

Your Car Wash - Starting Out Right

Selecting a quality pumping system for your car wash can save you time and money over the life of the system.

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Whether you are a new car wash operator, adding onto your existing system or acquiring a new location, there is nothing more satisfying than knowing your car wash is built with the correct components and the best system design. The correct beginning is the best way to assure you are going to be profitable. Building with high quality components and following a quality design plan will save you time and money over the life of the system. Both can be accomplished, if you select the correct pump and components for your car wash. There are several significant factors to consider when selecting your pumping system to assure you save time and money.

Determine the type of system

Selecting a quality pumping system begins with determining the **type of system** you are building. Do you want to offer self-service bays, an automatic, a rollover or a combination. Will you need a prep-unit? How much traffic does your location see? Are you applying chemicals, waxes or spot-free rinse? What are the advantages of a single pump system over multiple pumps? Once you have determined the type of system, you can determine the **total flow required and your system operating pressure** and decide the size of pump [s] you need. Now you can move onto the next criteria in the pump system selection process.

Evaluate the pumped liquid

Building a quality pumping system requires determining the **type of liquid** being pumped. It is important to remember that water is not the same in every location. Some water contains natural minerals that can be very harsh to the system. These can cause scale build-up or even deterioration of the plumbing, pump and other car wash components and may require special filtration or softening to be compatible with the system components. Some locations may have water use restrictions and require reclaim systems. Reclaim water can contain salts, chemicals, sand and soap residue that can be very hard on your pumping system. Not all pumps can handle this

type of water. Even the selection of soaps and waxes can have a very severe effect on your pump and system component life, if the pH levels become too high or too low. Careful liquid evaluation can avoid premature wear and frequent downtime. Carefully selecting the most compatible pump and correct system components can save you time and money over the life of the system.

Select the correct drive

Equally important in building a quality pumping system is determining the **type of drive**. You need to determine the available power to your location. Low voltage coming into your facility can stall and overheat your motor and result in a costly replacement. You need to evaluate the cost of operation using single phase or three phase motor [s]. You need to determine whether standard or premium efficiency motors are more cost effective for your car wash. You need to be certain you select enough horsepower for your total system flow and pressure requirements to assure optimum performance. You will also want to consider whether you should use a traditional pulley and belt or direct-drive motor-to-pump installation. The traditional pulley and belt drive offers more flexibility in setting your performance. The direct-drive and flexible coupling or clutch offer a compact package and less adjustment at installation, however, you are fixed with a set RPM. Which will save you more time and money over the long run? Then you need to secure the pump and motor to a solid base for proper alignment and minimum vibration. Selecting the proper drive can definitely save you time and money over the life of the system.

Optimize the pump inlet conditions

One of the most important considerations in building a quality pumping system is designing **for optimum inlet conditions**. You need to determine the proper inlet supply line size [diameter], review the line length, the number of elbows and fittings, assure air-tight connections, install adequate inlet filtration, review the total demands for the water supply, determine the maximum inlet pressure

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permissible by your pump and consider the amount of restriction required for a chemical feed system.

Flooded or pressurized inlet, generally, provide optimum conditions for your pump. You should check with your pump supplier to determine the negative suction allowable with your pump. Properly sized inlet supply lines are critical. It is far less expensive to over size your supply line than to undersize and pay for the resulting damage caused by starving the pump. Reinforced flexible hose at the pump inlet is recommended, as it will absorb pulsation and pressure spikes and will prolong the life of the pump and system. With long feed lines, booster pumps are recommended. These should be adequately sized to assure proper inlet pressure and flow to the pump inlet. In other installations, excessively high city water pressure will require the installation of a pressure reducing valve to keep from over-pressurizing the pump inlet.

The C.A.T. [captive acceleration tube] has been designed by CAT PUMPS to stabilize inlet pressure to the pump with boosted inlet, long feed lines and spiking return valves. Assuring good inlet conditions is the surest way to save time and money.

Install essential discharge accessories

Equally important in building a quality pumping system is designing the **correct discharge conditions**. The most important discharge accessory is the primary pressure regulating device. It should allow adequate by-pass for smooth operation and still cover the total demand of the system. It should be rated slightly higher than both the system flow and pressure. It is also recommended that you install a secondary relief valve. This should be set approximately 10% above the primary valve pressure setting. It will rarely see activity, but is important should the primary valve wear or fail. Every system should have a pressure gauge to monitor pump performance. Fluctuations in pressure or a sudden drop in pressure are your first indications that maintenance is necessary. All triplex pumps have some pulsation. Adding a pulsation dampener will reduce pulsations to a minimum level and prolong the life of both the pump and system components. Assuring system accessories are properly selected and installed will provide optimum performance and save time and money over the life of the system.

Customize your preventative maintenance

Establishing a **maintenance cycle** for your pumping system is the best way to minimize unexpected downtime and costly repairs. You definitely do not want to be down with cars lined-up outside your doors. Monitor your new system immediately after installation. At the first signs of low pressure, fluctuating pressure or leaks, examine your pump and system components. Document the number of hours of operation and establish this interval as your service cycle. Keep a set of spare parts or kits and the proper tools handy, so you can do your service as soon as it is deemed necessary. In some cases, you may even want to keep a spare pump, so you can slip in the spare pump while you do maintenance at your convenience. Running your pump with worn parts puts you at greater risk for major failures and expensive repairs. You may end up needing to replace your pump rather than just a few parts. Like your car, changing the oil regularly on your pump will keep it in good running condition. When you do maintenance on your pump, be sure to examine all system accessories, including fittings and belts. Maintain regular cleaning schedules for your filters to prevent starving the pump. Preventative maintenance is the least expensive service and will save you time and money over the life of your system.

Select a strong technical support team

To complete your quality pumping system, you need strong **technical support**. Selecting a pump company who is available after the sale is critical.

Every system is different and requires some fine-tuning. Check with your pump supplier for available training seminars. Learn as much about your pump and system as possible to reduce unexpected problems. Specification Data Sheets and Service Manuals are necessary tools to assist in finding the correct parts and learning how to repair your pump. Parts lists, specifications and servicing data should be readily available. The DATA SHEETS section of our web site offers pump specific Data Sheets and Service Manuals, as well as, full line catalogs, brochures and service videos. The SERVICE and FAQ sections of our web site offer diagnosis and service tips 24 hours a day. Having a knowledgeable technical contact to review your selection, installation and maintenance concerns will definitely optimize your system performance and save you time and money.