Cleaning Your Parts Washer

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Wally the Washer Guy

“Wally, you have a call on line 1.” The paging system bellowed, “Wally, you have a customer emergency on line 1.”

When Wally the Washer Guy picked up the call he thought he recognized the voice on the other end.

“Wally, the caller began in a high pitched scream, you can come pick this washer up anytime, because it is not doing any good here.”

“Why the change in attitude my friend,” Wally countered. “The last time I talked with you the runoff had gone well, the cleanliness specification was being met and the training had gone smoothly.”

“It’s gone smoothly, but it’s been down hill ever since then. The parts originally came out looking great. Then they slowly got dirtier and dirtier until the customer cited us and now has put us on probation.”

Wally asked, “Have you changed your fluid out and performed a thorough system clean lately?”

“Ha, I knew you were going to say that,” the customer exclaimed. “I just had a disposal service come in and suck out the water. Then we filled it right back up and the parts are still unacceptable. It doesn’t even help to send parts through twice anymore. We must meet production and we must meet the cleanliness spec or we are going to lose the contract.”

“I’ll be over there this afternoon,” Wally said. “ He knew exactly what he would face when he walked into that facility.”

What Wally the Washer Guy saw on the subsequent visit is the same as what is seen in most every aqueous parts washing system after a time in production. Preventative maintenance and thorough system cleaning are being ignored due to the demands of high production rates and the 24 hour a day, 7 day a week manufacturing schedule.

As a part is manufactured, whether it is stamped, cut, drilled, broached, turned or whatever is done to it, residue develops. This residue, or soil, must be stripped from the part to complete the next step in production. All the soil that is removed does not magically disappear, it has to go somewhere. That somewhere is the washer.

In the washer, the soil can be found in a myriad of locations. It can float on top of the water surface, stay suspended in the water or it can sink to the bottom of the tank. It can also be found on the heating devices, in the filters, in the pump housings, on material handling components, in the plumbing, lodged in the nozzles and stuck or dried to the side walls of both the fluid stages and the blow off stages.

When Wally’s customer said he had replaced all of the water, he honestly felt this meant he had done a thorough system clean. Dumping the water, however, is only one step in the necessary task of cleaning and recharging the system. The correct procedure is as follows.

1. Find 4 – 12 hours from production. To be done correctly this will take some time.
2. Add a descaling solution to a 10% - 15% concentration ratio. This alkaline solution is a metal cleaner that attacks hard water salts, scale, and sludge build up. Its surfactant package loosens the heavy build up so it can be removed more easily. Most chemical distributors have a blend that can be used for this purpose.
3. Remove all nozzles and filter media from the washer. When the scale loosens it should not be a threat to

plug up your plumbing.
4. Turn the heat up and run the pumps, conveyor and blower. Running this solution for a period of 4 – 8 hours will help dislodge much of the caked soil.
5. Now suck all of the solution out and dispose of it.
6. Power spray the inside of the entire unit. Spray the tank, conveyor, fluid stages, blow off stage, heating coils and everywhere you see soil.
7. Suck all of that solution out of the tank.
8. Inspect and replace nozzles, filters and any gaskets necessary.
9. Fill the wash tank with the proper concentration of chemistry.

Of course this is all a great deal of work. It takes time and it takes someone or a team of people to dive into the washer and perform one of the dirtiest jobs in the plant. It is a credit to the maintenance supervisor who does not avoid this task.

There are some options a manufacturer can purchase with the original equipment or as a retrofit that can make this job a little easier, a little faster and a little less frequent.

1. In process fluid treatment. Once the part gets washed off, the soil needs to be removed before it saturates the bath and forces the machine to wash with dirty water.

a) Screen baskets to catch large particles from the water as it drains from the spray area before they get into the tank.

b) Particulate removing filter bags or indexing filter paper systems to hold tighter micron particles as the water is pumped from the tank.

c) Magnetic collection units that will attract metal dust.

d) Oil water separation system like the Suparator®. This will effectively remove free-floating oil from the agitated wash tank and return clean water to the system.

e) Using cleaning chemistries that split oil rather than hold it in suspension so a Suparator® style system will effectively remove the oil.

f) Use an oil-based or at least a semi-synthetic metal forming lubricant so the oil splitting chemistry has a chance to do its job, which will enable the Suparator® to perform its task.

2. Use quick fit nozzles. These nozzles can be removed with a quarter turn and a pull. When pulled they can be checked, cleared and replaced in seconds.

3. Instead of using threaded pipe for manifold connections, use quick fit Victaulic® or grooved piping. This way the entire manifold can be removed and cleared with a blast of compressed air and a snake. After cleaning they can be remounted.

4. Blow off section spray down manifold. This manifold is automatically fed from the rinse pump for 5 minutes each time the washer shuts down. This sprays away oils, dried chemicals and particles that have been carried over to the blow off stage. With the spray coming on with only the blower and the conveyor running, the fluid easily drains back to the rinse tank where it can be treated with the other soils.

In the present economy, production requirements rule. The best-laid plans to maintain a system are ignored in favor of dealing with the crisis of the moment.

If a manufacturer who is washing parts cannot guarantee his maintenance staff is going to regularly follow the previously listed tank clean out procedure, then a combination of the above options should be considered. These will not enable the washer to continue to run without any maintenance, but it will extend the length of time before it needs to be done. At that time, a call to the washer vendor should be able to create a contract with them to perform this work correctly.