theralux
POOL WATER AT ITS BEST™

User Manual

TVS PRO

1/1.5 hp

CONTENTS

IMPORTANT SAFETY INSTRUCTIONS

Before installing or servicing this electrical equipment, disconnect it from the power supply

⚠WARNING – This manual contains important information about the installation, operation, and safe use of this pump that must be transferred through to the end user of this product.

⚠WARNING – This product should be installed and serviced only by a qualified professional.

⚠WARNING – All electrical wiring MUST be performed by a qualified electrical contractor, and must conform to Local/State/Federal electrical regulations and the Latest Edition of AS/NZS 3000 Wiring Rules.

⚠WARNING – This appliance is not intended for use by persons (Including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. CHILDREN SHOULD BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE APPLIANCE.

⚠CAUTION – This pump is intended for use on permanently installed swimming pools and may also be used with hot tubs and spas if so marked. Do NOT use with storable pools. A permanently installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity. Though this product 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. It requires free circulation of air for cooling. Do not install in a damp or non-ventilated location. If installed within an outer enclosure or beneath the skirt of a hot tub or spa, adequate ventilation and free circulation of air must be provided to prevent overheating of the motor.

⚠WARNING – Pool and spa components have a finite life. All components should be inspected frequently and replaced at least every ten years, or if found to be damaged, broken, cracked, missing, or not securely attached.

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⚠WARNING – Risk of Electric Shock. All electrical wiring must be performed by a qualified electrical contractor, and must conform to Local/State/Federal electrical regulations and the Latest Edition of AS/NZ 3000 Wiring Rules. All electrical circuits must be supplied through a Residual Current Device - RCD (Safety Switch), with a residual operating current not exceeding 30 mA. Hazardous voltage can shock, burn and cause death or serious property damage. To reduce the risk of electric shock, do NOT use an extension cord to connect unit to the electricity supply.

⚠WARNING – To reduce the risk of electric shock replace damaged wiring immediately. Locate the power cord so that it cannot be damaged by lawn mowers, hedge trimmers and other equipment.

⚠WARNING – Never operate the circulation system at more than 344 kPa (50 PSI) maximum.

⚠WARNING – Automatic Restart. The pump motor is automatically protected from overheating. If such an error occurs, the pump will automatically restart once the temperature is at a safe level to do so without warning. If a power failure occurs while the pump is running, it will automatically restart once the power has been restored.

⚠WARNING – Damaged Supply Cord. If the power supply cord is damaged it must be replaced by the manufacturer, its service agent or similarly qualified persons to avoid a hazard.

MAXIMUM TOTAL HEAD

Model	Max. Total Head	Input kW	Input Amps	Noise dB(A) 1m	Weight (kg)	Ingress Protection
VS 1hp	15.5m - 152kPa	1.03kW	6.0	< 70	11	IPX5
VS 1.5hp	16.5m - 162kPa	1.08kW	7.0	< 70	12.4	IPX5

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⚠WARNING – Hazardous Pressure. Pool and spa water circulation systems operate under hazardous pressure during start-up, normal operation, and after pump shut-off. Stand clear of circulation system equipment during pump start-up. Failure to follow safety and operation instructions could result in violent separation of the pump housing and cover due to pressure in the system.
This separation could cause property damage, severe personal injury, or death. Before servicing the pool and spa water circulation system, all system and pump controls must be in the off position and the Filter Manual

Air Relief Valve must be in the open position. Before starting the system pump, all valves must be set in a position to allow system water to return to the pool. Do not change the Filter Control Valve position while the system pump is running. Before starting the system pump, fully open the Filter Manual Air Relief Valve. Do not close the Filter Manual Air Relief valve until all the air is expelled and a steady stream of water is discharged from the valve. All suction and discharge valves MUST BE OPEN when starting the circulation system. Failure to do so could result in severe personal injury and/or property damage.

⚠WARNING – Separation Hazard. Failure to follow safety and operation instructions could result in violent separation of pump components. Strainer cover must be properly secured to pump housing by ensuring it is firmly screwed down. Before servicing pool and spa circulation system, all system and pump controls must be in off position and the Filter Manual Air Relief Valve must be in open position. Do not operate pool and spa circulation system if system components are not assembled properly, damaged, or missing. Do not operate pool and spa circulation system unless the Filter Air Relief Valve body is in locked position within the filter upper body. All suction and discharge valves MUST BE OPEN when starting the circulation system. Failure to do so could result in severe personal injury and/or property damage.

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WARNING – Suction Entrapment Hazard. The force from suction in suction outlets and/or suction outlet covers which are damaged, broken, cracked, missing, or unsecured, can cause severe injury and/or death due to the following entrapment hazards:

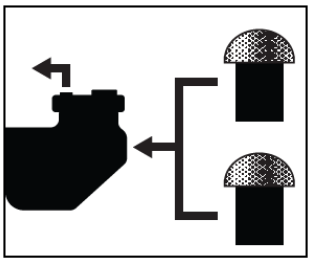
Hair Entrapment - Hair can become entangled in suction outlet cover.
Limb Entrapment - A limb inserted into an opening of a suction outlet sump or suction outlet cover that is damaged, broken, cracked, missing, or not securely attached, can result in a mechanical bind or swelling of the limb.

Body Suction Entrapment - A differential pressure applied to a large portion of the body or limbs can result in an entrapment.
Evisceration/Disembowelment - A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is damaged, broken, cracked, missing, or unsecured, can result in evisceration/disembowelment.

Mechanical Entrapment - There is potential for jewellery, swimsuits, hair decorations, fingers, toes, or knuckles, to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

⚠WARNING – To Reduce the risk of Entrapment Hazards:

- When outlets are small enough to be blocked by a person, a minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall), must be installed a minimum of 0.91 metres or three feet (3') apart, as measured from near point to near point to avoid dual blockage by a user.
- Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- Never use pool or spa if any suction outlet component is damaged, broken, cracked, missing, or not securely attached.



- Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- In addition to installing two or more suction outlets per pump, follow all national, state, local regulations and AS 1926.3 Latest Edition.
- Installation of a vacuum release or vent system, which relieves entrapping suction, is recommended.

INTRODUCTION

The TVS swimming pool pump has been specifically designed with the consumer in mind. With the Australian electricity and water usage costs always increasing, it was necessary to provide our users with a swimming pool pump that is manually adjustable to the speeds they desired. By utilising this feature, our users can save money on their electricity and water bills, as well as experience an efficient, longer lasting life on their pool pump motor.

The TVS is a great combination of tried and tested wet end technology with the smart innovation of TVS (True Variable Speed) motor adjustment. At first glance, the large and robust wet end exemplifies high quality. Australian made from high tensile plastic, our wet end is extremely tough and is designed for longer lasting life. Our revolutionary clamp and screw down clear lid provide for easy access to the hair and lint basket which makes maintenance a breeze. Our motor is designed for maximum energy efficiency and is controlled by a simple to use control pad that provides total adjustment at the push of a button.

The TVS swimming pool pump is part of the unique Australian designed Theralux swimming pool sanitation system, which focuses on providing the healthiest swimming pool environments possible for our users. This is achieved through the calibration of hundreds of years industry experience, allowing us to challenge the realms of industry normality.

INSTALLATION

The TVS comes with quick release connecting unions on both the inlet and outlet which simplifies the installation process. It also allows the user to remove the pump at any time by simply unscrewing each union. This is handy for any future maintenance.

The 2 connecting unions can be plumbed with either 40mm or 50mm PVC pipe. Ideally, the pump will operate better with the least amount of PVC bends and in the closest proximity to the swimming pool available. Ensure the suction pipe is the same size or larger than the discharge pipe.

Installation should be made on a level concrete slab or solid even surface with the pump either bolted or screwed down. There should be at least 100mm clearance between the rear of the pool pump motor to allow for ventilation & cooling.

Connect the screw-on union to the pump inlet, clean the surface area with priming solution, and then glue together, using pressure PVC glue, the PVC plumbing that comes from the swimming pool skimmer box.

Please note: Do not forget to use the union gasket provided.
Connect the screw-on union to the pump outlet, clean the surface area with priming solution, and then glue together, using pressure PVC glue, the PVC plumbing line that connects to the filter inlet.

Please note: Do not forget to use the union gasket provided.
Connect the electrical power cable plug into your power supply – this may be a power point or a salt water/mineral chlorinator.

Please note: Do not turn power on at this point.
Please allow enough time for the glue to set. Please check the PVC glue used for timing directions. However, we recommend you allow 6-8 hours for optimum results.

All electrical wiring must be performed by a licensed electrical contractor and must conform to the Latest Edition AS/NZS 3000 Wiring Rules.

START UP

Once the glue has had the required amount of setting time, check that both the inlet and outlet connection points are hand tight.
At this point, it is necessary to prime the pump wet end. This can be done by unscrewing the 2 locking knobs & removing the clear plastic lid.
Fill the hair & lint pot area up with water until it is completely full. This can be pool water via a bucket or tap water from your hose. Once full, please install the clear lid and tighten the locking knobs hand tight.

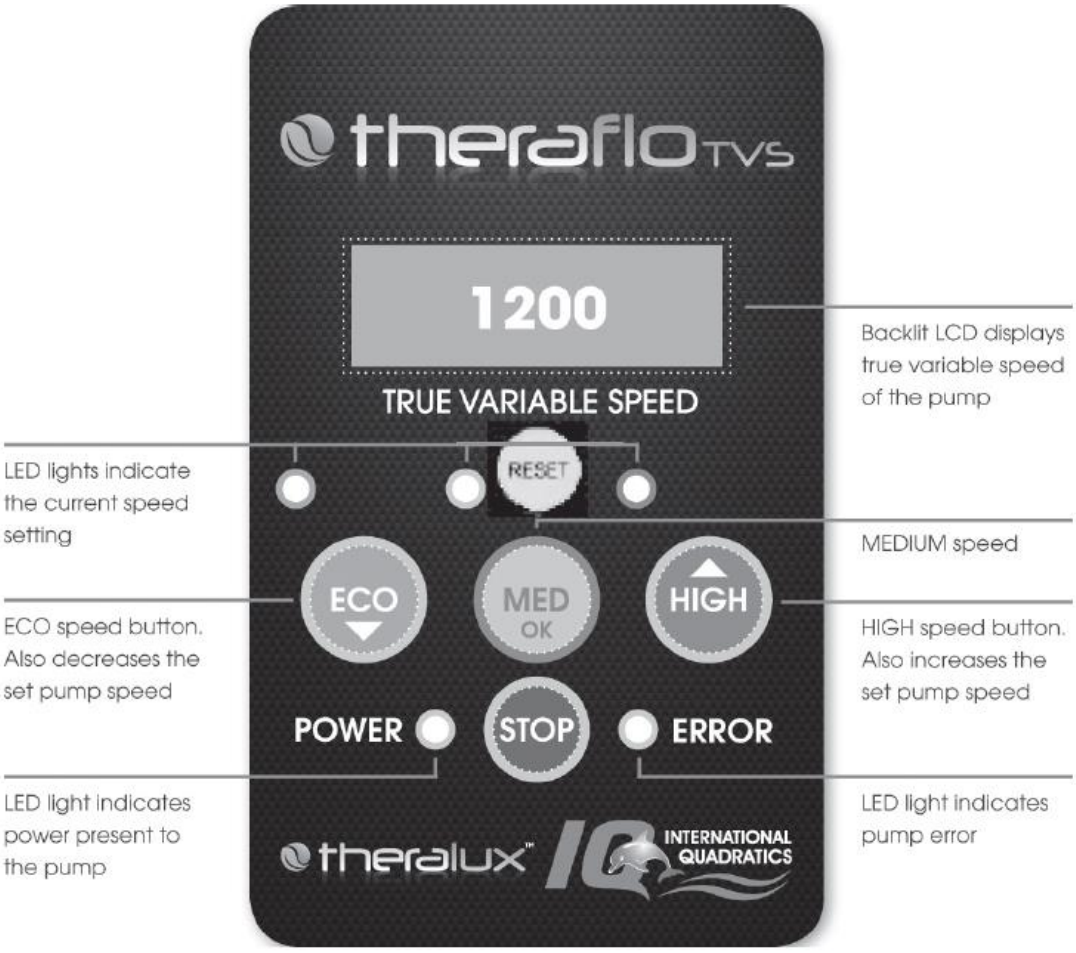
Check that ALL valves are in the open position and that your filter multipart valve is set to FILTER.

It is now time to turn the power on (on the pump). This will either be via a power point or chlorinator depending on the type of swimming pool you have. The TVS swimming pool pump will automatically start up in priming speed (high speed) which will last for 5 minutes. Once the pool pump is primed, you can then select the best suited speed for your swimming pool.

Please note: You need to ensure that you have enough water flow to provide sufficient filtration for your pool volume & system. The water flow provided can be adjusted by simply changing the speed of the motor (refer to TVS control page).

If you have a salt chlorinated pool, you also need to ensure that your salt cell is always 100% full of water whilst the pump is in operation. If you are unsure of the above, please consult your local swimming pool professional.

CONTROL PANEL EXPLANATION



TRUE VARIABLE SPEED CONTROL

The TVS has 3 factory set motor speeds: ECO, MED & HIGH. The buttons for each speed can be found on the control pad and also has a corresponding LED light to signify the current speed.
There is also the True Variable Speed LCD screen which shows you the exact RPM speed of the motor.

Please note: The LCD screen will show the current speed for only 3 minutes and will then enter power saving mode where the screen will be blank. The set speed LED light will be on to let you know which setting you are currently on.

TRUE VARIABLE SPEED MODE:

If you find that the 3 factory set speeds do not provide you with the best water flow, you can adjust each speed according to your needs. All 3 set speeds can be manually adjusted.

To adjust any speed, press and hold the speed button down for 5 seconds (1). You should notice that the set speed LED light will start to flash. This means that the pump is in Adjustment Mode. At this point it will allow you to either increase or decrease the True Variable Speed RPM in increments of 20 RPM simply by pressing the UP or DOWN button (2) until your desired speed has been reached.
If you want to return the pump control back to factory settings, press and hold all 3 speed buttons at once for 3-5 seconds (1).

Please note: If the power has been lost to the pool pump, it will always revert back to the previous speed setting after priming mode.

(1)

(2)

SHAFT SEAL REPLACEMENT

IMPORTANT SAFETY INSTRUCTIONS – PLEASE READ AND FOLLOW ALL INSTRUCTIONS

When servicing electrical equipment, basic safety precautions should always be observed including the following. Failure to follow the instructions may result in injury.

- Disconnect the pump motor power cord from the power outlet before beginning the shaft seal replacement.
  Only qualified personnel should attempt to replace the shaft seal. Contact your local Authorised Theralux Service Centre if you have any questions.
- Exercise extreme care in handling both the rotating and stationary sections of the two-part replacement seal. Foreign matter or improper handling will easily scratch the graphite and ceramic sealing surfaces.
- See the "Parts Diagram" on page 15 for the pump component locations.

Removing the Motor Assembly

1. Remove the six (6) housing cap screws (item 27), which hold the motor assembly to the pump housing/strainer (item 6), using a 9/16" AF spanner or socket.
2. Slide the motor assembly out of the pump housing/strainer (item 6), exposing the diffuser (item 18). Pull the diffuser off the seal plate (item 23), exposing the impeller (item 20). The diffuser may remain in the pump housing/strainer. To remove, pull it straight out of the pump housing/strainer.

Removing the Impeller

1. To prevent the motor shaft from turning:
   For 1hp: Insert a flat head screwdriver through the centre hole in the fan cowling, into the socket on the end of the motor shaft and hold it.
   For 1.5hp: Insert a 3mm allen key into the slot at the bottom of the motor and hold it.

2. Remove the impeller (item 20) by rotating it counter clockwise. The spring portion of the seal assembly is now exposed. Carefully note the position of the spring seal and remove it. Also remove the impeller ring (item 19) from the impeller and note the way that it was installed.

IMPORTANT - Clean all recesses and parts to be reassembled. Inspect gaskets and replace if necessary

Removing the Ceramic Seat

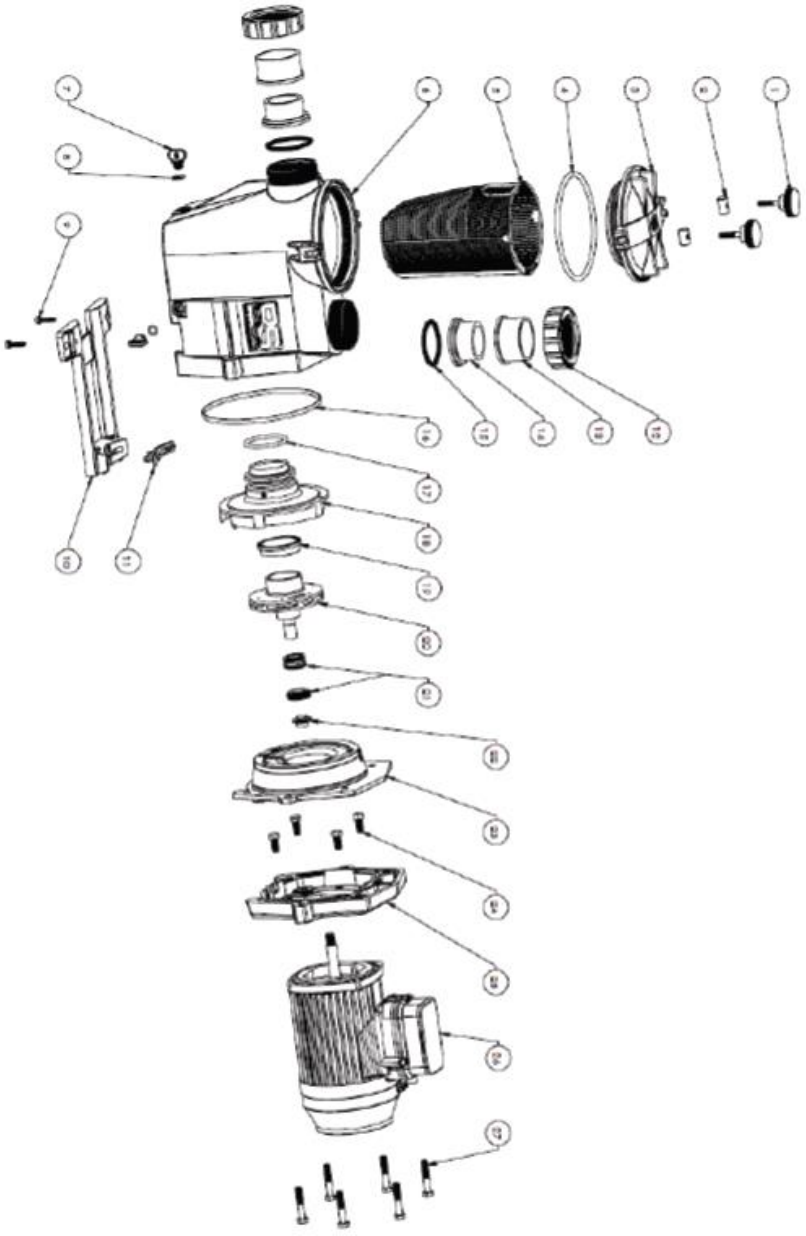
1. Remove the seal plate (item 23) from the motor mounting plate (item 25).
2. Press the ceramic seat with rubber cup out of the seal plate (item 23). If tight, use a small screwdriver to tap the seal out from the back side of the seal plate.

SEAL, IMPELLER AND DIFFUSER INSTALLATION

1. Clean and lightly lubricate the motor shaft and seal recess in the seal plate (item 23) with dilute solution of non-granulated liquid type soap. Gently wipe the polished face of the ceramic seal with a soft, lint free cotton cloth. Lubricate the rubber cup on the ceramic seal and press it firmly into the recess of the seal plate (item 23) with the polished ceramic surface facing towards you. Ensure the motor shaft slinger (item 22) is slid just onto the start of the shaft with the tapered end pointing outward or away from the motor.
2. Place the seal plate (item 23) onto the motor mounting plate (item 25). Align the tabs on the seal plate with the grooves on the motor mounting plate. The outside profile of the two parts should be the same.
3. Gently wipe the black, polished surface of the carbon spring seal assembly (item 21) with a soft, lint free cotton cloth.
4. Clean and lubricate the impeller (item 20) and press the carbon spring seal assembly (item 21) onto the impeller hub with the black, polished surface facing away from the impeller.
5. Screw the impeller (item 20) onto the motor shaft in a clockwise direction and tighten snugly by holding the motor shaft with a flat head screw driver (for 1hp model) or 3mm allen key (for 1.5hp model) as explained earlier. Place the impeller ring (item 19) back onto the impeller (item 20), with its flange facing towards the diffuser (item 18).
6. Place the diffuser (item 18) over the impeller (item 20) and onto the seal plate (item 23), aligning the arrow to the top of the motor or the top ridge of the seal plate. Give it a tap with the heel of your hand to make it seat into position on the seal plate. Ensure the diffuser gasket is fitted to the outside of the diffuser inlet.
7. Replace the motor assembly into the pump/strainer housing in the reverse order of the removal steps. Ensure the housing gasket (item 16) is lubricated and tighten the housing cap screws (item 27) in a cross pattern and evenly.

NOTE: Do not use petroleum-based lubricants on gaskets, O-rings or plastic components. Use only silicone-based lubricants

REPLACEMENT PARTS DIAGRAM



REPLACEMENT PARTS TABLE

REF NO.	PART NO.	DESCRIPTION
1 & 2	THERAF4320	Hand Knob Kit for Strainer Cover (inc Hand Knob & Swivel Nut)
3	THERAF4304	Strainer Cover, Hand Knob Style - Clear
4	THERAF4303	Strainer Cover O-Ring
5	THERAF4302	Basket
6	THERAF4301B	Pump Housing/Strainer - 50mm, w/Drain Plugs, threaded external
7 & 8	THERAF4318	Drain Plug with O-Ring
9	THERAF4317	Mounting Foot Cap Screw (set of 2)
10	THERAF4316B	Mounting Bracket, hps style
11	THERAF4323	Spacer for motor support (required only for 1hp model)
12, 13, 14	THERAF4321	Union Kit (set of 2) suit 40mm & 50mm w/Gasket (T-Seal)
15	THERAF4322	Union Gasket (T-Seal)
16	THERAF4305	Housing Gasket
17	THERAF4323B	Diffuser Gasket
18	THERAF4306C	Diffuser
19	THERAF4307B	Impeller Ring
20	THERAF4308K THERAF4308H	Impeller 1HPVS (required only for 1hp model) Impeller 1.5HPVS (required only for 1.5hp model)
21	THERAF4309B	Seal Assembly (inc, Mechanical Seal and Slinger)
22	THERAF4312B	Slinger
23	THERAF4310B	Seal Plate
24	THERAF4311B	Motor Cap Screw (4 required)
25	THERAF4313B	Motor Mounting Plate
26	THERAF4315K THERAF4315L	Motor 1HPVS (required only for 1hp model) Motor 1.5HPVS (required only for 1.5hp model)
27	THERAF4314	Housing Cap Screw (6 required)

CARE & MAINTENANCE

It is strongly advised that you check the hair and lint pot basket area regularly for any debris. If debris is found within the basket, you should empty the basket, as a full basket can result in reduced water flow and an increased chance of blocking the impeller.

To do this, please ensure that the power to the pump is turned off before you remove the lid. You may also need to re-prime the pool pump once the clean basket has been returned. Please follow priming instructions found on start-up page 9. Regularly check the pump for any wet areas or leaks. If you find wet areas around the pump, please check and re-tension the 2 connecting unions on the inlet & outlet PVC lines.

If by chance you find water accumulating at the base of the motor, this could be a sign of seal damage and action should be taken immediately to avoid any further damage. It is best to consult your local swimming pool professional if this arises. Please do not run your TVS pool pump off an extension lead as this results in a drop in voltage current which can damage the motor.

Always ensure that the pump itself is free of flooding.

Always ensure that the pump itself is well ventilated. The pump motor will run hot during its normal operation and utilises the rear mounted fan to aid in cooling. It is essential that the rear of the pump is clear of all debris and fixtures within 100mm.

Do not under any circumstances run your TVS swimming pool pump without water as this will damage the internal components. Running the pump dry will void any warranty so it is imperative that you maintain adequate water levels within your swimming pool always.

Please also be aware when using any small pool toys in the swimming pool that may be small enough to block the suction line.

WARRANTY

TVS carries a 3-year limited warranty and is structured in the following way:

- 2 years warranty on motor
- 1 year warranty on mechanical seal
- 3 years on all other parts

Our warranty covers manufacturing faults, not wear and tear. We will, at our discretion, repair or replace the faulty material or part. It is your responsibility to notify Theralux at the earliest possible time of any issues found within the warranty period.

Proof of purchase is required to be presented with any warranty claim submission.

This warranty does not apply to any misuse of the pool pump, negligence, or incorrect installation. We will not cover any damage due to the pool pump running dry, incorrect chemical balance of pool water, flood damage, damage caused by running the pump off an extension cord, damage caused by foreign material blocking the impeller (pebbles, organic matter, toys, etc.) or if the pool pump is used for any other purpose other than a swimming pool.

We will not be liable for any incidental or consequential damages, loss of time, inconvenience, incidental expenses, labour, or material charges in connection with the removal or replacement of the equipment, or costs of transporting the goods.

We will not be liable for compensation or damages to any person for any loss, injury or damage to any person or property whatsoever, occasioned by or as a result of the use of this equipment.

Please Note: Labour and service calls are not included in this warranty.

Any TVS pool pumps found in a commercial application will only carry a 12-month warranty from date of purchase.

Register your product warranty online at www.theralux.com.au

Visit theralux.com.au or call
Australia 1300 131 788
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