



remember the
protection
B.A.S.I.C.S.

Protecting **the Power**
Washer & the **Cash**

by Bill Loenhorst

Do you have a stringent, well-managed maintenance policy? Many of us simply “fix it when it breaks.” Unfortunately, this attitude can result in unnecessary costs that can make a difference in profit or loss, and even result in dangerous conditions for our employees and families. Sometimes it’s a struggle to log and track maintenance steps, but the reality is that a well-maintained pressure washer performs better, improves fuel and operator efficiency, reduces water waste, toxic emissions, and, in the long run, will help generate profits. To help smooth our daily struggle in trying to remember this, consider the following B.A.S.-I.C.S. memory trick. It is intended to help serve both your customer and those out in the service yard inspecting machines. Over the years, these six points have been a solid, helpful tool to draw upon when in conversation with customers and employees:

Blockages Cleared?

Look for and clear anything that is interrupting normal fluid flow; include the water supply valve in your discussion. Many a demonstration or new machine test has gotten off to a rocky start by forgetting to turn on the water. For machines already in use, tank filters, line strainers, and garden hose filters frequently become blocked with green algae, iron bacteria, or small rocks and debris. Water nozzles and high-pressure strainers must be included in this check. Should the pump run without water long enough to get hot and the error is recognized, coach a long cool-down period instead of a fast water splash. Let the pump head cool without water in order to reduce the risk of plunger fractures and further pump seal damage. If available, compressed air can help speed the cool-down process. In some situations, you may get lucky and still have seals and plungers left that will serve just fine. Always be sure the water-supply system is adequate for the requirements of your pump. This reduces the risk of cavitation to



Figure 1

the manifold, which could also lead to water seal and valve damage, causing loss of pressure. Again, if for some reason the pump is operated dry and seal replacement is required, be sure to cool down the pump manifold before replacing the seals. Some system’s restrictions are intentional; correctly-sized wash nozzles and a proper regulator/unloader valve setting are key to the system’s ability to build pressure. Don’t forget to consider thermal dump protection, bypass flow to bulk tank, auto-off and time-delay features that are available for many machines to help reduce the risk of bypass water heat damage.

Airflow Clear?

Fresh, clean air is important for pumping and heating systems. We see many heat exchanger failures and premature soot accumulation take place where poor airflow conditions exist; vans, utility sheds, and service rooms should include airflow exchange systems that meet the need for the newly added equipment. Unattended burner systems are in critical need of the correct airflow and must only be allowed to operate in a way that ensures airflow cannot be accidentally interrupted during operation. Be sure that if a door accidentally gets closed, fire or carbon monoxide poisoning won’t result. Engine performance can also be greatly affected by high ambient temperatures and poor airflow.

Scale Cleared?

Accumulations of calcium carbonate and iron precipitates in the coil and outlet plumbing should be planned for and then regularly removed. Use commercially available coil cleaner/descaler and follow the instructions. Water with total dissolved solids counts



Figure 2



Figure 3



Figure 4



Figure 5

of 300 parts per million or more will generally mean descaling will be required every two to three years. Also see Jess Henderson’s “Fighting Scale” article in the *Cleaner Times* December 2008 issue that details this important maintenance step. Training the operator to cool the system down prior to extended shut-down periods can reduce descaling frequencies.

Ice Cleared?

Protect the system from freezing or remove all the water. While most of the damage occurs during the fall, winter, and spring, troubles may come because of a poor decision made in the summer.

Our inventory of equipment may have been received in the warm, summer months, forgotten in stock, and released to customers without considering the potential for ice. Freeze damage is not only expensive, but it can under certain conditions, prevent critical safety-relief valves and burst disks from functioning. For some power washer systems used in extreme cold environments, coil freeze can occur during lunch or break period, resulting in dangerous steam explosions when the operator returns and restarts in full-burner mode. Consider use of a dump gun for such conditions.

Crankcase Oil Clean?

Many pumping systems need their break-in oil changed after 25 hours of operation. Those pumps with sleeve bearings instead of roller bearings fail more often mainly because we forget to change out the break in oil. Continued operation without the break-in lubricant change will result in crankcase, crankshaft, and connecting rod failures. Note and heed recommended changes and change engine oils more

often when subjected to excessive heat and dust conditions. For the majority of our pumps in this industry, crankcase oil must be changed every three to five months or at 500-hour intervals. Make sure when replacing the oil it is with the recommended type of oil, in most cases, a hydraulic non-detergent pump 30 wt. oil is required. Engine oil should be changed after the first five to eight hours of operation. Replace oil filters every 100 hours. Crankcase cooling fins should be kept clean. Note the overheated pump shaft and dirty cooling fins in **Figure 1**.

Safety Clear?

Summarize your inspection with a complete safety check. Document this step with a formal checklist that can be retrieved later if necessary. Components such as belt guards, heat shields, panels, and electrical covers are all part of a good machine design and they are intended to keep your operator safe and productive. Keep these devices functional, and note on your service records and the customer service invoice if

the device needs to be repaired. Other checklist items to remember:

- Are your operators trained to use the correct personal protective equipment?
- Are system components and fasteners tight? (Belts, rails, battery terminals, even temporary tie down straps used for delivery)
- When servicing a machine are new components installed in the correct direction of flow?
- Will two workers become a danger to one another or would only one at the controls be best?
- Do the customer and employee understand the owner's manual and its warnings; are the safety warnings clearly understood?

Try memorizing these six "BASICS" and use them the next time you look over a machine. When defining their meanings, they can be a value to your service team, customers, and your long-term well being.

Bill Loenhorst is the Operation Manager for Hydro Tek Systems in Redlands, CA. cr

WE ACCEPT







NOT THE BIGGEST, JUST THE BEST PARTS HOUSE!

Complete Line of Replacement Parts & Coils



Built to your specifications
Complete line of hot water
High pressure cleaning equipment

– DISTRIBUTORS ONLY –

Manufacturer's Rep for: AR, Beckett, CAT, General, Comet, Suttner, Giant, Spraying Systems, Wayne

TOLL FREE 1-800-238-3050 TOLL FREE

P.O. BOX 279-11606 MEMPHIS-ARLINGTON RD, ARLINGTON, TN 38002

clickindustries@att.net