

Preventative Measures

THE TIME TO START WORRYING ABOUT WHETHER YOUR CLEANING EQUIPMENT is ready to do its job is not when your masons have completed their job. Whether you have a standard pressure washer or a washer specifically made for cleaning masonry, much like some of your other machinery, preventive maintenance will go a long way to keeping your cleaning equipment in good working order and avoiding on-the-job breakdowns.

Let's first take a look at some general maintenance tips for pressure washers and then we'll cover an appropriate preventative maintenance schedule for them.

BY RON BAER

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General Maintenance Tips

SOME GENERAL MEASURES that you should take to protect your investment in cleaning equipment are:

- Just like a pickup truck or forklift, cleaning equipment will last longer if one person is responsible for using it.
- It is a good idea to have a preventative maintenance checklist attached to the machine in a clear plastic protective envelope – along with a pencil – so that operators can check off the preventive measures taken and make notes about needed maintenance. (If you don't have a checklist, call me at the phone number listed at the end of this article and I will send you a preventative maintenance checklist that you can modify to apply to any equipment.)
- Don't let the machine freeze. If cold weather is expected, fill the water-handling system with automotive antifreeze or windshield washer fluid. Make sure the fluid is through the heating coil and the hoses.
- Use Teflon thread tape on all plumbing connections when reassembling. Fix any leaks as quickly as possible.
- Keep the high-pressure water hose out of wheeled traffic or protect it from being run over.
- Filter the water going into the pump and clean the filter frequently. Water from new plumbing systems and fire hydrants probably will have contamination that may damage the water pump and valves.
- Some people have spread the belief that, if you have a hot water cleaning machine, you should run it at the end of the day without the heater on to let the coil cool off. This is not true. In fact, leaving the coil hot will cut down the internal rust because the heat will dry the coil and likely prevent rust from occurring.

Breaking it Down

Now, let's get a little more specific. Each of the four main elements of your cleaning equipment – the engine, the water pump, the water heater (if you are getting the advantage of hot water) and the chemical feed system – has its own preventative maintenance needs.

You probably were supplied with an engine maintenance schedule that should be followed. However, if it's gone the way of most maintenance manuals and can no longer be found, here are some general pointers:

- Change the engine oil – using a multi-grade SAE oil – every 100 hours.
- Change the oil filter when you change the oil. Change the fuel filter every 200 hours. Clean the air filter every 50 hours and change it at 200 hours.
- Clean the spark plugs after 50 hours and change the plugs after 200 hours.

The Engine

Try these good ideas to keep the engine working longer:

- Keep your cleaning equipment away from the area

where you are spraying so that the water and chemicals are not drawn back into the air intake.

- Make sure the electrical connections to and from the battery and the grounding source are clean, tight and free of corrosion.
- Don't let water get on a hot engine.
- If you are going to store your washer for a period of time, drain the fuel from the entire system and replace the oil,



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CHEMICAL STRIPPER RESTORES HISTORIC COURTHOUSE TO FORMER GLORY

The Water Pump

NOW, let's take a look at the water pump. Preventive maintenance for the water pump is pretty simple.

- Change the oil for the water pump every three months or 500 hours. Use non-detergent 30-weight oil. Non-detergent oil is available at auto parts stores.

- Most pumps have two oil level check points, a dipstick and a sight gauge. If you see the oil has turned milky, this indicates that water infiltrated the oil, usually caused by a bad oil seal or a broken ceramic piston. No matter the cause, the problem needs to be fixed and the oil changed.

- Run your washer at least once per month. This will keep the seals moist and saturated to avoid leaks.

A major enemy of water pumps is heat. If your washer does not have a water-recycling tank, you must not let it idle for more than a minute or two. When the pump is running it naturally generates heat. The flow of cold water cools the pump. However, when the pump is in idle mode

Built in 1858, North Carolina's historic Northampton County Court House is among the South's finest examples of Greek Revival temple form architecture. Thanks to the savvy work of the Mayhew Brothers, Inc., a full service contractor specializing in paint and coating removal and recoating, the red brick façade has been completely stripped of paint and clear-coated to reveal the elegance of the original brick.

The front portion of the building had been painted 45 separate times, at least three times within the last 10 years. Most of the paint was white. At one point, according to Surapon Sujjanavich, county architect, the bricks had been painted burgundy.

"Testing showed that it had never been stripped to bare brick," reports Dave Mayhew, President of Mayhew Brothers, Inc., "and the paint was layered on at least 1/8-inch thick in most places."

Work began in November 2002, with plans calling for as much of the paint as possible to be removed via sand blasting, then recoated with white paint.

"Sand blasting would have required full containment measures, might have proven somewhat problematic in terms of possible damage to the original historic fabric, and would definitely have been costly in terms of inconvenience and man hours," says Mayhew.

Convinced that there had to be a better way, Mayhew explored other options. One was Peel Away® 1, a paint removal system developed for safe, containment-free removal of lead-based paint.

"It didn't take it down to bare brick with just one application, but it did remove about 90% of the 45 layers of paint in one shot, and it did it without damaging the brick and while fully containing the lead paint and lead particulates," says Mayhew.

As layers of paint were peeled away during patch testing, the Northampton County commissioners reconsidered their original recommendation that the building be repainted white. Sujjanavich agreed, noting that it would cost the county upwards of \$50,000 to repaint the courthouse every 10 years, as opposed to between \$10,000 and \$15,000 to clear-coat. In January, the commissioners voted unanimously that if at least 99% of the thickly layered paint could be stripped, the brick would be clear-coated instead of once again covered by paint.

As this was the first time Mayhew had used Peel Away, he was somewhat hesitant to make any promises.

"I'd never touched the stuff before," he says. "I was very, very skeptical myself until I saw how well it worked during patch testing."

After the patch tests showed positive results, Mayhew was confident that he could exceed the board's expectations.

During the process, the paste was sprayed on the brick, and a special cloth was smoothed in place and left for three days to permit the paste to work to maximum effectiveness. The ground beneath the brick was covered in poly sheeting to catch any debris or run off.

"When we peeled the paper away, the paste was still damp, and we were stripping about 90% of the paint," says Mayhew.

A second application of paste, covered by paper, easily stripped what remained to bare brick.

"We had a harsh winter, unusual for North Carolina, with ice storms and extended periods of freezing temperatures," recalls Mayhew.

Nonetheless, the project moved forward throughout the winter. According to Mayhew, some 17,000 square feet of brick were completely stripped. The stripping portion of the project took less than three months.

After the paint was removed, the brick was neutralized and repointed where needed. Then a clear, penetrating sealer was used to protect the brick.

"The sealer gives the bricks a nice touch of shine and really sets off the color," Mayhew says.

The project was completed in May 2003, and everyone involved is very pleased with the results.



Before



During



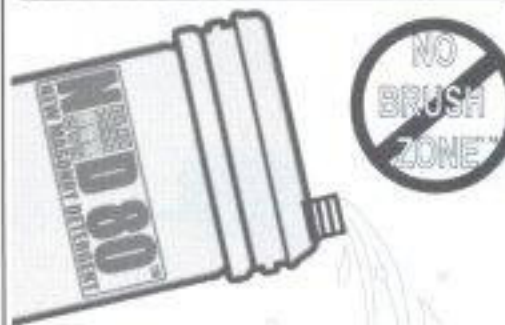
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the recycling water will soon become too hot to cool the pump. If no water is flowing through the pump, the possibility of this destructive process is increased and the time it takes is decreased – it can take only seconds for the pump to overheat.

The Water-heater

THE WATER-HEATING UNIT is very similar to an oil burner on a home furnace. It takes very little maintenance. The important thing is to make sure that the fuel tank and filter are kept clean and the burner does not get wet while it is running.

Chemicals and Cleaners


AS YOU KNOW, the chemicals used to clean masonry, either new or restoration work, are strong and harsh. The chemical handling systems that are built into standard pressure washers are not made to handle the kinds of chemicals mason contractors use, although some pressure washer manufacturers say their products can. Unless they make machines specifically for cleaning masonry and know the conditions of your work, they don't understand the complexity.

For almost all cleaning applications, a standard chemical handling system will work. But not for cleaning masonry. Standard pressure washers are made to handle standard conditions and chemicals. Masonry cleaning machines, like those made by Kem-O-Kleen, are made for cleaning masonry and handling masonry cleaning chemicals.

There are preventive measures that you can use with whichever acid handling system you are using.

- As a rule, do not pump masonry cleaning chemicals or powdered detergents through the water system.
- Use clean chemicals. Oftentimes reused chemical containers and drums will accumulate dirt in the bottom. If you are using a pump to transfer the chemical, keep the pump from touching the bottom of the container so you can lessen the risk of drawing dirt or other impurities.
- Flush the chemical handling system with water when finished. Also, immediately rinse any chemicals spilled on surfaces.
- Do not leave chemicals in the tank for long periods of time. They may separate or cause corrosion. Do not cover any chemical tanks or containers.

Conclusion

ALL OF YOUR EQUIPMENT is an investment and valuable to your company. Keep your cleaning equipment in good order so the final step that you need to take at the end of a job – cleaning your good work – will be the shine on the apple and a source of pride to you, your masons and your clients. 

Ronald Baer is President of Unique Industries, Inc., manufacturer of Kem-O-Kleen masonry cleaning equipment, and Enterprise Consulting of Colorado, Inc., a consulting firm providing management services to family-owned businesses. He is also a facilitator for The Alternative Board (TAB). He may be reached at (800) 274-4121.

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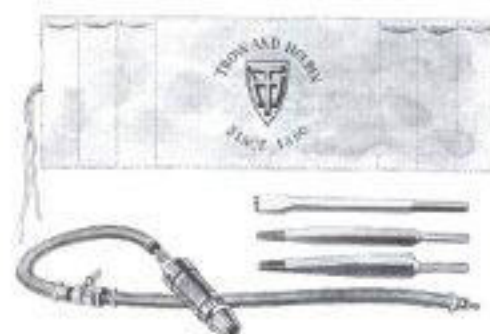


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