost of the RO unit via increases in time the machine is online instead of shut down for cleaning.