



# CORDLESS VACUUM PUMP

## INSTRUCTION



ST-C2BM   ST-C2S  
ST-C4BM   ST-C4S



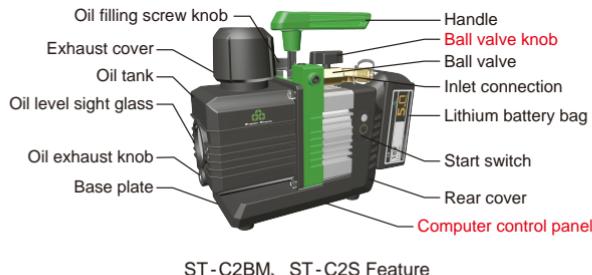
PREMIUM REFRIGERATION TOOL SERIES

Thanks for purchasing  products. For safe and correct using, please read this user instruction carefully before using the product.

## STRUCTURAL DRAWINGS, TECHNICAL PARAMETER, APPLICATION RANGE, FEATURE

### STRUCTURAL DRAWINGS

To help you recognize the  components of the vacuum pump, we provide visual structural drawings.



### TECHNICAL PARAMETER

Model	ST-C2BM	ST-C2S	ST-C4BM	ST-C4S
CFM	Dual stages	Single stage	Dual stages	Single stage
Power			18V lithium battery	
Battery Capacity	5.0 AH		9.0 AH	
Flow rate	2.5CFM		4.5CFM	
Ultimate pressure	2Pa	18Pa	2Pa	18Pa
Oil capacity	200ml	260ml	320ml	380ml
Weight	3.3kg	2.8kg	6kg	5.5kg
Inlet port	1/4"		1/4", 3/8"	

### APPLICATION RANGE

 Single, dual rechargeable vacuum pump, adopt brushless motor, lithium battery as power, small size, quick pumping, carry convenient, use on occasions without AC. This product can be used in the vacuum operation of R32, R134, R410 and other chillers and systems.

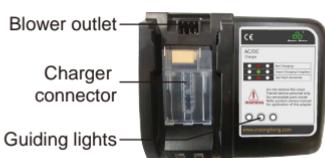
### FEATURE

1. Integral cylinder block structure, high precision and limit vacuum pump.
2. Forced oil pump lubrication, ensure high reliability.
3. Large oil window design, prevent oil shortage.
4. Sparkless design, more secure.
5. Use brushless DC motor, lighter, smaller, more convenient.
6. Lithium batteries, safer and more convenient.

## CHARGER TECHNICAL PARAMETERS, INSTRUCTION, SAFETY WARNING

### TECHNICAL PARAMETERS OF THE CHARGER

Model	Parameter
AC input	100~240V ~
Frequency	50/60Hz
Power	200W
Output voltage	21V
Output current	5A
Weight	0.64kg
Size	189 x 155 x 81mm



## CHARGER OPERATE INSTRUCTION

1. Please charge up indoors.
2. Lithium battery can be charged at any time, can be interrupted when charging or use time, will not damage the battery.
3. The charger is only suitable for our brand lithium battery.
4. Battery Installation: Push the battery into the charger interface, the battery buckle will lock automatically.
5. Battery Disassembly: Hold on the battery buckle and pull out the battery.
6. Battery power indicator, hold on the indicator switch, the indicator lights up, three same indicator, more battery power and fewer lights, less battery power.
7. 8. Battery charge status shown in indicator.



## INDICATOR INSTRUCTION

Display status	Instruction
Red long light	Charging
Green long light	Charging finish
Red light blinking	Fault warning

## SAFETY WARNING

1. Do not make the charger in the rain or soak in water, it will increase the risk of electric shock.
2. Do not charge other batteries, the charger is only suitable for our brand lithium battery. There is risk of fire & explosion if charging other brands batteries.
3. Please keep the charger clean, the pollution, moisture will increase the risk of electric shock.
4. Be sure to check the charger, power cord and plug before using. If with fault, do not use the charger, non-professional person do not open the charger or carry out maintenance.

5. Do not use charger on flammable substance or environment, the charger will heat during charging and may cause a fire.
6. Please unplug the charger to reduce the risk of electric shock before maintenance or cleaning.
7. Please unplug the charger power plug without charging, avoid the metal objects fall into the interface, it will increase the risk of electric shock or damage the charger.
8. The charger is not suitable for children or people with physical, sensory, other defects or lack of relevant experience and knowledge.
9. Avoid debris falling in charger blower outlet to damaged blower.
10. When the charger or power cord is damaged, do not replace or repair by yourself, if necessary, please contact our service organization in time.

## PREPARATION BEFORE USING PUMP, SAFETY WARNING PREPARATION BEFORE USE OF THE PUMP

1. Make sure the lithium battery has enough power, charge if the power is insufficient.
2. Filling of the pump oil:

Turn on oil filling screw knob, filling oil to middle of oil window. Note: The filling oil rate should be too fast to prevent overflowing.

Install the lithium battery, turn on the start switch, the pump starts to run, check the oil level in the oil window after 1 minute operation, shut off to filling in if the oil level is too low, turn back the oil filling screw knob.

Note: When the pump is running, the oil quantity should keep in the illustrated position, it will reduce the pump performance if the oil lever is too low and will cause the oil mist spray out if the oil level is too high.



## SECURITY WARNING

warning!

- \* To avoid personal injury, please read carefully and follow the instruction manual.
- \* Wear goggles when working with refrigerant.

- \* Do not contact refrigerant gas directly, avoid the refrigerant gas cause personal injury.
- \* Because the pump will heat when working, please do not touch the tank or motor housing when operating.

## VACUUM PUMP OPERATING GUIDE, SAFETY WARNINGS, MAINTENANCE

### OPERATING GUIDE

1. When ST - C2BM and ST - C2S vacuum pump are used, First, take off the inlet cap (7/16"-20NPT interface side, as shown in the figure), connect to the pumped container (note to check whether the pipe connection thread is consistent with the inlet thread), all pipes should be short, open the ball valve knob, (the opening direction is shown in the figure, and turn right 90 ° to close).
2. When using ST - C4BM and ST - C4S vacuum pump, First remove the inlet cap (tee joint on vacuum pump, can be connected according to the actual situation of an interface), connect to be pumped container (check the pipe outlet thread with air inlet are consistent, all pipes should be short, start the vacuum pump, solenoid valve will be opened automatically, vacuum pump connected to the container. When power switch is turned off, solenoid valve automatically shut down, vacuum and container disconnected).
3. Then check the air inlet connection and all the pipelines are sealed reliably, no leakage phenomenon.
4. After the use of the pump, close the valve between the pump and the pumped container.
5. Remove the connecting pipe.
6. cover the inlet cap and outlet cap (except the model without outlet cap) to prevent dirt or floating particles from entering the pump chamber; Tips: pay attention to the oil level, when the oil level in the oil window is lower than the middle line of the oil level line, please fill vacuum pump oil in time.



7. The ST - C2BM and ST - C2S vacuum pump use 18V 5Ah lithium battery as the power source. When the new fully charged 18V 5Ah lithium battery is used at 25 °C, the operation time of ST - C2BM is approx 60 minutes, and the operation time of ST - C2S is approx 80 minutes. ST - C4BM and ST - C4S use 18V 9Ah lithium battery as the power source. When the battery is used, the operation time of ST - C4BM is the same as that of ST - C2BM, and the operation time of ST - C4S is the same as that of ST - C2S. When the operating voltage of the lithium battery is reduced to about 15.6V, the buzzer of the vacuum pump will generate an alarm. This process lasts 2 to 3 minutes, and then the vacuum pump will stop running.
8. ST - C2BM and ST - C2S vacuum pump have built-in one-way cut-off parts. After the pump stops running, it can prevent oil backflow of vacuum pump in the pump.
9. When ST - C2BM and ST - C2S stop running, due to the influence of air diffusion movement, the vacuum degree in the pumped container will decrease. It is recommended that the user close the ball valve knob after the pump stops running in time. When ST - C4BM and ST - C4S stop running, the internal solenoid valve will close automatically.

### SAFETY WARNING

1. It's not allowed to run pump and exceed 3 minutes when inlet port connect to atmosphere.
2. The ambient temperature of the product is 5-40 °C.
3. ST - C2BM and ST - C2S use 18V 5Ah lithium battery. The ST - C4BM and ST - C4S use 18V 9Ah lithium battery.
4. Before the vacuum pump is connected to the A/C or refrigeration system, please extract the refrigerant from the system in a reliable way. Please note that taking out the refrigerant under high pressure will damage the pump. Special equipment is recommended.

### MAINTENANCE

1. Selection of pump oil:  
The type and condition of the pump oil is an important factor to determine whether the pump can reach the ultimate vacuum. In order to maintain the best performance of the pump, we recommend you to use the special vacuum pump oil provided by our company. This oil is specially

Thanks for purchasing  products. For safe and correct using, please read this user instruction carefully before using the product.

modulated to maintain the maximum viscosity at normal operating temperature, which is conducive to the cold start of the pump.

Tip: when the pump oil is emulsified and contaminated, please change the vacuum pump oil in time.

## 2. Change pump oil:

To ensure that the pump is in a hot state, the pump needs to run for about 1 minute before replacing oil.

Run the pump and open the air inlet at the same time, so that the oil in the pump chamber is forced to flow out, shut off the pump and then open the drain plug, waste oil into a suitable container, and reasonable treatment. When the oil stops flowing, tilt the pump body to completely discharge the residual waste oil.

Tighten the drain plug.

Open the filling plug and fill new pump oil (same operation as item 2 of preparation before using pump).

## TROUBLESHOOTING AND WARRANTY COVERAGE

### TROUBLESHOOTING

Problem	Reason	Solution
Low degree of vacuum	1. Spare inlet cap side leakage	Tighten spare inlet cap
	2. Seal ring in spare inlet cap damaged	Replace new seal ring
	3. Oil insufficient	Add oil center line of oil scale
	4. Pump oil emulsified, not clean	Replace with new oil
	5. Oil inlet blocked or oil feeding inadequate	Clean oil inlet and filtering screen
	6. Pump pipeline leak	Check pipeline for leakage and repair
	7. Improper pump chosen	Check the container which be evacuated choose correct pump
	8. After long time of using parts worn	Repair or replace a new pump
Oil spray	1. Oil seal damaged	Repair with new oil seal
	2. Oil tank joint loosen or damaged	Tighten screws or replace O-type ring

Oil leakage	1. Too much oil charged	Discharge oil to base line
	2. Inlet pressure too high for long time	Choose proper model pump
Difficult starting	1. Too low oil temperature	Lead air inlet to atmosphere start motor, interruptedly heat pump oil
	2. Motor or power supply trouble	Check and repair
	3. The foreign matter fell into the pump	Check and clear
	4. Low supply voltage	Check the supply voltage
	5. Overcurrent protection	After overload protection occurs, pull out the lithium battery pack, check and rule out the cause of overload, and insert the lithium battery pack again for operation

### Remark :

1. This product is a sparkless design, the motor has overload, overcurrent protection, etc., when the protection occurs, please troubleshoot in time.
2. If the above solutions do not solve the problem, please contact the nearest dealer, or send your pump to the professional repair center, we will do our best to serve you.

### WARRANTY SCOPE

Due to the product quality issue, warranty within 1 year from the date of the factory, the scope of warranty is as follows:

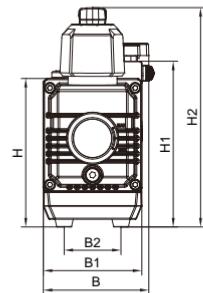
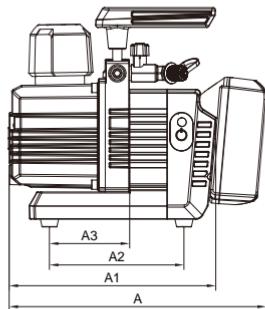
1. The qualified testing organization confirmed that there are manufacturing defects of the product.
2. Repaired or disassembled product with permission.
3. Use in the right way -- follow the instructions to operate. All warranty services shall be during the warranty period.

### STATEMENT:

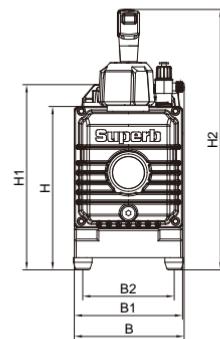
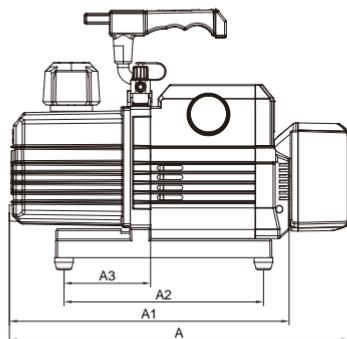
The manufacturer does not bear any additional costs except Product malfunction, including: waste of working hours and refrigerant gas, unapproved transportation or labor after refrigerant is contaminated.

Thanks for purchasing  products. For safe and correct using, please read this user instruction carefully before using the product.

## ELEVANT SHAPE SIZE



ST-C2BM、ST-C2S Shape Size



ST-C4BM、ST-C4S Shape Size

Item No.	A	A1	A2	A3	B	B1	B2	H	H1	H2
ST-C2BM	235.5	189	123	73.3	96.5	90	52	135.5	151.5	200.5
ST-C2S	235.5	189	123	73.3	96.5	90	52	135.5	151.5	200.5
ST-C4BM	364	300	214	93	118	116	98	175	198	279
ST-C4S	364	300	214	93	118	116	98	175	198	279