

 **theralux**  
POOL WATER AT ITS BEST™

# User Manual

**TVS PRO**  
1.25/1.75 hp



**Read these instructions before operating the pool and spa pump.**

MODEL: TVS Pro 1.25hp and 1.75hp

**DANGER - HAZARDOUS SUCTION.**

- Do not block water entry into filtration system with any part of your body as the suction can trap hair or body parts, causing severe injury or death. Do not block suction. Turn off pump immediately if someone becomes trapped.

**Careful Reminder**

- This appliance is not intended for use by persons (including children) or person/s with reduced physical, sensory or mental incapability's, or lack of experience and knowledge, unless they have supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Please check your pump basket, skimmer and entire pool system regularly to maximize the life of your pool equipment & personal safety. Turn pump off first before checking baskets.
- Make sure that all pressure gauges installed are in working condition and the operating pressure is within limits as specified on the product.
- Make sure that each suction inlet, and main drain has a cover that is securely attached and in safe working condition to meet with all current legislation.
- Make sure that all skimmer covers (deck lids) are securely attached and in safe working condition. These should be replaced every 3 to 4 years.
- Remove any obstructions or debris from the main drain cover.
- Ensure the skimmer baskets and the pump hair and lint pots are free of leaves and debris at regularly.
- Remove obstructions and combustibles from around the pump motor.
- Make sure all wiring connections are clean and that all wiring and electrical equipment is in good condition. Damaged wiring must be repaired or replaced by a qualified electrician as soon as damage is discovered.
- Do not add chemicals directly to the pool skimmer. Adding undiluted chemicals may damage pump, heater, etc and void warranty.
- Check water balance and sanitizer levels at your local pool shop.

### WARNING

CHILDREN SHOULD BE SUPERVISED AT ALL TIMES TO ENSURE THAT DO NOT PLAY WITH THE PUMP OR ANY POOL ASSOCIATED ELECTRICAL DEVICE

- Pump suction is hazardous and can cause entrapment, drowning or disembowel bathers.
- Do not block or cover any pool/spa suction.
- Do not use or operate swimming pools, spas or spa baths if a suction cover is broken, missing or loose.
- Suction covers and inlets must be installed as per Australian Standards guideline and provided for every pump to avoid suction entrapment.

### CAUTION

- In the interest of safety, we advise that all brands and types of pool pumps must be installed in accordance with AS3000 wiring rules or equivalent
- If the pump and filter are located below pool water level, it is necessary to fit isolating valves in the pipe between the pump and the skimmer box and in the return pipe from the filter to the pool.
- The fittings on this product are constructed of ABS. Some PVC jointing compounds are incompatible with ABS. Check compound suitability before use.
- Theralux recommends that all installations are fitted with earth leakage or residual current protection devices.
- Ensure that an electrical isolation switch is located with easy access so that the pump can be switched off in an emergency.

## TVS Pro Fully Variable 3 Speed Pool / Spa Pump

Read these instructions before operating the pool and spa pump.

**The TVS PRO pool pump uses a patented variable 3 speed permanent magnet brushless DC motor. If installed (by a professional) and used correctly it will significantly reduce operating costs, noise, and greenhouse emissions.**

### INSTALLATION & OPERATING INSTRUCTIONS

#### THERALUX'S POOL AND SPA PUMP

Congratulations on your purchase of a quality product from the Theralux range of Pool and Spa Equipment. You will be pleased with the many years of reliable and efficient performance your Theralux pool and spa pump will deliver.

Theralux pool and spa pumps have been designed to circulate swimming pool and spa water in conditions set out in the Australian Standard for swimming pool water quality (AS 3633)

Theralux designs its own electric motors specifically for its pumps. The matched motor and “pump wetend” are designed to provide quiet operation and energy efficiency. Theralux’s totally enclosed fan-cooled motor incorporates “thermal cut-out” overload protection designed to protect the motor from overheating.

Every Theralux pool and spa pump is thoroughly water tested against flow, pressure, voltage, current and mechanical performance parameters. Theralux advanced pump technology provides reliable and efficient performance that lasts.

Theralux pool and spa pump are designed with high flow and the head pressures are ideally suited for the modern pool or spa with extensive equipment.

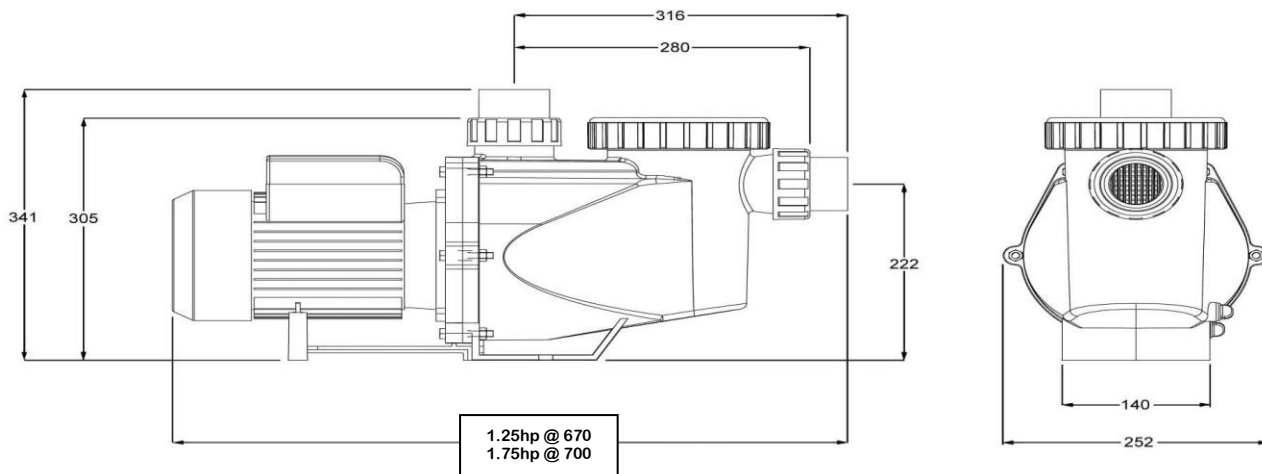
Theralux pool and spa pumps are designed to operate with most chlorinators, heaters and other pool equipment producing correct water flow and energy efficiency.

#### FEATURES & BENEFITS

- Energy Efficient fully variable 3 Speed Motor
- Computer-designed impeller and diffuser quickly correct loss of water flow, allowing a free flow of water with whisper quiet and efficient performance.
- Easy to remove; see through strainer lid for easy removal of leaves and debris.
- Extra large strainer basket allows long intervals between cleanings.
- Continuous duty rated motor with an enclosed fan cooled motor.
- Built-in thermal overload protects the motor against damage from overheating.
- Every unit is pressure and performance tested in factory ensuring quality and reliability.
- High performance Silicon Carbide mechanical seal, fitted for long life in salt & fresh water.
- Constructed of strong corrosion and U.V. resistant materials for long life.
- A.B.S. quick connect couplings makes installation simple.



## Dimensions



## Installation Instructions

### Location

The pump should be located as close to the water as practicable and mounted on a firm base in a well drained position, high enough to prevent any flooding. It is the installer's/owner's responsibility to locate the pump so that it can be accessed for service and maintenance. The rear fan shroud should be installed at a minimum distance of 100 mm away from any walls or obstructions. This is to allow adequate air flow from the fan to cool the motor. Overheating due to a lack of cooling voids warranty.

### Weather Protection

It is recommended that the pump be protected from the weather. Enclosures should be ventilated to allow a free flow of air for the fan cooled motor.

### Power Connection

Theralux pool and spa pumps are suitable for connection to a nominal 240-volt 50Hz power supply.

The motor is equipped with a flex and 3-pin plug. If a power outlet is not available within 2 meters of the pump, a 3-pin power point in a safe, dry place may need to be provided by an electrician.

#### Note:

- Pumps must be either
  - Supplied by an isolating transformer, or
  - Supplied through a residual current device (RCD) with a rated residual operating current not exceeding 30mA.
- Extension cords are unsafe around pools and must be avoided.
- If the supply cord of this product is damaged the dealer or manufacturer must replace it, with genuine THERALUX pool and spa pump spares.
- Water temperature is not to exceed 45 degrees

## Pipe Connection

A barrel union is provided for connecting to the piping from the pool.

The pumps are designed to accept the following PVC Pipes:

- Inlet PVC Position 40mm pipe ID or 50mm fitting ID PVC pressure pipe fittings
- Outlet PVC Position 40mm pipe ID or 50mm fitting ID PVC pressure pipe fittings

The use of pipe with a smaller ID than those specified above is not recommended and may cause damage to the pump voiding warranty.

A straight length of pipe measuring no less than 300mm should be installed in front of the inlet of the pump allowing quieter and smoother operation.

Suction piping should be free from all air leaks and any humps and hollows, which may cause suction difficulties.

The outlet piping from the pump should be connected to the inlet connection on the swimming pool filter (at the filter valve).

For pump installations above water level, it generally requires a check valve in the suction line.

Do not use type 'P' (green) plumber's glue on the barrel unions as this may cause damage to the material used.

Always install pump for maintenance and service accessibility.

## USAGE WARNING

- The TVS Pro is manufactured with technological advances including PCB's and microchips. It is necessary to turn power off completely for 10 seconds prior to turning pump back on again
- Some brands of older style chlorinators may release a small amount of power to the TVS PRO even whilst it seems turned off. If this occurs the TVS PRO may not reset correctly until power is completely disconnected.
- In some cases, chlorinator manufacturers may be able to modify internal components to work in with the V3PRO. If not, a suitable chlorinator may be required.
- Theralux's chlorinator completely disconnects power to the pump when the pump is in off mode.

## OPERATION

### Starting the Pump

To operate efficiently and to prevent damage to the pump there must be a free flow of water to and from the pump. Before starting ensure that:





- All pipe work is correctly sealed.
  - Barrel unions on the inlet and outlet are hand tightened and the pipework is installed square to the pump.
  - The pool/spa water level is at the correct height.
  - That all appropriate valves are open and there is nothing preventing the flow of water through the system.
1. First prime the pump by removing the strainer basket lid and filling the strainer basket area with water. Replace the lid, ensuring that it seals on the large o-ring.
  2. Connect to the power supply and switch on.
  3. Allow the pump to run, so that any air trapped in the pipe work and pump may be expelled.
  4. If prime is not established within approximately two minutes, as evidenced by a strong flow of water from the outlet, switch off the pump for 10 secs and repeat the procedure. Continued evidence of air under the hair and lint pot lid indicates an air leak in the suction piping work, which should be rectified to avoid pump damage.
  5. If water flow through the pump is continuously tedious to obtain at start-up after cleaning the lint basket, then an examination of the system to establish a reason and correct the cause. (ie. Check valve, air leaks, faulty seal/s, crack lid.

## TVS Pro variable speed control



**Normal Operation Mode:**

Press Button:

-  - for Low Speed (LED will flash when selected)
-  - for Medium Speed (LED will flash when selected)
-  - for High Speed (LED will flash when selected)
-  - Off Button (LED will flash when selected)

## Factory Setting Speeds / Star Ratings

### 1.25hp TVS PRO




Low @ 1600                      Medium @ 2400                      High @ 2850

### 1.75hp TVS PRO





Low @ 1450                      Medium @ 2400                      High @ 2850

## Adjustable Speed Mode

**Adjustable Speed Mode:**

- Press and Hold  ,  or  for approx. 3 secs (until the LED begins to flash) to switch to Adjustable Speed Mode.
- Holding all 3 buttons for 3 seconds will reset the speeds to default

Press Button:

-  - to decrease speed by 25, 50 and 100rpm increments with 1000rpm as the minimum limit
-  - (High Speed - 2830RPM - top speed) Can only be increased by 25, 50 and 100 rpm if already previously adjusted
-  - to save the current speed setting and return to normal operation mode
-  - will cancel the change and revert back to the original speed and return to normal operation mode



The TVS Pro Variable Speed Pumps has 3 speed settings

1. Eco (Energy Saving)

- This should be used for everyday water filtration
- The pump should be operated for approximately 8 hours per day depending on the surrounding climate, bather loads, pool volume and length of pipework.
- In some cases when your pool has areas where water is not turning over, increase the speed setting
- This setting is **not** recommended to be used with a suction cleaner but may work.

2. Med

- This should be used for gentle spa jet action and the majority of suction cleaners when connected to a skimmer box

3. High

- This should be used for backwashing, manual vacuuming of the pool, operating gentle or soft spa jets and/or water features.

PLEASE NOTE

- The TVS Pro will always run at ‘high’ speed for 3 minutes upon start up or a filter cycle. This assists with priming of the pump and pipe work.
- After the initial 3 minutes the TVS Pro will revert to the previous selected speed it was set at before it was turned off.
- Priming function can be disable, however, this is not recommended

**CHANGING PRIME ON/OFF, PRIME DURATION AND PRIME SPEED**

- Turning Prime On / Off
  - Press the stop button 3 times simultaneously
  - Screen should read “P off”
  - Do this again to turn it on, “P on”
  - Disabling Prime function is not recommended for standard operation use
- Changing Prime Duration
  - Hold Off button for 10sec
  - Screen with display P 3 -- Depicting 3 Minutes
    - This can be increase up to 120 minutes
    - Press set to save 3 times
- Changing Prime Speed
  - Hold Off button for 10sec
  - Screen with display P 3 -- Depicting 3 Minutes
  - Change Prime Duration if required (See above)
    - Press Set -- P 3
    - Screen will display 2850 (Highest possible speed)
    - Increase or decrease as desired by using up and down arrows
    - Press set to save 2 times

## WHEN USING WITH THERALUX / POOL+ MANAGER CONTROLLER WITH RS485 COMMUNICATION

- Press and hold OFF button for 10secs
- Screen will display P 3 -- Press SET
- Screen will display 2850 -- Press SET
- Screen will display -- Mod Off
  - Press Up or DOWN arrows
  - Screen will display Mod On - Press SET
- Plug cable into pump from controller
- When connect screen should display “----” It is now in slave mode

## WHEN USING WITH THERALUX ECOMMANNER

- Priming function must be disabled prior to connecting communication plug to motor
  - Press the stop button 3 times simultaneously
  - Screen should read “P off”
  - Do this again to turn it on, “P on”
- Set speeds prior to connecting communication plug to motor
  - Adjust eco and solar heat demand speed, then save prior to connecting comms cable
- Plug comms cable into pump from controller



## THERALUX'S RECOMMENDATION

- During day-to-day operation we recommend running the TVS PRO on “eco” for 8-10 hours. This will achieve the lowest noise and lowest operating costs whilst maintaining filtration effectiveness.
- In some cases (larger pools, warmer climates and increase bather loads you may have to increase the speed setting or operating duration. This will still provide you with significant savings.

### Limits

Water temperature Max 45oC  
 Ambient Temperature Max 55oC  
 DBa @ 1 meter 62

### Water Quality

Maintaining balanced water chemistry is important to the life of your pool pump. This pump is designed to be used with Pool & Spa water, balanced in accordance with Langlier Saturation Index, with a pH level of between 7.2 and 7.8 and is regularly treated with a chlorine sanitizing agent with the level not exceeding recommended chlorine levels.

Please consult your local pool shop regularly to have your water tested.

### Emptying the hair and lint pot

The hair and lint pot strainer basket should be inspected frequently through the transparent lid and emptied when a build up of rubbish is evident.

Follow the directions below.

1. Switch off pump.
2. Unscrew the hair and lint pot strainer basket lid anti-clockwise and remove.
3. Remove the hair and lint pot strainer basket by lifting upwards from its housing.
4. Empty the trapped refuse from the basket. Hose out with water if necessary.
5. Check the hair and lint pot strainer basket for cracks, replace the strainer basket in the pump if OK.
6. Replace the lid and ensure that it seals on the large rubber o-ring. **Firm hand tightness only is required.** The o-ring & thread can be lubricated with silicone grease.

## HOW TO CONNECT TO SUCTION CLEANERS

- It is important that the TVS PRO is fully primed when connected to a suction cleaner.
- Switch pump to “high” setting for 2 minutes if pump is currently switched on or allow for initial 3 minute prime.
- Connect cleaner hose to skimmer plate only after air has been purged from top of hair and lint pot
- Select speed (usually “med”) at which the cleaner will travel to all areas of the pool
- Disconnect cleaner and remove from pool once it is cleaned. Change setting back (usually “eco”) to your daily filtration requirements.

## TROUBLE SHOOTING

If the pump does not operate, one of the following conditions may apply:

- a. The power is not connected. For 240 volts only.
- b. Check the power point by plugging in a portable appliance to ensure power is available.
- c. Check fuses and the main power supply switch
- d. Automatic overload is tripped. The pump has an in-built thermal overload, which will re-set automatically after the motor has cooled following an overheating period. Determine the cause of the overload tripping and rectify.
- e. Pump needs to be disconnected for 10 secs and reconnected
- f. Blockage is preventing the pump from rotating.
- g. If plugged into chlorinator, disconnect and reconnect directly to power after 10 secs. If it then works, please check your chlorinator manual.
- h. Motor is burnt out - burning smell is evident. Replacement is required.
- i. If you are unable to resolve any installation or operation difficulties with your THERALUX pool and spa pump, contact the supplier from whom the pump was purchased or you're nearest Authorized THERALUX pool and spa pump Pool Equipment Service Centre. If any further assistance is required, contact the THERALUX Customer Service Centre at the address indicated in this manual.

If the pump runs but there is no water flow or water flow is reduced, the following condition may apply:

1. The filter requires backwashing, or it is blocked.
2. Disconnect the suction cleaner
3. Check the skimmer box for blockage.
4. The pump is not primed, increase speed. If this doesn't work within 1 minute turn off. (See 'Starting the pump')
5. There are air leaks in the suction piping. Check all piping and eliminate leaks, also check for a loose strainer basket lid. Air bubbles in the water flowing back to the pool would indicate a leak in the suction to the pump allowing air to infiltrate the pipe work.
6. The pump is not able to get water from the pool. Check that the valves to the pump are fully open and that the pool water level is up to the skimmer box.
7. A leaking pump seal may also prevent operating. Evidence of this would be water on the ground under the pump.
8. Blockage in the piping or pump. Remove the hair and lint pot strainer basket and check for any blockage to the pump impeller entry.
9. You may require a check valve installed.



## Removal of the Pump from Pipe work

To remove the pump, follow these instructions:

1. Switch off the power and remove the plug from the power source.
2. Close the water valves on the pool return and the pump inlet pipe work.
3. Remove the discharge & suction barrel unions taking care not to lose the o-rings.
4. Move the pipe work with the barrel unions attached until the pump can be moved clear.

### NOTES:

- If the pump is hard wired, a qualified electrician should remove the wiring.
- Barrel unions need to be hand tightened. No sealant, glues or silicones are required.
- When making any enquiries about your THERALUX pool and spa pump be certain to quote the model number from the nameplate located on motor.
- Never run pump dry. Running the pump with no water may damage the mechanical seals, causing leakage and flooding. Dry running damage and associated damage is not covered under warranty.
- Failure to undertake regular maintenance may cause damage not covered by warranty.
- The pump is not intended for use by young children or infirm persons without supervision. Ensure that young children are supervised at all times to ensure that they do not play with the pump.

## FAULT CODES

Blinks/ Display	Fault	Software Cause	Action
1/ Er01	Micro controller failure	Micro controller is continually rebooting.	<ul style="list-style-type: none"> <li>No action can be taken to resolve issue. Return motor for warranty.</li> </ul>
2/ Er02	Under voltage	The line voltage has dropped below 180 volts AC running.	<ul style="list-style-type: none"> <li>The controller will reboot after voltage comes above 209 volts AC for at least 6 seconds.</li> <li>Reduce distance between motor/pump and breaker.</li> <li>Turn off any other non-critical equipment on the same breaker circuit.</li> </ul>
3/ Er03	Temperature	Internal electronics detected an over temperature condition (+100C on sensor)	<ul style="list-style-type: none"> <li>Verify the proper impeller has been applied (net 1.0Hp max)</li> <li>Turn the power off at the timer / breaker and allow motor to remain off for at least 15 minutes before reapplying power.</li> </ul>
4/ Er04	Over current trip	Over current protection has tripped.	<ul style="list-style-type: none"> <li>Verify the proper impeller has been applied (net 1.0Hp max)</li> <li>Inspect all equipment / piping in the system connected to the pump</li> </ul>
5/ Er05	Over voltage	The line voltage has risen above 269 volts AC.	<ul style="list-style-type: none"> <li>The controller will reboot after voltage comes below 254 volts AC for at least 6 seconds.</li> </ul>
6/ Er06	Output shaft seized	Motor failed to start. Motor was stopped.	<ul style="list-style-type: none"> <li>Manually rotate the shaft via the shaft access in the fan cover</li> <li>Inspect all equipment in-line with the pump for obstructions or locked pump parts.</li> </ul>
7/ Er07	Self-check	One or more of the self-tests failed either at start up or while running.	<ul style="list-style-type: none"> <li>Turn the power off at the timer / breaker and allow motor to remain off for at least 15 minutes before reapplying power</li> <li>Return motor for warranty if error persists.</li> </ul>
8/ Er08	Motor fault	One or more of the phases has become disconnected.	<ul style="list-style-type: none"> <li>Turn the power off at the timer / breaker and wait one minute before opening the topside connection enclosure. Verify phase leads from both the motor and control connecting into the terminal block (red, yellow, white leads on left-most connections of blocks as viewed from the conduit entrance) are properly connected and screws on the terminal block are tightened sufficiently.</li> </ul>

\*\*\* Sequential LED blinks will indicate the fault code. \*\*\*

## Limited Warranty

Your Theralux TVS PRO pool and spa pump is covered by a limited three-year warranty.

Please refer below for details as follows:

- 2/3 year limited warranty against defects in workmanship and materials excluding obvious neglect, misuse, improper installation or improper maintenance from date of purchase.
- 3 years on pump body and seal plate
- 12 months on mechanical seal and bearings
- 2 years on motor

Replacement of routine maintenance items are not covered under warranty. These items may include O' rings, baskets, gaskets and mechanical seal.

This warranty is subject to the conditions and limitations herein after stated. You must notify Theralux of the failure of any component of your pool and spa pump and motor within 7 days of the recognised fault. Theralux will at its option, repair or replace any defective parts. Component failure must be due solely to a defect in materials or workmanship. This warranty does not apply if failure is due to any abuse, misuse, improper installation or accident or to any of the following:

- Improper chemical balance in the water,
- Incorrect power supply and/or connection
- Water damage from external sources,
- Cement, pebbles, render or other pool surface finish blocking the impeller,
- Use on non-swimming pool or spa pool application, (saltwater aquaculture).
- Running the pool and spa pump dry,
- Inadequate ventilation,
- Installed on uneven ground or in a sump area that collects significant water
- Addition of salt, chlorine and/or any other pool chemicals through skimmer or pump basket

To stand behind our commitment to provide warranty coverage, Theralux has established a network of authorized warranty agents throughout Australia. To obtain warranty service, contact our Service Department. If your request for warranty service is diagnosed to be non-warrantable, you will still be charged for a service call.

12 months in field labour warranty is applicable in some Capital City Metropolitan areas or within a 20 km radius of an Authorised Theralux Service Agent. A travel fee may be charged on all other areas.

Theralux shall have no liability for incidental or consequential damages. No person is authorized to make any representation or warranty on behalf of Theralux other than what is stated here.

### Commercial Installations

On Commercial Installations, such as health clubs, swim schools, motels/hotels and hydrotherapy, parts and in field labour warranty (within capital city metropolitan areas or 20km radius of authorised service agents) is 6 months from the date of purchase.

Theralux assumes no liability for consequential damages of any kind.

#### PLEASE NOTE:

- This literature is not a complete guide to product usage. Further information is available from your THERALUX dealer, THERALUX Customer Service Centre and from the relevant product Installation and Operating Instructions.
- This data sheet must be read in conjunction with the relevant product Installation and Operating Instructions and all applicable statutory requirements. Product specifications may change without notice.
- Warranties vary in different States and/or Territories.

#### INSTALLATION NOTES:



Visit [theralux.com.au](http://theralux.com.au) or call  
Australia 1300 131 788  
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 **theralux**  
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