

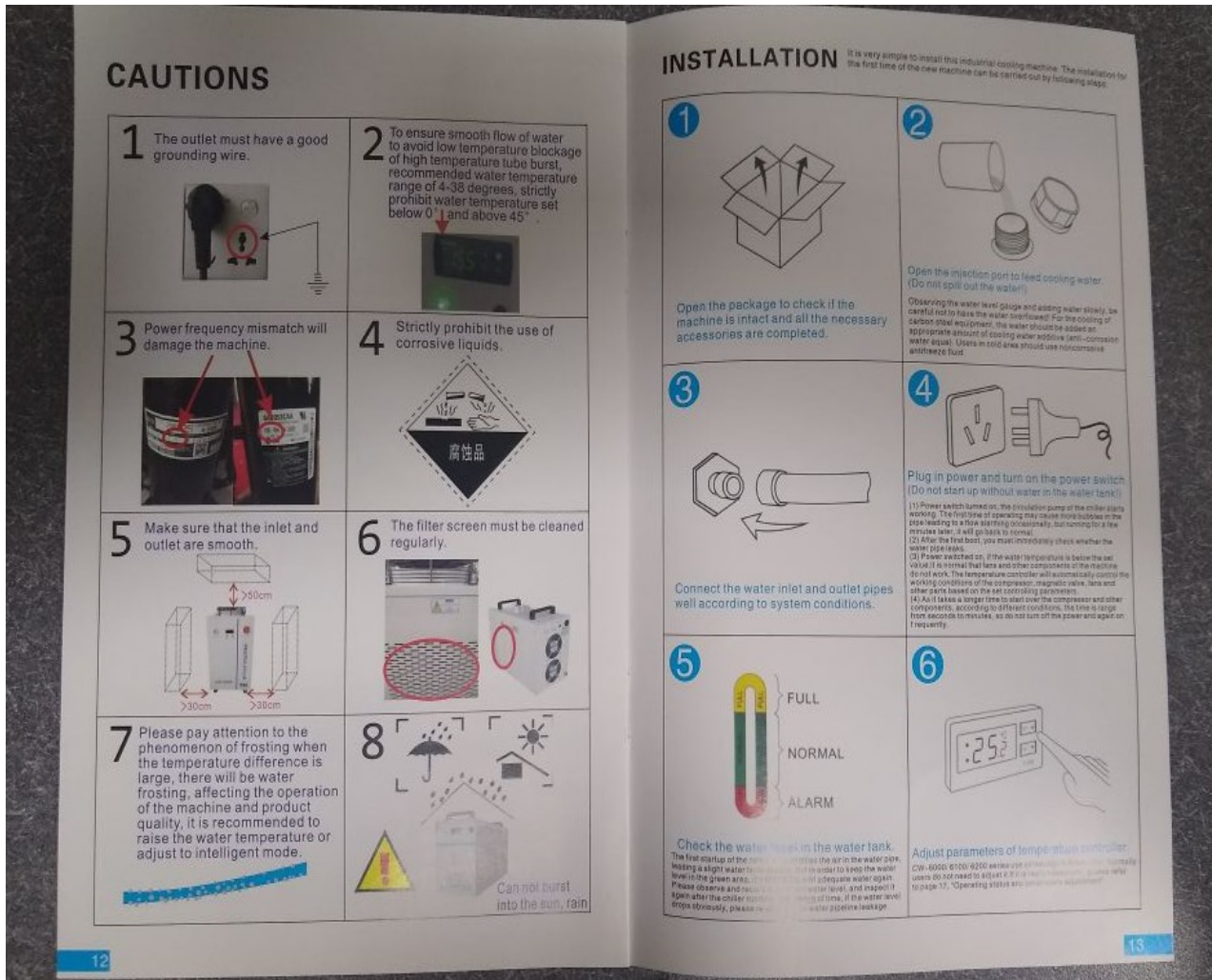
The Trogdor Chiller Manual

What follows are scans from the manual for the B&H CW-5200 Chiller used to cool the Trogdor CO2 Laser. This is included primarily for troubleshooting and maintenance.

It is requested to forward any issues seen with the chiller to the area coordinators responsible for the laser machines. Please do not attempt a repair unless you have intimate knowledge of this machine.

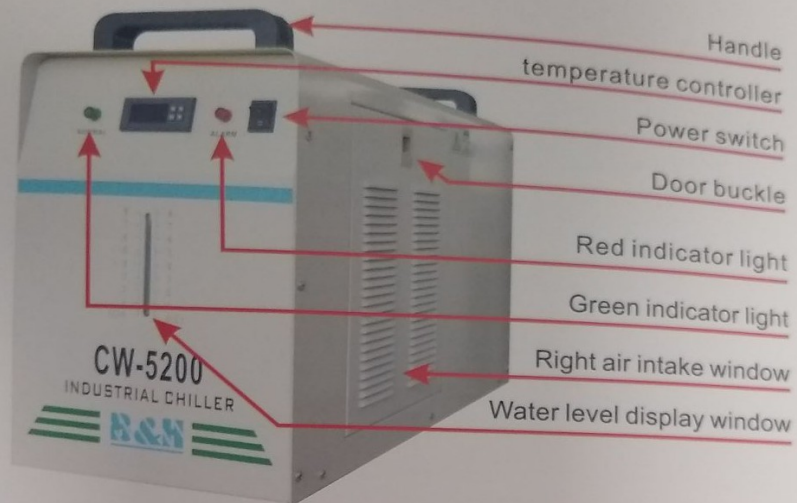
The notification is best accomplished by posting a notice to TheLab discord, Trogdor channel.

The following images were pulled from the “laser-deprecated” discord channel to preserve the information.



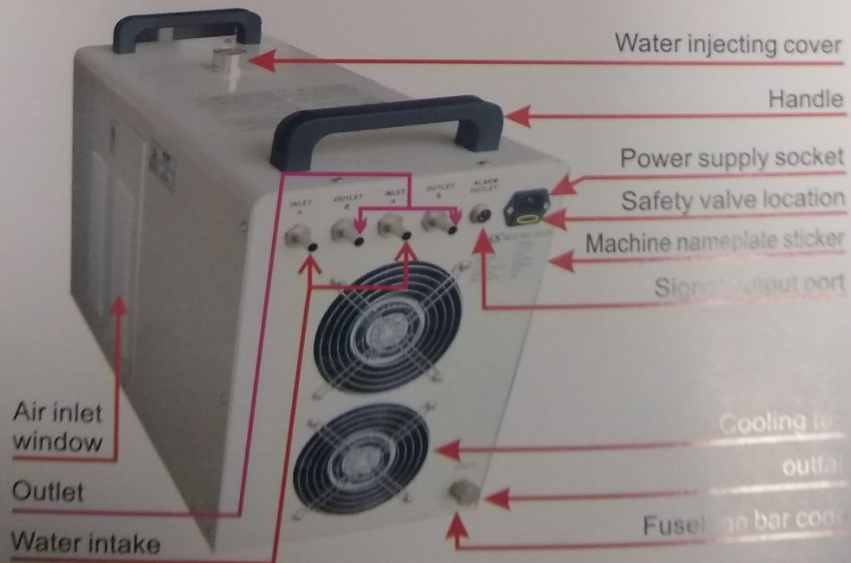
Appearance and part name

Fuselage front

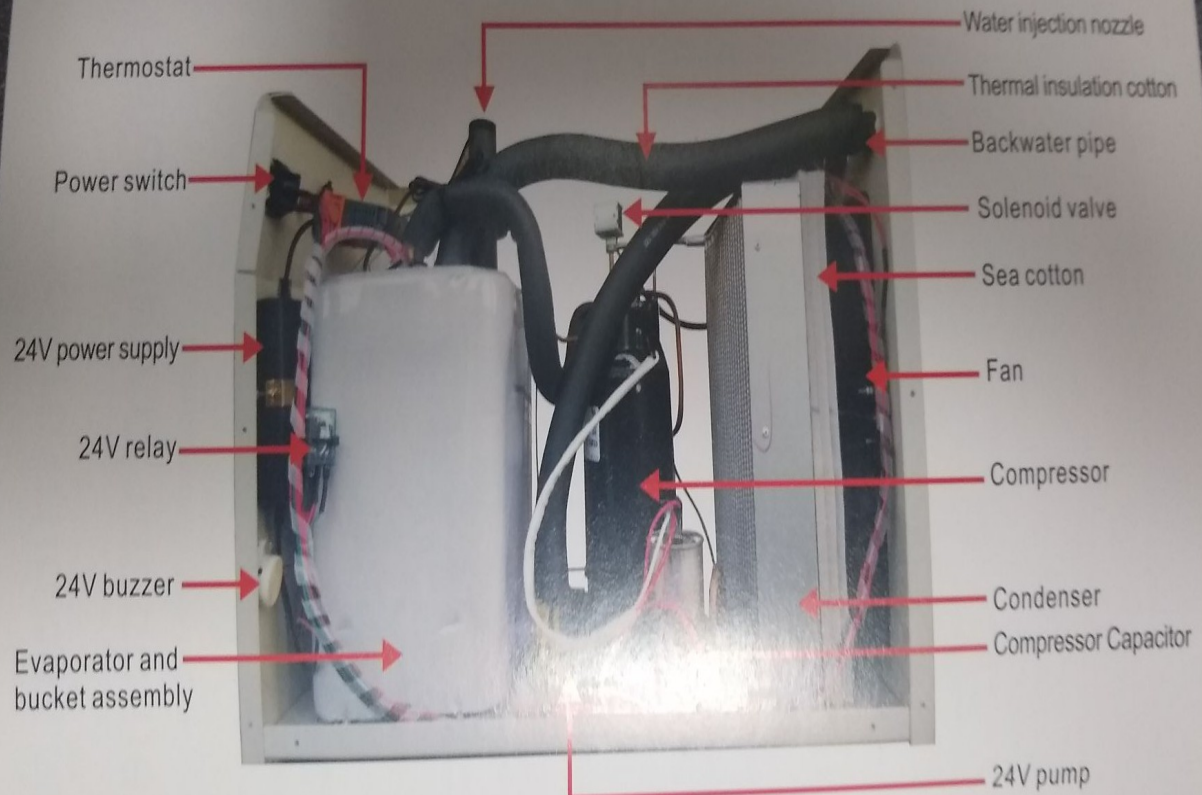


03

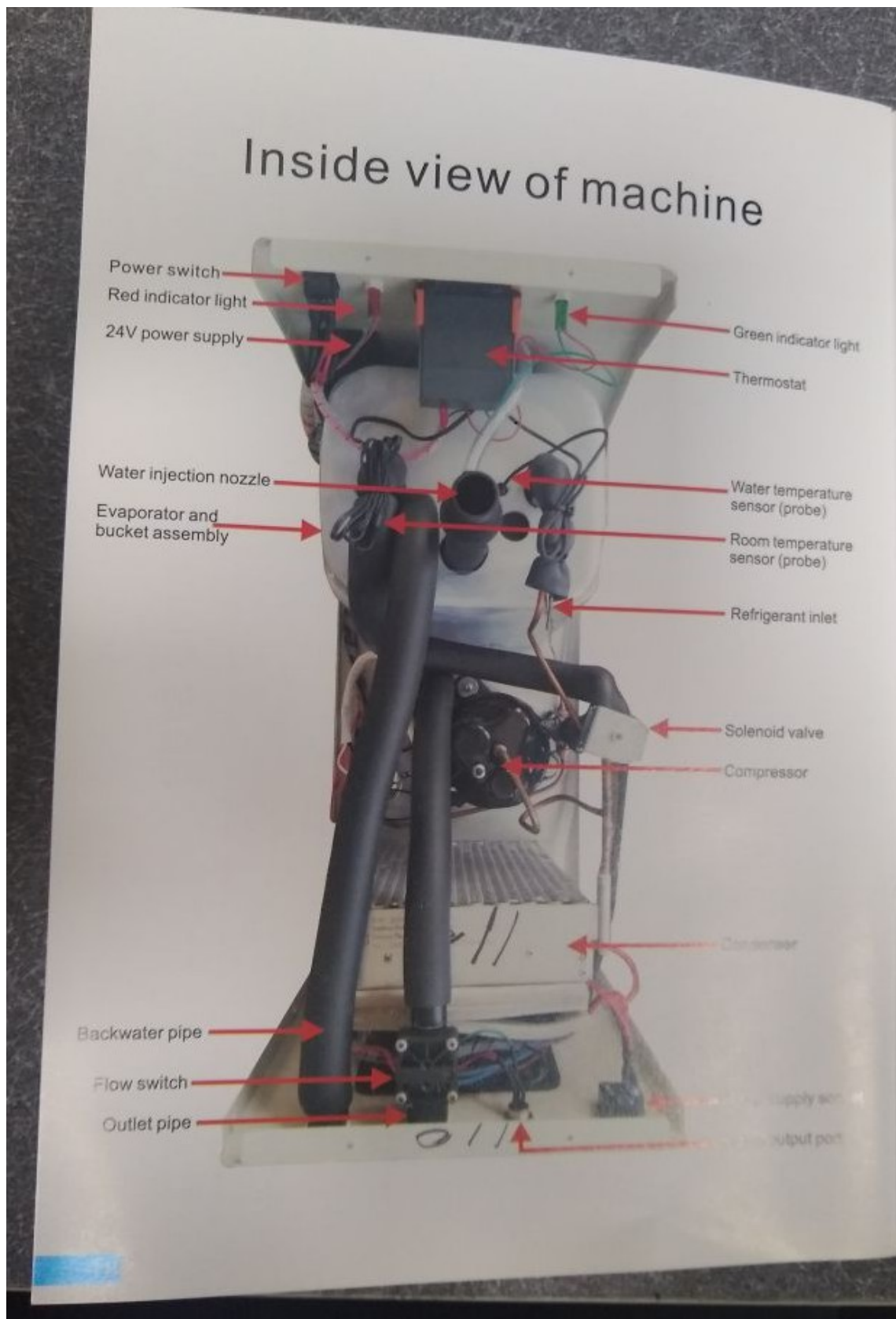
Fuselage back



Machine side



test

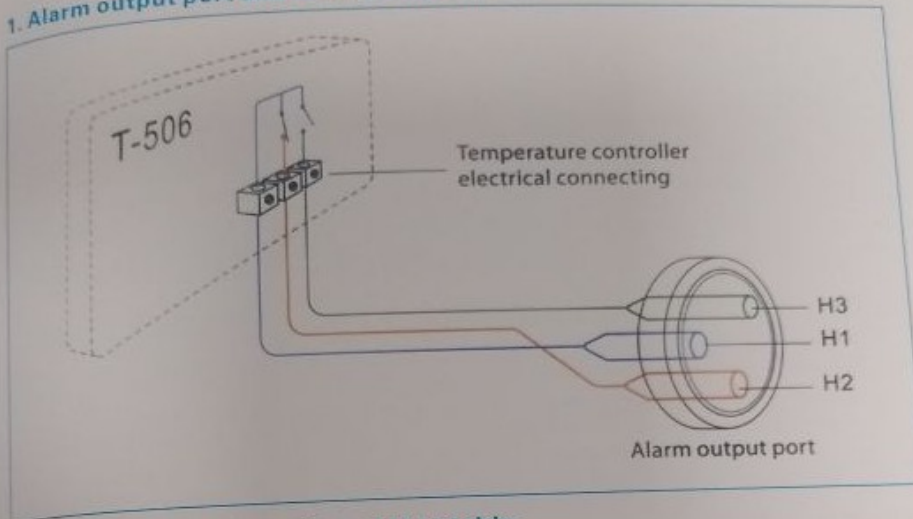


test

ALARM AND OUTPUT PORTS

In order to guarantee the equipment will not be damaged while cooling water circulation is out of control, CW-6000/6100/6200 series chillers possess alarm protection.

1. Alarm output port and wiring diagram.



2. Alarm causes and working status table.

Display	Alarm code	Buzzer	OUT H1 H2	OUT H1 H3
Condition				
Circulating pump works properly			Disconnection	Breakover
Blocked cooling water circulation loop	E6	Sounds	Breakover	Disconnection
Alarm of water shortage	E6	Sounds	Breakover	Disconnection
Faulted circulating pump	E6	Sounds	Breakover	Disconnection
Ultrahigh room temp	E1	Sounds	Breakover	Disconnection
Ultrahigh water temp	E2	Sounds	Breakover	Disconnection
Ultralow water temp	E3	Sounds	Breakover	Disconnection
Faulted room temp sensor (Constant temperature invalid)	E4	Sounds	Breakover	Disconnection
Faulted water temp sensor	E5	Sounds	Breakover	Disconnection
Chiller power failure			Breakover	Disconnection

Note: the flow alarm is connected to the normally open relay and normally closed relay contacts, requiring operating current less than 5A, working voltage less than 300V.

Note: other electric sources can be customized; heating and higher temperature control precision functions are optional.

CW-5200 Series compressional type chiller

5200 Series compressional type chiller										
MODEL	CW-5200AG	CW-5200BG	CW-5200DG	CW-5200TG	CW-5200AH	CW-5200BH	CW-5200DH	CW-5200A	CW-5200B	CW-5200D
Voltage	AC 1P220V	AC 1P220V	AC 1P110V	AC 1P220V	AC 1P220V	AC 1P220V	AC 1P110V	AC 1P220V	AC 1P220V	AC 1P110V
Frequency	50Hz	60Hz	60Hz	50/60Hz	50Hz	60Hz	60Hz	50Hz	60Hz	60Hz
Current	2.4~3.1A	2.6~3.3A	4.5~6.5A	2.4~3.3A	2.4~3.1A	2.6~3.3A	4.5~6.5A	2.4~3.1A	2.6~3.3A	4.5~6.5A
Compressor power	0.6 KW	0.6 KW	0.68 KW	0.49/0.57KW	0.52 KW	0.5 KW	0.68 KW	0.52 KW	0.5 KW	0.68 KW
	0.8HP	0.8HP	0.93HP	0.66/0.77HP	0.71HP	0.68HP	0.93HP	0.71HP	0.68HP	0.93HP
Refrigeration capacity	5084Btu/h	4982Btu/h	5186Btu/h	4825/5797Btu/h	5084Btu/h	4982Btu/h	5186Btu/h	5084Btu/h	4982Btu/h	5186Btu/h
	1.749KW	1.749KW	1.749KW	1.749KW	1.749KW	1.749KW	1.749KW	1.749KW	1.749KW	1.749KW
	1281Kcal/h	1256Kcal/h	1307Kcal/h	1219/1465Kcal/h	1281Kcal/h	1256Kcal/h	1307Kcal/h	1281Kcal/h	1256Kcal/h	1307Kcal/h
Refrigerant	R/22 / R-134a /R-410a									
Refrigerant charge	360g	380g	350g	360/380g	360g	380g	350g	360g	380g	350g
Precision	±0.3℃									
Raducer	Capillary									
Protection	Overcurrent protection for compressor, flow alarm, over temperature alarm									
Pump power	0.03KW				0.05KW			0.1KW		
Tank capacity	8L									
Inlet and outlet	External φ 10mm brass connector							φ 10mm speedy connector		
Max. Lift	10M				12M			25M		
Max. Flow	10L/min				13L/min			16L/min		
N. W	26.4Kgs									
G. W	28.8Kgs									
Dimension	58*29*47 cm (L*W*H)									
Packing dimension	70*43*58 cm (L*W*H)									
Heating and higher temperature control precision type are optional										

Note: other electric sources can be customized; heating and higher temperature control precision functions are optional.

Temperature control function and setting

Function description

1. Constant temperature mode: It can realize precise control of the water temperature by started cooling compressor and control the refrigerant solenoid valve.
2. Intelligent mode: It is enable to automatically adjusts the setting valve of temperature of water according to changes in ambient temperature.

Menu of parameters settings of temperature controller

(1) Parameters adjustable table for temperature

Order	Code	Setting items	Range	Factory set	Unit
1	F0	Temperature setting	F9~F8	28.0	intelligent/ instant temperature
2	F1	Temperature different between the numerical	-15~5	-2.0	℃
3	F2	Refrigeration return difference	0.1~3.0	0.8	℃
4	F3	Control mode	0~1	0	1: Intelligent 0: Instant temperature
5	F4	Ultra high temperature alarm	1~20	17.0	℃
6	F5	Ultra-low water alarm	1~20	16.0	℃
7	F6	Ultra-high temperature alarm	-30~50	45.0	℃
8	F7	Room temperature calibration	-5~+5	0	℃
9	F8	Temperature calibration	-5~+5	0	℃
10	F9	Compressor delay	0~99	60	℃
11	F10	Water level switch alarm 1	0 normally open 1 normally close	1	0 normally open 1 normally close
12	F11	Water level switch alarm 2	0 normally open 1 normally close	1	0 normally open 1 normally close

(2) Mode of adjustable

1. Factory parameter adjustable methods

2. Restore factory setting

Press the ▲▼ in the meantime, temperature controller is power on, it displaying rE, all setting valve restores the factory setting.

It returns to normal working condition after three seconds

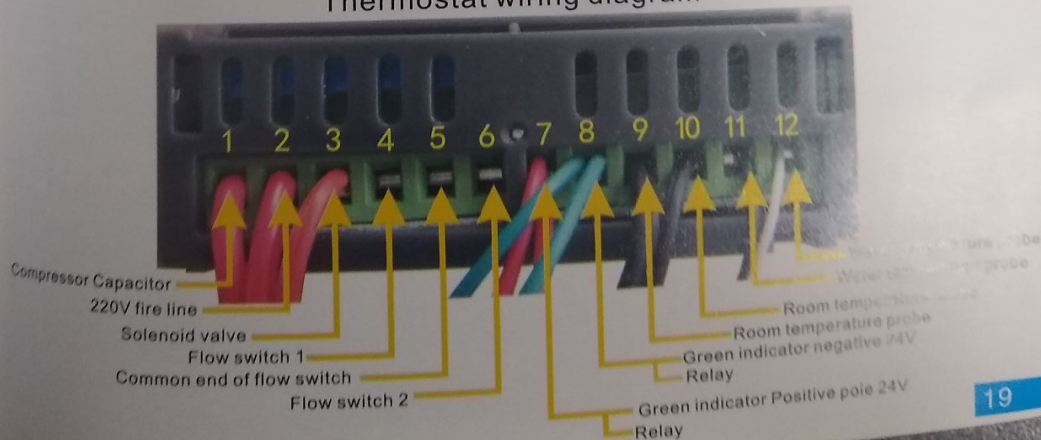
3. Check the room temperature

In the non-set state, press the ▼ key to display the detection value of room temperature sensor, the water temperature is restored after 6 seconds. (At this time, DI flashes, indicating it is room temperature.

4. Quick adjustment

Press the SET key when temperature controller is working normal, if the temperature controller work under the constant temperature mode. The panel displays parameter value of F0 (Set temperature) Intelligence mode displays parameter of F1 (Temperature difference value). At that time, DI flashes, it indicates the parameters of controller is setting state. At this time, press ▲▼ keys to modify the setting value. Then press the SET key again or without press the key within 20s to exist without saving. Parameters takes affect

Thermostat wiring diagram



SIMPIE TROUBLESHOOTING

FAILURE	FAULT CAUSE	APPROACH
Machine turned on but unelectrified	Power cord is not plugged in place	Check and ensure the power interface and the power plug is plugged in place and in good contact.
	Fuse burnt-out	Open the electric box cover, check the protective tube, replace with spare one if necessary and check whether the power supply voltage is stable; Check and ensure the power interface and the power plug are in good contact.
Flow Alarm (controller displays E6) use a water pipe directly connect to the water outlet and inlet but still without water flowing	Water level in the storage water tank is too low	Check the water level gauge display, add water until the level shown in the green area; And check whether water circulation pipe leaks.
Flow alarm occurs while running with other equipment (controller displays E6), but there is water flowing and no alarm when use a water pipe directly connected to the chiller water outlet and inlet.	Water circulation pipes are blocked or a pipe bending deformation.	Check water circulation pipe
Ultrahigh water temperature alarm (controller displays E2)	Blocked dust gauze, bad thermolysis	Unpick and wash the dust gauze regularly
	Poor ventilation for air outlet and inlet	To ensure a smooth ventilation for air outlet and inlet
	Voltage is extremely low or unstable	To improve the power supply circuit or use a voltage regulator
	Improper parameter settings on thermostat	To reset controlling parameters or restore factory settings
	Switch the power frequently	To ensure there is sufficient time for refrigeration (more than 5 minutes)
	Excessive heat load	Reduce the heat load or use other model with larger cooling capacity
Ultrahigh room temperature alarm (controller displays E1)	The working ambient temperature is too high for the chiller	To improve the ventilation to guarantee that the machine is running under 40°C.
Serious problem of condensate water	Water temperature is much lower than ambient temperature, with high humidity	Increase water temperature or to preserve heat for pipeline
Water drains slowly from drainage nozzle during water changing	Water supply inlet is not open	Open the water supply inlet

PACKING LIST



1



2



3



4



5



6

1. 1 unit of industrial chiller.
2. 1 copy of user manual.
3. 1 pc of power cord.
4. 2 pc of sealed hoop.
5. 1 pc of alarm signal output plug.
6. 1 pc of spare protective tube

Adjust flow alarm



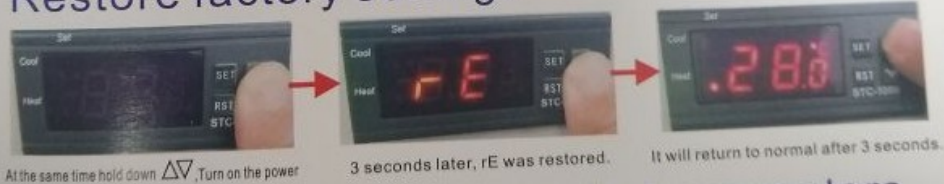
Pump replacement steps



Quick set up temperature



Restore factory settings



Adjusting temperature control parameters



The following video shows one users experience adjusting various settings of the machine.

The user admits to not being an expert so use this for general information only.

[B&H CW-5200 Chiller Review & Temperature Settings](#)