

Understand your Water Blaster

Water Blasters are usually expensive to repair, but most repairs can be avoided by taking certain precautions with their operation and maintenance.

Most problems are caused by:-

- Contaminated, or inadequate water supply
- Corrosion and dirt.
- Lack of Lubrication.
- Overloading and Overheating.
- Incorrect operating procedure.
- Incorrect adjustments.

General Description

The principle of most water blasters is much the same. They are either driven by an Electric Motor or an Internal Combustion engine. The pumps are multi-plunger (ceramic or stainless steel), the valves are mostly plastic and the seals made of a Teflon composition. The plungers are operated by a swash plate or cams. By & large the cheaper the machine, the more plastic it contains & the lighter it is. The plastic pumps are usually not repairable.

Quality Varies.

A good water blaster is heavy because it will contain more brass parts. It will also have ceramic plungers which resist wear, are easy on the seals & non corrosive. They are expensive so you will not find ceramics used in Domestic machines. The pressure hoses should be quality high pressure, & not skinny, kinky plastic hose. The lance on the cheaper ones will have plastic fittings & the jet is controlled by squeezing the stream of water. They are usually on the short side which is hard on the back. The best lances have replaceable nozzles & are long stemmed.

Water Supply

The water supply must be clean, & pressurised. If mains water is not available the water supply can be from a tank mounted **above** the pump. Water blaster pump seals are directional, meaning that they will only seal under pressure. They will not suck. If they have to suck, air & dirt will be drawn past the seals causing wear and cavitation.

Water which is contaminated with chemicals can cause corrosion of the alloy parts, especially when in storage. Dirt will wear the seals & clog the filters. Make sure that there are no kinks in the supply hose, no leaks & no other appliances working at the same time, ie, Washing machine, dish washer, shower etc.

Lubrication

Some domestic machines are "lubricated for life". Don't believe it! The quantity of oil is very small, about 120ml, so any oil loss could be disastrous. If there is any sign of oil coming from the machine, take it to your dealer for investigation. Another problem is water contaminating the oil, this will ruin the machine. I recommend that every season you have the oil checked for water & quantity. If you wish to do this yourself, use a multigrade motor oil, & do not overfill it. If in doubt phone the manufacturer for the specification. The reason for using a multigrade oil is that it mixes with water & still lubricates. Turns a milky colour. A straight oil will remain separate from the water which would rust the bearings & springs.

Overloading & Overheating

This can be caused by the following conditions:-

- Working for long periods of time with a Domestic machine, you may need a commercial one.
- Working at excessive pressure caused by incorrect relief valve settings or a restricted lance nozzle.
- Excessive running in by-pass mode, ie. machine is running without water passing through it. Machine should not be run in by-pass mode for more than 30-45 seconds. If you need to operate

the machine from a distance, ie. you are on a roof & the machine is on the ground, you either need an assistant at ground level or a pressure controlled Micro switch (Electric Machines). Commercial machines usually have an adequate bypass system, they also have temperature controlled dump valves.

- Excessive engine speed causes overheating and cavitation. Set engine speed to that marked on the pump or 3600RPM if not given.
- **DO NOT RUN A WATER BLASTER WITH OUT WATER**

Incorrect operating procedure.

There are several points to follow which will help you towards trouble free water blaster operation:-

- Ensure that all hoses are clean & free from grit & rust. Spray HP connections with "Inox" or "CRC" to lubricate coupling threads & "O" rings
- Before starting the machine, run water through it until all air is expelled from the system. Observe that the jet is clear.
- If the machine is on wheels operate it in a horizontal position. Running in a vertical position places excessive thrust on the motor bearings & also could lead to oil leaks.
- Ensure that there are no kinks or leaks in the supply hose.
- On electric machines we recommend you use an R.C.D. (residual current detector), this detects any leakage of power to earth and switches off before you get killed. Remember Water + Power can be a deadly combination.
- To avoid voltage drop do not use an extension cord longer than 25metres, & it must be a commercial grade one. The cord must be completely uncoiled as a magnetic field will result which will heat the cord & cause loss of power. The best power point in most houses is the Oven.
- When starting an electric machine, if it hums but does not start, either the capacitor is defective, or the pump has seized for some reason. Do NOT persist or you will burn the motor out.
- Petrol engines fitted to water blasters work at high temperatures. Make sure you check the oil level & condition. Sniff the oil, if it smells "cooked" change it. Use a straight SAE30 motor oil. If you can not obtain it, use good quality 20/50 multigrade.
- Do not operate a petrol engine in a confined space as the exhaust contains carbon monoxide which is deadly & also the motor needs fresh cool air to operate.

Storage

A little bit of care with the storage of your machine will save you a lot of grief.

- Remove hoses from the machine, if you leave them on, the couplings will freeze, also the pipes will become twisted. Block the couplings off to stop dirt & Mason bees getting in. (Mason bees build mud nests in small holes)
- Coil the power cord & lance hose without twists or kinks.
- If the pressure is adjustable set it to LOW pressure to assist starting a Petrol engine.
- Check the oil levels if appropriate.
- Clean water filters.
- Clean air filters.
- Add "Stabil" to the fuel to prevent it from going stale (see lube page)
- Store in a dry place in a horizontal position.

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