



## Henden 280 3 Speed Pump H3SP1HPN

# INSTALLATION & OWNERS MANUAL



**IMPORTANT**  
Please read carefully



**WARNING:**  
Failure to follow these instructions and comply with all applicable codes may cause serious bodily injury and/or property damage.

The installation of this product should be carried out by a person knowledgeable in swimming pool plumbing requirements following the installation instructions provided in this manual.

Please pass these instructions on to the operator of this equipment



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## INSTALLATION

### 1. INSTALLATION OF THE HENDEN 280 3 SPEED PUMP

#### 1.1 Location of the Pump

The pump should be located as close to the water as possible 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 such that the nameplate can be easily read and the pump can be readily accessed for service.

#### 1.2 Weather Protection

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

#### 1.3 Power Connection

The Henden 280 3 Speed Pump is suitable for connection to a nominal 220-240 volt 50Hz power supply and is equipped with a flex and 3 pin plug. If a power outlet is not available within 2 metres of the pump, a 3 pin power point in a safe, dry place may need to be provided by an electrician. Extension cords are unsafe around pools and should be avoided. If the supply cord of this product is damaged it must be replaced by Henden or the manufacturer, with genuine Henden spares.

This Henden 280 3 Speed Pump incorporates motor overload detection designed to protect the motor from overheating. If the motor gets too hot during operation, it's operating speed will reduce to bring it within an acceptable operating temperature and then will speed up to the originally set speed.

To reset the motor, switch the power off then remove the power lead. After 30 seconds, plug the pump back into the mains power supply and resume normal operation.



Henden recommends that all installations are fitted with earth leakage or residual current protection devices.



**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 skimmer box and in 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.



**Warning!** Ensure that an electrical isolation switch is located with easy access so that the pump can be switched off in an emergency.

## 2. PIPE CONNECTION

Barrel union sets (40mm & 50mm) are supplied with the pump to connect with suitable PVC pipe.

When plumbing the discharge pipe, ensure that the pipework does not interfere with the touchpad's protective cover, which needs to fully open and close.



\* clear cover for visual purposes only

Ensure pipework from discharge does not interfere with protective cover.

The use of any pipe smaller than those specified above is not recommended. Suction piping should be free from all air leaks and any humps and hollows which cause suction difficulties.

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



Barrel unions need to be hand tightened. No sealant, glues or silicones are required.

### ELECTRICAL DATA

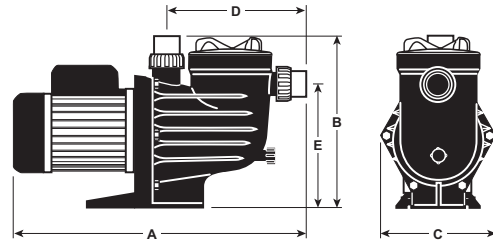
Model	H3SPIHPN
RPM (Factory setting) Min 1000RPM Max 2850RPM	Eco Flow Speed - 1500
	Mid Flow Speed - 2400
	High Flow Speed - 2850
Enclosure Class (IP)	24
Insulation Class	Class F 130 Insulation
Voltage (V)	220-240 AC
Supply Frequency (Hz)	50
Run current (A)	6.5 amps @ High Flow
Motor Input Power (W / hp)	Eco Flow - 181W / 0.24hp
	Mid Flow - 600W / 0.80hp
	Hi Flow - 970W / 1.30hp

### Operating Limits:

Max Water temperature	50°C
Max Ambient temperature	55°C

### Dimensions:

Model	A	B	C	D	E	Mounting Holes Diameter	Inlet PVC	Outlet PVC	Net Weight (kg)
H3SPIHPN	705	330	250	305	246	10	*40/50	*40/50	16.75



\*Suction and Delivery barrel unions are supplied to fit both 40mm & 50mm PVC pipe.

## OWNERS MANUAL

### 3. START UP

#### 3.1 Pre-start up checklist

- Eco Speed setting is compatible with other pool equipment ☐
- The pump is installed in a safe and dry environment ☐
- The pump enclosure has adequate drainage in the event of leakage ☐
- The pipework is correctly sealed and supported ☐
- The pump is primed correctly ☐
- The power supply is correctly connected ☐
- All steps have been taken for safe operation ☐
- The filter has been plumbed with 40/50mm pipe ☐

To realise the best energy efficiency from your pump, please follow these installation recommendations:

- Suction pipe length should be kept as short as possible
- Install a 450mm long straight pipe horizontally into the front of the pump
- Minimise the number of bends in the plumbing

#### 3.2 Starting the Pump

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

- All pipework is correctly sealed
- The pool/spa water level is at the correct height (at least halfway up the skimmer base)
- All appropriate valves are open and there is nothing preventing the flow of water through the system

The Henden 280 3 Speed Pump motor has 3 pre-set speed settings: Eco Flow, Mid Flow and High Flow. It will always start on High Flow setting to aid priming and after 3 minutes will automatically revert to the last used speed setting. The pump can further be adjusted to run at different speeds between the three speeds.

1. First prime the pump by removing the strainer basket



**NOTE: During high speed start up, the LED for the last set speed will flash.**

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 may be expelled. It will start in High Flow mode (high speed) for 3 minutes in order to prime effectively.
4. If prime is not established within approximately three minutes, as evidenced by a strong flow of water and no bubbles returning to the pool, switch off the pump and repeat the procedure. Continued evidence of air under the strainer basket lid indicates an air leak in the suction piping which should be rectified to avoid pump damage.

For optimum pump performance, the strainer basket housing should always be full of water and free from air bubbles. The water level of the pool should always be maintained to at least halfway up the skimmer box, which will ensure water is supplied to the pump at all times. From time to time it may be necessary to re-prime the pump. This should be carried out as described above.



**Never run the 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.**



**Ensure to wait 30 seconds when stopping and restarting pump to allow capacitors to properly dissipate energy**

## 4. LOW ENERGY OPERATION

Your Henden 280 3 Speed Pump has 3 speed settings which are also programmable:

1. Eco Flow - Lowest Speed
  2. Mid Flow - Medium Speed
  3. High Flow - Highest Speed
- Eco Flow mode provides the lowest speed and therefore the greatest energy savings.

Operation	Recommended Speed Settings
Pool Filtration	Eco Flow
Automatic pool cleaner operation	Mid Flow
Backwashing your media filter	High Flow
Manually cleaning your pool	
Water Feature operation	
Spa Jet operation	
Solar pool heating	

Guidelines for recommended pump operating hours:

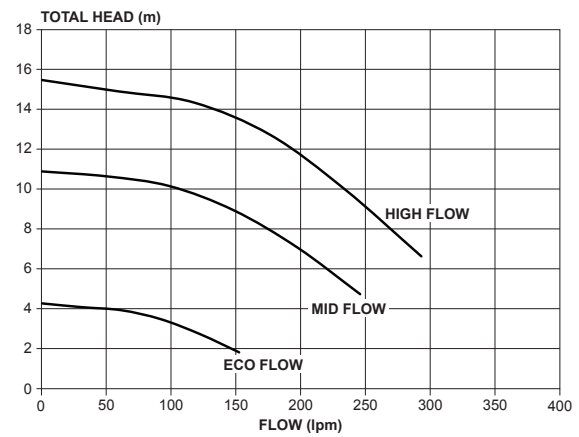
Australian Standards AS3633: "Private swimming pools - water quality" states that "the minimum turnover rate shall be a single turnover of the full volume of the pool water, within the period that the pump would normally be operating..."

The table below provides a guide to the running times of your pump while in filtration mode in order to achieve the minimum turn over rate:

Pool Size (Litres)	Speed Setting (hours)		
	Eco Flow	Mid Flow	High Flow
20,000	2.7	1.6	1.3
30,000	4.1	2.4	2.0
40,000	5.4	3.2	2.7
50,000	6.8	4.0	3.3
60,000	8.1	4.8	4.0
80,000	10.8	6.4	5.4
100,000	13.5	8.0	6.7

### 4.1 Using your Henden 280 3 Speed pump with a Henden Salt & Mineral Chlorinator

Chlorinators require a minimum flow rate through the chlorinator cell for best efficiency and cell life. If you are using this pump with a Henden Chlorinator please ensure the flow rate is sufficient to cover your cell plates completely at all times of operation. For other chlorinators please refer to the relevant installation and operating instructions.



#### TIP:

**Operating your automatic pool cleaner**  
Before installing or purchasing a pool cleaner for use with your Henden 280 3 Speed Pump, it is important to know the minimum flow rates required for it to operate effectively.

## 5. MAINTENANCE

### 5.1 Emptying the strainer basket

The strainer basket should be inspected frequently through the transparent lid and emptied when a build up of rubbish is evident. The directions below should be followed.

1. Switch off pump.
2. Unscrew the strainer basket lid anti-clockwise and remove.
3. Remove the strainer basket by lifting upwards from its housing.
4. Empty the trapped refuse from the basket. Hose out with water if necessary.



**NEVER knock the plastic basket on a hard surface as it will cause damage.**

5. Check the 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 o-ring silicone lubricant or equivalent products.



**Failure to undertake regular maintenance may cause damage not covered by warranty.**



**Power supply to this pump needs to be through an isolating transformer on RCD, having a rated operating current not exceeding 30mA.**

## 6. TROUBLE SHOOTING

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

1. The filter requires backwashing or it is blocked. Refer to the relevant section in the filter manual.
2. The pump is not primed. Re-prime as per instruction in 'Starting the Pump'
3. 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 enter the pipework.
4. A leaking pump shaft seal may also prevent operating. Evidence of this would be water on the ground under the pump.
5. 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 at least halfway up the skimmer box.
6. Blockage in the piping or pump. Remove the strainer basket and check for any blockage to the pump impeller entry. Check the skimmer box for blockage.

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

1. The power is not connected. For 220-240 volt only, check the power point by plugging in a portable appliance to ensure power is available. Also check fuses and the main power supply switch
2. 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. Re-set the pump by switching the power OFF for 30 seconds.
3. Blockage is preventing the pump from rotating.
4. Motor is burnt out - burning smell is evident. Replacement is required

If you are unable to resolve any installation or operation difficulties with your Henden 280 3 Speed Pump, contact the supplier from whom the pump was purchased or your local Reece Irrigation & Pools branch as indicated at the back of this manual.



## 7. CONTROL PROGRAMMING

### Pump Control programming function:

It is a function of your new Henden 280 3 Speed Pump that the pre-set programming can be adjusted to suit specific conditions. Henden recommends that you consult your dealer to correctly understand the conditions if you wish to alter the factory settings, to avoid undesired results.

### Programming Adjustment



**NOTE:** Programming adjustment cannot be performed while pump is in the 3 min priming run time or in any run condition please stop before proceeding.



**NOTE:** to program the controller it requires constant power connection, when plugged into a chlorination device it may trigger the low flow option and subsequently cut the power to the pump.

### 7.1 Speed (rpm) adjustment

1. Depress the flow button for the speed that is to be adjusted for 5 seconds, the display should blink and the rpm should be displayed to signify the control is ready to adjust.
2. Pressing the **ECO FLOW** button will lower the speed (rpm) by 25 rpm at a time.
3. Pressing the **HIGH FLOW** button will increase the speed (rpm) by 25 rpm at a time.
4. Depressing the **MID FLOW** button will save the adjusted time period.



**NOTE:** Henden do not recommend the adjustment of the priming time as it may adversely affect pump performance.

### 7.2 Time (priming) adjustment

1. Depress the **STOP** button for 5 seconds until it flashes, while holding it press the **MID FLOW** button at the same time to enter the prime time adjustment mode, **P3** will display on the screen and green **LED** will blink twice every second.
2. Depressing the **ECO FLOW** button will lower the time period for priming by 1min increments.
3. Depressing the **HIGH FLOW** button will increase the time period for priming by 1min increments.
4. Depressing the **MID FLOW** button will save the adjusted time period and automatically proceed into Speed (priming) adjustment.



**NOTE:** High flow setting will not exceed 2850 rpm. Henden do not recommend lowering the priming speed as it may produce adversely affect pump performance.

### 7.3 Speed (priming) adjustment (continued from 7.2)

1. Depress the **ECO FLOW** button to decrease the speed by 25 rpm per button press.
2. Depress the **MID FLOW** button to save the adjusted speed and automatically proceed to turn the **MODBUS** feature on or off.



**NOTE:** High Flow setting will not exceed 2850 rpm.

### 7.4 MODBUS Connection On or Off (continued from 7.3)

1. Depress the **ECO FLOW** button to turn the **MODBUS** connection to '**nb on**'.
2. Depress the **HIGH FLOW** button to turn the **MODBUS** connection to '**nb off**'.
3. Depress the **MID FLOW** button to save the setting.

### 7.5 Priming Enabled/Disabled

1. Depress the stop button quickly 3 times in a row to disable priming feature, the display will show "**P oF**" and the **LED** will light up and not blink, depressing the **STOP** button quickly 3 times again will turn the priming back on "**P oN**" is displayed.
2. Resetting the control will restore the factory 3-minute priming feature.



**NOTE:** Henden do not recommend disabling the priming feature as your system will not perform as expected.

### 7.6 Resetting to factory condition

1. Depress and hold the **STOP** button for 10 seconds and all speeds and priming setting will reset to factory conditions. All **LEDs** will light up momentarily.
2. Normal operation can then be utilised again.

## 7.7 Software Error Codes

The interface control panel has a digital display and red error display LED to indicate operation issues. Normal operation is indicated by a single flash of this LED upon start-up. Any subsequent blink sequence of this LED indicates that a fault has been registered by the motor control, with the explanation of these faults given in the below table. This table also includes the cause for this fault as well as some potential actions to potentially resolve the issue.

Blinks/ Display	Fault	Software Cause	Action
1/ <b>Er01</b>	Micro controller failure	Micro controller is continually rebooting.	No action can be taken to resolve issue.
2/ <b>Er02</b>	Under voltage	The line voltage has dropped below 180 volts AC running.	<ul style="list-style-type: none"> <li>- Pump will resume operation on return of correct incoming voltage. Check electrical supply if problem persists, contact your nearest Reece Irrigation &amp; Pools branch.</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/ <b>Er03</b>	Temperature	Internal electronics detected an over temperature condition (+100C on sensor)	<ul style="list-style-type: none"> <li>- Ensure the motor has sufficient air flow to cool the motor.</li> <li>- Check pump leaf basket for obstructions</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/ <b>Er04</b>	Over current trip	Over current protection has tripped.	<ul style="list-style-type: none"> <li>- Inspect all equipment / piping in the system connected to pump for obstructions</li> <li>- Inspect the motor fan is clear from obstructions</li> </ul>
5/ <b>Er05</b>	Over voltage	The line voltage has risen above 269 volts AC.	<ul style="list-style-type: none"> <li>- Turn off power to pump for at least 30 seconds, and restart. If problem persists contact your nearest Reece Irrigation &amp; Pools branch.</li> </ul>
6/ <b>Er06</b>	Output shaft seized	Motor failed to start.	<ul style="list-style-type: none"> <li>- Manually rotate the shaft via the shaft access in the fan cover and check for obstructions</li> <li>- Inspect all equipment in-line with the pump for obstructions or locked pump parts.</li> </ul>
7/ <b>Er07</b>	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/ <b>Er08</b>	Motor fault	One or more of the phases have become disconnected.	<ul style="list-style-type: none"> <li>- Contact your nearest Reece Irrigation &amp; Pools branch for repair or replacement</li> </ul>

## 8. REMOVAL OF THE PUMP FROM PIPEWORK

Should it be necessary 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 pipework.



**NOTE:** If the pump is wired into a time clock or another automatic control, the wiring should be removed by a qualified technician.

3. Remove the discharge & suction barrel unions taking care not to lose the o-rings.
4. Move the pipework with the barrel unions attached until the pump can be pulled clear.



**NOTE:** When making any enquiries about your Henden 280 3 Speed Pump, be certain to quote the model number from the nameplate located on the motor.

## 9. 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 Langelier Saturation Index, with a pH level of between 7.2 and 7.8 and is regularly treated with a chlorine sanitising agent with the level not exceeding 3.0 parts per million of free chlorine.

Please consult your local Reece Irrigation & Pools branch regularly to have your water tested.



**WARNING!** POWER CONNECTIONS AND WIRING MUST BE CARRIED OUT BY AN AUTHORISED ELECTRICIAN.



**DANGER** Hazardous suction. Do not block water entry into filtration system with any part of your body as the pressure can trap hair or body parts, causing severe injury or death. Do not block suction.

Turn off pump immediately if someone becomes trapped.



**CAUTION!** Do not add chemicals directly to the pool skimmer. Adding concentrated chemicals may damage pump and filter and void warranty.



**WARNING!** Pump suction is hazardous and can trap and drown or disembowel bathers. Do not block suction. Do not use or operate swimming pools, spas or spa baths if a suction cover is broken, missing or loose. Two suction covers and inlets must be provided into every pump to avoid suction entrapment.



**CAUTION!** In accordance with AS/NZS60335.2.41 we are obliged to inform you that this device is not to be used by children or infirm persons and must not be used as a toy by children.

Routine Maintenance tasks -  
to maximise the life of your pool equipment & personal safety, use this checklist once a week.  
Turn pump off first.

- ☐ Make sure that any pressure gauges 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.
- ☐ Make sure that all skimmer covers 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 least once a week.
- ☐ 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.
- ☐ Check water balance and sanitiser levels at your local pool shop.

## 10. HENDEN™ REPAIR OR

### **Henden Guarantee Period**

Pump 0-2 year infield repair / replacement.

3-4 year return to branch repair / replacement.

Consumables 0-1 year infield replacement.

## **REPLACEMENT GUARANTEE**

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Should you experience any difficulties with your Henden product, we suggest in the first instance that you contact the installer of the product or your local Reece Irrigation & Pools branch.

Alternatively you can phone Henden. On receipt of your claim, Henden will seek to resolve your difficulties, if the product is faulty or defective, advise you on how to have your Henden product repaired, obtain a replacement or a refund.

Henden does not cover normal wear or tear, or damage resulting from misuse or negligent handling, improper use for which the product was not designed or advertised, failure to properly follow the provided installation and operating instructions, failure to carry out maintenance, corrosive or abrasive water or other liquid, lightning or high voltage spikes, or unauthorized persons attempting repairs. Where applicable, your Henden product must only be connected to the voltage shown on the nameplate.

Henden does not cover freight or any other costs incurred in making a claim. Please retain your receipt as proof of purchase; you MUST provide evidence of the date of original purchase when making a claim.

Henden shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from Henden products.

Should your Henden product require repair or service after the guarantee period; contact your nearest Reece Irrigation & Pools branch or phone the number below.

For a complete list of Reece Irrigation & Pools branches visit our website [reece.com.au/storefinder](http://reece.com.au/storefinder) or contact:

### **TECHNICAL AND AFTER SALES SUPPORT:**

1300 HENDEN (1300 436 336)

### **MAILING/MANUFACTURER ADDRESS:**

Davey Water Products  
6 Lakeview Drive, Scoresby,  
Victoria, 3179

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# henden™

