

## Power-Flo Matrix™ Pump Series

### Installation Instructions (cont.)

#### Pump Location (cont.)

Install pump on a firm, level base or pad to meet all local and national codes. The field supplied base or pad must be level and vibration-free.

Though the pump is designed for outdoor use, it is strongly advised to protect the electrical components from the weather. Select a well-drained area, one that will not flood when it rains. Pump motors require free circulation of air for cooling. Do not install pump in a damp or non-ventilated location.

#### Pump Mounting

Fasten pump to base or pad with screws or bolts to further reduce vibration and stress on pipe or hose joints.

**NOTE:** Allow adequate access for servicing pump and piping.

#### Plumbing

To facilitate servicing of pump and to allow for indoor storage during the winter months, installing union connections at the suction and outlet ports is recommended.

Use Teflon tape to seal threaded connections on molded plastic components. All plastic fittings must be new or thoroughly cleaned before use. **NOTE:** Do NOT use Plumber's Pipe Dope as it may cause cracking of the plastic components.

When applying Teflon tape to plastic threads, wrap the entire threaded portion of the male fitting with one to two layers of tape. Wind the tape clockwise as you face the open end of the fitting, beginning at the end of the fitting.

The pump suction and outlet ports have molded-in thread stops. Do NOT attempt to force hose connector fitting past this stop. It is only necessary to tighten fittings enough to prevent leakage. Tighten fitting by hand and then use a tool to engage fitting an additional 1 ½ turns. Use care when using Teflon tape as friction is reduced considerably; do NOT over-tighten fitting or you may cause damage. If leaks occur, remove connector, clean off old Teflon tape, re-wrap with one to two additional layers of Teflon tape, and re-install connector.

#### Electrical



**⚠ WARNING** – Ground motor before connecting to electrical power supply. Failure to ground pump motor can cause serious or fatal electrical shock hazard.

**⚠ WARNING** – Do NOT ground to a gas supply line.

**⚠ WARNING** – To avoid dangerous or fatal electrical shock, turn OFF power to motor before working on electrical connections.

**⚠ WARNING** – Ground Fault Circuit Interrupter (GFCI) tripping indicator electrical problem. If GFCI trips and won't reset, consult electrician to inspect and repair electrical system.

**⚠ WARNING** – Fire Hazard. Match supply voltage to motor nameplate voltage.

Insure that the electrical supply available agrees with the motor's voltage, phase, and cycle, and that the wire size is adequate for the H.P. (KW) rating and distance from the power source.

**NOTE:** All electrical wiring MUST be performed by a qualified professional, and MUST conform to local codes and regulations.

## Power-Flo Matrix™ Pump Series

### Installation Instructions (cont.)

#### Electrical (cont.)

##### Voltage

Voltage at motor **MUST NOT** be more than 10% above or below motor name plate rated voltage, or motor may overheat, causing overload tripping and reduced component life. If voltage is less than 90% or more than 110% of rated voltage when motor is running at full load, consult power company.

##### Grounding/Bonding

Install, ground, bond, and wire motor according to local or national electrical code requirements.

Permanently ground motor. Use green ground terminal provided under motor canopy or access plate; use size and type wire required by code. Connect motor ground terminal to electrical service ground.

Bond motor to pool structure. Use a solid copper conductor, size or larger. Run wire from external bonding lug to reinforcing rod or mesh. Connect a No. 8 AWG (8.4 mm<sup>2</sup>) solid copper bonding wire to the pressure wire connector provided on the motor housing and to all metal parts of swimming pool, spa, or hot tub, and to all electrical equipment, metal piping or conduit within 5 ft. (1.5 m) of inside walls of swimming pool, spa, or hot tub.

##### Wiring

If other lights or appliances are also on the same circuit, be sure to add their amp loads before figuring wire and circuit breaker sizes. (NOTE: If unsure how to do this or if this is confusing, consult a licensed electrician). Use the load circuit breaker as the Master On-Off switch.

Install a Ground Fault Circuit Interrupter (GFCI) in circuit; it will sense a short-circuit to ground and disconnect power before it becomes dangerous to pool users. For size of GFCI required and test procedures for GFCI, see manufacturer's instructions.

In case of a power outage, check GFCI for tripping, which will prevent normal pump operation. Reset if necessary.

**NOTE:** If you do not use conduit when wiring motor, be sure to seal wire opening on end of motor to prevent dirt, bugs, etc., from entering.

### New Installation – Start-Up & Operation

#### Prior to Start-Up

Fill strainer housing with water to suction pipe level. **NEVER** operate the pump without water. Water acts as a coolant and lubricant for the mechanical shaft seal.

**⚠ WARNING – NEVER** run pump dry. Running pump dry may damage seals, causing leakage and flooding. Fill strainer housing with water before starting motor.

**⚠ CAUTION – Do NOT** add chemicals to pool/spa system directly in front of pump suction. Adding undiluted chemicals may damage pump and voids warranty.

**⚠ CAUTION – Before** removing strainer cover:

1. **STOP PUMP** before proceeding.
2. **CLOSE VALVES** in suction and outlet pipes.
3. **RELEASE ALL PRESSURE** from pump and piping system.