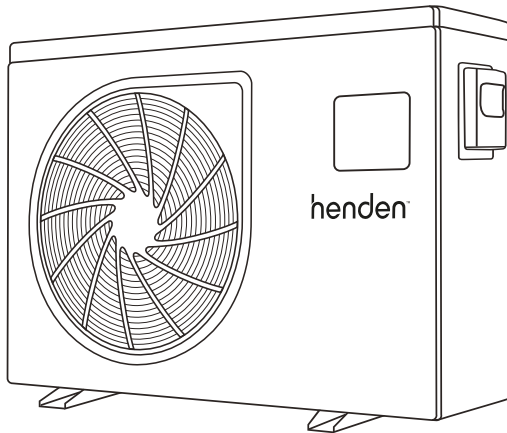


# henden™

## Inverter Heat Pump

# INSTALLATION & OWNER'S MANUAL



**IMPORTANT**  
Please read carefully



### CAUTIONS AND WARNINGS:

Installation and maintenance must be handled by a professional pool builder/service agent. Repairs should be carried out in a well ventilated area.

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

This Inverter Heat Pump contains R32

refrigerant gas which is a flammable substance under certain conditions.

Turn off the power during thunderstorms and severe weather.

The Inverter Heat Pump must be positioned on a concrete base. It is recommended that the frame is secured using M10 bolts.

Do not lift the Inverter Heat Pump using the water unions.



# Contents

## Inverter Heat Pump

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## INTRODUCTION

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### **Thank you for purchasing a Henden Inverter Heat Pump.**

Harness the power of this high performing heat pump. Built with inverter technology for energy efficiency and designed for super quiet operation, this sleek and compact heat pump is perfect for Australian residential pools.

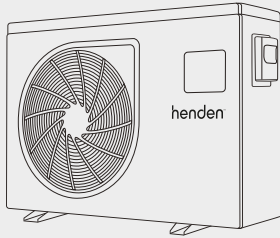
## HELPFUL HINTS

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- > The surroundings of the Henden Inverter Heat Pump should be kept clear to avoid restricting ventilation.
- > Install the Henden Inverter Heat Pump in a well ventilated, outside area.
- > Regularly check the condensate hose for blockages and clean as necessary.
- > Ensure the Wi-Fi strength at the site of installation is strong (more than -50dB is recommended).
- > Install the Henden Inverter Heat Pump in line with the ventilation diagrams in this manual.
- > For a complete heating solution, pair with a Henden 550 Micron Solar Pool Cover. This addition helps reduce energy consumption, heat loss and water evaporation.

## IN THE BOX

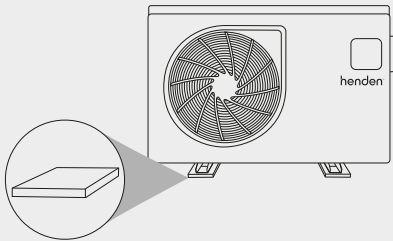
### Henden Inverter Heat Pump



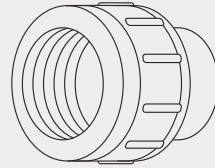
### Quick Start Guide



### X4 rubber feet



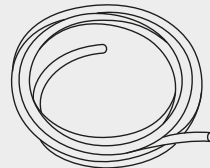
### X2 half barrel unions



### Drain barb for condensation











### 1.5 metre drain hose



## ELECTRICAL SET UP

---

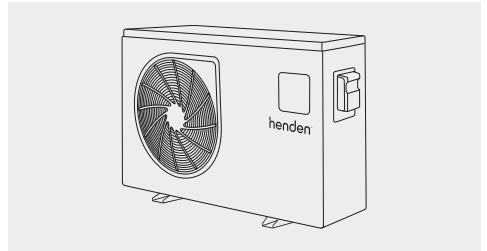
-  Always use a qualified electrician to perform any electrical work. A licensed electrician must read the information before connecting.
-  Ground the Henden Inverter Heat Pump to protect you against short circuits inside the unit. Bonding is also required.
-  The Henden Inverter Heat Pump must be earthed.
-  Ensure the power cable and circuit breaker are of suitable size for the heater being installed. See specification sheet on page 27 for max input power.
-  Check that there is adequate voltage and current available at the heater connection to run the unit. Voltage range should be 220-230 volts for single phase. Voltage ranges outside these parameters will damage the Henden Inverter Heat Pump.

-  1 Ensure power is disconnected during installation or service.
-  2 Always comply with the national and local electrical codes and standards.
-  3 Ensure electrical cable size is adequate for heater requirements at the installation location.

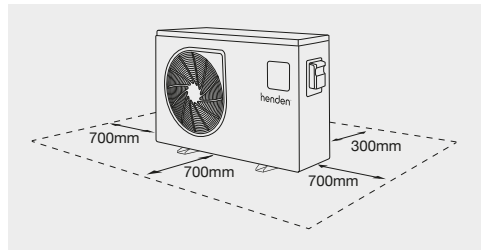
## INSTALLATION

### Positioning the Henden Inverter Heat Pump

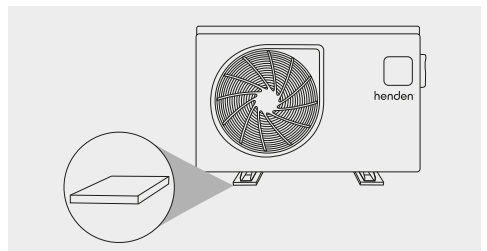
**1** To begin, position the Henden Inverter Heat Pump on solid level ground outside. Do not place the unit in an enclosed area.



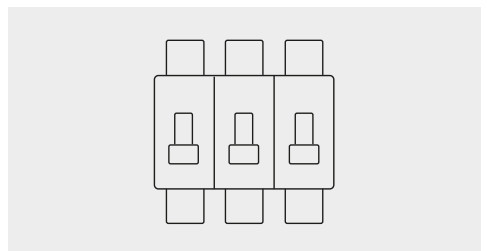
**2** Check that there are no objects blocking the air inlet and that the minimum clearance guidelines displayed are followed.



**3** Place the 4 rubber feet supplied under the Henden Inverter Heat Pump.



**4** Ensure the Henden Inverter Heat Pump is equipped with a circuit breaker and electrical isolation valve.

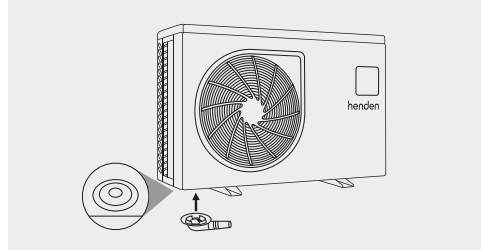


## INSTALLATION

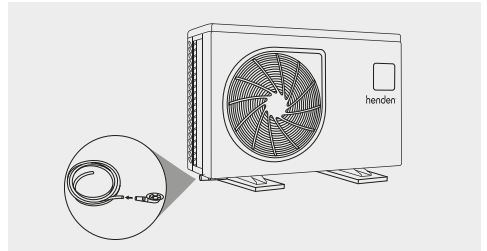
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### Connecting the condensation drain

**1** Locate the drain port under the Henden Inverter Heat Pump and push the supplied drain hose barb in.

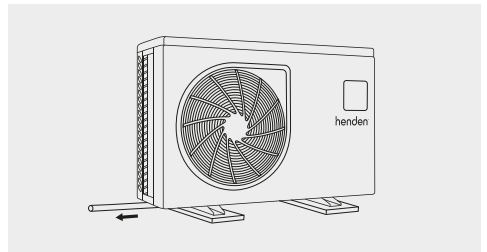


**2** Grab the hose supplied and push it onto the other end of the barb.



**3** Run the drain hose downhill to a suitable location. For example, a garden or nearby stormwater drain.

Note: the hose can drain up to 10 litres per hour.

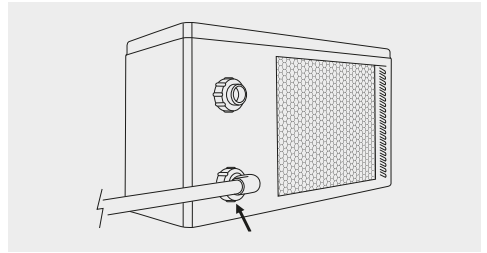




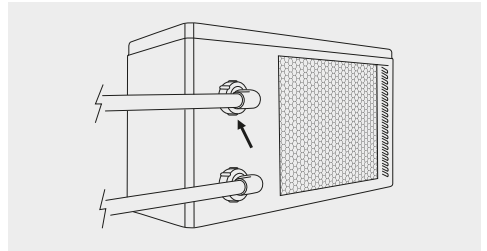
## INSTALLATION

### Connecting the pipework

- 1 Using the 40mm union supplied, connect the inlet of the Henden Inverter Heat Pump downstream, after the pool pump and filter.

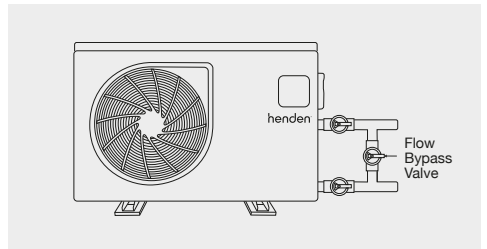


- 2 Using the 40mm union supplied, connect the outlet upstream before any chlorinators, acid injection or other chemical dosing systems.



### Setting up the flow bypass

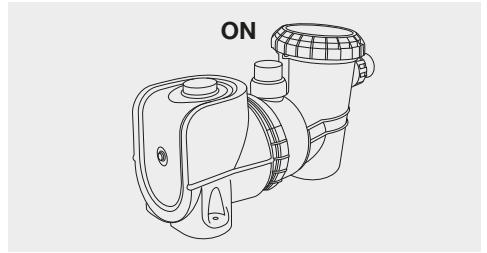
- 1 Create a flow bypass between the inlet and outlet pipework to ensure optimal efficiency. See an example of this using 3 valves adjacent.



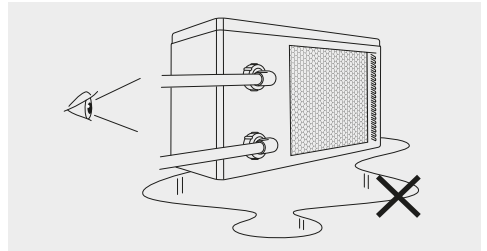
## FIRST TIME START UP

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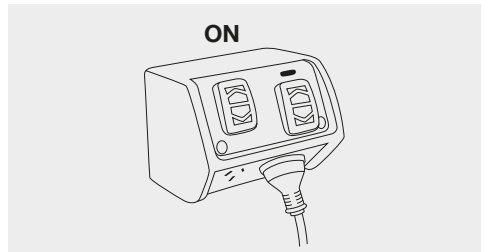
- 1** With the bypass valve fully open, turn the pool pump on.



- 2** Check there are no water leaks and verify adequate flow to and from the pool.



- 3** Turn on the electrical power supply to the Henden Inverter Heat Pump. If hardwired, turn on the isolation switch.

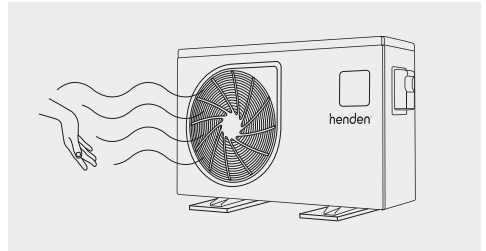


- 4** Press the power symbol on the control panel. The Henden Inverter Heat Pump will turn on within a few seconds.



## FIRST TIME START UP

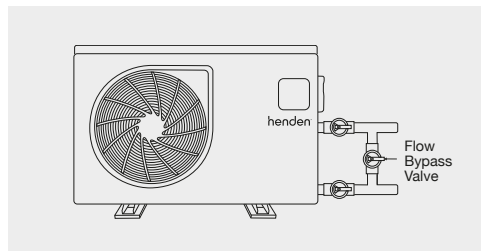
- 5** After the compressor has been running for a few minutes, the air leaving the Henden Inverter Heat Pump should be 5-10°C cooler than the ambient air temperature.



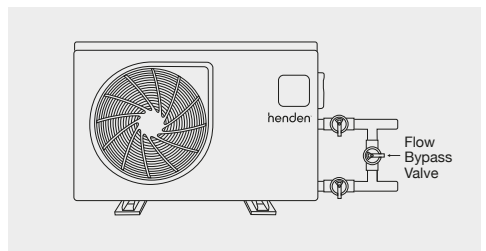
- 6** To test the flow switch, ensure the Henden Inverter Heat Pump is operating, then turn the pool pump off. If the flow switch is working, the Henden Inverter Heat Pump should turn off automatically and the control panel should display the low flow error "E03".



- 7** It's time to adjust the bypass and calibrate the flow rate through the heater.



- 8** Open all isolating valves.

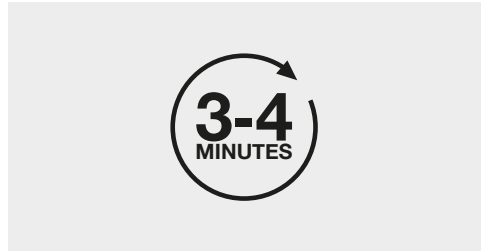


## FIRST TIME START UP

- 9** Fully close the flow bypass and switch the Henden Inverter Heat Pump on to the maximum temperature.



- 10** Wait 3-4 minutes until the Henden Inverter Heat Pump is at 100% capacity.

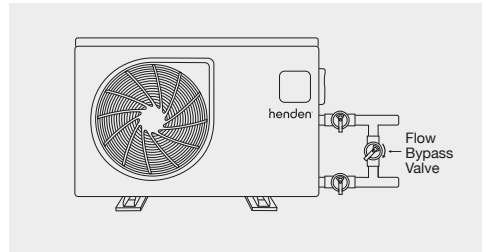


- 11** To check the temperature differential between the inlet and outlet, press and hold the settings symbol for 2 seconds until "t01" appears. Then press the UP symbol once to display "t02" (inlet temperature). Press the UP symbol again to display "t03" (outlet temperature).



## FIRST TIME START UP

- 12** Slowly open the flow bypass valve to increase the temperature differential between the inlet and outlet. Closing the bypass valve will decrease the temperature differential. Adjust until optimum differential of 2 degrees is achieved. Wait two minutes between each adjustment.



- 13** The flow bypass set up is successful when the temperature difference between the inlet and outlet is 2-4 °C. At this point, lock the position of the bypass if possible.



- 14** The initial start up is complete. Allow the Henden Inverter Heat Pump to run 24 hours per day until the desired pool temperature is reached. This can take several days.



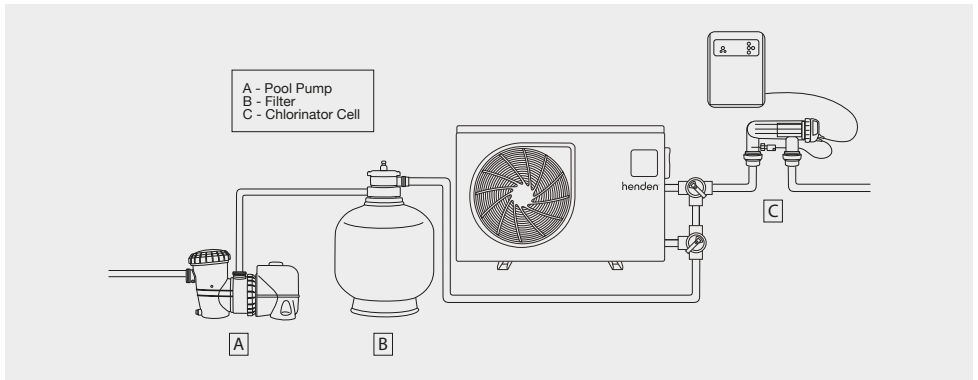
## ALTERNATIVE INSTALLATION OPTIONS

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### Flow switch activated heating

#### Optimal scenario AUTO

The Henden Inverter Heat Pump is activated by the flow of water initiated from the filtration/circulation pump. If the Henden Inverter Heat Pump gets to temperature within the timers the unit will first start to use the inverter technology to slow the machine down to maintain the temperature and eventually to a stop.



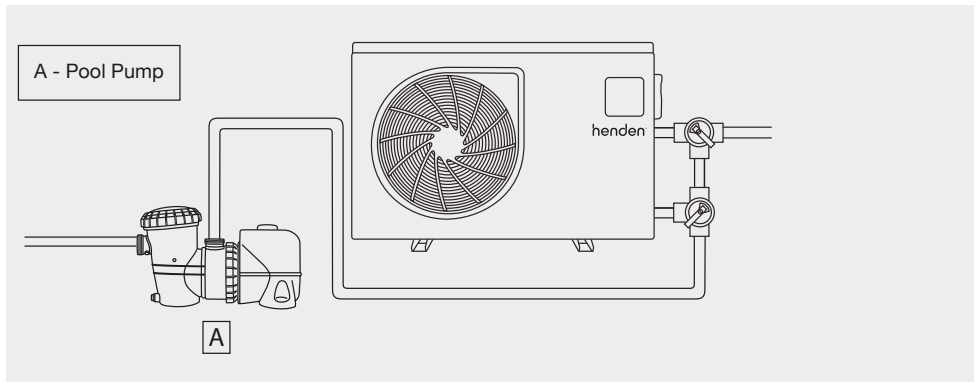
## ALTERNATIVE INSTALLATION OPTIONS

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### Individual circulation pump

#### Optimal scenario BOOST

An onboard output initiates the circulation pump to start and stop from the Henden Inverter Heat Pump itself based on temperature and timers. Ideally used when there is dedicated heating pipework which can operate independent of filtration timers.



**WARNING:** the maximum load for the relay is 10A.

The termination points labelled P1-P2 from the on-board relay are activated by the timers and pool temperature, and will continue to run the pump until the heated water reaches the set temperature or the timer switches off.

If the pool reaches temperature but the timer is still active the Inverter Heat Pump will switch off relay to stop the circulation pump. While the timer is still active, every hour it will run the circulation pump for 2 minutes to test the water temperature. If the temperature is 1 degree below the set point, the Inverter Heat Pump will continue to run the circulation pump and start the heating process again.

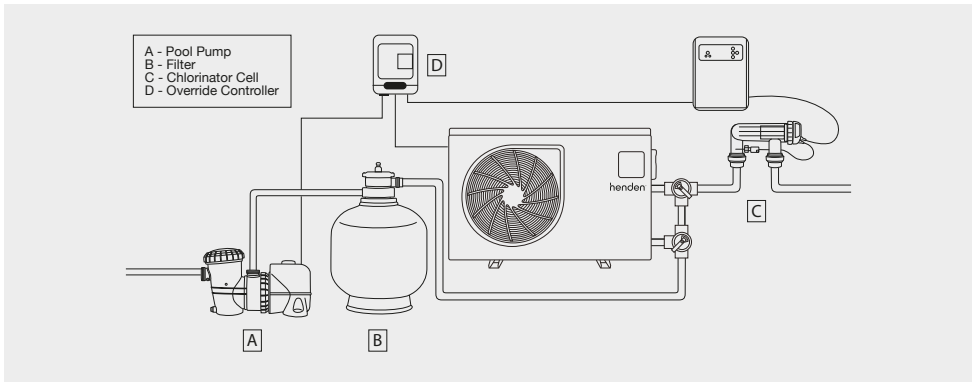
Heat Pump timers can either be set with the on-board controller or through the mobile application. For this set up, it is recommended to install a power point for the pump to plug into for any future service work to the pump which may be required.

## ALTERNATIVE INSTALLATION OPTIONS

### Flow activated with Chlorinator override controller

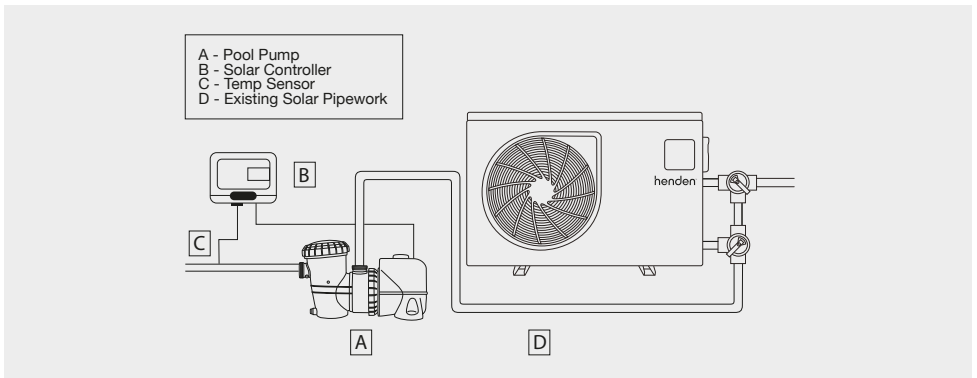
#### Optimal scenario BOOST

An onboard pump output relay can activate the main filtration pump by using it in combination with a “single pump controller”. This allows the Henden Inverter Heat Pump to run longer than the chlorinator timers to prevent over-chlorination when further heating is required. This set-up is best when only single pipework is available from pool and doesn't have individual heating pipework. The recommended scenario setting for this type of install is “Boost”.




#### Solar retro


The Henden Inverter Heat Pump can be used to replace existing solar heating systems. In some installations, this can be achieved using the existing solar pipework and pump.





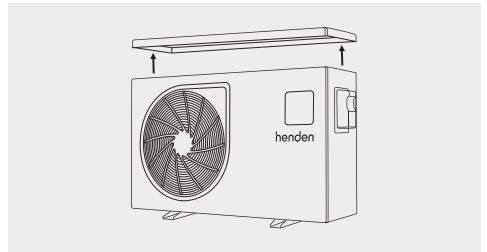
## EXTERNAL AUTOMATION CONTROL

 This Henden Inverter Heat Pump contains electrical equipment. Always use a licensed professional and never remove panels without disconnecting the power.

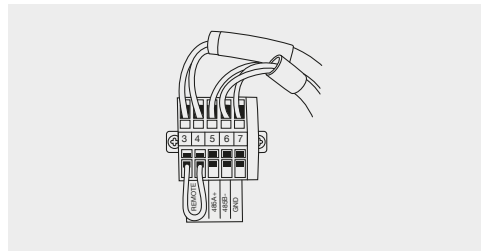
 Please check with the automation system provider that the connection is a dry contact switch and the best way to install with their equipment.

The Henden Inverter Heat Pump can be paired with an external automation controllers. To connect the controller, follow the steps below.

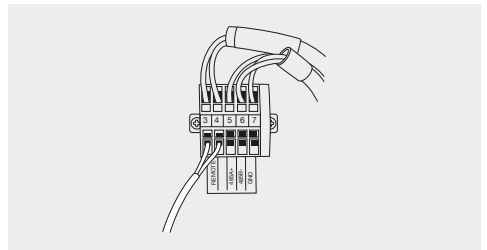
**1** Remove the top cover to access the electrical box and terminals.



**2** In the electrical box you will see the prewired bridge cable connected in terminals 3 and 4.



**3** Remove the bridge and connect to a dry contact connection from the automation system.



## EXTERNAL AUTOMATION CONTROL

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- 4** If the external controller is not signalling the Henden Inverter Heat Pump to operate, the display will show the word "OFF". The Henden Inverter Heat Pump cannot be operated if the system is "OFF" from external controller.



## OPERATION

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- 1** Hold the ON/OFF key for 5 seconds to turn power ON or OFF.
- 2** Press the Mode key to cycle between Heating, Cooling and Auto Modes.
- 3** Press the UP/DOWN key to increase or decrease the desired set temperature.
- 4** Press the Settings key to save the desired temperature.
- 5** Hold the Power key for 5 seconds to lock the screen.

Note: If no key is pressed for 1 minute, the screen will turn off.

## OPERATION



KEY SYMBOLS	DESIGNATION	FUNCTION
	On-off key	Used to Power On/Off and also as the Cancel/Back button when in the menu
	Mode key	Used to switch between Heating, Cooling and Auto modes
	Up key	Used to increase value or move up in the menu
	Down key	Used to decrease value or move down in the menu
	Settings key	Used to view Settings and Select/Save when in the menu
	Scenario mode	Used to view the Scenario Mode menu

ICON SYMBOL	SYMBOL	FUNCTION
	Cooling mode	When illuminated, unit is in cooling mode
	Heating mode	When illuminated, unit is in heating mode
	Auto mode	When illuminated, unit is in auto mode
	Defrost mode	When illuminated, unit is running a defrost cycle
	Water outlet temperature	When illuminated, unit is showing water outlet temperature
	Water inlet temperature	When illuminated, unit is showing water inlet temperature
	Setting temperature	When illuminated setting temperature is adjustable
	Fault	When illuminated, unit is indicating a possible fault and needs attention
	Settings engaged	When illuminated, the screen is displaying performance settings

## OPERATION

---

### Heating modes

Henden recommends using the default mode (heating) for the majority of applications. In the event that you need to adjust modes, follow the steps below.

- 1 When the heat pump display is active, press the mode symbol.
- 2 A green light next to the mode will indicate the current setting.
- 3 Select the new mode by pressing the symbol.

### Mode overview

#### Cooling mode

Henden Inverter Heat Pump will cool the pool to set temperature.



#### Heating mode

Henden Inverter Heat Pump will heat the pool to set temperature.



## OPERATION

### Auto mode

Auto mode will heat to set the temperature. If the pool temperature exceeds the set temperature by 1 degree, the Henden Inverter Heat Pump will reverse cycle and cool the pool to reach the set temperature.



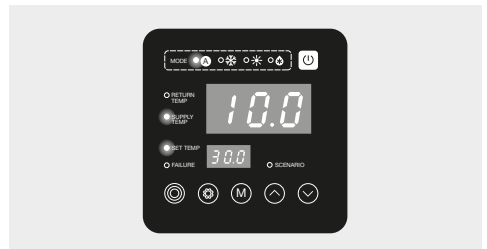
### Setting the temperature

The current set temperature can be found on the lower display of the control interface. To adjust the temperature follow the steps below.

- 1 Touch the up or down symbol briefly. The set temperature will then begin to flash. Use the up or down buttons to adjust the set temperature.



- 2 Press the settings button to confirm the new set temperature.



Note: If you press the power button during this process, the system will return to the main interface without saving any changes.

## OPERATION

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### Setting and adjusting the clock:

To set or adjust the clock follow the steps below or adjust the clock settings via the app.

- 1 While the controller is active, press the settings symbol.
- 2 Enter the manufacture set password, 025, to access the settings.
- 3 The time will begin flashing, one digit at a time. Cycle through the digits using the up and down key.
- 4 To modify a digit, click the settings keys then use the up and down buttons to change it.
- 5 To confirm the number, hold the settings key for 1 second.
- 6 Repeat the same process till you have the "025" password typed in.
- 7 Once the password is entered correctly the main display will become blank and the parameter letter "d" will be displayed in the bottom display.
- 8 Click on down symbol 4 times to navigate to parameter code "u". Once "u" is displayed, press the settings symbol to access and manage the clock timers.
- 9 You can cycle between the different codes using the up and down key.
- 10 To change a parameter and access the code range click on the setting key, the code range will start flashing, indicating that you can modify it using the up and down keys.
- 11 Click on the settings key to save a parameter setting. Once time is correctly set, do not press for 5 seconds to return to the home screen.

CODE REFERENCE	CODE MEANING	CODE RANGE
u01	Clock time - "hours"	0 ~ 23
u02	Clock time - "minutes"	10/20/30/40/50

## OPERATION

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### Timer settings

Time settings are displayed in the lower small box in the form of “u03-u08”. The chart below explains the meaning of those codes.

CODE REFERENCE	CODE MEANING	CODE RANGE
u03	Starting time - “hours”	0 ~ 23
u04	Starting time - “minutes”	10/20/30/40/50
u05	Ending time - “hours”	0 ~ 23
u06	Ending time - “minutes”	10/20/30/40/50
u07	Enable start timer	0: Disabled - 1: Enabled
u08	Enable end timer	0: Disabled - 1: Enabled

To set or adjust the timer settings follow the steps below or adjust the timer settings via the app.

- 1** When the controller is active, hold the Mode symbol for 5 seconds to access the timer settings.
- 2** Cycle between the different codes (u03-u08) using the up and down keys.
- 3** To change a parameter and access the code range click on the settings key. The code range will start flashing, indicating that you can modify it using the up and down keys.
- 4** Click on settings key to save a parameter setting, and repeat the same process to set your timers.

## OPERATION

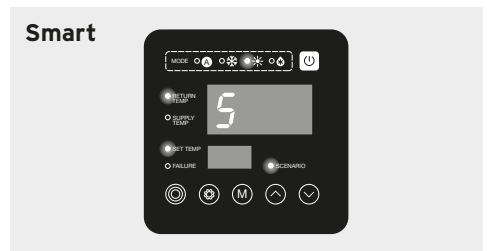
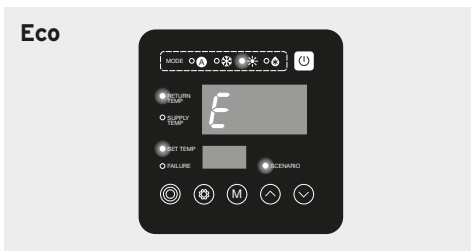
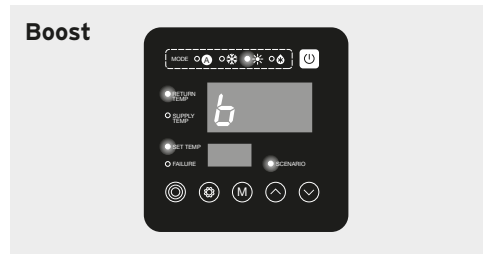
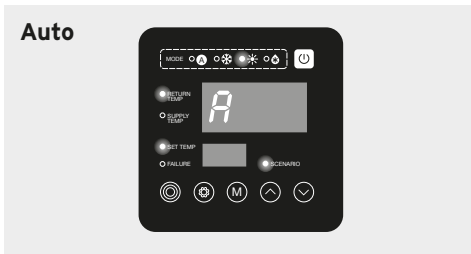
### Changing the scenario mode

Your Henden Inverter Heat Pump has four scenario modes – Auto, Boost, Eco and Smart. The default scenario is Auto. Auto allows for the fastest heating combined with the highest efficiency.

PERFORMANCE SCENARIO	SCENARIO MODE FUNCTION	FUNCTION
Boost	Max 100% output	Fastest heating
Smart	Max 80% output	Lower noise level, high efficiency and energy saving
Eco	Max 50% output	Lowest noise level, relatively slow heating rate, suitable for low noise times and through summer
Auto	Full inverter mode	Will automatically adjust the maximum capacity based on the operation conditions

To adjust the scenario mode follow the steps below:

- 1 While the controller is active, press the scenario mode symbol to start switching between the different heater performance modes.
- 2 Use the up and down keys to change the performance mode.
- 3 Press the settings key to complete selection.





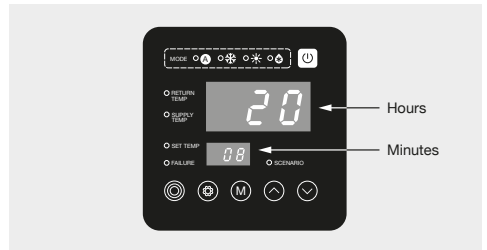
## OPERATION

### Locking the screen

- 1 To lock the screen, hold the power key for 5 seconds.



- 2 Once locked, the screen will display the clock with the hours on top and the minute on the bottom.



### Defrost mode

If your Henden Inverter Heat Pump goes into defrost mode, please allow up to 15 minutes for it to return to normal. During these 15 minutes, the Henden Inverter Heat Pump fan will stop running, and the heater will run at louder than usual. The heat pump will reverse the refrigeration cycle in an attempt to melt any frost that formed on the back of the unit. It is normal to witness higher condensation rate around the unit (frost melting). Once the frost has melted, the fan will initiate again and a single plume of white cloud will come out of the unit (water vapor).

## APP FUNCTIONALITY

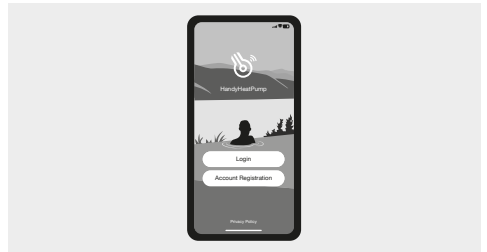
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The Handy Heat Pump app can be used with the Henden Inverter Heat Pump to control and monitor your Henden Inverter Heat Pump via Wi-Fi. To set up the Handy Heat Pump app, follow these steps:

**1** Download and open the app.



**2** Follow the prompts to create an account.



**3** Add a device by selecting 'Wi-Fi Available Devices'.



**4** Follow the prompts in the app.



## SPECIFICATIONS

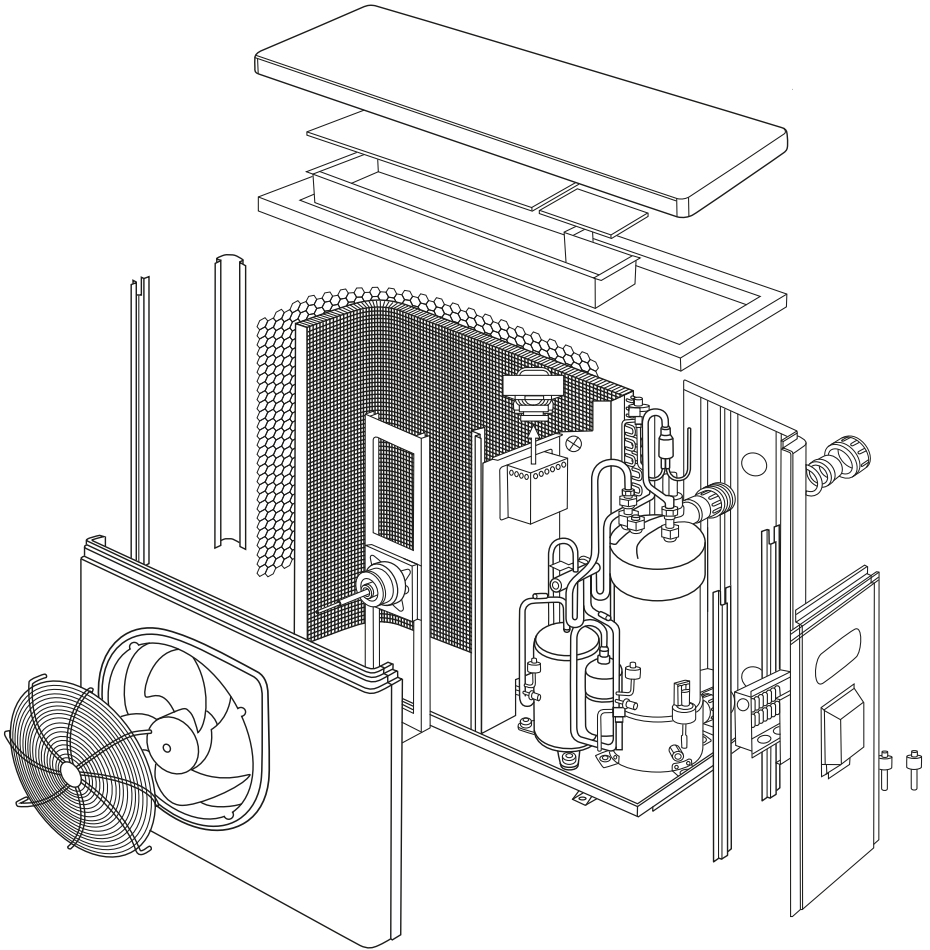
Performance					
Performance at conditions: Air 27°C / Water 26°C / Humidity 80%					
Heater Model	9kW	13kW	15kW	20kW	24kW
Heating capacity (kW)	1.8 - 9	2.6 - 13.5	2.9 - 15.4	3.7 - 20	6.5 - 24.3
Power input (kW)	0.17 - 1.55	0.24 - 2.33	0.27 - 2.7	0.3 - 3.3	0.45 - 3.74
COP range	10.7 - 5.8	10.8 - 5.8	10.7 - 5.8	12 - 6.1	12.2 - 6.2

Technical Specifications					
Heater Model	9kW	13kW	15kW	20kW	24kW
Power supply	230v / 1Ph / 50Hz	230v / 1Ph / 50Hz	230v / 1Ph / 50Hz	230v / 1Ph / 50Hz	230v / 1Ph / 50Hz
Electrical connection	10A	15A	Hardwired	Hardwired	Hardwired
Maximum input current (A)	8	12	14	17	19
Casing	ABS	ABS	ABS	ABS	ABS
Water connection	40mm	40mm	40mm	40mm	40mm
Sounds pressure 1m dB(A)	41 - 52	41 - 52	44 - 55	43 - 56	45 - 56
Ideal water flow	50 lpm	75 lpm	80 lpm	100 lpm	140 lpm

Dimensions					
Heater Model	9kW	13kW	15kW	20kW	24kW
Length x width x height	888 x 319 x 609mm	888 x 319 x 609mm	972 x 340 x 766mm	1145 x 465 x 840mm	1115 x 428 x 825mm
Weight	43kg	50kg	61kg	74kg	92kg

# EXPLODED DIAGRAM

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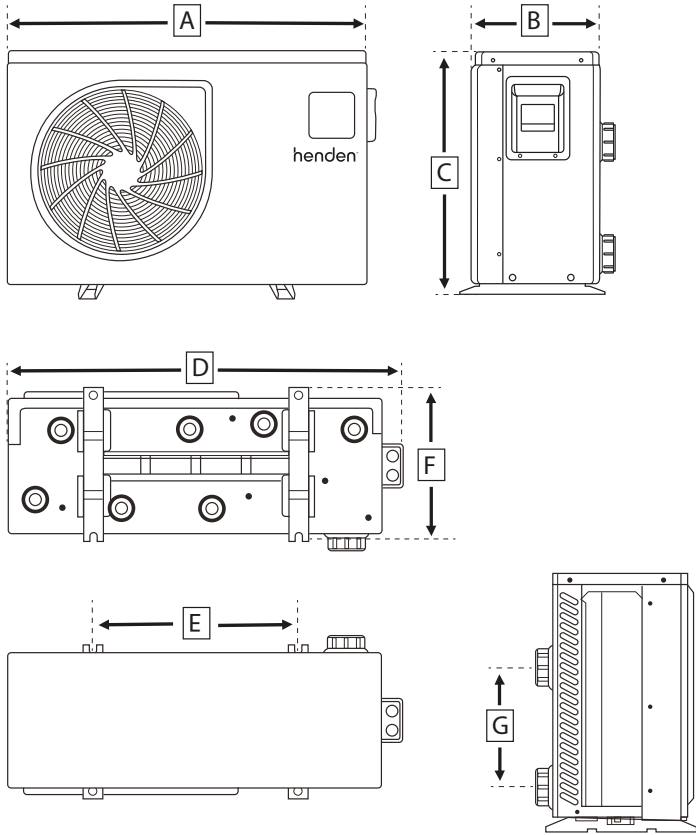
## SPARE PARTS

ELECTRICAL SPARE PARTS		
1	Inverter board	033091290000
2	PC board (heat)	033090240000H16
3	Oval LED (heat)	034090200000
4	Squared LCD	/
5	Touch controller	/
6	Contactora	/
7	Capacitor	/
8	Power filter plate	033092300000
9	Capacitor plate	/
10	Reactor (big)	041301090000
11	Reactor (small)	/
12	Water pump contactora	/
13	Electronic expansion valve	006121000000
14	4-way valve	006110080000
15	Water flow switch	040060600000
16	Fan motor	032050510100
17	Fan motor driver module	032050500200
18	Fuse	040070010000
19	Full set of sensors	035043010000-R

REFRIGERATING SPARE PARTS		
20	Compressor	031063080000
21	Titanium heat exchanger (heat)	001031070002
22	Evaporator	001011220000
23	High & low pressure protection switch	040050600000-R
24	High & low pressure valve	006080500000-R
25	Liquid reservoir	/

CABINET & OTHER SPARE PARTS		
26	Water union	003990020000
27	Water union gasket	004980050000-R
28	Fan	007010130000
29	Drainage kit	003991700000-R
30	Compressor insulation cap	004040270000
31	Top cover	003020220107
32	Front panel	003020450107
33	Right panel	003020220707
34	Back panel	003020221407
35	Bottom board	002021010100
36	Electrical compartment rack	002020100300
37	Front left pole	002020691300
38	Front right pole	002020101100
39	Back left pole	002020101200
40	Back right pole	002020101300
41	Separate board	002021000900
42	Motor bracket	002021001000
43	Electrical compartment 1	002021200300
44	Electrical compartment lid 1	002021200900
45	Reactor box	002021200700
46	Terminal board protection cover	003020230907
47	Fan mesh	002990140000
48	Black plastic mesh	003991100000
49	Evaporator heating belt	042040010000

## DIMENSIONS



DIMENSION	9 KW	13 KW	15 KW	20 KW	24 KW
A	887mm	887mm	970mm	1115mm	1115mm
B	332mm	332mm	340mm	440mm	440mm
C	609mm	609mm	765mm	862mm	862mm
D	931mm	931mm	1014mm	1159mm	1159mm
E	485mm	485mm	586mm	790mm	790mm
F	360mm	360mm	360mm	490mm	490mm
G	280mm	280mm	352mm	467mm	467mm

## MAINTENANCE

WHEN	WHAT ARE YOU LOOKING FOR?	HOW CAN YOU FIX IT?
Weekly	Check around the unit for leaves/debris or signs of flooding.	Remove any debris that is restricting air circulation around the Henden Inverter Heat Pump. If in a flood prone location, rectify.
Quarterly	Check all gaskets	Isolate and turn off the Henden Inverter Heat Pump.  Remove all gaskets and turn over. You can also apply a silicon-based grease to extend the life. If dry, then contact your local pool professional to replace.
	Check for any insects/ants etc.	It is a good practice to use a good quality surface spray around your equipment. Make sure all units are turned off and then spray around all units to eliminate any insect/ants etc.
	Check for any leaks	If you notice any water leaking from the heat pump, check gaskets first and reseal. If continues, contact your local pool professional to assess and rectify.
Annually	Clean the evaporative coil and fan	Isolate and turn off the Henden Inverter Heat Pump.  Use a soft cloth with water containing a small amount of household detergent to carefully clean the entire outside of the unit, especially the evaporative coils and fan.

## WINTERISING

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If you live in a climate where your temperature is low enough to freeze the pool, it is important to winterise your Inverter Heat Pump. Failure to follow these steps could result in water freezing inside the unit, and causing potential damage.

To prepare your heat pump for freezing conditions:

- 1** Turn off the power supply to the Inverter Heat Pump.
- 2** If the heat pump is positioned below the pool water level, ensure the inlet and outlet valves are turned off.
- 3** Remove the inlet unions and drain water out of the Invert Heat Pump.
- 4** When the water is completely drained, replace the inlet union fitting.

## TO DE-WINTERISE YOUR INVERTER HEAT PUMP

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Once the freezing conditions have subsided and you are ready to restart your Inverter Heat Pump, turn the valves back to on, turn power onto the Henden Inverter Heat Pump and restart.

## STORAGE

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If not in use for long periods of time (e.g. colder months), discharge all water in the Henden Inverter Heat Pump, including the water at the bottom. This prevents water from freezing in the Inverter Heat Pump and potentially causing damage.



## TROUBLESHOOTING

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Troubleshooting should be carried out by a qualified pool professional.

FAILURE	CAUSE	REMEDY
The Inverter Heat Pump is not running.	There has been a power outage.	Wait for power to return. Once the supply is back online, the unit will begin to operate.
	The power switch is off.	Switch on the power source.
	The fuse has blown.	If the fuse has blown, contact a qualified electrician to repair the fuse.
	The breaker is off.	Turn the breaker on.
The heat produced is insufficient, but the fan is running.	The evaporator is blocked.	Remove the obstacles.
	The air outlet is blocked.	Review the maintenance and ventilation requirements in this manual.
	There is a three minute start delay.	Review the maintenance and ventilation requirements in this manual.
The display is on, but the unit isn't heating.	The temperature is set too low.	Set a higher heating temperature.

## ERROR CODES

ERROR CODE	TYPE OF FAULT	CAUSE	REMEDY
E01	High pressure switch	Poor water flow or ventilation. Or, the high pressure switch is broken	Check the water flow and filters are not inhibited. Check the ventilation is in line with the diagrams on page 7
E02	Low pressure protection	Poor ventilation or leakage of refrigerant	Check ventilation is in line with diagrams on page 7, if problem reoccurs check the refrigerant charge
E03	Flow switch protection	No water/little water in water system	Check the pump is switched on. Check the valves are open correctly. Check filters are not blocked
E05	Waterway anti-freezing protection	Outlet water temperature is too low	Check the water flow if in cooling mode. Winterise heater if external ambient conditions are below freezing
E06	Inlet and outlet temperature are too big	Water flow is not enough and low differential pressure	Check the pipe water flow and whether water system is jammed or not
E07	Anti-freezing protection	Not enough water flow	Check the pipe water flow and check whether the water system is blocked or not
E08	Communication fault	Communication failure between the wire controller and mainboard	Check the wire connection between remote wire controller and main board
E19	Primary anti-freezing protection	Low ambient air temperature detected in sensor 1	Check ventilation / replace sensor
E29	Secondary anti-freezing protection	Low ambient air temperature detected in sensor 2	Check ventilation / replace sensor
E51	High compressor current	Compressor running in abnormal conditions	Check that ventilation, water flow, and ambient air temp is within operating range
E051	Comp. overcurrent protection	Compressor running above normal running conditions	Check water flow and ventilation is correct. Check incoming power
E081	Communication fault (speed control module)	Speed control module and main board communication fail	Check the communication connection
F01	Drv1 MOP alarm	MOP drive alarm	Wait 150 seconds
F02	Inverter offline	Frequency conversion board and main board communication failure	Check the communication connection
F03	IPM protection	IPM modular protection	Wait 150 seconds

## ERROR CODES

ERROR CODE	TYPE OF FAULT	CAUSE	REMEDY
F031	Fan motor fault	Motor is in locked-rotor state The wire connection between DC-fan motor module and fan motor is in bad contact	Replace with a new fan motor Check the wire connection and make sure they are in good contact
F04	Comp. driver failure	Lack of phase, step or drive hardware damage	Check the measuring voltage check frequency conversion board hardware
F05	DC fan fault	Motor current feedback open circuit or short circuit	Check current return wires connected motor
F051	EC fan feedback fault	There is something wrong with the fan motor. It may have stopped running	Check whether the fan motor is broken or locked or not
F06	IPM overcurrent	IPM Input current is large	Check and adjust the current measurement
F07	Inverter DC overvoltage	DC bus voltage > DC bus over-voltage protection value	Check the input voltage measurement
F08	Inv. DC less voltage	DC bus voltage < Dc bus over-voltage protection value	Check the input voltage measurement
F09	Inv. input less voltage	The input voltage is low, causing the input current is high	Check the input voltage measurement
F10	Inv. input overvolt	The input voltage is too high, more than outage protection current RMS	Check the input voltage measurement
F11	Inv. sampling volt.	The input voltage sampling fault	Check and adjust the current measurement
F12	Comm. err DSP-PFC	DSP and PFC connect fault	Check the communication connection
F16	Input over cur.	The equipment load is too large	
F17	PFC fault	The PFC circuit protection	Check the PFC switch tube short circuit or not
F18	IPM over heating	The IPM module is overheat	Check and adjust the current measurement
F19	Weak magnetic warn	Compressor magnetic force is not enough	
F20	Inv. input out phase	The input voltage lost phase	Check and measure the voltage adjustment
F22	IPM sampling cur.	IPM sampling electricity is fault	Check and adjust the current measurement
F23	Inv. temp. probe fail	Sensor is short circuit or open circuit	Inspect and replace the sensor

## ERROR CODES

ERROR CODE	TYPE OF FAULT	CAUSE	REMEDY
F24	Inverter overheating	The transducer is overheating	Check and adjust the current measurement
F25	Inv. overheating warn	Transducer temperature is too high	Check and adjust the current measurement
F28	Comp. overcur. warn	Compressor electricity is large	The compressor over-current protection
F031	Input over cur. warn	Input current is too large	Check and adjust the current measurement
F032	EEPROM error warn	MCU error	Check whether the chip is damaged Replace the chip
F051	V15V over/ undervoltage fault	The V15V is overload or undervoltage	Check the V15V input voltage in range 13.5v~16.5v or not
NON	Fan motor2 fault	1. Motor is in locked-rotor state 2. The wire connection between DC-fan motor module and fan motor is in bad contact	Change a new fan motor Check the wire connection and make sure they are in good contact
P01	Inlet temperature sensor fault	Sensor is broken or short circuit has occurred	Check or change the temperature sensor
P02	Outlet temperature sensor fault	Sensor is broken or short circuit has occurred	Check or change the temperature sensor
P04	Ambient temperature sensor fault	Sensor is broken or short circuit has occurred	Check or change the temperature sensor
P05	Coil temperature sensor fault	Sensor is broken or short circuit has occurred	Check or change the temperature sensor
P07	Suction temperature sensor fault	Sensor is broken or short circuit has occurred	Check or change the temperature sensor
P081	Discharge temperature sensor fault	Sensor is broken or short circuit has occurred	Check or change the temperature sensor
P082	Exhaust air over temperature protection	The compressor is overloaded	Check whether the system of the compressor is running normally
P09	Antifreeze temperature sensor fault	Antifreeze temperature sensor is broken or has short circuited	Check and replace this temperature sensor
PP	Pressure sensor fault	The pressure sensor is broken	Check or change the pressure sensor or pressure
TP	Low AT protection	Ambient temperature is too low	

## WARRANTY

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### HENDEN™ REPAIR OR 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:

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