

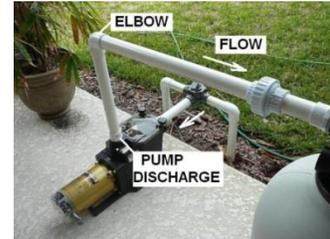
TECHNICAL SERVICE BULLETIN

Date: September 4, 2014

Product: Swimming Pool Pumps

Re: Installation

Properly working swimming pool system pumps ensure that the pool water is clear, sanitized and safe, and the various water features of the pool are working satisfactorily. Correct installation of the pool pump is important. THE INSTALLATION & OPERATION MANUAL INCLUDED WITH THE PUMP CONTAINS IMPORTANT INFORMATION. PLEASE READ AND UNDERSTAND THE CONTENTS OF THE MANUAL.



The pump should be located as close as possible to the pool on a firm, level base or pad to meet all local and national regulation. The suction lines should have the shortest path to the pump as is practically possible and have continuous slope upward from lowest point in line. Suction line diameter must be equal to or larger than the discharge line diameter. Where possible keep the suction pipe to a minimum 2". It is recommended that a minimum length of piping, equivalent to at least 6 pipe diameters, be used between the pump suction inlet and any plumbing fittings. Allow for gate valves in suction and discharge piping. For better efficiency, use the fewest possible fittings but at least two suction outlets. Use a non-entrapping suction fitting in pool (multiple drains) or double suction (skimmer and main drain).

Joints must be tight (but not over-tightened). Use Teflon tape to seal threaded connections on molded plastic components. Try not to use too much Teflon tape; a few turns should be sufficient. Do NOT use Plumber's Pipe Dope or any petroleum based lube/sealant as it may cause cracking of the plastic components.



When two or more pumps are installed in parallel the header pipe should be sized appropriately to meet the flow requirements. A check valve should be installed on the discharge of the pumps to prevent back flow that would result in high radial load on the impeller and shaft. This could also cause the impeller to rotate in reverse and come off the shaft. See that the pump turns freely before starting the motor. To avoid dangerous or fatal electrical shock, turn OFF power to the motor before working on electrical connections

In a pump with a three phase motor, reversing any two of the three phases will cause the motor to run in the opposite direction. This may damage the impeller, shaft and other internal components. The condition usually occurs as a result of mistakes made during routine maintenance or when modifications are made to the circuit. Before putting the pump into operation check the direction of rotation of the



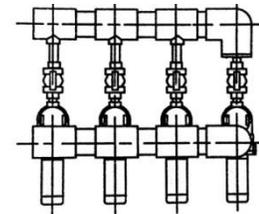
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shaft by momentarily switching on the power to the pump and observing the direction of rotation of the shaft. The correct direction is marked on the pump. 3-Phase Monitor Relays protect motors and equipment from expensive damage due to voltage faults on three-phase systems. Three phase pumps do not come with the thermal overload protection and care should be taken to ensure that they do not overheat.



It has become common practice to install two same sized pool pumps for a filter. One pump is considered to be the “standby” pump and is run alternately. While doing this ensure that the run times are not short and there are no short start-stop cycles. It is better to run the primary pump for extended periods as this keeps the seal lubricated preventing faster wear-out and excessive heat buildup in the motor. The starting current required is also much higher and can cause excessive heat buildup. Install a check valve on the discharge of both pumps. Do not install different size pumps in parallel as the larger pump can throttle the smaller pump causing shaft deflection leading to premature seal and bearing failure.

Multi pump installation



The pool system should be adequately bonded. Failure to ground and bond the pump motor can cause serious or fatal electrical shock hazard. Do NOT ground to a gas supply line. The pool motor should be bonded to the pool structure with a continuous wire of AWG No. 8 or 10 mm². Lack of bonding will cause deterioration in the pump and motor structure due to stray voltages especially in the case of pools using a salt chlorinator.

All electrical wiring MUST be performed by a competent, qualified electrician, and MUST conform to local codes and regulations. Running a pump dry may not harm the motor which is usually thermally protected, however the water flow through the pump cools the parts that heat up due to friction. A dry pump can cause excess heat which can damage the seal and other plastic components which could also lead to subsequent motor failure and reduced motor life.

The electric supply voltage should be compatible with the motor’s voltage, phase, and cycle. Voltage at the motor terminals MUST NOT be more than 10% above or below motor name plate rated voltage. The recommended minimum wire sizes should be used for the motors to prevent reduced voltage at the motor. Connections should be tight and all-copper conductors should be used.

Pump motors require free circulation of air for cooling. Ensure the pump is in a well-ventilated area. The temperature of the air around the pump should not exceed 40 deg C. The pump should not be installed too close to the building structure or close to other equipment that may give off heat or reflect heated air back onto the pump motor. Excessive variations in temperature and humidity can lead to condensation on the windings of the pump motor and in some cases mold formation – resulting in reduced motor life.



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