



Turbo-Tech WAVE Variable Speed Pump Installation & Instruction Manual

IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions must be followed.

- 1. READ AND FOLLOW ALL INSTRUCTIONS.**
- 2. WARNING -** To reduce the risk of injury, do not permit children to use this equipment unless they are closely supervised at all times. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. In order to avoid the possibility of hyperthermia (heat stress) occurring, it is recommended that the average temperature of spa pool water should not exceed 40 degrees C.
- 3. CAUTION –** Connect only to a circuit protected by a Class A Safety Switch. This equipment shall be located out of reach of a person in the tub.
- 4. FOR SPA & HOT TUB USE ONLY –** This equipment was specifically designed for use on spas and hot tubs only in conjunction with an approved spa control system. For other applications consult the manufacturer.
- 5. WARNING: Risk of Electric Shock. (For Spa & Hot Tub Use)**
Ensure this equipment is installed out of reach of persons in the spa or hot tub and adequately fixed into position. For safety, this equipment is intended to be installed in an enclosure that requires the use of a tool to gain access to the equipment. Install in accordance with these installation instructions and wiring diagram.
- 6. SAVE THESE INSTRUCTIONS.**

CAUTION

To reduce the potential risk of fire, electrical shock, or injury to persons:

1. All electrical wiring (both installation & repair) must be done by a licensed electrician and in accordance with local, provincial, and national ordinances.
2. No modifications, additions or deletions should be made to this equipment.
3. When servicing, be sure the power is off before accessing this equipment.
4. Do not use cables or connections other than the ones supplied with this equipment. If the supply cord is damaged, it shall be replaced by the manufacturer or its service agent or similar qualified person to avoid a hazard.

WAVE VARIABLE SPEED PUMP INSTALLATION

GENERAL

Your TURBO-TECH WAVE pump has been quality built and engineered to provide unique hydro-massage effects and give maximum energy efficiency under normal spa water pumping conditions. Consult the manufacturer for any other applications.

LOCATION OF PUMP

For the best pump performance, locate the system as close to the water source as possible, preferably in a dry position lower than the spa water level. Make sure the pump has adequate ventilation, is well fixed at the base plate provided and is not accessible to persons whilst in the spa. Provide adequate access around the pump for inspection and maintenance.

PLUMBING CONNECTIONS

Fit the pump to your plumbing scheme using the 40mm (1.5") Quick Connect Unions provided. Ensure Union O'Rings are clean. Lube with silicon based lubes only (DO NOT USE PETROLEUM BASED LUBRICANTS). Hand tighten Unions only. Do not over tighten.

STARTING & PRIMING PUMP

Do not run unit dry. Always be certain that the pump casing is filled with water before starting the unit. Allow a reasonable amount of time for priming. If the pump will not start or will not prime, see troubleshooting section in this manual.

MAINTENANCE

Keep motor clean. Ensure that louvered openings and cooling fins are free from dust and debris to avoid overheating. Over a period of time the shaft seals may become damaged or worn and must be replaced.

WAVE KEYPAD & ELECTRICAL INSTALLATION

GENERAL

Your WAVE Variable Speed Pump is engineered to provide three unique variable speed hydro-massage effects which may be changed via a remote, individual keypad whilst easily interfacing with most standard spa control systems. The WAVE receives its power supply from the spa control system and is initially activated via the "Pump 2" or "Pump 3" button on the spa control system's main keypad. Once activated, the WAVE remote keypad lights up and after 5 seconds the pump starts at a "SOFT" massage setting. Soft massage, Turbo charged massage or a Wave action massage can then be selected from the WAVE remote keypad.

The unique, patent pending WAVE massage is unique to TURBO-TECH. The pump will start at a soft massage setting then gradually increase jet pressure to turbo over a one second period. Turbo will be held for one second, then, the jet pressure will gradually decrease over a one second period back to soft. Soft massage will then be held for one second before the cycle repeats itself. This effect must be experienced to be appreciated. It simulates a "kneading" action very much like a true Shiatsu massage.

LOCATION OF REMOTE KEYPAD

The remote keypad should be fitted by the spa professional on the top side of the spa ABOVE the water line. It should be located in a position within convenient reach of the spa user.

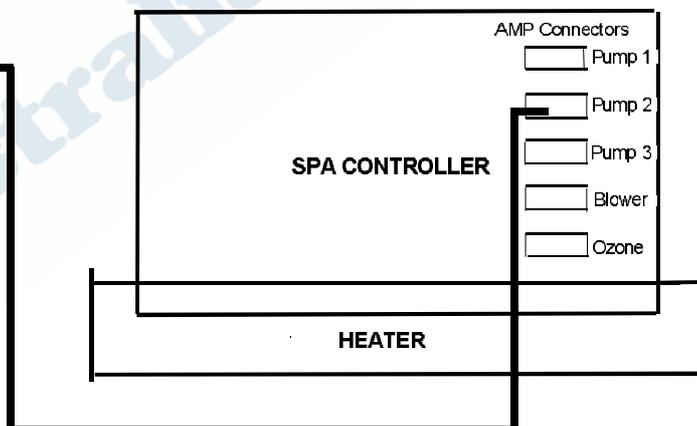
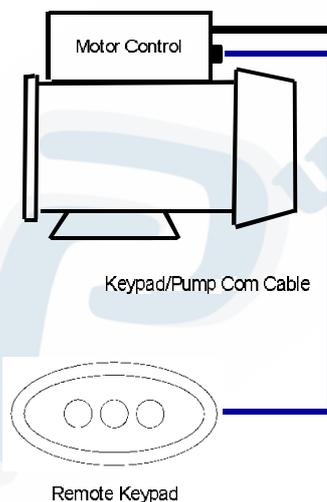
ELECTRICAL CONNECTION

The WAVE variable speed pump is provided with all the cables necessary to connect between the variable speed pump and the spa control system. The following diagram illustrates the connections necessary.

TURBO-TECH WAVE VARIABLE SPEED PUMP & BRIDGE CONTROL WIRING INSTRUCTION



TURBO-TECH WAVE VARIABLE SPEED MOTOR



Pump Power Cord 1spd 240vac/10amp
Connect to "Pump 2" or "Pump 3" Outlet
on Spa Control System.

STARTING & OPERATING CIRC-3 SYSTEM

WAVE incorporates sophisticated electronics to control and deliver the various quiet, energy efficient features designed into this product. Once all the cable connections have been made and the pump primed, turn on your spa control system. Set your spa control system as per the spa control manufacturer's recommendations incorporating your personal preferences in regards to time, filtration cycles, desired water temperature, equipment fitted etc.

Please note, for the "Pump 2" or "Pump 3" (whichever the WAVE is connected to) outlet, you need to set this in the "1 Speed Pump" configuration as per the spa control system manufacturer's instructions.

Press the "Pump 2" (or 3) button on the spa control main keypad and the WAVE remote keypad will light up. The pump will now start its boot up process. As part of the boot up process when Turbo-Tech WAVE is started from a power off status, a full systems check automatically occurs. This process may take up to 5 seconds to complete after the initial power up. The variable speed motor will then start in the SOFT massage mode. Press any one of the three buttons on the WAVE remote keypad to select one of the three massage effects you desire. Change back and forth as required. To turn the WAVE unit off, press the "Pump 2" (or 3) button on the spa control main keypad again.

IMPORTANT NOTE

After the spa control system calls for Pump 2 (or 3), typically after 20 minutes, to turn off completely, the WAVE must be given a chance to reboot after a manual input for the pump to re start is made. **Therefore, under these conditions, please allow 5 seconds after pressing the pump 2 (or 3) button for the motor to start.** Continuous inputs to the Pump button within the 5 second delay will disrupt the boot up and delay or confuse the start up process.

TROUBLESHOOTING

MOTOR WILL NOT START:

1. Check Circuit Breaker.
2. Check cabling is correctly fitted as per wiring instruction.
3. Check for loose connections.
4. Check spa control system is correctly configured with the "Pump 2" (or 3) outlet set to "1 Speed".
5. Check for any error symbols on the spa control system and follow manufacturer's recommendations for any of those error messages.

MOTOR OVERHEATING AND/OR SHUTTING DOWN:

1. Check for incorrect cabling and/or loose connections.
2. Make sure motor gets adequate ventilation and is free from debris.
3. Make sure ambient temperature where motor is located is not exceeding 50 degrees C.

MOTOR MAKING HUMMING NOISE BUT WILL NOT START:

1. Check for debris causing the pump impeller to jam.

NOISE:

1. Check plumbing vibration.
2. Check for cavitation due to air leaks, obstruction, undersized suction or dirty filter element.
3. Check for debris in the pump wet section.

PUMP WILL NOT PRIME:

1. Make sure pump is installed at the proper level and the plumbing lines have been correctly installed to allow water to freely enter the pump.
2. Open Air Control valves to release any possible air lock.
3. Loosen off pump discharge union SLIGHTLY whilst motor is running to bleed off any air locked in the pump wet section. Retighten once water appears.
4. Make sure all suction and discharge lines are clear and unobstructed and all valves are open.
5. Check for air leaks in the suction line.

LOW WATER FLOW AT HIGH SPEED:

1. Check for clogged plumbing lines or dirty filter element.
2. Check for worn or damaged impeller.
3. Check to ensure motor is transitioning correctly between its 3 speed options.

WATER LEAKS

1. Check for contamination or damage to the shaft rotary seal. Replace if necessary.
2. Check union compression fittings; make sure they are properly aligned and secure. **Hand tighten only. Do not use tools.**
3. Make sure O'Rings are properly seated, free from contamination and not damaged.

REMOTE KEYPAD DOES NOT TRANSITION MASSAGE EFFECTS CORRECTLY OR AS REQUIRED:

1. Check that cabling is installed correctly in accordance with the wiring diagram.
2. Check to ensure all connections are not loose.
3. Make sure spa control system is configured for a "1 Speed Pump" on the "Pump 2" (or 3) outlet.
4. Make sure spa control system is correctly programmed and configured for filtration maintenance and heating cycles.
5. Check for a clean power supply to the WAVE pump.
6. Check circuit breakers.
7. Make sure the pump is given 5 seconds to start from an "OFF" status before making further inputs to the "Pump 2" (or 3) button on the spa control keypad. **Further inputs made within the 5 second boot up period WILL disrupt the start up and transitioning process. If this happens, make no**

further inputs for 1 to 2 minutes to allow the system to stabilise, then press the “Pump 2” (or 3) button once and wait 5 seconds for motor to start before making any further inputs.

WARRANTY

CSN Global Pty Ltd extends to the original purchaser only, a warranty for a period of 12 months, that the products they manufacture are free from defects in material and/or workmanship (pump seals 30 days) from the date of purchase. If within 12 months, any such product shall prove defective, it shall be repaired or replaced at CSN Global's sole option and discretion as follows:

- The original retail purchaser shall first contact the installing dealer, as soon as possible after the discovery of the defect, but in no event later than the expiry date of this warranty.
- The dealer shall then advise CSN Global of the claim including the model number, serial number and date of purchase for the defective item.
- The dealer/retail purchaser shall present evidence to verify the date of purchase.
- CSN will advise the dealer of the address to which the defective item may be returned.
- CSN will repair or replace the defective item, at its sole discretion and return it to the dealer.
- Transport costs are not covered by this warranty and must be paid by the consumer.
- This warranty does not restart in the event of a product defect. The warranty expires 12 months from the date of purchase, regardless of any corrective action taken by CSN on defects reported to them within the warranty period.

EXCLUSIONS

1. The warranty shall not apply to failures resulting from negligence, abuse, misuse, misapplication, improper installation, alteration or modification, chemical corrosion, or improper maintenance.
2. Any items manufactured by other companies and used by CSN may carry warranties by the original manufacturers.
3. CSN is not liable for incidental or consequential damages, loss of time, inconvenience, incidental expenses, labour or material charges in connection with removal or replacement of the equipment.

CSN is not responsible for any implied warranties or representations by others and the foregoing warranty is exclusive and in lieu of all warranties provided therein.

Some states and territories do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.