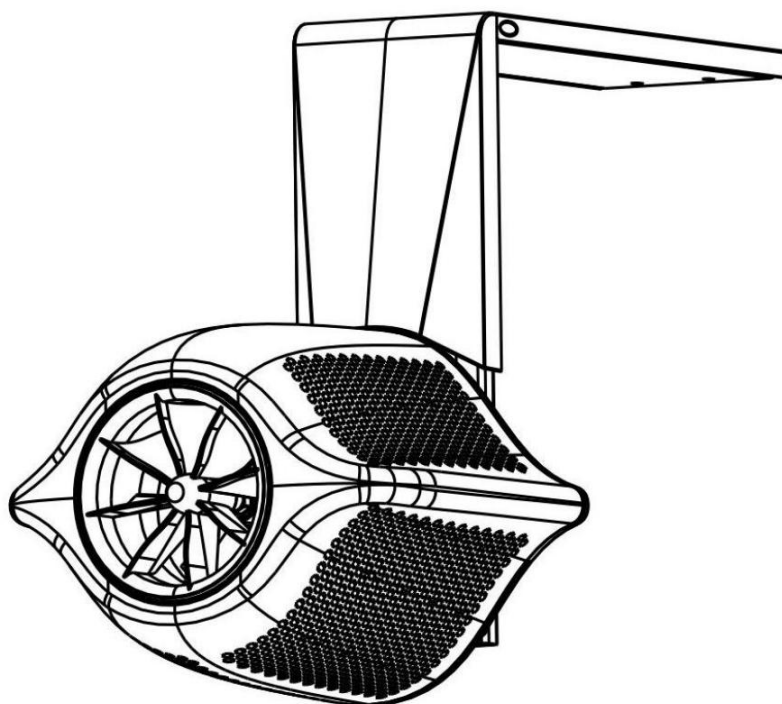


# **Surfing-SwimJet**

## **User Manual**



# Content







1. Warnings and Important Safety Instructions .....	2
2. Recommended Installation Environment.....	3
3. Specification .....	4
4. Configurations and Diagram .....	4
6. How to Use InverJet.....	11
7. APP Control .....	16
8. Product Care and Maintenance .....	23
9. Failure and Protection.....	23
10. FAQ & Solutions .....	26
11. Disposal.....	26


## 1. Warnings and Important Safety Instructions

### **Please read and follow all instructions before installation:**

Always read this manual and follow all safety instructions before installing or using this product, and keep this manual in a safe place.

#### **1.1 When installing and using this equipment, please follow the below safety rules:**

- Check the Jet, controller, and cable wires for signs of damage or wear before use. If any problems are found, stop using the product and contact the dealer for repair or replacement.
- Do not operate the controller without fully understanding the possible consequences of incorrect operation..
- Before power on, make sure that no one is near the inlet and outlet areas of the Jet.
- Avoid placing fragile objects around the Jet.
- To prevent damage to the equipment and to ensure personal safety, avoid exerting pressure on the Jet, such as sitting, straddling, stepping, and other dangerous behaviors.
- It is recommended that swimmers wear swimming caps and goggles during the use of InverJet.
- Consult doctor if you are unwell before use. If you experience chest pain or tightness in the chest, shortness of breath or feel dizzy while using, stop exercising immediately.
- Do not dive near the Jet to avoid unexpected accidents.
- Make sure that there are no obstacles around the Jet and is fully submerged before power on.
- This machine must be powered by a residual current protective device (RCD) with a rated residual action current of not more than 30mA, ensure that this device is working properly before each use of the appliance.
-  DANGER: Do not insert any foreign objects into the front deflector housing outlet.
-  DANGER: Do not attach any foreign objects to the deflector housing outlet.
-  DANGER: Do not run the machine if there is ice in the pool.
-  DANGER: Stop using this product if the user's body temperature is significantly higher than normal, which may result in serious consequences, including loss of consciousness and risk of drowning.
-  DANGER: Do not put the Jet cable plug into water, and do not plug or unplug the controller plug and the Jet cable plug with wet hands.
-  DANGER: When performing maintenance or overhaul operations on the Jet, the power supply must be strictly disconnected to ensure operator safety and to prevent electrical accidents or equipment damage.

-  DANGER: Do not coil the Jet cable for installation to prevent overheating and potential safety risks.

### **1.2 Children safety:**

- Do not allow children to use this product without adult supervision.
- Ensure that children are closely supervised at all times while using the product.

### **1.3 Restrictions on the use of people:**

- Individuals with limited physical/sensory or mental abilities should not use this product unless under the supervision of qualified personnel.
- This product should not be used after the use of alcohol, drugs or medications that affect responsiveness.

## **2. Recommended Installation Environment**

- Air temperature of the controller: 0°C~ 43°C (installed in a dry and non-condensing environment, avoiding exposure to sunlight and rain).
- Recommended installation depth of the Jet (center of Jet from the water surface): 250~350mm (need to ensure that the Jet is completely immersed in the water)
- Operating water temperature of the Jet: +5°C~ +40°C.

It is the responsibility of the InverJet user to provide suitable conditions to ensure the optimum life cycle of the product. To comply with the warranty conditions, we only use the most suitable good quality water for swimming pools.

The following parameters are required for swimming pool water quality:

- pH value: 7.0-7.8
- Chlorine: ≤0.5 mg/l
- Free chlorine: 0.3 mg/l to 2.0 mg/l (3000 ppm to 20 000 ppm)
- Cyanuric acid: ≤100 mg/l
- Salt concentration: ≤0.4% (4000 ppm)
- Metal content: ≈0 mg/l
- Carbonate hardness: ≥2°dH
- Ozone (O<sub>3</sub>): 0 mg/l
- Total chlorite and chlorinate: ≤30 mg/l
- Oxidation reduction potential (ORP): ≥700 mV

## Non-intended use

- Not for use in potentially explosive areas.
- Not suitable for harsh environments (gases, acids, vapours, substances, oils).
- Not for sewage.

## 3. Specification

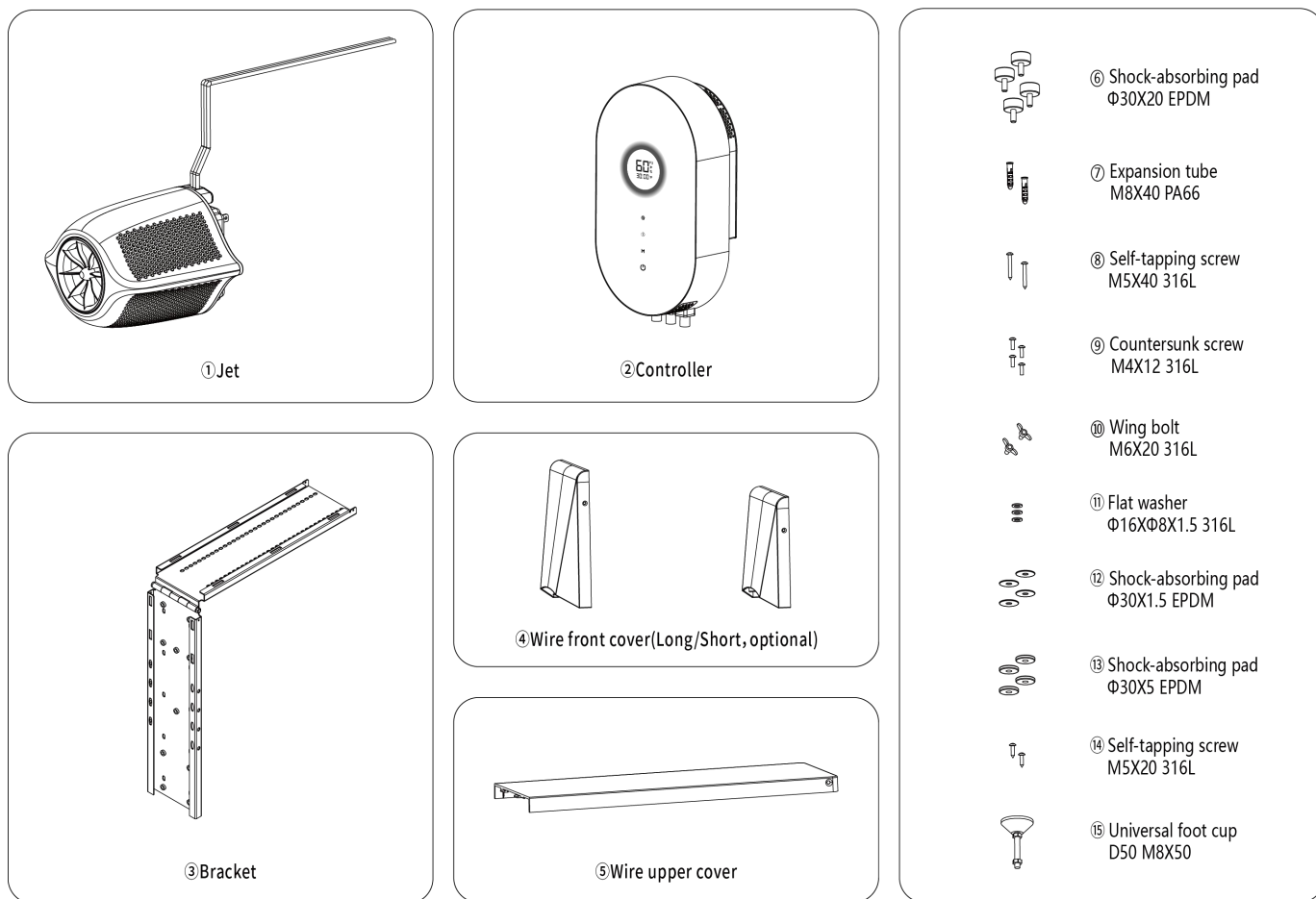
Model	SJ100	SJ160	SJ200	SJ230
Supply Voltage	230VAC	230VAC	230VAC	230VAC
Frequency	47~63 Hz	47~63 Hz	47~63 Hz	47~63 Hz
Input power	400W	600W	900W	1250 W
Max Input Current	1.6A	2.7A	4.0A	5.7A
Max flow rate	100m³/h	160m³/h	200m³/h	230 m³/h
Outlet speed	2.4m/s	2.9m/s	3.4m/s	4 m/s

## 4. Configurations and Diagram

### 4.1 Configurations

SN	Description	Quantity
①	Jet	1
②	Controller	1
③	Bracket	1
④	Wire front cover (Long/ Short, optional)	1
⑤	Wire upper cover	1
⑥	Shock-absorbing pad φ30X20 EPDM	4
⑦	Expansion tube M8X40 PA66	2
⑧	Self-tapping screw M5X40 316L	2
⑨	Countersunk screw M4X12 316L	4
⑩	Wing bolt M6X20 316L	2
⑪	Flat washer φ16Xφ8X1.5 316L	3
⑫	Shock-absorbing pad φ30X1.5 EPDM	4
⑬	Shock-absorbing pad φ30X5 EPDM	4
⑭	Self-tapping screw TPA5X20 316L	2
⑮	Universal foot cup D50 M8X20	1

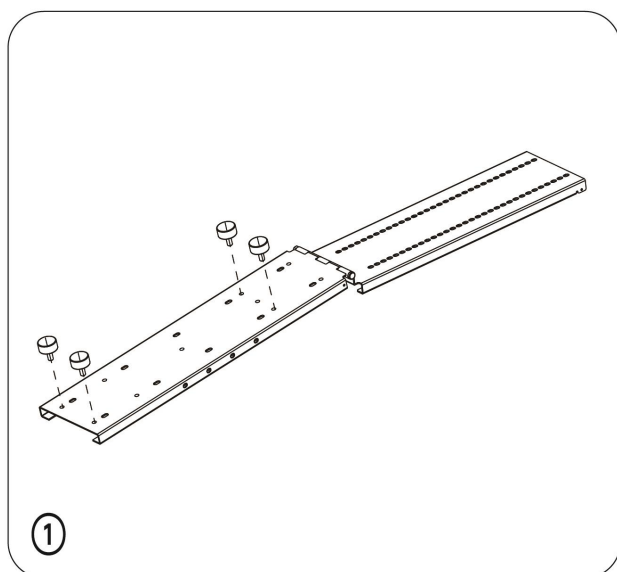
### 4.2 Diagram



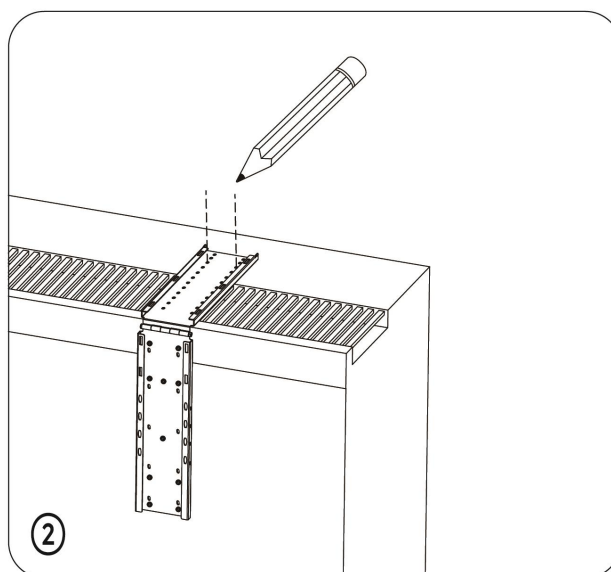
## 5. Installation Process

### 5.1 Instruction for installation of Jet

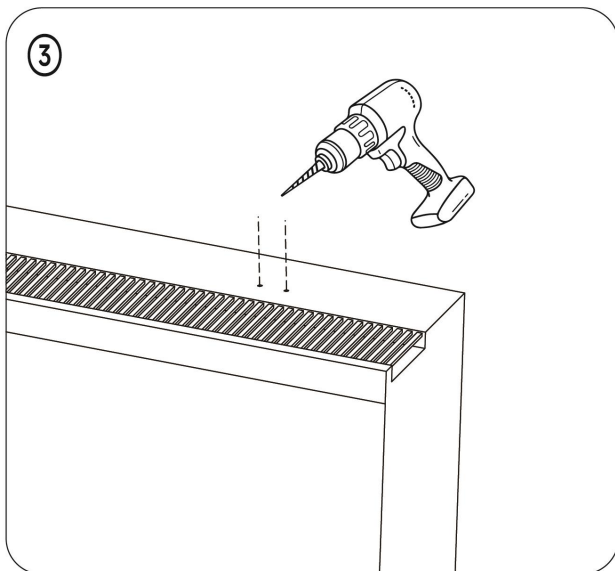
#### 5.1.1 Instruction diagrams:



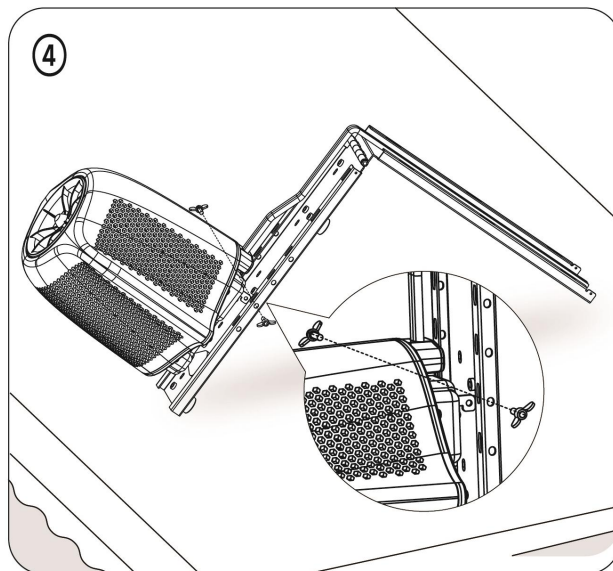
① Install 4 Shock-absorbing pad  $\phi 30 \times 20$  EPDM to the back of the bracket.



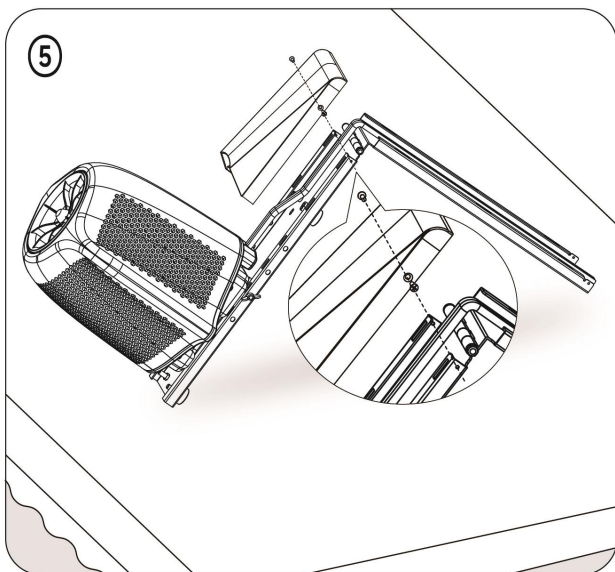
② Lay the bracket flat to the mounting surface and mark the location of the mounting holes.



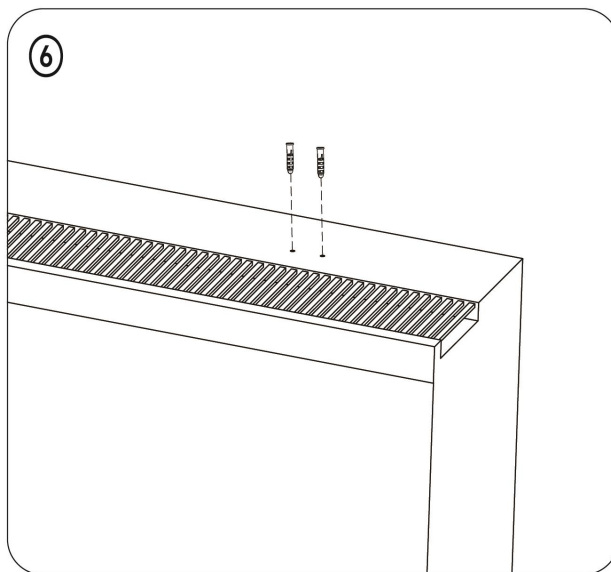
- ③ Drill the holes according to the installation holes, the recommended drill diameter is 8mm and the hole depth is 45mm. Take care to avoid electrical wires, gas pipes and water pipes to avoid damage.



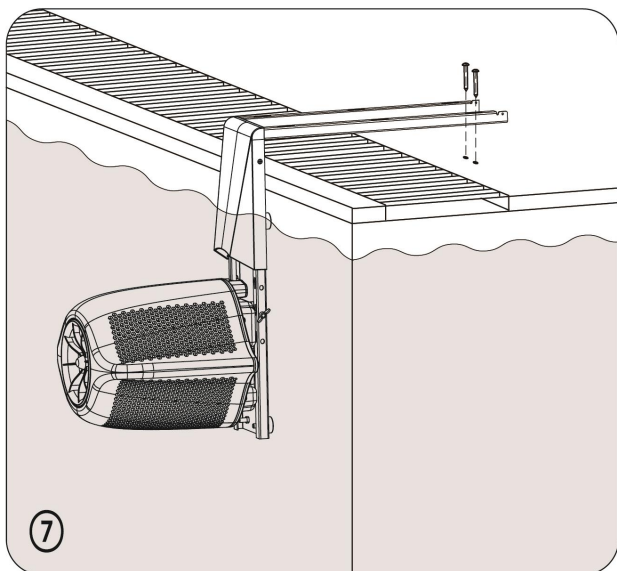
- ④ Install the Jet hooks by aligning them with the bracket openings. Tighten the butterfly bolts to secure the Jet.



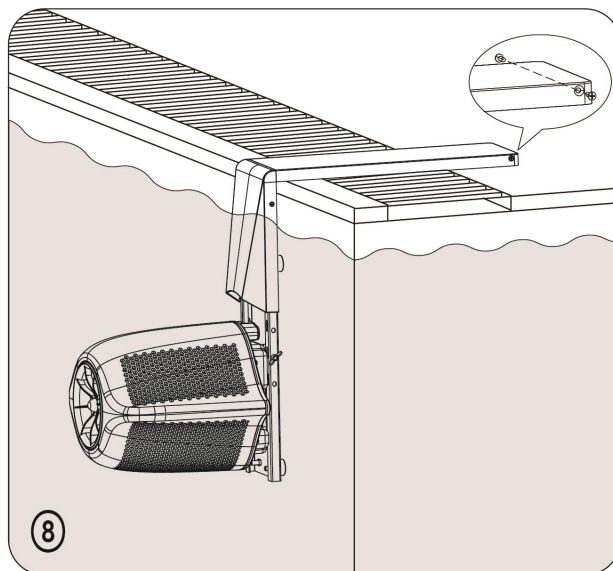
- ⑤ According to the height from the water surface to the bank level select the appropriate cable front cover to install, use M4 countersunk head screws to lock.



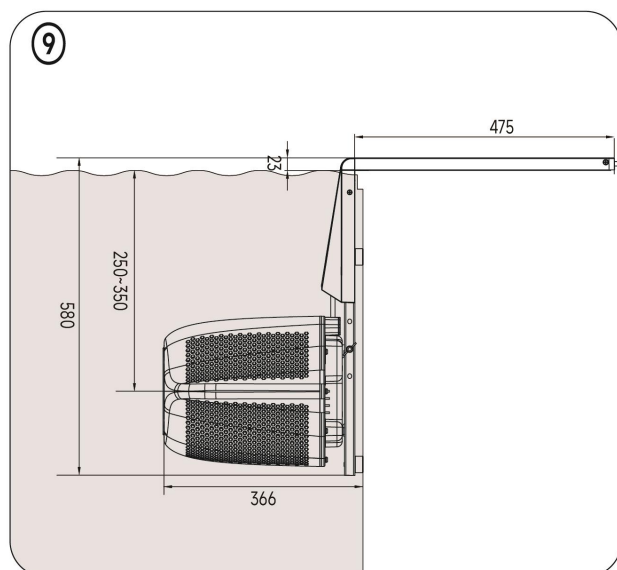
- ⑥ Install the Expansion tube M8X40 PA66



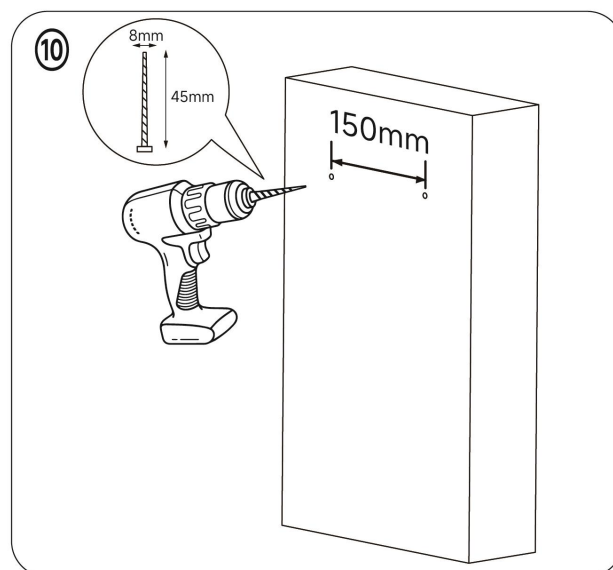
⑦ Place the Jet in the water, align the holes of the bracket with the holes of the expansion tube, and then tighten the self-tapping screws and the expansion tube to fix the bracket assembly.



⑧ Insert the cable top cover hook into the corresponding bracket opening and slide it forward to fit the front cover. Lock the cover with M4 countersunk screws.



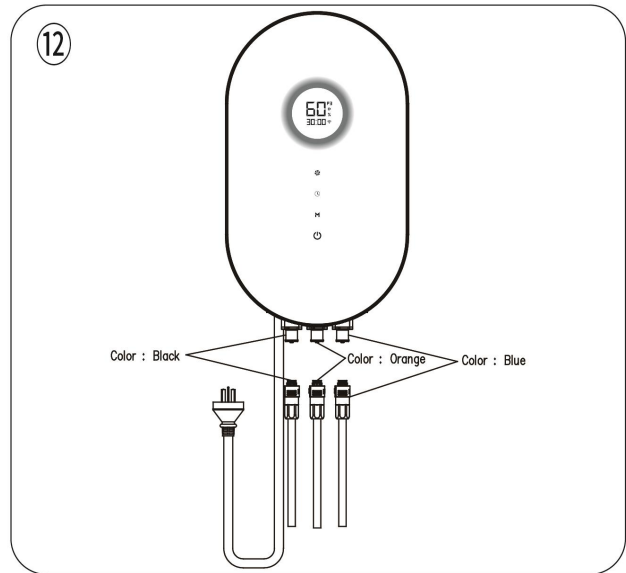
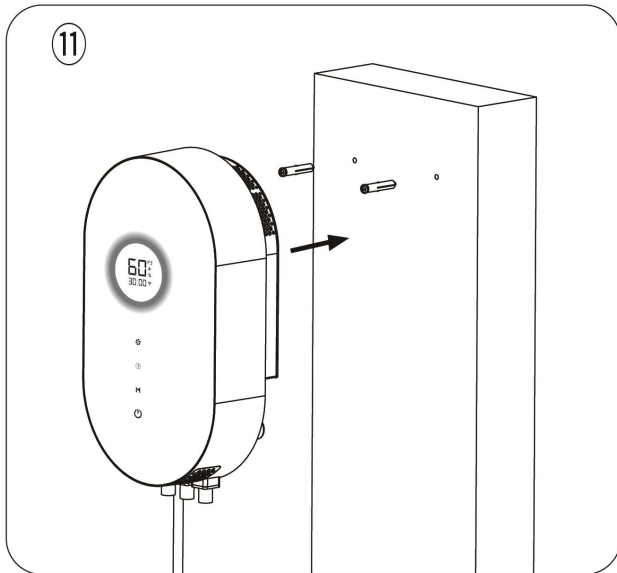
⑨ Ensure that the installation depth is 250~350mm from the water surface to the center of the main body of the Jet to ensure the best swimming experience



⑩ Drill 2 holes horizontally in the wall, 150mm apart, recommended drill diameter 8mm, hole depth 45mm.

**Note:** For the ⑤ step, the height range from the water surface to the bank level is 0~100mm, choose the short front cover; the height range from the water surface to the bank level is 100~200mm, choose the long front cover.





- ⑪ After completing the installation of self-tapping screws, the controller can be aligned with the holes to hang, pay attention to the direction of installation to ensure that the cable jacks is underneath.
- ⑫ The mainframe cable and the power bank socket are mated and plugged in according to the corresponding colors, which correspond to black/orange/blue.

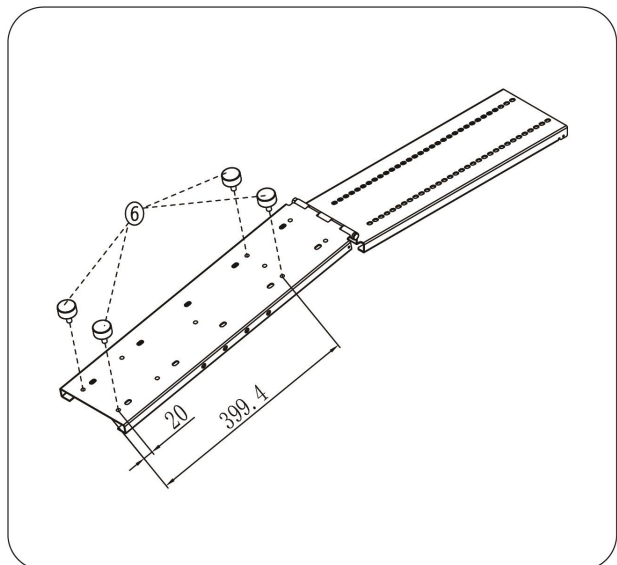
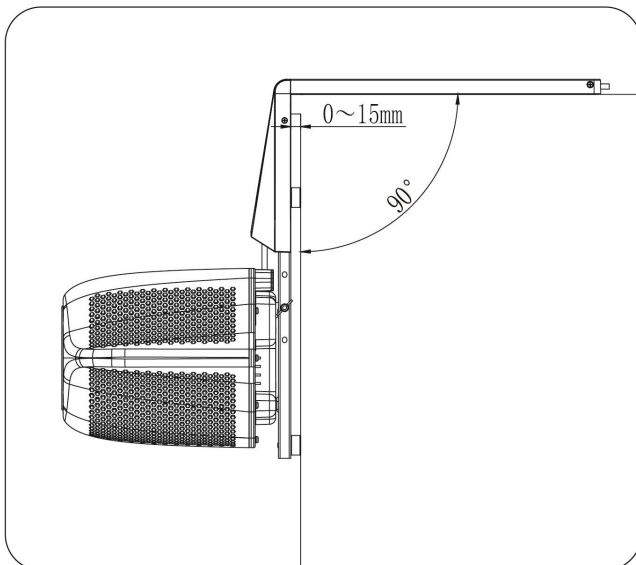
## 5.2 Bracket installation instruction

Depending on the pool wall, follow the steps below:

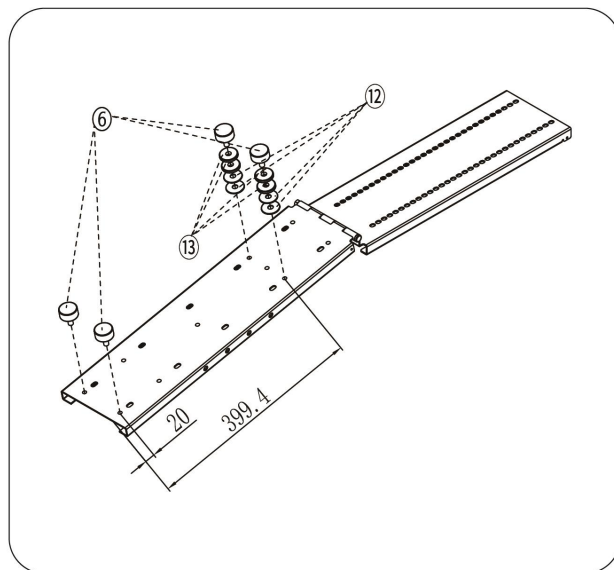
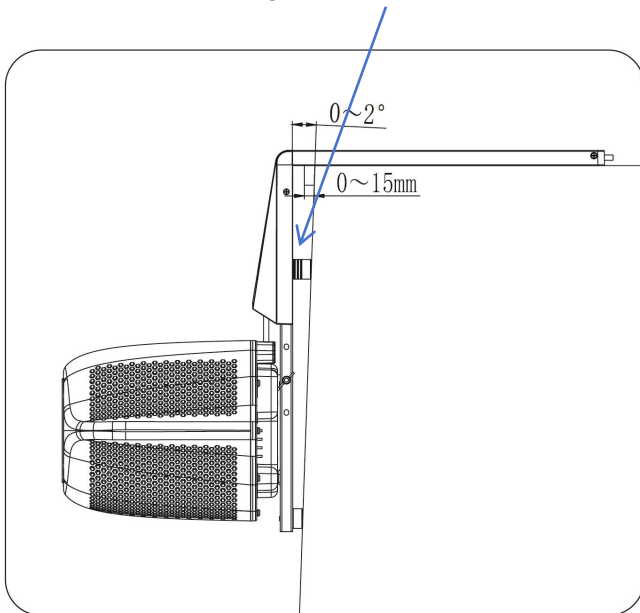
### 5.2.1 Non-inclined pool walls

**Top edge of pool bank  $\leq 15\text{mm}$ :**

- Install  $\Phi 30 \times 20$  ⑥ shock absorbing pads on the back of the bracket assembly.

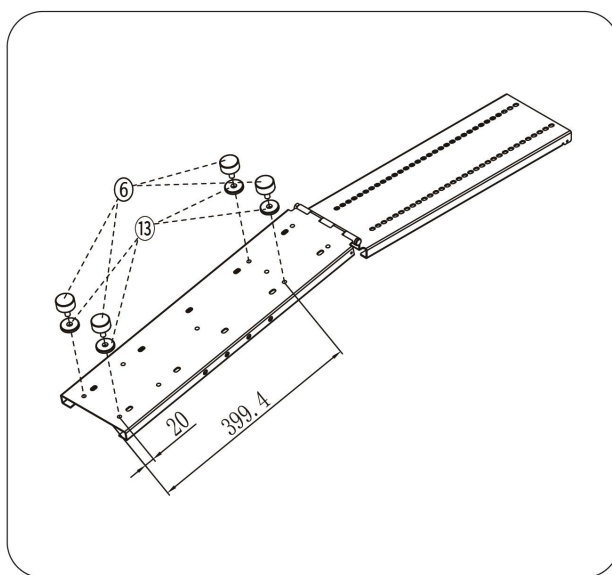
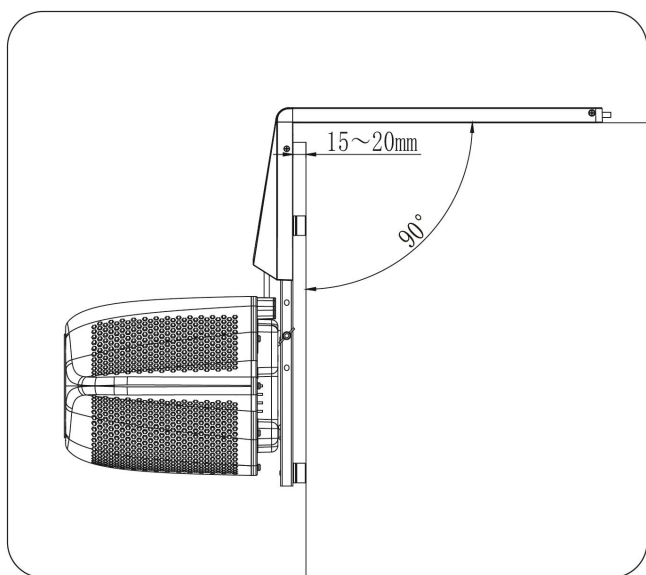


- If the pool wall has a slight inclination ( $\leq 2^\circ$ ), install ⑫ shock absorbing pad  $\Phi 30 \times 1.5$  and ⑬ shock absorbing pad  $\Phi 30 \times 5$  on ⑥ shock absorbing pad as shown in the picture.



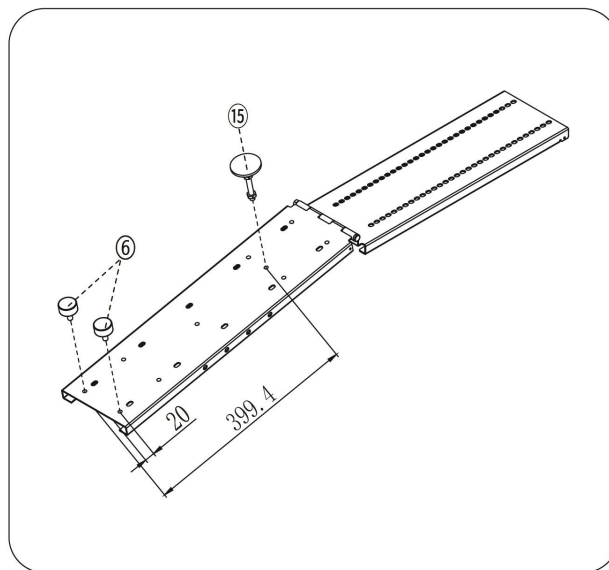
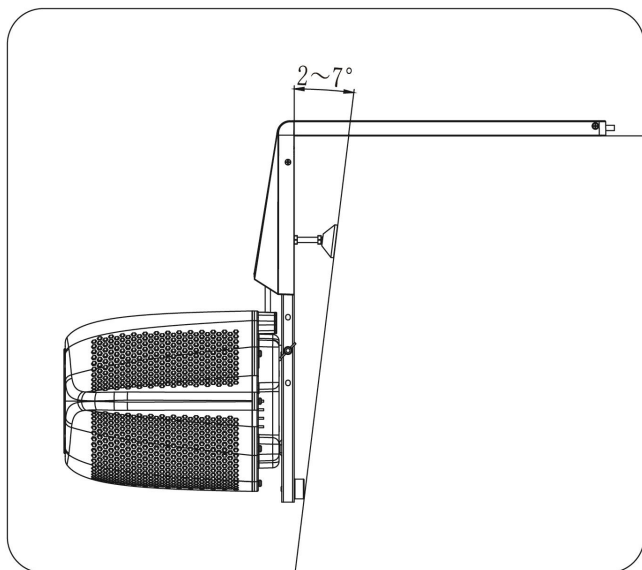
**15mm < Top edge of the pool bank  $\leq$  20mm:**

- Install ⑥ Shock absorbing pad  $\Phi 30 \times 20$  and ⑬ shock absorbing pad  $\Phi 30 \times 5$  at the same time.



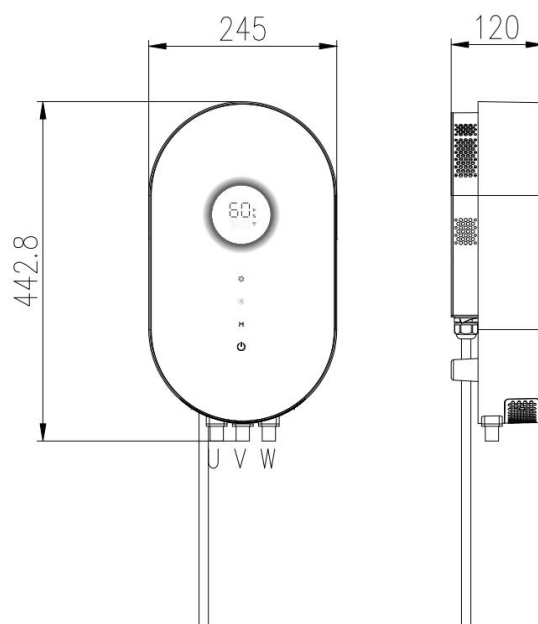
### 5.2.2 Pool walls with high inclination ( $2^{\circ} \leq \text{inclination} \leq 7^{\circ}$ )

Use a combination of ⑥ shock pads and ⑮ universal foot cups for installation:



## 5.3 Controller installation instruction

### 5.3.1 Installation Diagram:



### 5.3.2 Precautions for installing the controller:



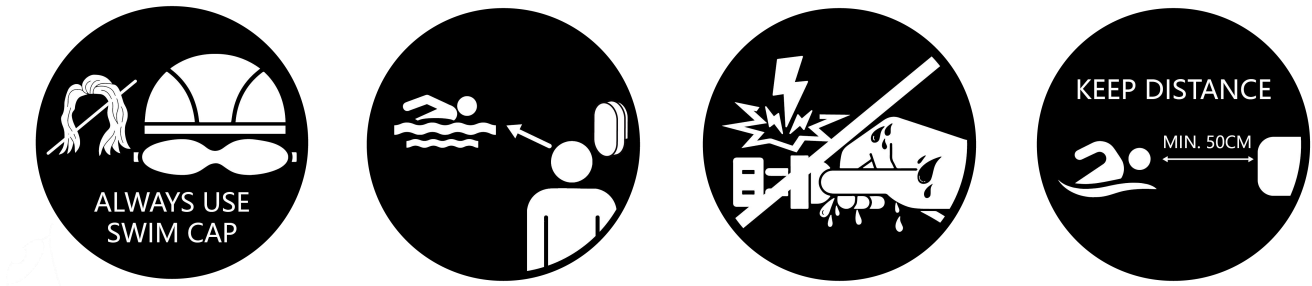
**DANGER:** Ensure that the power supply is turned off before installation to avoid injury from accidental startup;

Installation environment:

- Ensure that the controller is installed at least 3 meters from the edge of the pool and in a well-ventilated, dry, non-condensing area, protected from the direct effects of rain and pool splash.
- For controller installed outdoors, it is recommended that additional shields be added for protection.

- To ensure adequate heat dissipation, keep a space of at least 30 cm around the device.

## 6. How to Use InverJet



### 6.1 Check before usage

#### a. Check the power supply and connections;

- Make sure the power is off.
- Check the cables: check that all cables are connected correctly and are not damaged or worn, if damage occurs do not use the product and contact the agent for repair.

#### b. Check the Jet and pool condition

- Make sure the Jet is fully submerged.
- Clear obstacles: check that there are no obstacles in the pool, especially near the Jet, to ensure that there is no interference with the operation of the equipment.


#### c. Safety check

- Earth leakage protection: Confirm that the residual current device (RCD) is working properly.
- Wear a swimming cap and goggles.

#### e. Operation preparation





- Operation check: Before start-up, make sure there is no one near the Jet; keep watching the swim machine while you start it.
- Controller panel: Check the controller panel to see if there is any damage or cable loosen.

#### f. Usage tips:



-  **DANGER:** Do not plug or unplug the power plug with wet hands to prevent electric shock.
- Keep safe distance: Maintain a safe distance of at least 50 cm from the Jet during operation.



#### g. After confirming the above safety, the user can power on the power operation

## 6.2 Touch button description

Name	Function	Description
<b>ON/OFF</b> 	1、 Power on	Hold on/off button for 2 seconds to power on.
	2、 Power off	Hold for 2 seconds to power off.
	3、 Pause	Quick click pause while the mode is running.
	4、 Resume	Quick click in the paused state to resume the pre-paused state.
<b>MODE</b> 	1、 Mode	Tap to switch to different modes, Training Mode, Surf Mode and Free Mode.
<b>TIMER</b> 	1、 Enter timer	Quick click to enter timer mode.
	2、 Adjust differ timer	Tap the Timer button to adjust, there are six timers:15min, 30min, 45min, 60min, 75min , 90min.
<b>SPEED</b> 	1、 Adjust speed	Click the flow rate button to switch the flow rate.  Speed order: (20%, 40%, 60%, 80%, 100%, 20%)

## 6.3 Mode description


Mode type	Photo	Description
Free Mode(P0)		Freely adjustment of swimming speed and intensity, can swim at a fixed speed for an indefinite period of time.
Timer		Swimming time and swimming speed intensity can be freely adjusted, and swim after the setting is successful.

Training Mode (P1~P4)		Runs specified speeds for different periods of time according to a pre-set training plan to achieve the training effect
Surf mode (P5)		The system comes with modes that create powerful and varied wave effects for entertainment.


## 6.4 Workflow

### 6.4.1 Power on& off

**a. Power on process:** first the full screen will light for 2s, then display the product model number for 2 seconds, then complete the power on process;

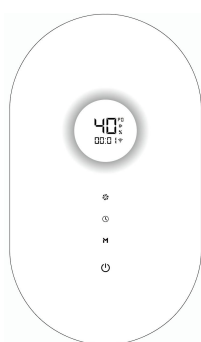
**b. Power on:** Hold  for 2s to power on, enter into default mode within 3s if no operating: the default speed is 40%. Enter the pre-shutdown mode if the machine again start up.

**c. Power off:**


- Long press  2s to power off in any mode;
- The system will automatically power off if there is no operation for 30 minutes in the pause state.

### 6.4.2 Initial start

When run this machine at the first time, after power on, it will enter into default mode (40% speed) if no operation within 3s, there are 5 different speed you can choose, 20%, 40%, 60%, 80%, 100%, this mode displays the running time below the speed, as shown in the below:



### 6.4.3 Speed adjustment


In the Free mode P0/Timing mode, setting state or running state, click  to change the speed, then are total five speeds: 20%, 40%, 60%, 80%, 100%, switching in turn; free mode P0/Timing mode switching the following figure:



Wait 3 seconds after selection and speed setting will complete.

Changing the speed in training mode (P1~P4) is the same as in other modes, you can change the speed by clicking the speed button when setting or running, it should be noted that changing the speed under the training programme is only effective for the current time period.

### 6.4.4 Switch to Training Mode

In any mode, click  to switch between Training Mode (P1~P4), Surfing Mode (P5), Free Mode (P0), the intensity of speed is different for each separate time interval in Training Mode, the system currently has 4 kinds of Training Modes (P1,P2,P3,P4), the details are as follows:

P1 (Easy) : (Duration: 15 mins)

Time	0-2min	3-5min	6min	7-9min	10min	11-13min	14-15min
Speed	20%	30%	20%	35%	20%	30%	20%

P2 (Medium) : (Duration: 20 mins)

Time	0-3min	4-6min	7-8min	9-12min	13min	14-17min	18-20min
Speed	45%	55%	45%	70%	45%	55%	45%


P3 (Hard) : (Duration: 25 mins)

Time	0-5min	6-9min	10min	11-14min	15min	16-20min	21-25min
Speed	70%	80%	70%	85%	70%	80%	70%

P4 (Endurance) : (Duration: 30 mins)

Time	0-7min	8-24min	25-30min
Speed	45%	65%	45%

#### 6.4.5 Switch to Surf Mode

Tap  in any mode, when the screen display shows P5, wait for 3 seconds to start running the surf mode P5. the speed cannot be manually adjusted in surf mode.

Surf Mode Features:




- Surf Mode entertains by quickly switching the flow rate to create a powerful water flow effect.
- After start-up, the first 10 seconds is the preparation time and the flow rate is run at a low speed of 30%.
- In the Surf Mode, the flow switches in a continuous cycle of 15 seconds of high speed (100%) and 15 seconds of low speed (30%).



Safety Instructions:

- Due to the strong water current in surf mode, users must wear suitable swimming gear such as a swimming ring, floatation sleeve, back floatation board, etc., and a swimming cap and goggles to ensure safety.
- Please remain alert during the experience. Beginners or weak swimmers need to be accompanied by an adult who can swim to ensure safety.

#### 6.4.6 Switch Timer Mode

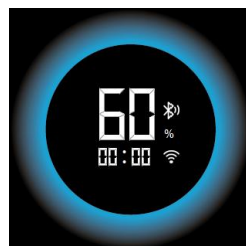
Click  in any mode to enter the timing mode setting, click  again to set the training time, there are 6 choices: 15 minutes, 30 minutes, 45 minutes, 60 minutes, 75 minutes, 90 minutes; you can click to switch the speed (5 speeds), switching is completed in 3 seconds without operation, the time counts down in the timer mode, such as the user timed for 30 minutes, the time will go from 30:00->29:59->0:00, the total time and speed of the timed mode will be flashing after 30 minutes, and it will enter the free mode after the training is finished. In addition, you can also tap  to adjust the speed in five steps when running in timed mode.



Speed 60%  
Duration:30min



Timer Mode:  
Time counts down






Time counts down  
end, mode finished



Flash 3s for finished  
training time and speed






a. Pause: When the swim machine is running or setting, quick press  to pause, the speed reduces to 0%, the time is paused, the status light flashes in a cycle of 5 seconds, and the system will be power off automatically if there is no operation within 30 minutes in the pause state.

b. Resume: Quick press  to resume the pre-pause state and continue to run in the paused state, if switching modes while paused, it will lead to the operation mode switching, after clicking  to resume, the system will run in accordance with the mode after switching.

## 7. APP Control

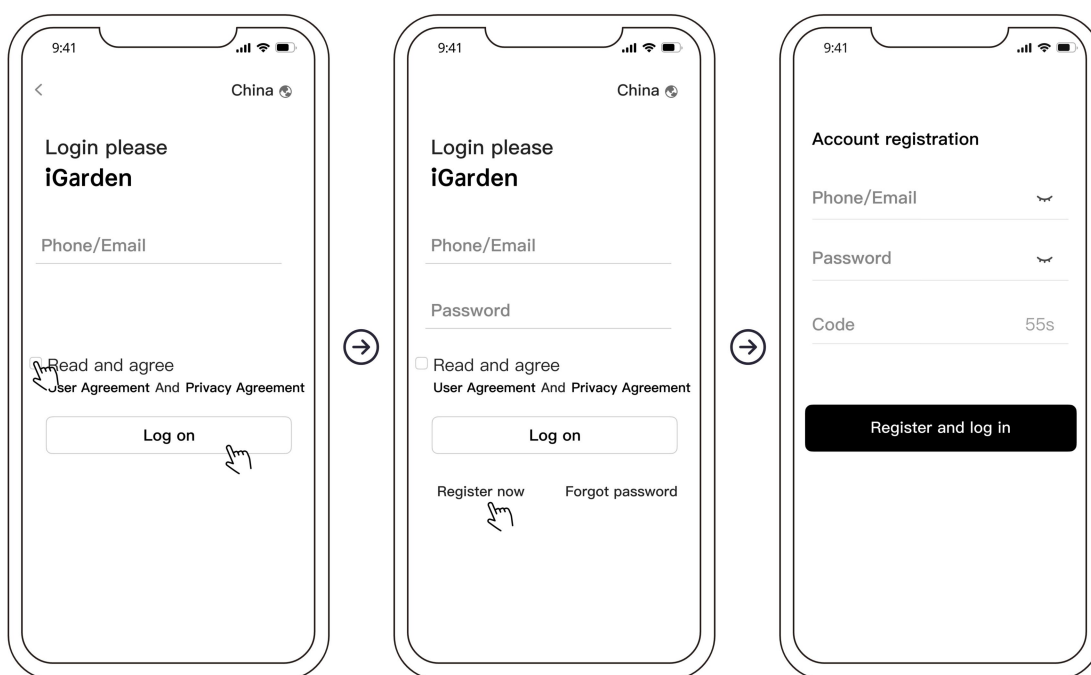
### 7.1 APP Download

Please search “**iGarden**”  in the application market to download.

- Android users: You can search and download through the **Google Play**  application market.
- For iOS users, you can search and download through the **App Store**. 



### 7.2 Account Registration and Login

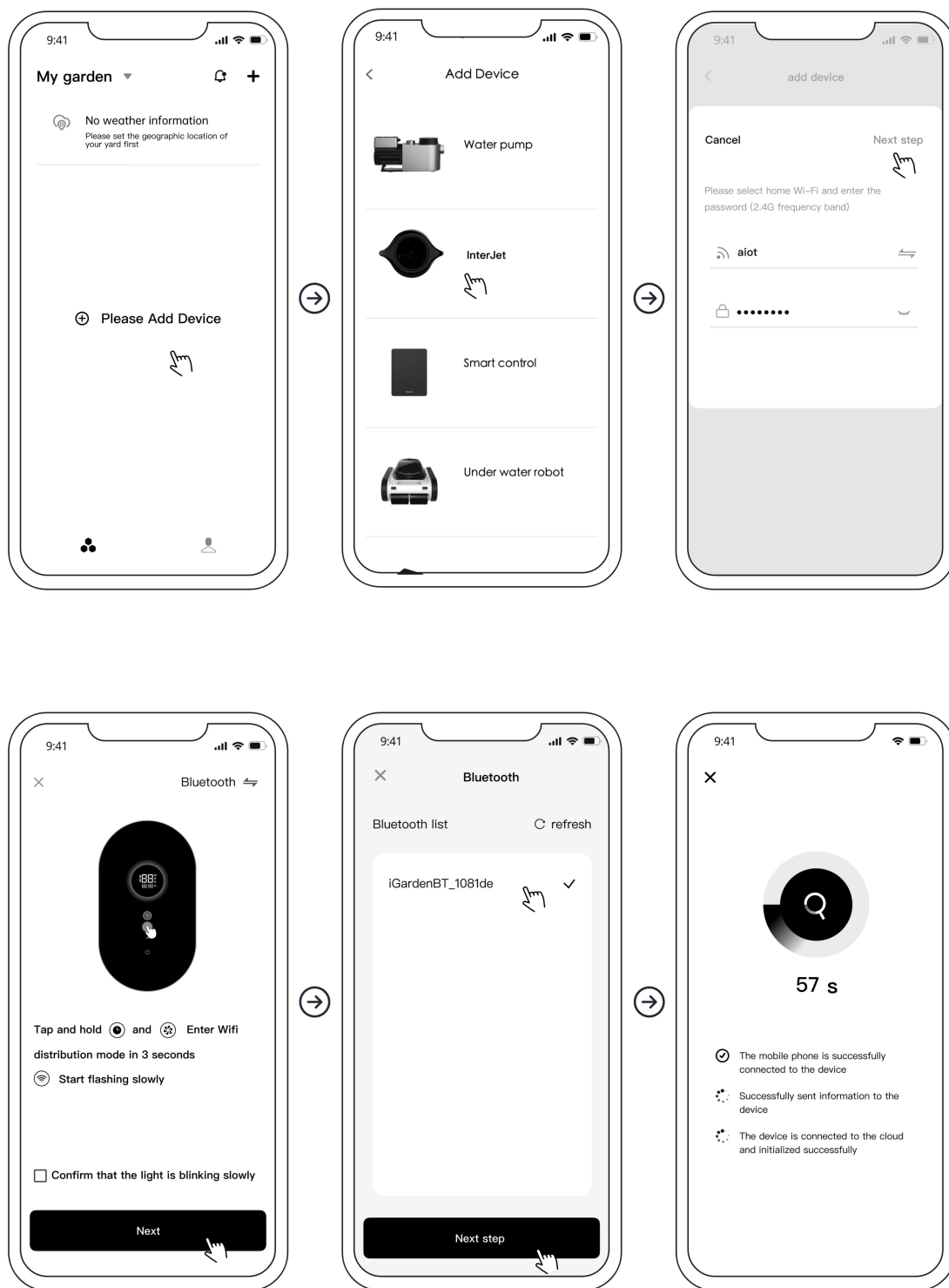
After downloading, you can register and log in your account by **email** or **phone number**.



### 7.3 Adding devices and networking

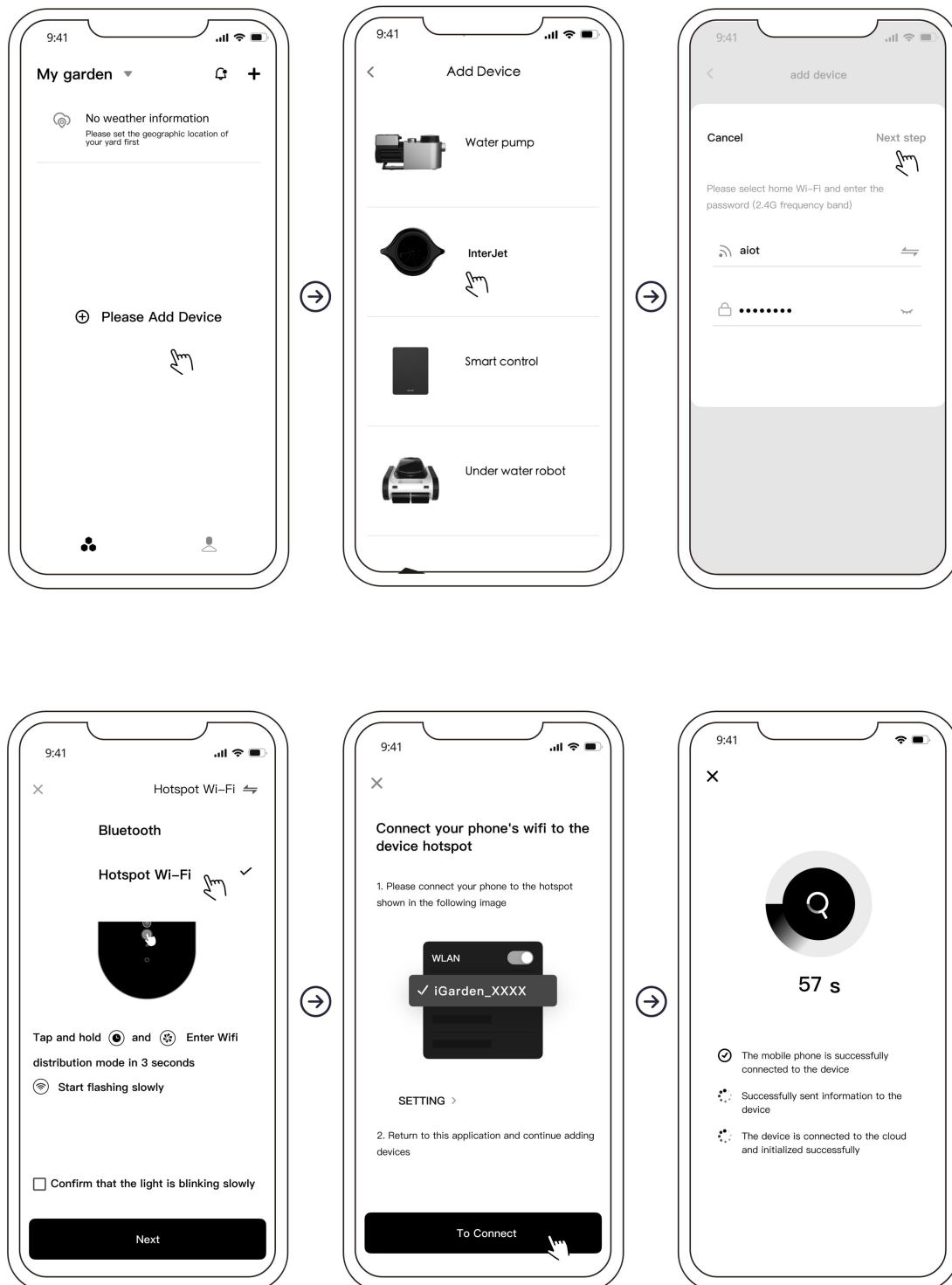
#### 7.3.1 Bluetooth Networking Mode

1. After the controller is turned on, press and hold  and  at the same time for about 2 seconds until the Wi-Fi icon flash, and then it enters the network mode.
  2. Open **iGarden APP** and click “Add Device” button.
  3. Follow the APP instructions to complete the device connection, then your device will be displayed in Home
- My Garden.**



### 7.3.2 WiFi Hotspot Networking Mode

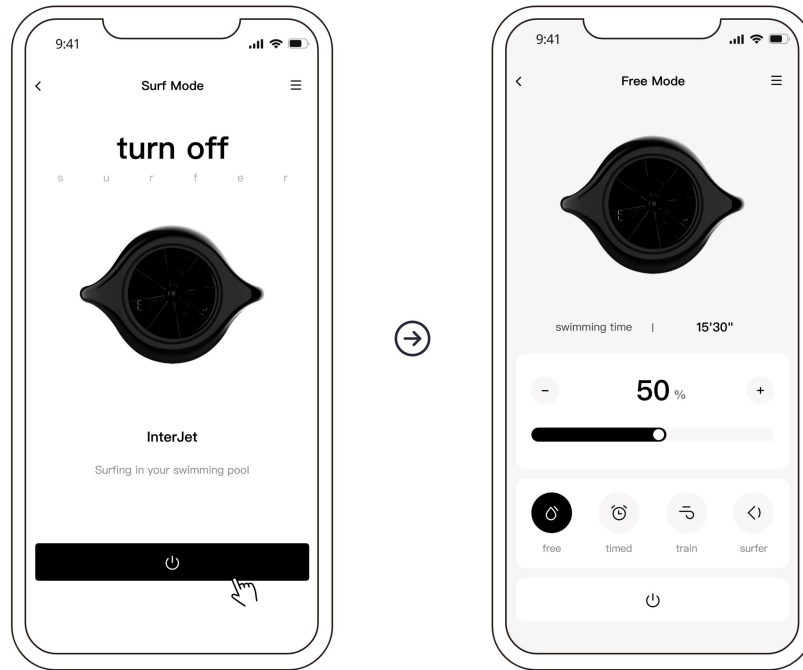
The operation is the same as the Bluetooth mode, select **"WiFi hotspot"** mode to operate, and follow the prompts to complete the connection.




## 7.4 Interface Functions

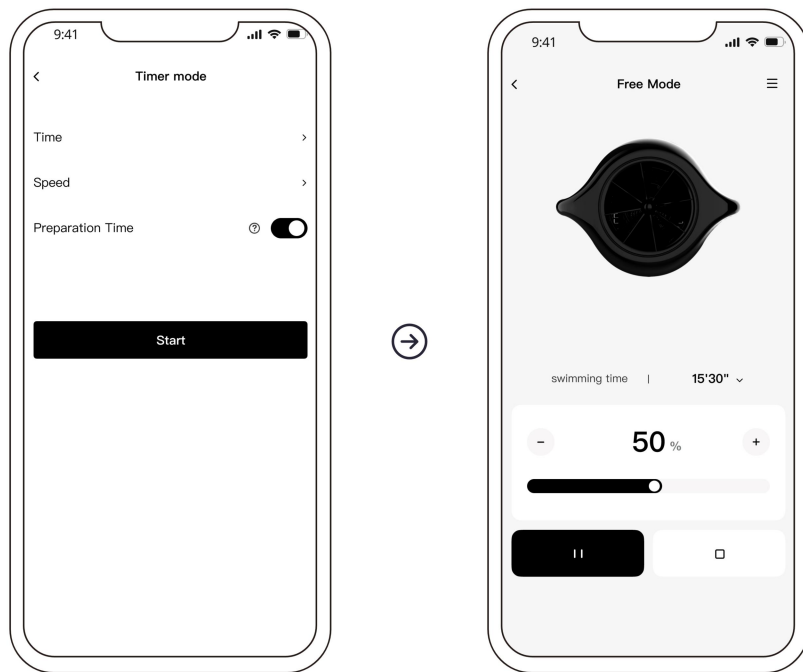
### 7.4.1 Free Mode

In free mode, you can freely adjust the swimming speed and intensity as needed. After the device is turned on, it enters the free mode operation state by default.




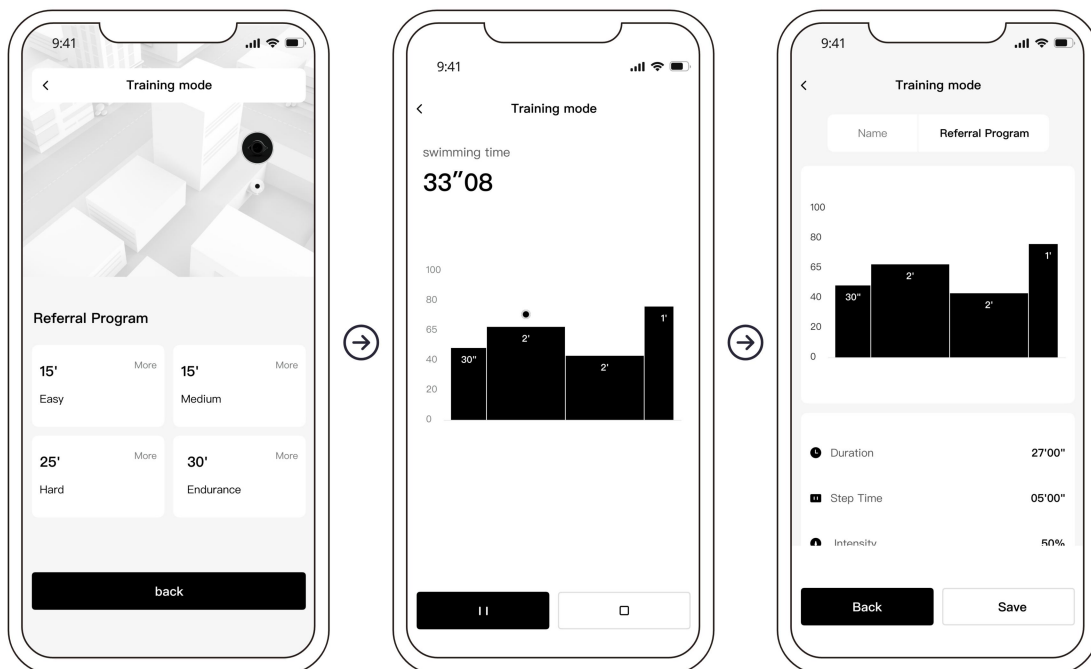
### 7.4.2 Timing Mode

Click  to enter the timer mode, you can set the target swimming time and swimming speed intensity. When the countdown is over, the device will automatically stop the operation.




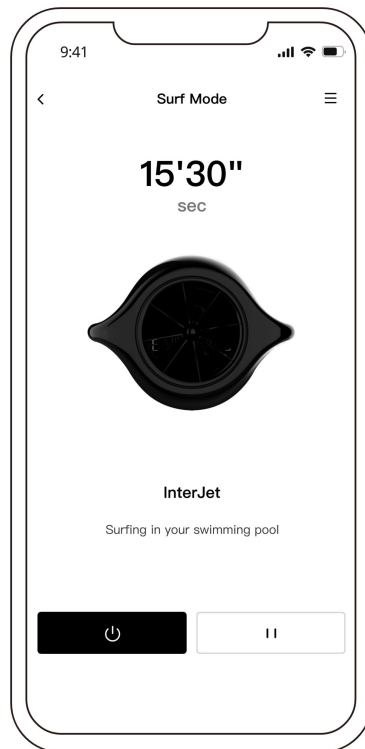
### 7.4.3 Training Mode

Click  to enter the Training Mode, which contains 4 different training programs: Simple Intensity in Interval Mode, Medium Intensity, High Intensity and Endurance Training Mode.



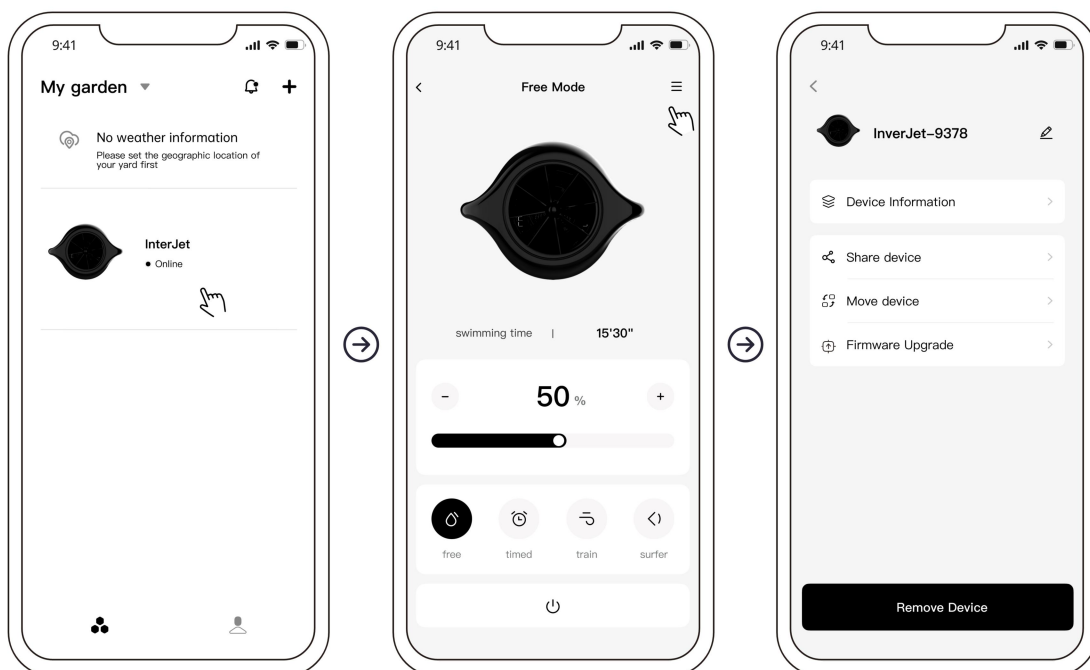
#### 7.4.4 Surf Mode

Click  to enter the Surf Mode. The Surf Mode simulates the real surfing experience by automatically and rapidly switching the flow rate to create a powerful water flow effect.



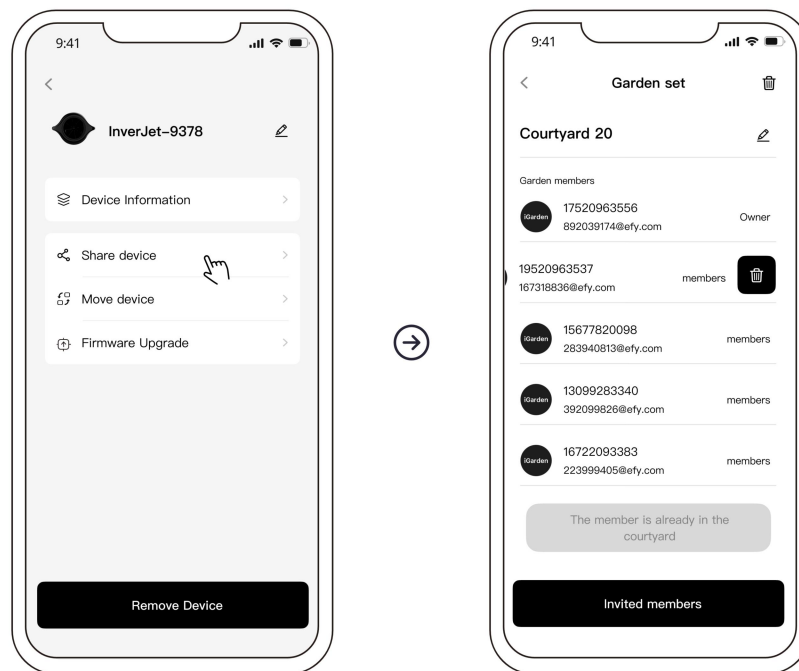
#### 7.4.5 Device Details

Click the corresponding device on the home page to enter the device control page for remote control. It supports operations such as changing the name and deleting the device on the device details page.



## 7.4.6 Sharing Devices

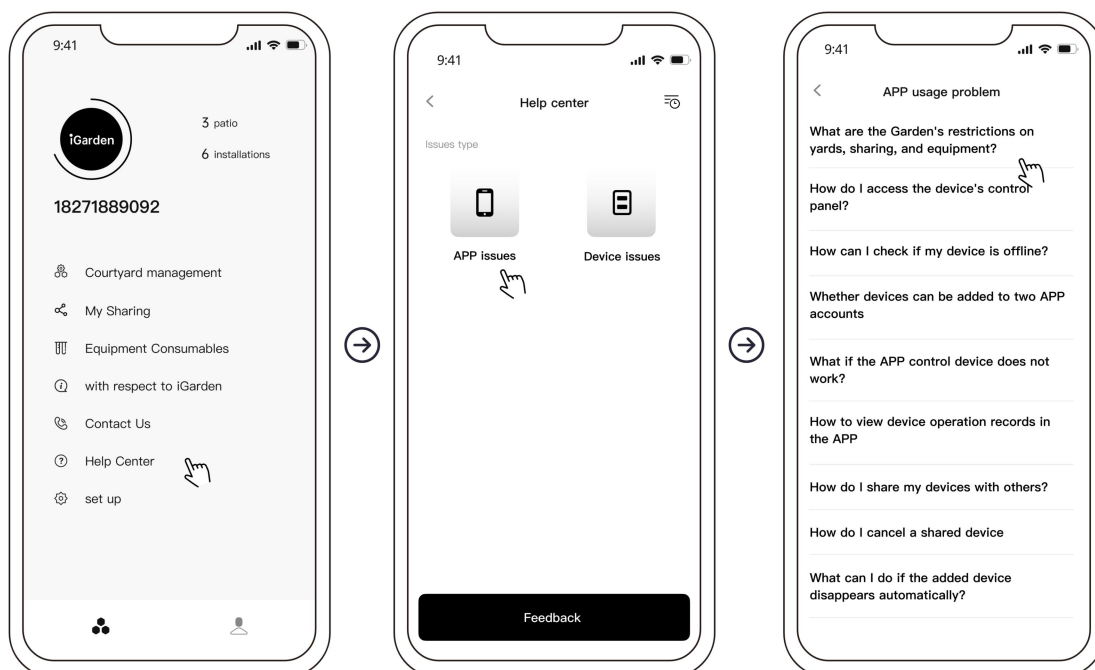
As a yard manager, you can share a device for use by other users via the device details page.



## 7.5 Help Center

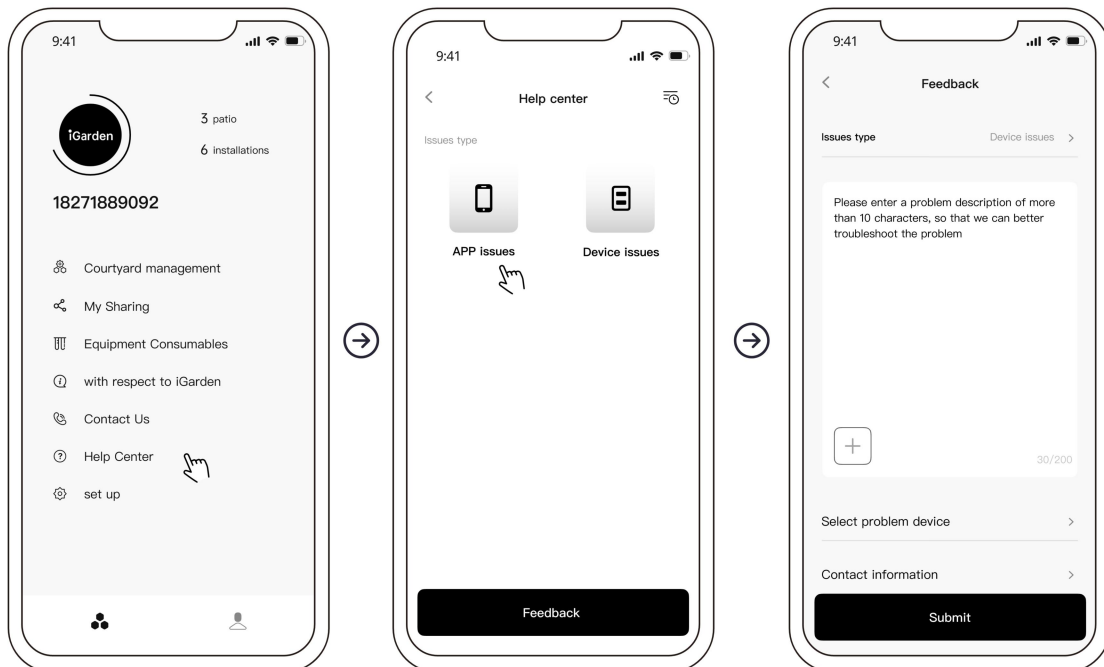
### 7.5.1 Frequently Asked Questions and Answers

If you encounter problems during use, you can check the Frequently Asked Questions and Answers in the Help Center to find solutions.



## 7.5.2 Feedback

If you encounter any problems during the use of the product, or have any good ideas to improve the function, please feel free to share your ideas with us through the **“Feedback”** function! Your suggestions are very important to us, we will listen carefully and continue to optimize the product and release newer versions to bring you a better experience. We look forward to your valuable feedback!



## 8. Product Care and Maintenance

When the product is not used for a long time, disassemble the Jet for indoor storage.

1. Turn off the power;
2. Disconnect the power supply cable;
3. Disconnect the control cable on the bottom of controller;
4. Remove the Jet from pool and make sure the Jet clean and dry;
5. Store the Jet in a cool and dry place.



**WARNING:** When storing the cable plug of Jet, it needs to be covered with a protective sleeve and not exposed to the air.

## 9. Failure and Protection



### 9.1 Fault detection


When the error code appears(except E0 04 or E2 01 errors), the machine stops running and will automatically try the following actions:





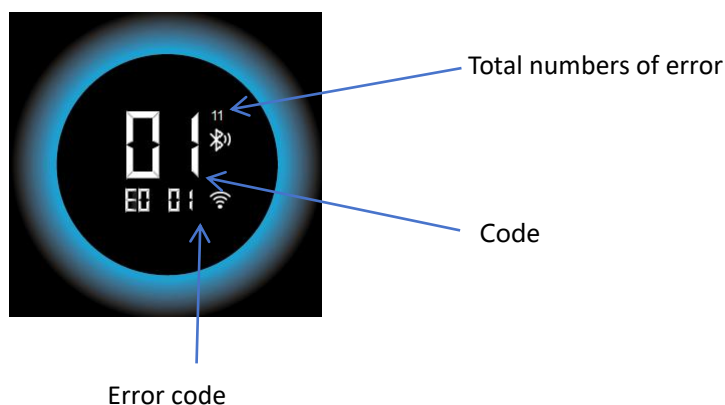
1. Automatically reboots after 30 seconds and tries to run again;
2. If the error code appears again after reboot, the machine will repeat step 1 again
3. After 3 occurrences of the error code the machine automatically locks up and can only be switched on and off without being able to perform functional operations. At this point please contact your dealer for assistance

In this case, it is necessary for the staff to manually reset the system after checking the faults on the site before continuing

to use it. When there are multiple errors, users can press   together to view the different errors.

The fault diagram is as follows, the top right corner of the screen  for the total number of errors, right in the middle

 for the current error number, the bottom  for the error code.



## 9.2 Error codes list:

SN	Error code	Description	Reason
1	E0 01	Abnormal bus voltage	The RMS value of the bus voltage is not in the range of 12V to 28V.
2	E0 02	Over current fault	The peak current of the inverter is greater than the preset current.
3	E0 03	Driver board current sensor bias fault	Current sensor current value mismatch
4	E0 04	Output shorted	Output wires (wires from the box to the Jet) are short-circuited or high current is present.
5	E0 05	Output Out-of-Phase	Poor contact of output wires or internal wiring problems
6	E0 06	Motor stalling	The motor is tangled or stuck by foreign objects and cannot rotate
4	E1 01	MOS overheating	The temperature of the mos tube on the driver board is too high.
5	E1 02	High temperature for controller	The internal temperature of the controller is too high.
6	E2 01	Temperature sensor failure	The driver board temperature sensor or circuit is damaged.

7	E2 02	Motor drive failure	The driver board is damaged or the motor control is abnormal.
8	E2 03	Driver Board Communication Failure	The driver board does not communicate with the main control for 30 consecutive seconds.

Note: After the appearance of E0 04 or E2 01 error code, manual power off and reboot, if the power is still reported after booting the corresponding fault, please contact your dealer for assistance in processing.

### 9.3 Speed reduction protection

In order to ensure the safe operation of the equipment, the controller is equipped with the following three kinds of downspeed protection mechanisms:

#### 1. MOS tube high temperature protection

- Trigger condition: high temperature of MOS tube, the temperature is more than 80°C.
- Speed reduction steps: the motor speed reduction of 10% for the first time, every 2 minutes if the temperature is still high, then further speed reduction of 5%, the minimum can be reduced to 20
- Display tips: Normal working interface and high temperature warning (interface display A1) are displayed alternately.
- Recovery conditions: temperature drops below 75°C, speed returns to normal.

#### 2. Chassis high temperature protection

- Trigger condition: high temperature of the chassis, the temperature exceeds 65°C.
- Speed Reduction Steps: The motor speed is reduced by 10% for the first time, and if the temperature is still high every 2 minutes, the speed is further reduced by 5%, and the minimum speed can be reduced to 20%.
- Display tips: normal work interface and chassis high temperature warning (interface display A2) alternately displayed
- Recovery conditions: temperature drops below 60°C, speed returns to normal.

#### 3. Output overcurrent protection

- Trigger condition: output current exceeds 65A.
- Speed Reduction Steps: The motor speed is reduced by 10% for the first time, and if the current is still high every 2 minutes, the speed will be further reduced by 5%, and the minimum speed can be reduced to 20%.
- Display tips: normal work interface and overcurrent warning (interface display A3) alternate display
- Recovery conditions: current drops below 60A, speed returns to normal.

Note: In any protection state, the device will automatically adjust the speed to prevent damage and ensure the safe operation of your equipment.

## 10. FAQ & Solutions

Problem	Reason	Solution
Loud noise	<ul style="list-style-type: none"><li>• The Jet is not fully submerged in water</li></ul>	<ul style="list-style-type: none"><li>• Make sure the Jet is fully submerged in water</li></ul>
Weak flow	<ul style="list-style-type: none"><li>• The Jet is not parallel to the water surface</li></ul>	<ul style="list-style-type: none"><li>• Check that the screw feet are installed correctly</li></ul>
	<ul style="list-style-type: none"><li>• Motor doesn' t work</li></ul>	<ul style="list-style-type: none"><li>• If the motor does not work properly, please contact your dealer.</li></ul>
No LCD display	<ul style="list-style-type: none"><li>• The controller is not connected to the power supply or the switch is off.</li><li>• Display panel receiving signal failure</li></ul>	<ul style="list-style-type: none"><li>• Ensure that the controller is powered on and the switch is open.</li></ul>

## 11. Disposal

### 11.1 Equipment retirement

- 1.Switch off the power.
- 2.Turn off the power around the pool.
- 3.Disconnect the power cord.
- 4.Disconnect the motor cable under the controller.

### 11.2 Disposal



When disposing of this product, please sort it into electrical or electronic product waste or give it to your local waste recycling system. By recovering and recycling the equipment separately at the point of disposal, you can ensure that it is disposed of in a manner that is beneficial to human health and the environment. Contact your local authorities to find out where you can recycle your swim machine.

