

# Intelligent Vacuum Pump User Manual

## V700/V900/V1200

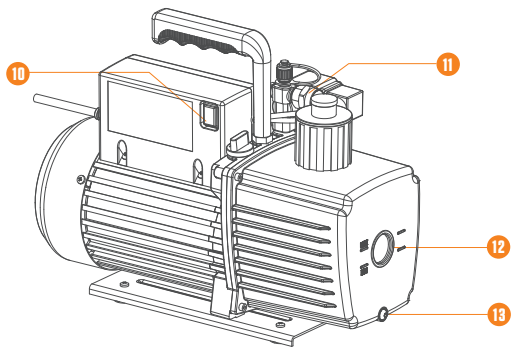
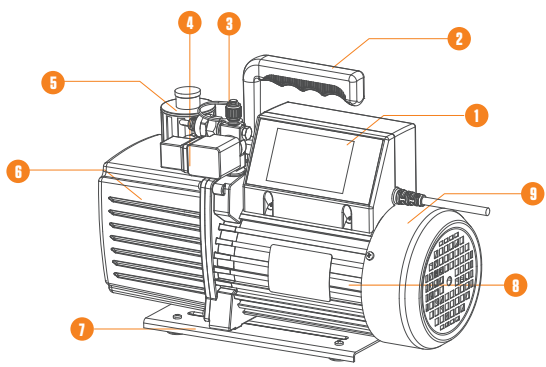


# Contents

- Disclaimer .....1
- Product Features .....2
- Technical Parameters .....2
- Service Parts .....3
- Operation Guide .....4
- Care and Maintenance .....9
- App Operating Instructions .....11



# Introduction



① Touch screen	⑧ Motor
② Handle	⑨ Motor housing
③ Inlet	⑩ Power button
④ Solenoid valve	⑪ Vacuum sensor
⑤ Oil Filter	⑫ Oil Level Window
⑥ Oil tank	⑬ Oil drain plug
⑦ Base	






# Product Features

- 4" Touch Screen Display
- Intelligent Control of Motor and Solenoid Operation
- Vacuum Leakage Indication
- Vacuum Levels Graph Indicated
- Job Duration Estimation
- Data Logging and Storage via App

# Technical Parameters

Models	V700	V900	V1200
Stage	2		
Power Supply	110V/60Hz; 220V/50Hz		
Motor	AC induction motor		
Speed Regulation	Fixed speed		
Vacuum Accuracy	1-10000microns      ±10% of Reading / ±10microns 10000-19000 microns    ±20% of Reading		
Operating Temperature	41°F~104°F (5°C~40°C)		
Transmission Distance	30ft / 10m		
End Vacuum	15 microns		
Flow Rate	7 CFM    (3L/S)	9 CFM    (4L/S)	12 CFM    (5L/S)
Motor Power	3/4 HP ( 550 W )	1 HP ( 750 W )	1 HP ( 750 W )
Oil Capacity	22oz /(650ml)	22 oz /(650ml)	25.3 oz(750ml)
Overall Dimension	18.5in×10.5in×14.8in    /    (470mm*267mm*380mm)		
Weight	34.2lbs / 14.8kg	35.3lbs / 15.3kg	36.8lbs / 16kg
Inlet Port	1/4 SAE ;3/8 SAE		

# Warning Signs

Sign	Name	Content
	Check the Oil Level	Add ISO 46 mechanical oil before the first use and keep the oil level between the maximum and minimum level
	Wear Goggles	Wear goggles when working with refrigerants . Direct contact with refrigerants may cause injury
	Beware of High Temperature Burns	The pump surface becomes hot during normal operation . Do not touch the pump body or motor during operation
	Avoid Electrical Shock Hazards	Improper use may cause electrical shock hazards Read and follow the instructions carefully and take precautions to avoid electrical shock hazards . Confirm that all associated devices are grounded correctly before power on
	Danger	Please remove the exhaust cap before starting up
		Check the oil level and prohibit running without oil

# Operation Guide

Conditions that must be met

1. Place on a flat surface.
2. Confirm the voltage and frequency at the outlet match with the vacuum pump specifications.
3. Confirm the oil level is within the Min and Max level.

4. Remove the air inlet cap (1/4 SAE fitting as shown in the right image ), connect the pumped system (make sure the pipe fitting is fit with the air inlet fitting). Tighten the air inlet and make sure the system and hoses are sealed with no leakage.

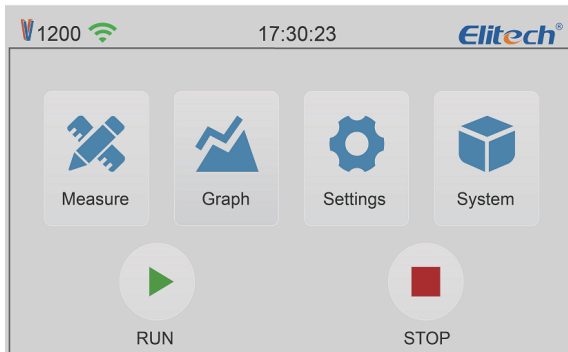






5. Plug in the power cord and open the exhaust port.

#### SAFETY WARNINGS





- Use only ISO 46 mechanical oil to avoid vacuum pump damage.
- Do not obstruct the exhaust port during vacuum pump operation.
- Do not expose the suction port continuously to atmosphere for more than 3 minutes.
- The air inlet pressure should not exceed 27.5 bar to avoid sensor damage.



## Interface Introduction



- (1) Status bar on top of the page shows the product model, time, Bluetooth status.
- ① Model Numbers varies depending on the product models.
  - ② Bluetooth Status:  Bluetooth not connect;  Bluetooth connected.
  - ③ During operation,  High Temperature Limit Alarm,  Normal Operating Temperature.

(2) Touch Screen Interface.

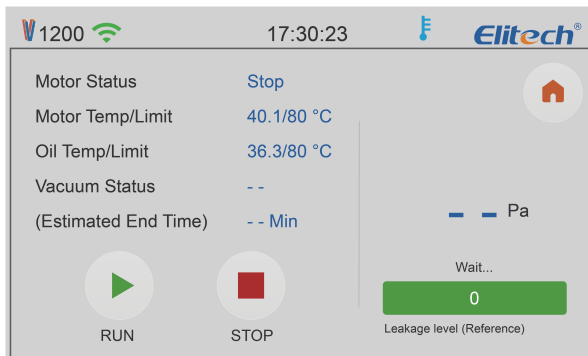
- ①  : Real-time Operational Measurement
- ②  : Vacuum Performance Graph
- ③  : Vacuum parameter setting
- ④  : System parameter display and setting

(3) The motor is off by default after power-on. Depress "  " to start the motor. Depress "  " to stop the motor.

When the motor operation begins, the solenoid valve automatically opens. The solenoid valve closes automatically upon motor shut down to avoid vacuum sensor oil cohesion.

## 1. Real time measurement interface

This feature contains real time operation and status of the evacuation process.



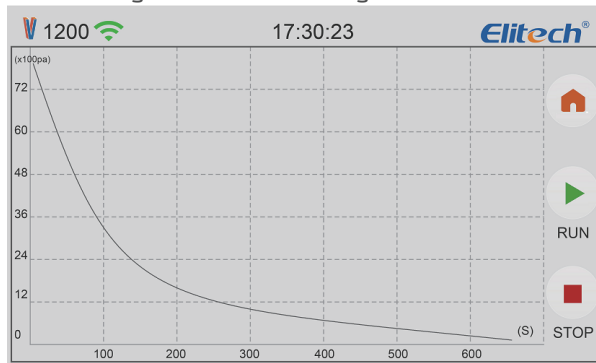
- (1) Motor Status: Indicates the current status of the motor.
- (2) Motor Temp/Limit: Indicates the surface temperature of the pump and the set alarm temperature.
- (3) Oil Temp/Limit: Indicates vacuum pump oil temperature and the set alarm temperature.
- (4) Vacuum Status: Displays the current vacuum value status.i.e "Decrease", "Stable", "Rise", "--".
- (5) Estimated End Time: Upon vacuum stability , the estimated job completion time,including holding time, is indicated.
- (6) Vacuum Level Display: Shows the vacuum level of the system in real-time if below 8000Pa. The waiting time for the vacuum reading is longer for a larger system.

*Note: The vacuum reading varies due to the sensor placement different. The reading variances is caused by the uneven air flow during the vacuuming process. The farther the air from the pump, the higher the air density is thus the vacuum reading is higher.*

- (7) Leakage level: Once the vacuum is stable, this feature provides a leakage rate information A general rate of leakage is represented from 0 to 100.As the figure rises, the indication of a higher leakage is present.  
possibility of the leakage.
- (8) 🏠 : Home Icon returns to the Main Screen.

## 2. Graph

The Graph Icon allows viewing of the vacuum change in real time.



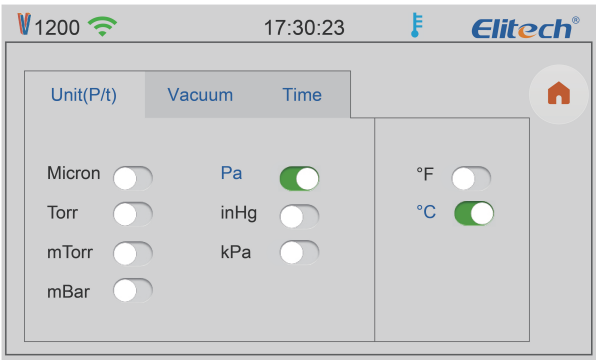
- (1) When the vacuum value drops below 8000 Pa, the vacuum change graph is displayed.
- (2) The X axis represent time. Y axis represent vacuum. The vacuum value is from 0 Pa to 8000 Pa.
- (3) 🏠 : Home Icon returns to the main interface.

### 3. Settings

Click the Settings Icon on the main menu to enter the setting interface.

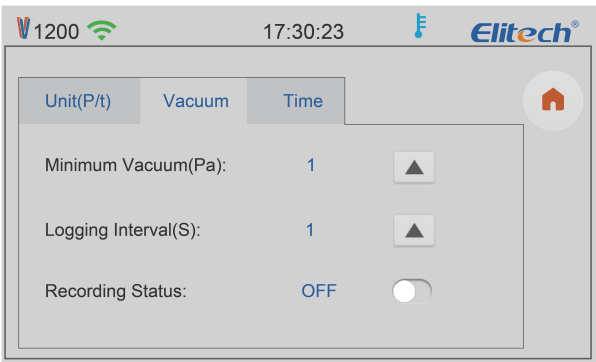
#### Unit (P/T)

Select Unit to set the unit for vacuum and temperature. The selected units are in blue.



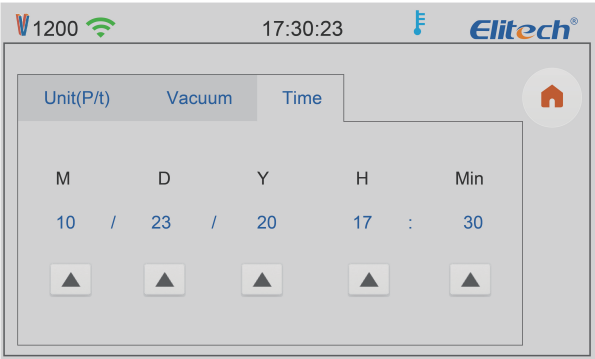
#### Vacuum

Set the minimum vacuum value, logging interval, and recording status.



- (1) Minimum vacuum value: The target vacuum value for vacuum pumping, and the setting range of the minimum vacuum value is 1-1000Pa. The solenoid valve automatically closes when the minimum vacuum value is set, and opens when the vacuum value rises by more than 10Pa;
- (2) Logging Interval (S): 1, 5, 10, 30, 60, 120, 300.
- (3) Recording Status: The logging can be turned on and off. The upper right corner shows the logging/recording status.

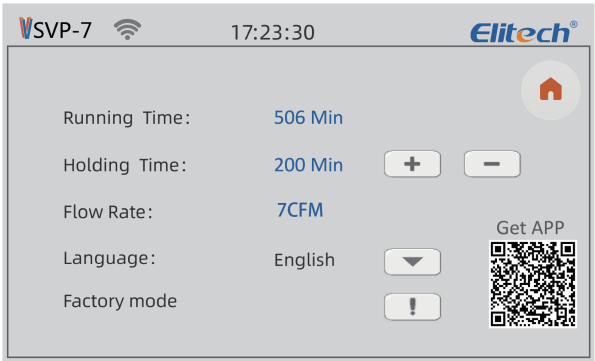
# Time



- (1) Set and save the time then it shows at the top of the screen.
- (2) ▲ : Change key.
- (3) 🏠 : Home Icon returns to the main interface.

## 4. System



In the main menu, click the “ System” button to enter the system interface.



- (1) Running Time: refer to the accumulated running time of the motor.
- (2) Holding Time: refer to the time for the vacuum pump to continue vacuuming after the target vacuum value is stable.
- (3) Flow Rate: refer to the pumping speed of the vacuum pump.
- (4) Language version: switch between Chinese and English.
- (5) Factory mode: Product factory settings, do not operate.
- (6) 🏠 : return to the main interface.



### Other functions

1. Temperature alarm: When the oil temperature or motor chassis temperature exceeds the upper limit alarm temperature set by the APP, the motor and solenoid valve are closed, the temperature alarm icon "  " is displayed at the top of the screen; When the temperature decrease within the alarm temperature, the alarm will be cleared, and the vacuum work continues. If temperature exceeds the offline alarm temperature, the temperature alarm icon "  " will be displayed on the top of the vacuum pump screen, the motor operation will not be affected.

### 5. After using the vacuum pump

1. Close the valve between the pump and the pumped container.
2. Turn off the power switch on the pump, unplug the power plug, and remove the connecting pipe.
3. Finally, close the air inlet cap to prevent dirt or floating particles from entering the pump cavity.

## Care And Maintenance

### Precautions

1. When the vacuum is started, the air pressure is relatively high and the pump exhaust volume is large, thus oil mist will be overflowing with a large amount of gas. This is a common phenomenon for a rotary vane vacuum pump.  
When the vacuum drops to a very low level, the pump exhaust volume is small, and there will be no oil mist. Therefore, user should regularly monitor the oil level via the oil window to avoid running out of oil.
2. During operation, storage and transportation, keep the vacuum pump clean to prevent pollutants such as water, mechanical impurities, etc. from entering the pump so as not to affect the service life of the vacuum pump and the normal operation of the system.
3. The oil in the pump should be drained if it is not used for a long time. Store the pump in a dry and clean environment.
4. The diameter of the pipe is larger than the inner diameter of the air inlet to avoid affecting the pumping speed.
5. Check the tightness of the fitting connection to prevent leakage. Recommended use of vacuum grease on the connection and clamp it with a clamp to ensure an adequate seal.
6. Do not use the pump to pump out gases which contain high level of oxygen, metal corrosive and explosive gases. In addition, do not pump in any gases that react with pump oil and containing large amount of water vapor.
7. It is recommended to clean the catcher once every half year.

**How to replace the vacuum pump oil**

- 1. Run the pump for about 3-5 minutes until it is warm and oil flow is indicated.
- 2. When the pump is running, open the air inlet port at the same time to let the oil flow back to the oil tank. The pump must stop when replacing the oil.  
Stop the pump and open the oil drain plug. Then open the catcher to speed up the process of oil exhausting.
- 3. Tilt the pump body to completely drain the residual oil, and tighten the drain plug.
- 4. Open the catch device and add the new pump oil.
- 5. Cover the air inlet cap and start the pump to run-check the oil level after one minute.If the oil level is below the lower limit, slowly add the oil until it reaches the normal oil level. Finally, screw on the catcher.

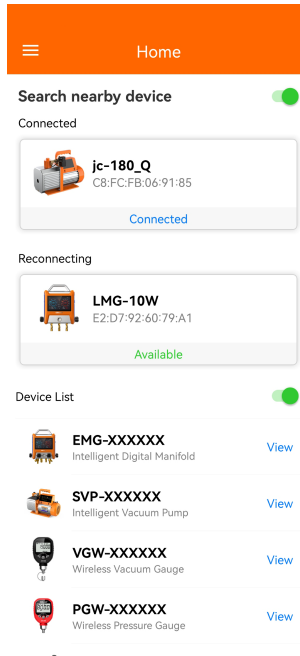
**Troubleshooting Guide**

Failure Phenomenon	Cause of Issue	Troubleshooting Method
Low Vacuum	1. Insufficient Oil	Add oil between the maximum and minimum level
	2. Pump oil Emulsified, Polluted	Replace with new oil
	3. The Oil Inlet Is Blocked or the Oil Supply is Insufficient	Clean the oil inlet and filter
	4. Leakage of the Pump System and Connection	Check the system and the connection to prevent the leakage
	5. Improper Selection of Pump	Check the size of the pumped container, recalculate and select the appropriate type of pump
	6. Parts Wear and Tear due to Long Time Used.	Repair or replace with a new pump
Oil Leakage	1. The Oil Seal Is Damaged	Replace oil seal
	2. Loose or Damaged Tank Connections	Tighten the screws and replace the O -ring

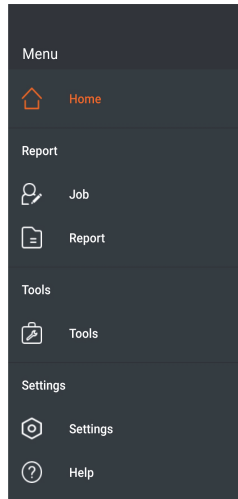
Fuel Injection	1. Too Much of Oil	Drain the oil to the oil level line
	2. The Air Inlet Is Over Pressured for a Long Time	Choose a pump with larger pumping speed
Difficulty Starting	1. Oil Temperature is Too Low	Open the air inlet, start the motor repeatedly or heat up the pump oil
	2. Motor Failure	Check and repair
	3. Foreign Objects Fallen into the Pump	Check and clean
	4. Power Failure	Check and repair
	5. The Power Supply Voltage Is Too Low	Check the power supply voltage

## APP Operating Instructions

1. Power on the vacuum pump.
2. Turn on the Bluetooth function of the mobile phone.
3. Open the “Elitech Tools”APP.

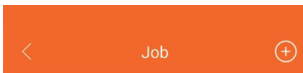


4. Enter the home page, click the right button to search for nearby device. Click to connect the vacuum pump. After the connection is successful, click to enter the device details interface. Click the button on the right side of the device list to display the devices that can be connected by the app, and click the button on the right side of the device to view the function description of the device. Click the connected device icon to enter the detailed interface of the device.
5. In the top left corner of the working interface to enter the menu, the option exists to view functionality. (Only some functions related to vacuum pump are described here)



## (1) Report

① Job: Click the work button to enter the work list. Add a work list at the top right. Add work information and save the work.

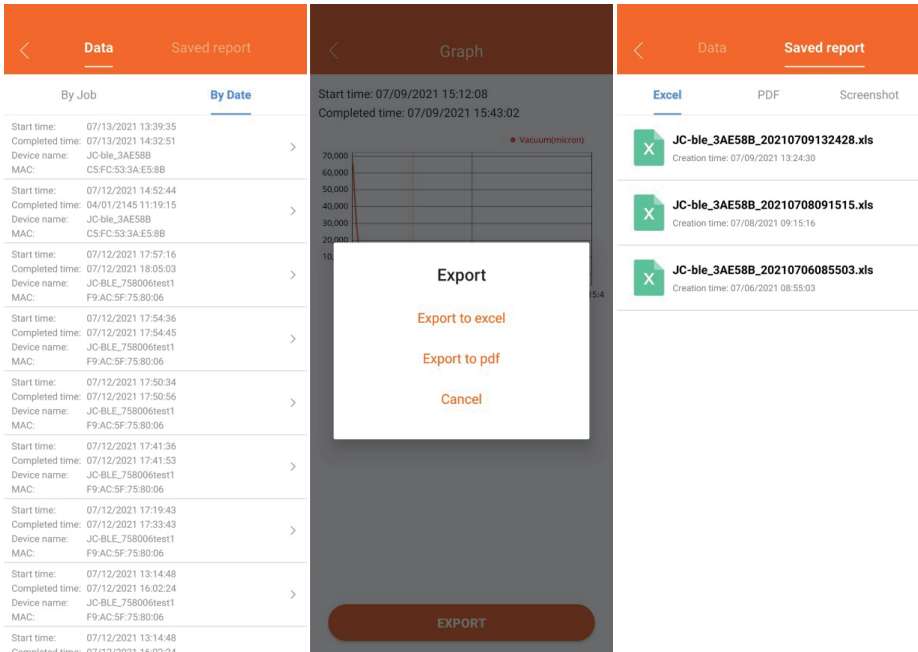


Current Data	
<input type="checkbox"/>	Start time: 07/05/2021 17:21:27 Completed time: 07/05/2021 17:58:35 Device name: JC-ble_3AE58B MAC: C5FC:53:3A:E5:8B

Available Data	
<input type="checkbox"/>	Start time: 07/05/2021 17:21:27 Completed time: 07/06/2021 08:50:51 Device name: JC-ble_3AE58B MAC: C5FC:53:3A:E5:8B
<input type="checkbox"/>	Start time: 07/06/2021 09:26:10 Completed time: 07/06/2021 09:48:14 Device name: JC-ble_3AE58B MAC: C5FC:53:3A:E5:8B
<input type="checkbox"/>	Start time: 07/06/2021 09:58:14 Completed time: 07/06/2021 10:26:25 Device name: JC-BLE_758006test1 MAC: F9AC:5F:75:80:06
<input type="checkbox"/>	Start time: 07/06/2021 09:26:10 Completed time: 07/06/2021 11:09:35

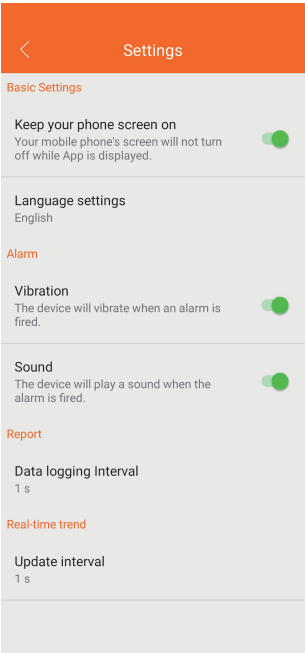
② Report: Click the report button to enter the report interface.

Enter the data interface, select data information by work or time, click a data to enter graph interface, click the “Export” button at the bottom to export data in Excel or PDF. Click the saved report to view historical Excel and PDF reports, and swipe the report to the left to delete it.



(2) Settings

① Settings: Click the “Settings”button to enter the system settings.



**Keep your phone screen on:** control the backlight of the screen.

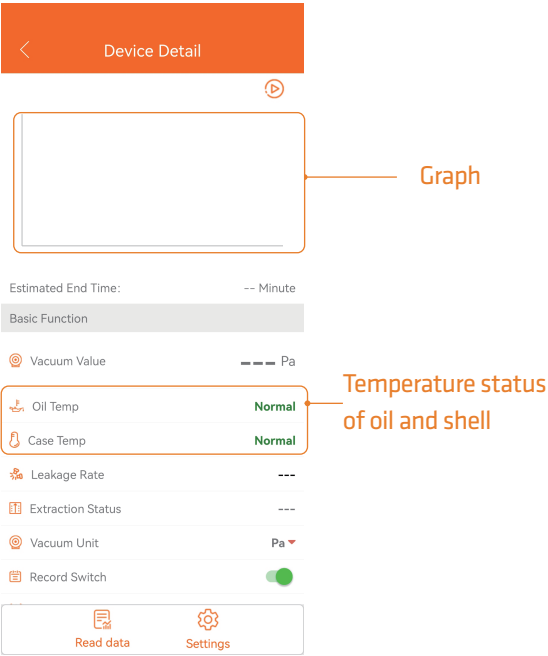
**Language settings:**select language English or Chinese.

**Alarm :** single sound, single vibration or sound vibration alarm at the same time.

② Help: Click the "Help" button to enter the help interface; click the "About" button to obtain version information.

6. Device Detail

vacuum pump status, and control the vacuum pump.



- (1) :Motor stop status, click to start running.
- (2) :Motor running status, click to stop the motor.
- (3) Graph: when the vacuum value drops below 60000micron, the real-time vacuum graph will be displayed.
- (4) Finish Time: when the vacuum status is close to stable, the remaining vacuuming time will be displayed including the holding time.
- (5) Basic Function
  - ① Device Name: modify the device name, support up to 10 characters and numbers, click OK to confirm.
  - ② Vacuum Value: display the real-time vacuum value.



③Temperature status of oil and shell: According to the setting alarm temperature, display the temperature status "High", "Normal", and "Low" .

④Leakage Rate: Under the stable state of the vacuum value, make a judgment on the possibility of leakage of the current system, which is represented by 0-100; 0 means the uncertain of the leakage status. The larger the number, the possibility of leakage is larger.

⑤Extraction Status: vacuum status display, ⬆ (up), ⬇ (down), ➡ (stable), --(exceed the range of vacuum sensor).

⑥Vacuum Unit: select vacuum unit, inHg , Torr, mbar, mTorr, Pa, micron, kPa.

⑦Record Switch: vacuum pump data recording switch, closed by default.

⑧Interval Time: select logging interval, 1S, 5S, 10S, 30S, 1Min, 2 Min, 5 Min.

⑨Read data: read the value saved by the vacuum pump while recording. Before reading the data, it will remind whether to delete the data after reading.

## 7.Settings

Click Settings to set parameters and alarm values of vacuum pump.

Settings

Basic Settings

Device Name

jc-180\_Q

Vacuum Unit

Pa

Temperature unit

°C

Keep Time

0 Minute

Alarm Settings

Vacuum Min

2.0 Pa

Oil Temp Lower Limit

0 °C

Oil Temp Upper Limit

80 °C

Motor Temp Lower Limit

5 °C

Motor Temp Upper Limit

80 °C

Record Settings

Record Switch

Interval Time

1 S

## (2) Basic Settings

- ① Device Name: modify the device name, support up to 10 characters and numbers, click OK to save the device name.
- ② Vacuum Unit: select vacuum unit, inHg, Torr, mbar, mTorr, Pa, micron, kPa.
- ③ Temperature Unit: select the temperature unit, °C, °F.
- ④ Keep Time: the continue working time after reaching the target vacuum, the setting range is 0 to 200 minutes.

## (3) Alarm Settings

- ① Vacuum Min: when the vacuum reaches the alarm value, the mobile phone will alarm and vibrate.
- ② Temperature Alarm Setting: set the max and minimum oil temperature and chassis temperature alarm. The temperature range of vacuum pump is -50°C to 85°C. The minimum temperature shall not exceed the max temperature. When the alarm temperature is triggered, the mobile phone will alarm with sound and vibration.

## (4) Record Settings

- ① Record Switch: set vacuum pump data recording status, closed by default.
- ② Interval Time: set the logging interval , 1S, 5S, 10S, 30S, 1Min, 2 Min, 5 Min.

Enter the APP Store and search for "Elitech Tools" to download or scan the QR code below to download.



# Product Warranty Card

Product Model Number	Product Name
Factory Serial Number	
Purchase Store	
Purchase Date	Invoice number
Customer Name	Customer Phone
Customer Address	

*This couplet and the purchasing invoice are both considered as the Protection to fix warrantees, so please reserve them carefully.*

## Limited Warranty Provisions

Product warranty is provided for product quality problems for one years from date of sale. For warranty to be valid, the following conditions must be met:

- 1. Products issues due to manufacturing defects confirmed by qualified agents.
- 2. Products which have not been maintained or dismantled by unauthorized parties.
- 3. Products that have been used in accordance with the User Manual. All maintenance services shall be performed during the warranty period.

Other than repairing the product defective, the manufacturer of this product will not be liable for any other costs, such as time spent in fixing the issue, refrigerant consumption, refrigerant disposal costs, as well as unauthorized transportation and labor costs.



Made in China V1.2