



Understanding Your Pressure Washer

Understanding your equipment will get you better, more consistent results.

Your pressure washer is a classic example. Basically, the engine turns the pump and the pump pushes the water through the hose against the back-pressure created by the nozzle. The smaller the opening in the nozzle, the more pressure that is created. The overall effect of that pressure is abrasion of the surface (sort of like a liquid 'sandpaper'). Most people understand that the engine and pump must both run at peak efficiency to get peak output, but the nozzle actually remains the single most important part in determining how well your pressure washer works. A larger orifice creates less pressure, and a smaller orifice creates extreme back-pressure that can damage the pump. Considered a wear item, the nozzle orifice wears out when the orifice wears larger – a process that only takes a few months of use. There are long-life nozzles with hardened carbon steel inserts, and there are plastic nozzles that claim even longer service life, but you should plan on replacing your nozzles at least annually. Be sure to properly size your nozzles using a [Nozzle Chart](#).

Beyond the equipment, there are four elements that affect successful pressure washing: pressure (PSI), flow (GPM), the water temperature, and the proper cleaner.

PSI: PSI (pounds per square inch) is a measure of the force generated by your equipment. You can successfully clean many surfaces with pressures that range between 2000 PSI and 4000 PSI. Some surfaces, such as wood, require that you reduce the pressure to a much lower number, but surfaces like concrete can be cleaned with as little as 2000 PSI. Interestingly enough, most surface cleaners require at least 2000 PSI to work at all. As manufacturers introduce higher and higher PSI ratings in their equipment, most of us are happy to have an honest 3000 to 3500 PSI for our purposes.

GPM: Since most cleaning these days is done chemically, your GPM rating is very important. In cleaning with chemicals, they do most of the work and the equipment provides a small amount of agitation (PSI) and a large amount of rinsing action. The "flow" of your equipment must be at least 3 GPM to even consider using a surface cleaner, for example, and flow rates of up to 8 gallons per minute are commonplace. The higher the GPM, the faster you can do the work.

Water temperature is important because the power of your cleaning agents is optimized in warm or hot temperatures. You will use as little as half of the amount of cleaning chemical if you use hot water, for example. Hot water will cut your cleaning time by around 30%.

If you don't use hot water, you need the proper chemicals to attack the soil and you need a stronger version of these cleaning chemicals. Cleaning chemicals can reduce your job time by another 30%. Cleaning chemicals can be downstreamed through your equipment or applied to the surface and allowed to dwell. We are proponents of the dwell method, because we believe that it gives you the best overall control over the cleaning process.

Chemical cleaning is an important advancement in the industry. In the old days, people just blasted away at a surface, generally causing damage to the surface they were cleaning. The use of good, strong cleaners has eliminated the damaging use of extreme pressures. The chemical cleaners break the bond between the dirt and the surface being cleaned. There are many different cleaners out there, each designed for a specific surface or a specific type of dirt.

Don't fall into the trap of believing that there is one single cleaner that will work in all situations. Set up an arsenal of good cleaners for yourself, and always keep some of each cleaner with you so that you are ready for whatever surprises your clients can throw at you.

Finally, keep in mind that if you use a cold water pressure washer instead of a hot water pressure washer, you will have to use more chemicals, apply higher pressure and/or spend more time to achieve the same results. That is not taking away from cold water washers, as they can be very effective for a lot of cleaning. We built our entire service business with cold water machines and never ran into a job we couldn't do. It just took us longer.

Feel free to contact us with any questions you may have!

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