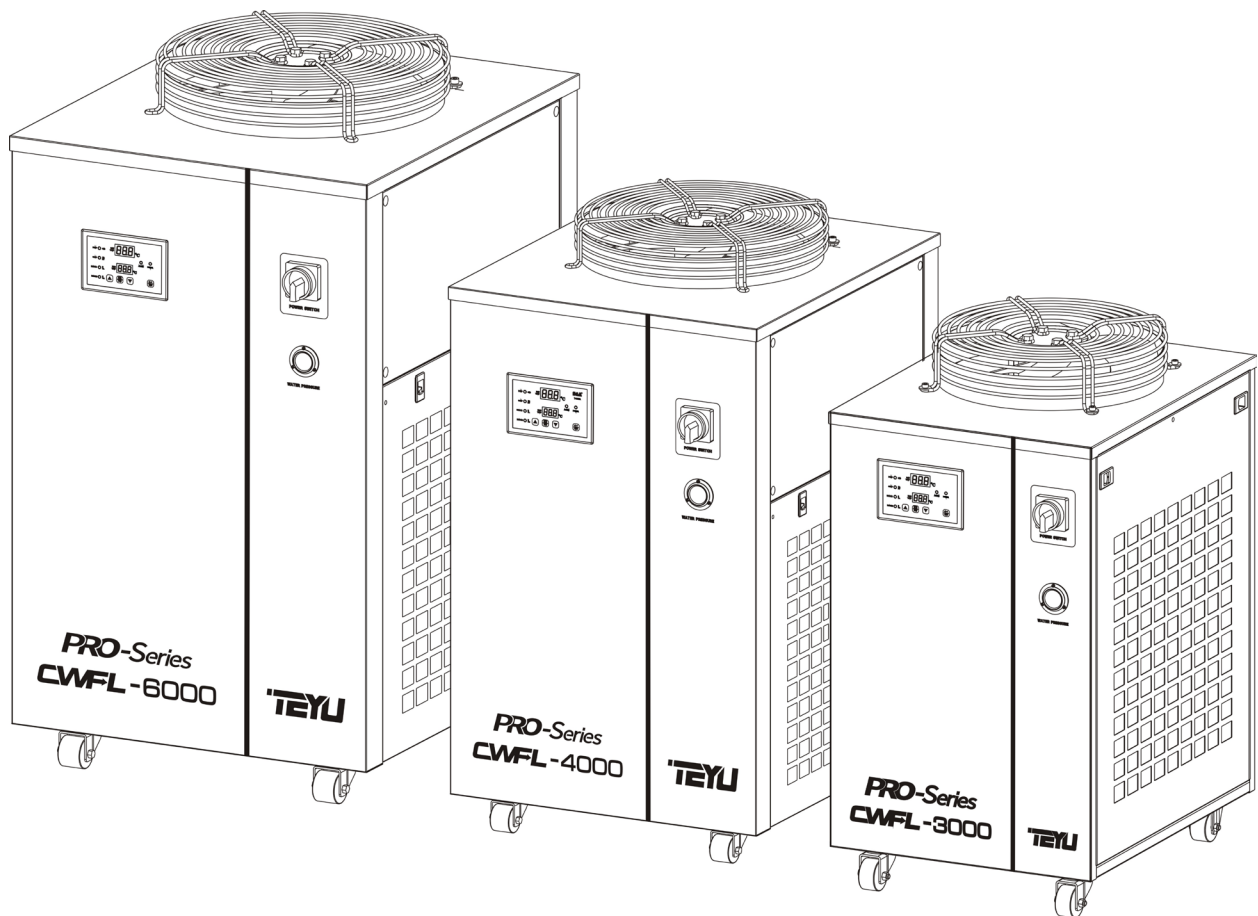


CWFL-3000 4000 6000

Industrial Chiller

User Manual



FOREWORD

Thanks for your purchase of our product. Please read this manual carefully before using and keep it properly so that you can refer to it whenever you need information.

This manual is not a quality guarantee. Our company reserves the right to the interpretation of the correction of misprint and improperly described information and product improvement. The revised content will be edited into the reprinted user manual without prior notice.

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Notice

In order to ensure your personal safety and avoid property loss, you must pay attention to this manual, but not limited to the following warning notices. General electric knowledge and safety standards should also be followed.

 **DANGER** Failure to take safety measures will result in death or serious personal injury.

Notice		Operation Guideline
 Must-do	The Operation should be carried out by professional technicians	Handling, installation of pipes, electrical, operation, maintenance, overhaul and other operations must be carried out by personnel with professional knowledge.
 Forbidden	It is forbidden to be used beyond the range of specification	It is forbidden to use the equipment beyond the range of manual specifications in order to avoid equipment damage, injury, fire, electric shock and other major accidents.
 Forbidden	It is forbidden to be used in the explosive environment	It cannot be installed in dangerous places with flammable gas.
 Must-do	Electrical connection	a) The power supply must conform to the standard indicated in the nameplate or the manual; b) Use the standard cable, and select the standard wire diameter; c) The grounding wire must be installed and the connection must be reliable; otherwise, it will cause an electric shock or fire.
	It is forbidden to operate the equipment without a cover	There are live parts inside the machine. It is forbidden to operate without a cover, as there is a risk of electric shock.
	Water-proof	Do not allow the equipment to be drenched or immersed in water, otherwise there may be a risk of short circuit and electric shock.
 Must-do	Maintenance and repair	The operation must be carried out after 3 minutes of cutting off the power supply, because the high-voltage charging part in the equipment is not discharged within 3 minutes. Working in a live state or working immediately after shutdown will cause the risk of electric shock.
	Danger High Voltage	Contact with live parts can cause serious personal injury or death.
	Danger Hot Surface	The human body or the heat-labile articles must keep away from this high temperature area. Otherwise, it will cause personal injury or property loss.

 **DANGER** Failure to take safety measures will result in death or serious personal injury.

Notice		Operation Guideline
 Must-do	Transport and installation	The equipment must be firmly fixed during transport and installation. Otherwise, there will be a danger of tipping or falling.
 Must-do	Electrical protection	The power cable terminal must be equipped with the electric leakage and overload protection device according to the rated current indicated on the equipment nameplate.
 Must-do	Stop running in abnormal state	When the equipment is abnormal, as long as the cause is not clear, it is forbidden to start. Otherwise, there is a danger of damage, electric shock, fire, and injury.
 Forbidden	Do not put fingers or other things into the gap of the equipment	There are rotating parts inside the device. Do not put fingers or other things into the gap of the equipment. Otherwise, it will cause personal injury.
 Must-do	Refrigerant leakage	a) When the refrigerant leaks, please make sure that the ventilation is available. Otherwise, it may cause anesthesia and suffocation if a large amount of refrigerant fills the enclosed space; b) Avoid contacting with skin, or it will cause frostbite.

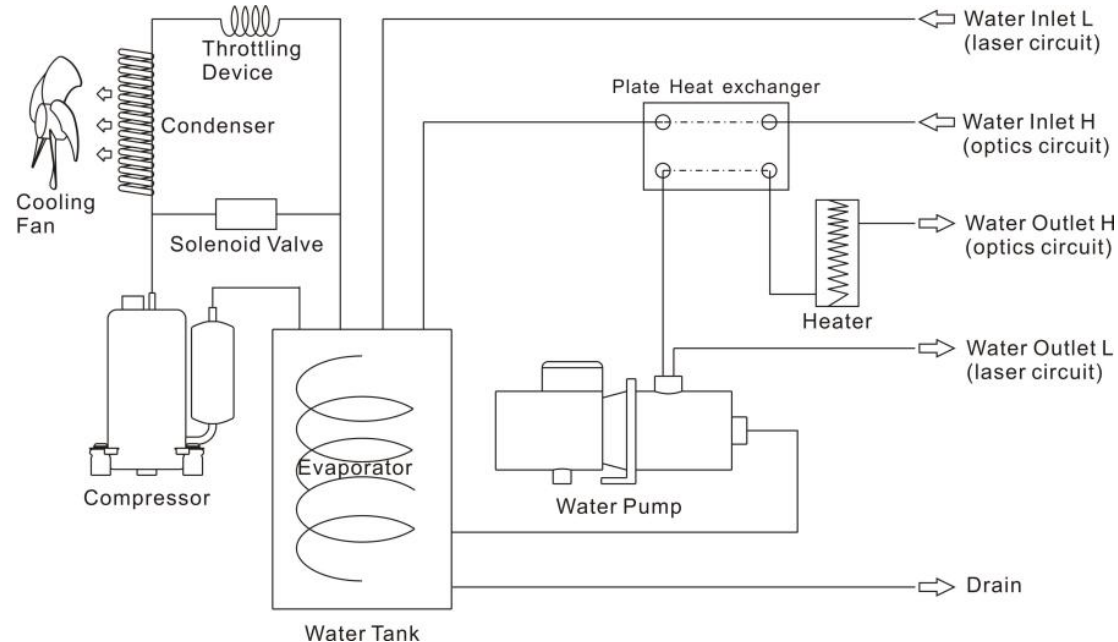
 **DANGER** Failure to take safety measures will result in minor personal injury or property damage.

Notice		Operation Guideline
 Forbidden	Transportation with liquid is prohibited	The equipment is not allowed to be transported with liquid to prevent internal pipeline leakage.
 Must-do	Transport	a) The equipment should be fixed firmly before transportation to prevent the equipment from moving due to vibration and external forces. If there is excessive vibration and external force, the internal equipment may be damaged. b) Tilt angle should be $\leq 45^\circ$. Otherwise, the refrigeration system will fail.
 Forbidden	Operating environment	a) It is forbidden to use in special environments such as high temperature, humidity, strong electromagnetic interference, etc. b) The equipment must be installed in a place where there is no direct sunlight and away from the fire sources.
 Must-do	Installation	a) The equipment must be installed on a horizontal surface. Otherwise, the refrigeration system will fail; b) It is forbidden to place objects within 1 meters around the air inlet and 1.5 meters around the air outlet. If the air inlet and the

		air outlet are blocked, the cooling ability that the equipment should have cannot be realized.
 Must-do	Before commissioning	a) Make sure that the water supply pipe of equipment is not blocked; b) It is necessary to check the water pipe and the water pump to confirm that there is a proper amount of water entering the water pump and exhaust it through the water pump exhaust valve, otherwise it will cause damage to the water pump; c) Confirm that the state of the equipment is normal and safe, otherwise there may be injury and damage.
 Warning	Gently move the motor impeller if the equipment isn't used for a long time	For equipment that has not been used for a long time, it may be difficult to start the pump at the first start. Please gently move the motor impeller before the equipment is powered on.
 Forbidden	The equipment is forbidden to be trampled on	Please do not step on or sit on the equipment. Otherwise, it may cause injury accidents such as falling or overturning
 Must-do	Clean the air filter regularly	Clean the air filter at least once a week. If it is blocked, the cooling ability will decrease and the power consumption will increase, and the alarm will not work properly.
 Must-do	Equipment surface cleaning	a) Please use cleaning agents that are non-corrosive to metals and plastics; b) Please keep the cleaning agent properly after cleaning to prevent liquid leakage; c) The container for storing the cleaning agent must be sealed completely to avoid danger.
 Forbidden	No air blowing at the water outlet	A temp sensor is installed inside the water inlet, and it is forbidden to blow air inside the device with an air gun.
 Must-do	Wear protective gloves during maintenance, inspection and cleaning	a) The sharp edges of the condenser fins may cut the skin; b) The temperature of the internal compressor and refrigerant piping is very high, and direct skin contact may cause burns.
 Must-do	Anti-freezing	a) When the ambient temperature is lower than 0℃ and the machine is shut down for a long time, it is necessary to drain the liquid and blow the water away in the system with compressed air, otherwise there is a danger of freezing and cracking the components and pipelines. b) When room temperature is lower than 0℃, it is recommended to use antifreeze with a concentration of not more than 30% containing ethylene glycol or propylene glycol.
	Translation of the original instruction	This is Translation of the original instruction

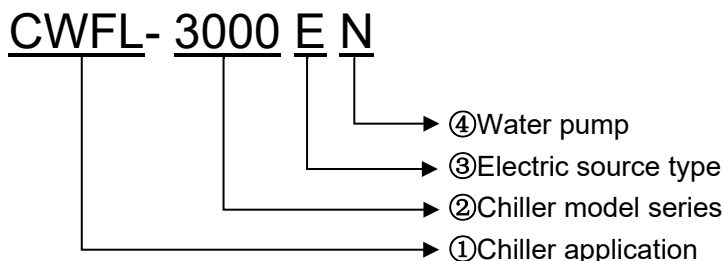
I. Overview

This product is an industrial cooling device designed and manufactured for laser cutting, laser welding, laser marking, laser engraving and other equipment that uses laser processing. It can provide a temperature-stable cooling medium for the above application scenarios.



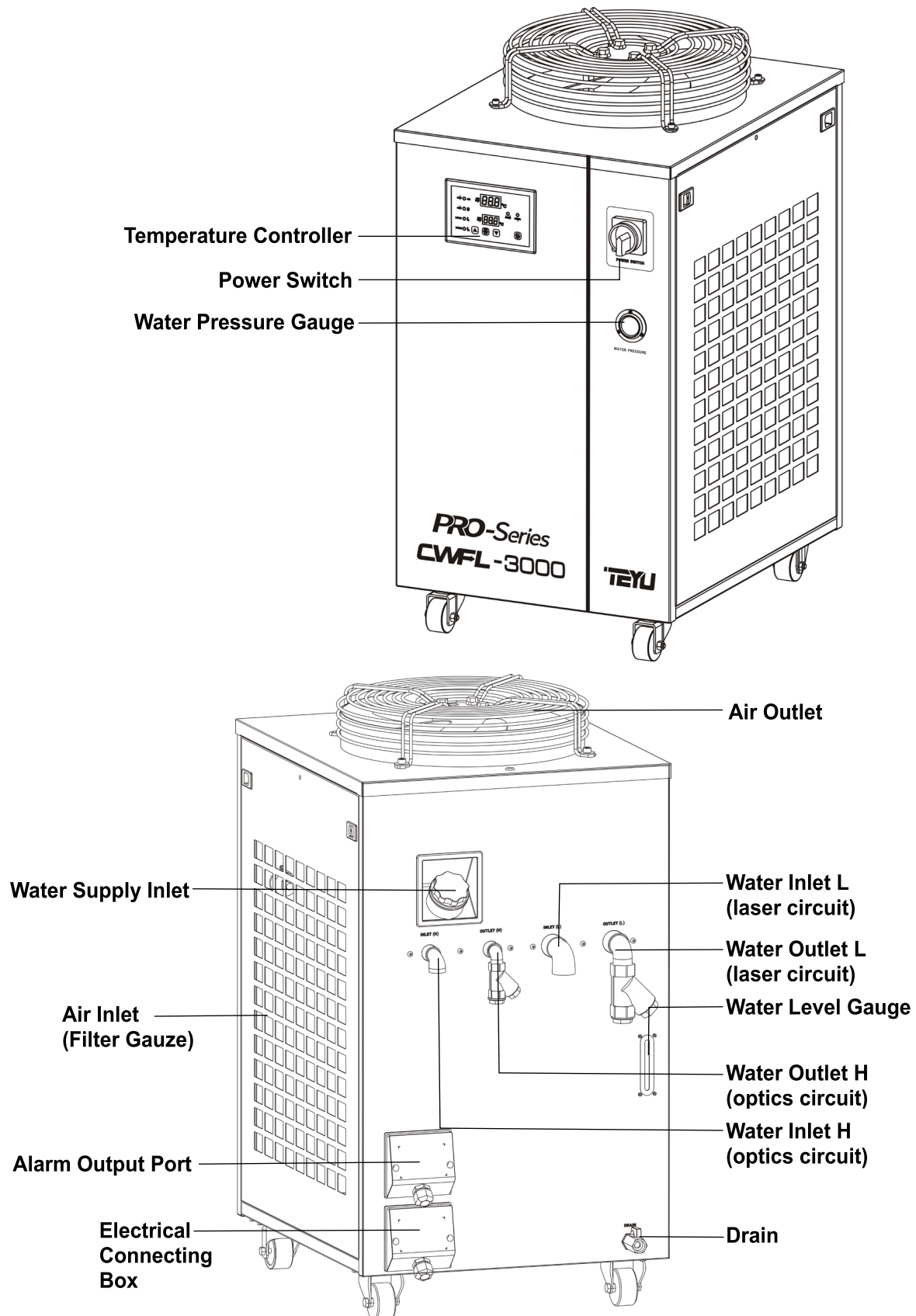
The chiller is composed of a compressor, a condenser, a throttling device (expansion valve or capillary), an evaporator, and a water pump. Its working principle is that the chiller's refrigeration system cools the water, and the water pump delivers the low-temperature cooling water to the equipment that needs to be cooled. Then the cooling water will take away the heat, heat up and return to the chiller, and then be cooled again and transported back to the equipment. In the refrigeration system of a chiller, the refrigerant in the evaporator coil absorbs the heat of the return water and vaporizes into steam. The compressor continuously extracts the generated steam from the evaporator and compresses it. The compressed high-temperature, high-pressure steam is sent to the condenser and later will release heat (heat extracted by the fan) and condense into a high-pressure liquid. After being reduced by the throttling device, it enters the evaporator to be vaporized, absorbs the heat of the water, and the whole process circulates constantly. Users can set or observe the working status of the water temperature through the temperature controller.

II. Model Illustration



Note: This model description only contains the description of the company's main product codes, not all of them are listed. Please confirm with our company before ordering the specific model, our company has the final interpretation right about it.

III. Product Outlines & Parts



Note: The above-mentioned product outlines and part names are only for one of the models. The outlines and parts installation may be slightly different in different models.

IV. Installation

1. Open the package and check whether the machine is in good condition and whether the accessories are complete.

2. Please ensure that the working voltage of the chiller is stable and normal.

Because the refrigeration compressor is sensitive to the power supply voltage, the normal working voltage of our company's standard products is 380V . If wider operating voltage range is necessary, customization is available.

3. Equipment installation conditions and requirements.

(1) It must be installed on a horizontal surface and not tilted, as shown in Figure 1.

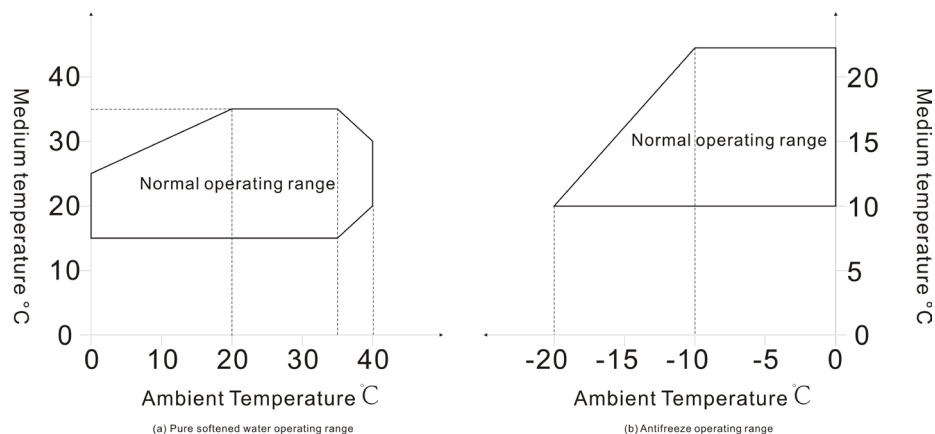
(2) When using the machine, please ensure that the casters are in a locked position to prevent the machine from slipping during operation. The brake device is typically installed on the wheel axle sleeve or the wheel surface and can be activated by either hand or foot. When pushing the machine, the wheels cannot move forward but can swivel, indicating the braking is correct, as shown in Figure 2.

(3)The air outlet of the chiller should be at least 3.5m away from the obstacle, and the air inlet must be at least 1m away from the obstacle (See below diagram) , as shown in Figure 3.

(4) Do not install in harsh environments such as corrosive, flammable gas, dust, oil mist, conductive dust, high temperature and humidity, strong magnetic field, direct sunlight, etc, as shown in Figure 4.

(5) Operating Environment

Ambient Temperature	Ambient Humidity	Altitude
0~40℃	≤90%RH	≤3,000m



(6) Medium Requirements

Cooling medium allowed by the chiller includes purified water, distilled water, high-purity water and other softened water. It is forbidden to use oily liquids, liquids containing solid particles, corrosive liquids, etc. Clean the filter element and replace the cooling water regularly (about three months is recommended) to ensure the normal operation of the chiller.

When the chiller is stored with water at room temperature lower than 2℃, it is necessary to add anti-freezer in the chiller water tank. It is recommended to use antifreeze with a concentration of not more than 30% containing ethylene glycol or propylene glycol. After the temperature warms up, change to purified water, distilled water or other suggested cooling media, let the chiller run for 30 minutes to remove the residual anti-freezer and drain it, and then refill with unused circulating water.

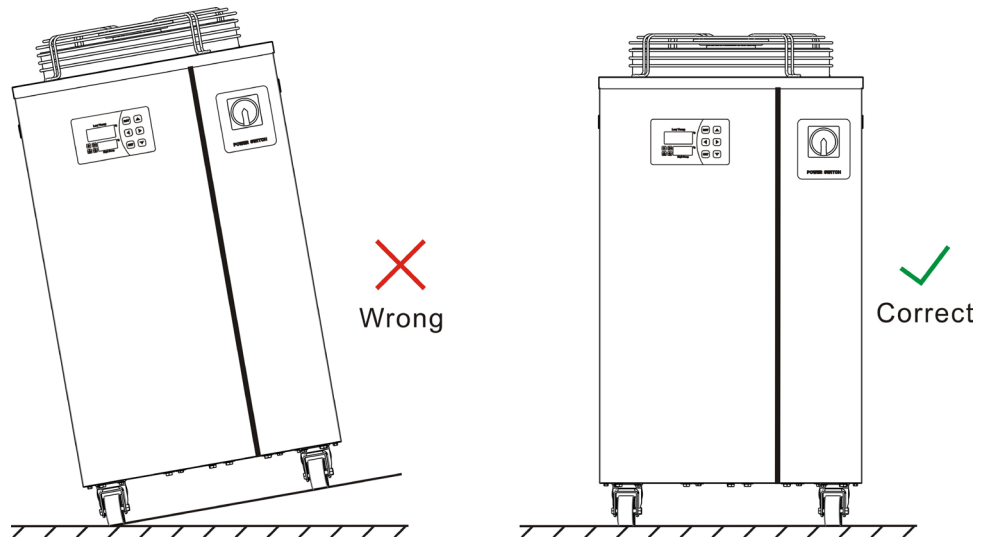


Figure 1: Form Requirements for Chiller Installation

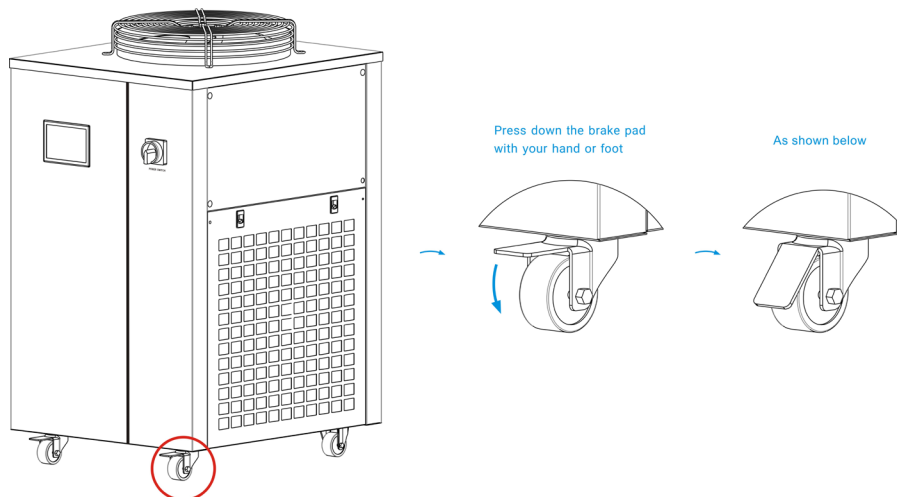


Figure 2: Illustration of Locking Casters

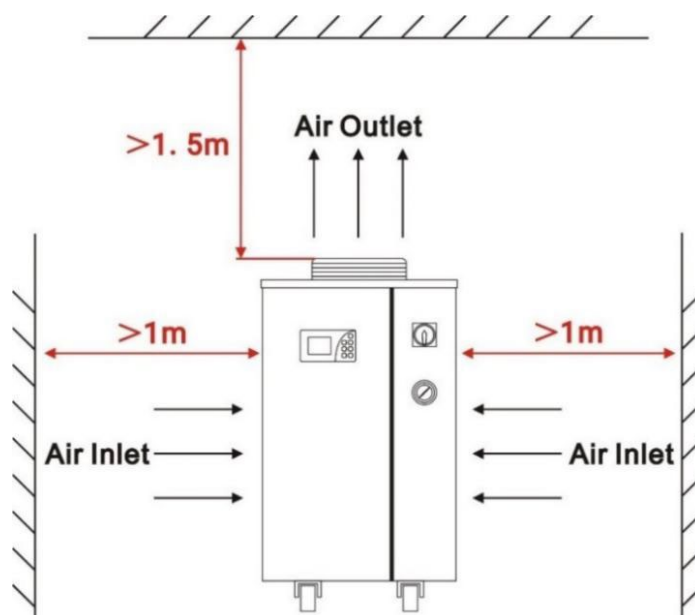


Figure 3: Space Requirements for Chiller Installation

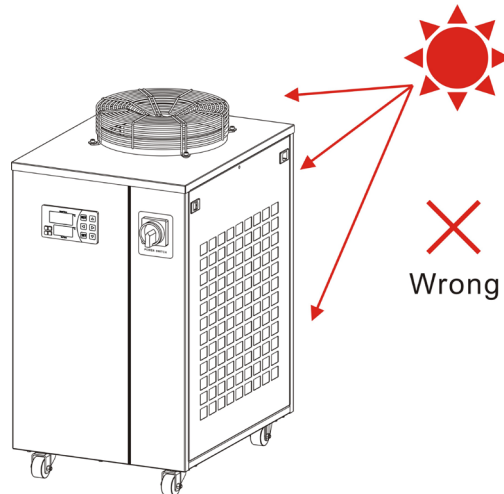
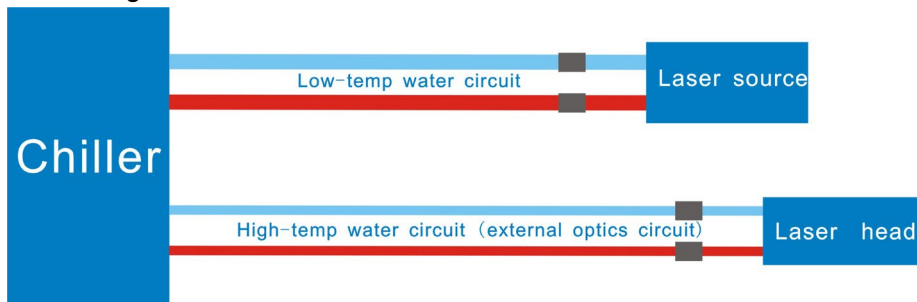


Figure 4: Environmental Requirements for Chiller Installation

4. Water Circuit Connection

- (1) Determine the layout direction of the pipeline based on the equipment's inlet and outlet markings, ensuring that the water pipes are clean and free from impurities to prevent blockages or pump malfunctions.
- (2) Caution: Do not blow air into the chiller water inlet to avoid disrupting machine operation, as shown in Figure 5.



Note: For the chiller, the blue water pipe refers to the outlet water, and the red water pipe refers to the inlet water.

Figure 5: Environmental Requirements for Chiller Installation

- (3) Pipeline Connection: The method of connecting the chiller and the laser machine is illustrated in Figure 6. The inside diameter of the piping should not be smaller than the chiller's inlet and outlet pipe diameter. If the inside diameter of the piping is smaller than required, the approval of the chiller manufacturer should be obtained.

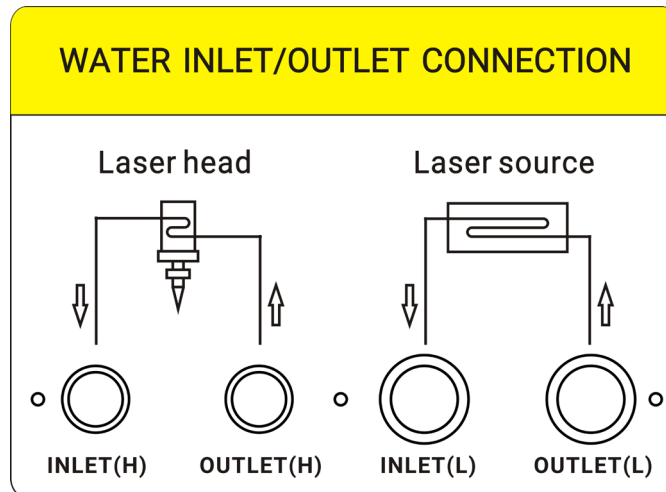


Figure 6: Water chiller to laser connection diagram

5. Plug in the power cord and turn on the power switch(It is forbidden to start without water).

(1) After turning on the power switch, the circulating pump of the chiller starts to work. When the new machine is turned on for the first time, there will be more air bubbles in the pipeline, which will cause the machine to alarm occasionally, and it will return to normal after a few minutes of operation.

(2) After starting the machine for the first time, check if the water pipes leaks immediately.

(3) After turning on the power, if the water temperature is lower than the set temperature, it is normal that the cooling fan and other devices of the machine do not work. The temperature controller will automatically control the working status of compressors, solenoid valves, cooling fans and other components according to the set parameters.

(4) As it takes a longer time to start over the compressor and other components, according to different conditions, the time is range from seconds to minutes, so do not turn off the power and again on frequently.

6. Electrical connection.

(1) Please select the cable based on the max. rated current indicated on the label of the chiller.

(2) Recommended reference standard for power cord diameter selection.

Rated current/ A	≤5	≤10	≤15	≤25	≤35	≤50
Wire diameter (copper wire)/ mm ²	1.0	1.5	2.5	4.0	6.0	10.0

Note: This data is provided according to IEC 60204-1 standard and only for reference. Standard cables must be used in the power cord.

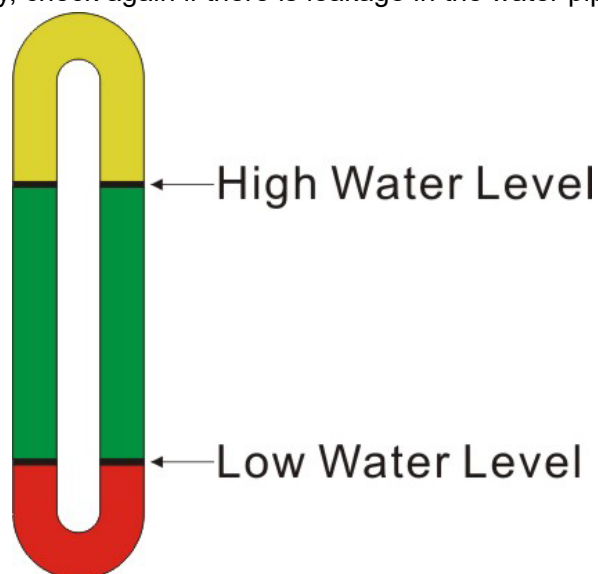
(3) The main circuit of the power supply must be equipped with appropriate electric leakage and overload protection devices, and the chiller must be well grounded.

(4) Less than ±10% of power supply voltage fluctuation and less than ±1Hz of frequency fluctuation are allowed, and keep away from electromagnetic interference sources.

7. Fill Water & Exhaust Air.

(1) Fill Water

After the new machine is turned on, the air in the water pipe is emptied, and the water level of the water tank will drop slightly. In order to keep the water level in the green area, you can add water again. Observe and write down the current water level. After the chiller has been running for a period of time, observe the water level gauge again. If the water level drops significantly, check again if there is leakage in the water pipes.



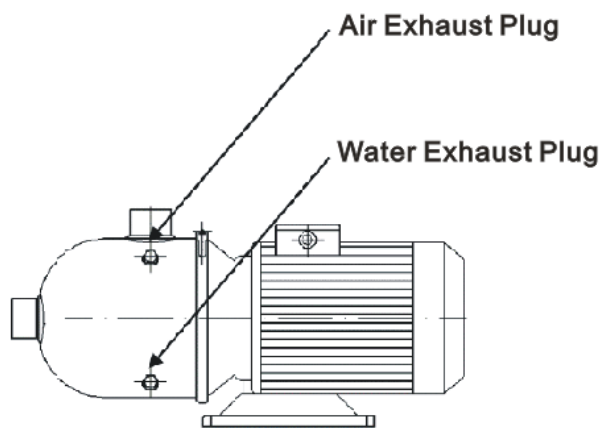
(2) Exhaust Air

After adding water for the first time or replacing water, exhaust the air in the water pump to start use, otherwise the equipment will be damaged. The exhaust method is as follows:

Method 1: Under the state of shutting down, after adding water, remove the water outlet from the laser circuit (OUTLET L) and connect the water pipe, drain for 2 minutes, and then install it firmly.

Method 2: Open the water supply inlet, after starting the machine (water flows), repeatedly press and fold the water pipe several times to drain the air from the pipe.

Method 3: Loosen the air exhaust plug of the water pump (do not unscrew), and air is discharged until water flows out, and then tighten the air exhaust plug (See below diagram, only the exhaust position of the horizontal pump is shown. According to customer requirements and specific models, the pump will be different, and the exhaust position will also be different. For the specific situation, see the external mark of the pump).



8. Test-run Check.

- (1) Check whether the pipeline connection is correct, and there must be no bubbling or water leakage;
- (2) Check whether the inlet and outlet water ball valves are open and the drain valve is closed;
- (3) Check the liquid level of the water tank;
- (4) Confirm that the electrical wiring of the equipment is connected correctly;
- (5) Confirm whether the equipment is grounded.

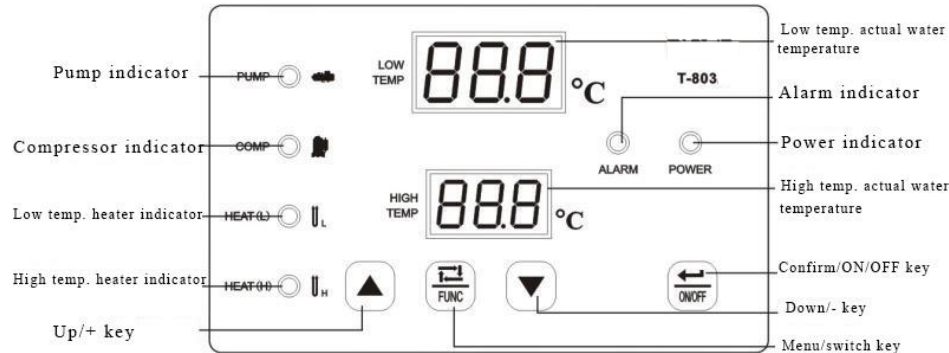
V. Storage Instructions

1. Ensure the equipment's surface is clean, use an air gun to remove internal dust, wipe off oil stains, and protect the exterior with a cover to prevent dust, oil, or moisture buildup.
2. If the equipment is manufactured with wheels, lock them securely to prevent sliding and potential damage during storage.
3. Store the machine on a level, dry, and well-ventilated surface, away from dust, rain, and corrosive or flammable gases. Avoid harsh environments with oil mist, conductive dust, high humidity, strong magnetic fields, direct sunlight, or extreme temperatures.
4. Maintain ambient temperature between 0 to 40°C (32 to 104°F) and humidity below 90%RH.

VI. Operating States & Parameters Adjustment

Default setting of T-803 new model intelligent temperature controller is Intelligent temperature mode ,water temperature is setting 25 °C , customer could adjust the temperature according to requirement.

1. Temperature controller panel introduction



2. Power on / off operation

In power-on status, the power indicator is on, and press “on/off” to control the on and off of the system. In the operation of dual temperature system, the digital tube ① indicates the actual water temperature of the low temperature circuit and the digital tube ② indicates setting water temperature of the low temperature circuit. When the system is off, the digital tube ② indicates “OFF”.

3. Parameter setting

(1) System Parameter setting

In standby status, press and hold “up” and “down” simultaneously for 5 seconds to enter local address setting. Digital tube ① indicates parameter code(P00) and digital tube ② indicates the set value. Press “up” or “down” to adjust the set value. Press “confirm” and exit after finishing setting.

(2) User parameter setting

In operating status, press and hold “menu” for 3 seconds to enter temperature setting. Digital tube ① indicates parameter code and digital tube ② indicates the set value. Press “up” or “down” to adjust the set value. Press “menu” to switch to next parameter setting. Press “confirm” and exit after finishing setting.

(3) Admin parameter

In standby status, press and hold “menu” for 5 seconds and digital tube ① indicates “cod” while digital tube ② indicates “000” with the first digit flashing for prompting password input. Press “up” or “down” to enter password. Press “menu” to switch to the second and the third digit to enter password respectively. After inputting correct password, press “confirm” to enter related parameter setting. At this time, the digital tube ① indicates the related parameter code while digital tube ② indicates the set value. Press “up” or “down” to adjust the set value. Press “menu” to switch to the next parameter setting. Press “confirm” and exit after finishing setting. If wrong password is input, it quits the setting automatically.

(4) Password table

Parameter category	Password
Administrators Parameter	359
Reset Parameter	999

(5) Parameter setting table

Item No.	Parameter name	Unit	Value range	Remarks	Attributes	Parameter address (decimal)	Function code (decimal)
P00	Local address		1~125		R/W	39	03 Function code 06 Function code 16 Function code
P01	Setting temperature of low temperature circuit	℃	-19.9~50.0	*10		47	
P02	Heating difference of low temperature circuit	℃	-5.0~8.0	*10		48	
P03	Compressor starting temperature difference	℃	0.1~8.0	*10		49	
P04	Compressor stop temperature difference	℃	0.0~8.0	*10		50	
P05	Low temperature following temperature difference	℃	-19.9~20.0	*10		51	
P06	Low temperature mode selection	0-Constant temperature mode;1-Intelligent mode		*1		52	
P07	Setting temperature of high temperature circuit	℃	5.0~60.0	*10		53	
P08	Heating difference of high temperature circuit	℃	-5.0~8.0	*10		54	
P09	Refrigeration difference of high temperature circuit	℃	0.1~8.0	*10		55	
P10	High temperature following temperature difference	℃	-19.9~20.0	*10		56	
P11	High temperature model selection	0-Constant temperature mode;1-Intelligent mode		*1		57	
P12	Start/stop mode with power	0-standby;1-start;2-memory		*1		58	
P13	Three phase detection enable	0-Disable; 1-Enable		*1		59	
P14	Compressor overload current	A	0~30.0	*10		60	
P15	Pump overload current	A	0~30.0	*10		61	
P16	Upper limit alarm of low temperature circuit	℃	20.0~60.0	*10		62	
P17	Lower limit alarm of low temperature circuit	℃	-19.9~20.0	*10		63	
P18	Upper limit alarm of high temperature circuit	℃	25.0~70.0	*10		64	
P19	Lower limit alarm of low temperature circuit	℃	1.0~25.0	*10		65	
P20	Flow rate lower limit protection of low temperature circuit	L/Min	0~50.0	*10		66	
P21	Flow rate lower limit protection of high temperature circuit	L/Min	0~50.0	*10		67	
P22	Flow switch type of low temperature circuit	0-Normally open;1-Normally closed		*1		68	
P23	Flow switch type of high temperature circuit	0-Normally open;1-Normally closed		*1		69	

P24	Remote switch type	0-Normally open;1-Normally closed		*1		70	
P25	Pressure switch type	0-Normally open;1-Normally closed		*1		71	
P26	Level switch type	0-Normally open;1-Normally closed		*1		72	
P27	Alarm output type	0-Normally open;1-Normally closed		*1		73	
P28	Flow rate detection delay	second	0~300	*1		74	
P29	Pressure detection delay	second	0~300	*1		75	
P30	Compressor frequently starting delay	second	10~300	*1		76	
P31	Pump star/stop with failure	0-Pump stops with failure;1-Pump works with failure		*1		77	
P32	Water temperature following upper limit of low temperature circuit	℃	25.0~45.0	*10		78	
P33	Water temperature following lower limit of low temperature circuit	℃	0.0~25.0	*10		79	
P34	Water temperature following upper limit of high temperature circuit	℃	25.0~50.0	*10		80	
P35	Water temperature following lower limit of high temperature circuit	℃	0.0~30.0	*10		81	
P36	Standby antifreeze enable	0-Disable; 1-Enable		*1		82	
P37	Standby antifreeze temperature	℃	0.0~20.0	*10		83	
P38	Model selection	1-Single temperature type;2-Dual temperature type		*1		84	
P39	Ultra-low liquid level delay	second	0~600	*1		85	
P40	State transition delay	second	0~99	*1		86	

4. Temperature current checking

When the system is on, press “up” or “down” to check the working current of the compressor and the water tank temperature. The digital tube ② indicates the checked part while the digital tube ① indicates the checked value. If no button is pressed within 5 seconds, then the display restores to the interface that indicates water temperature and setting temperature status.

CH1 ----- Temperature of low temperature circuit (℃)

CH2 ----- Temperature of high temperature circuit (℃)

CH3 ----- Flow rate of low temperature circuit (L/Min)

CH4 ----- Flow rate of high temperature circuit (L/Min)

CH5 ----- Compressor current (A)

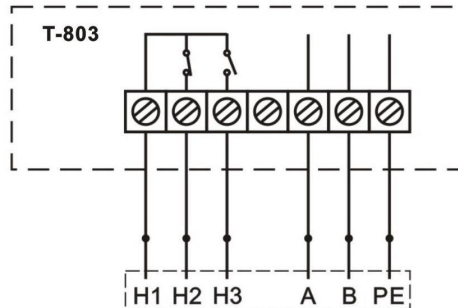
CH6 ----- Pump current (A)

CH7 ----- Ambient temperature (℃)

VII. Alarm & Output Terminal

In order to guarantee the equipment will not be affected while abnormal situation happens to the chillers, the chillers are designed with alarm protection function.

1. Alarm and MODBUS RS-485 communication output wiring diagram.



H1, H2 and H3 are alarm signal output terminal; A, B and PE are MODBUS RS-485 communication output terminal.

2. Working condition table of alarm signal

Working status	Display	Error code	Buzzer	OUT H1, H2	OUT H1, H3
Circulating pump works properly				Disconnection	Breakover
Ultrahigh room temp alarm		E01	Sounds	Disconnection	Breakover
Ultrahigh water temp alarm of laser circuit		E02	Sounds	Breakover	Disconnection
Ultralow water temp alarm of laser circuit		E03	Sounds	Breakover	Disconnection
Room temp sensor failure		E04	Sounds	Disconnection	Breakover
Water temp sensor failure of laser circuit		E05	Sounds	Breakover	Disconnection
Switch type flow alarm of laser circuit		E06	Sounds	Breakover	Disconnection
Sensor type flow alarm of laser circuit		E07	Sounds	Breakover	Disconnection
Ultrahigh water temp alarm of optics circuit		E08	Sounds	Breakover	Disconnection
Ultralow water temp alarm of optics circuit		E09	Sounds	Breakover	Disconnection
Water temp sensor failure of optics circuit		E10	Sounds	Breakover	Disconnection
Switch type flow alarm of optics circuit		E11	Sounds	Breakover	Disconnection
Sensor type flow alarm of optics circuit		E12	Sounds	Breakover	Disconnection
Power phase loss protection		E13	Sounds	Breakover	Disconnection
Power anti-phase protection		E14	Sounds	Breakover	Disconnection
Liquid level protection		E15	Sounds	Breakover	Disconnection
Compressor pressure switch alarm		E17	Sounds	Breakover	Disconnection
Compressor current overload		E19	Sounds	Breakover	Disconnection
Water pump overload alarm		E25	Sounds	Breakover	Disconnection

Note: The alarm output port is connected with a set of normally open and normally closed contacts of the relay inside the machine. The working current should be smaller than 3A while the working voltage should be smaller than 300V.

VIII. Maintenance

The equipment must be shut down for maintenance, and the power supply must be cut off. The operation can only be carried out after 3 minutes, otherwise there will be a risk of electric shock. When the room temperature is lower than 2°C, the internal water must be drained when the machine is shut down for a long time.

1. Remove Dust Regularly

Regularly disassemble the filter gauze for cleaning and use a compressed air gun to blow away the dust on the condenser (about 1 week is suggested and the air filter must not be missing for a long time).

2. Guarantee Water Quality

A certain amount of impurities will accumulate in the filter element over a period of time, which will cause a decrease in water flow, or even a secondary pollution. Therefore, it is necessary to clean or replace the filter element regularly.

IX. MODBUS RS-485 communication function

This system adopts MODBUS-RTU communication slave mode, baud rate 9600, no parity, 8 data bits, 1 stop bit, and supports MODBUS-RTU command.

Description		Value range	Remarks	Attributes	Parameter address (decimal)	Function code (decimal)	
Output switching value	Bit0: Compressor			R	0	01 Function code	
	Bit1: Heating of low temperature circuit						
	Bit2: Pump						
	Bit3:Refrigeration valve/high temperature refrigeration						
	Bit4:Heating valve/refrigerant valve						
	Bit5:Alarm						
	Bit6:						
	Bit7: Heating of high temperature circuit						
Input switching value	Bit0:Flow switch of low temperature circuit			R	0	02 Function code	
	Bit1: Low pressure switch						
	Bit2: High pressure Switch						
	Bit3:Flow switch of high temperature circuit						
	Bit4: Level switch						
Restore factory default		1	*1	W	15	03 Function code 06 Function code 16 Function code	
System status	0x01: standby			R/W	25		
	0x02: power on						
	0x03: fault			R			
Error code	0: Normal			R	29		03 Function code 06 Function code 16 Function code
	1: Ultrahigh room temp alarm						
	2: Ultrahigh water temp alarm of laser circuit						
	3: Ultralow water temp alarm of laser circuit						
	4: Room temp sensor failure						
	5: Water temp sensor failure of laser circuit						

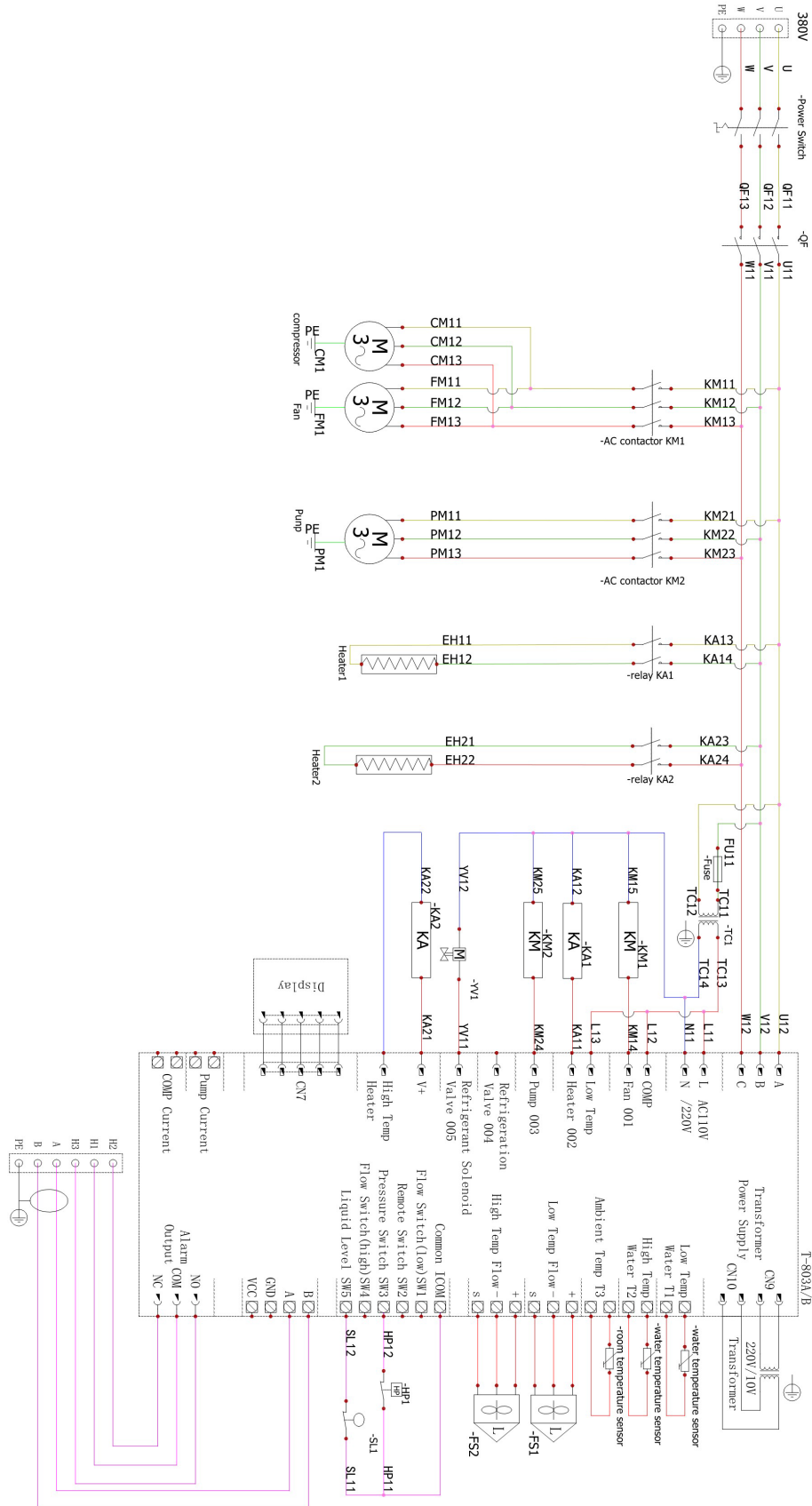
	6: Switch type flow alarm of laser circuit					
	7: Sensor type flow alarm of laser circuit					
	8: Ultrahigh water temp alarm of optics circuit					
	9: Ultralow water temp alarm of optics circuit					
	10: Water temp sensor failure of optics circuit					
	11: Switch type flow alarm of optics circuit					
	12: Sensor type flow alarm of optics circuit					
	13: Power phase loss protection					
	14: Power anti-phase protection					
	15: Liquid level protection					
	17: Compressor pressure switch alarm					
	19: Compressor current overload					
	25: Water pump overload alarm					
System uptime	Unsigned integer		*1	R	30	
Compressor uptime	Unsigned integer		*1	R	34	
Local address			*1	R/W	39	
Temperature of low temperature circuit			*10		0	
Temperature of high temperature circuit			*10		1	
Flow rate of low temperature circuit			*10		2	
Flow rate of high temperature circuit			*10		3	
Compressor current			*10		4	
Pump current			*10		5	
Ambient temperature			*10		6	
				R		04 Function code

X. Simple Troubleshooting

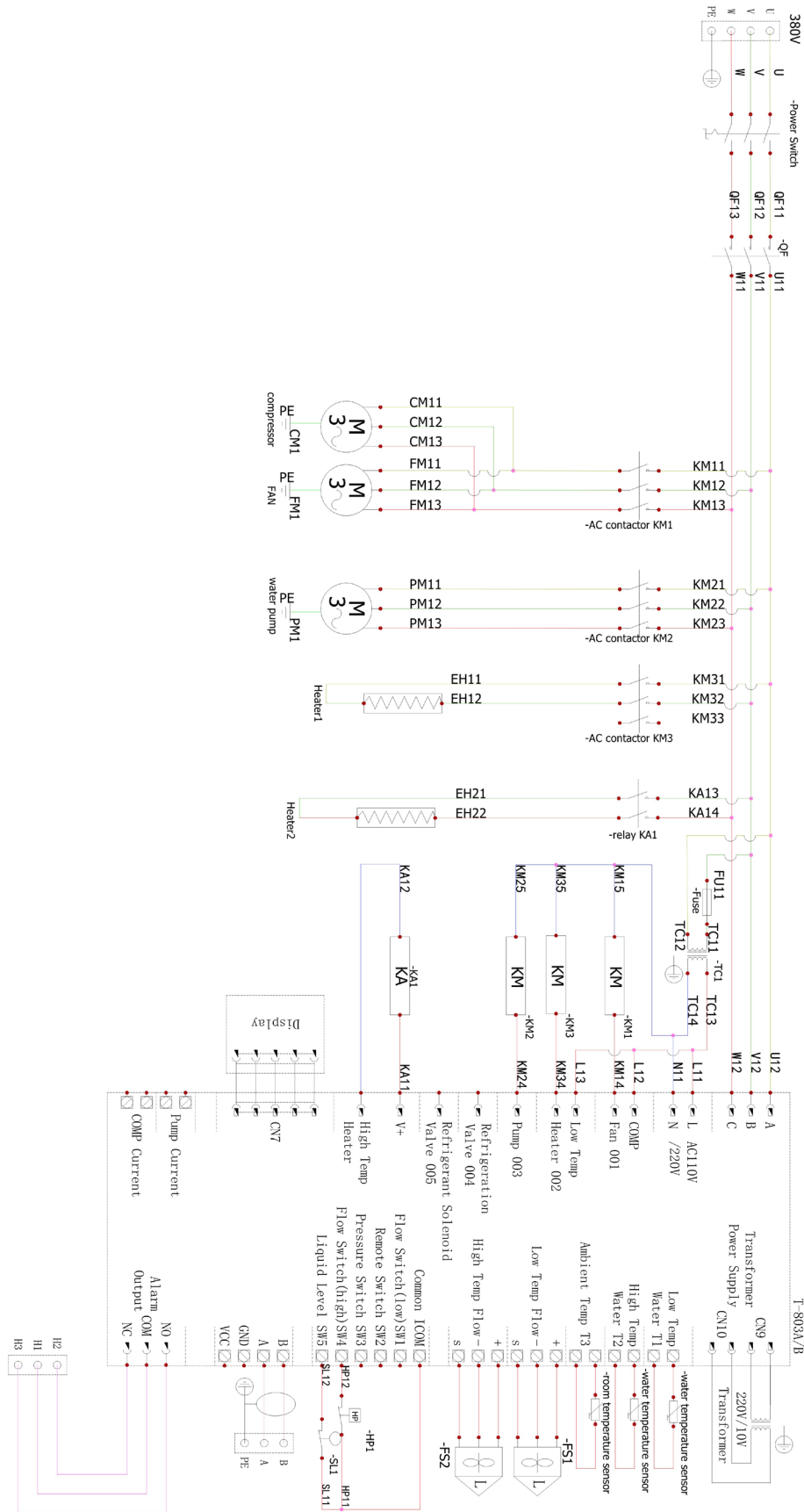
Phenomenon	Reason	Solution
No power after turned on	Power cord is not plugged in place.	Check and ensure the power interface and the power plug are well plugged.
	Fuse burnt-out.	Replace fuse tube that in the electric box at the back of chiller
Flow alarm, use a water pipe connect the water outlet and inlet but without water flowing.	Low water level in the water tank.	Check the water level gauge indicator, pour water until the water meet green area; and check whether water circulation pipe leaks.
Flow alarm occurs while running with applied equipments, but there is water flowing without alarm when use a water pipe directly connected to the water outlet and inlet.	Water circulation pipes are blocked or a pipe bending.	Check water circulation pipes.
Upper temperature limit alarm	Anti-dust gauze accumulated heavy dust leading to poor heat dissipate.	Remove the anti-dust gauze and clean it regular.
	Poor ventilation for air outlet or inlet.	Make sure good ventilation for air outlet and inlet.
	Over low or unstable voltage.	To improve the power supply circuit or use a voltage regulator.
	Error parameter setting of temperature controller.	Resetting parameter or restore to default setting.
	Chiller On/Off frequently	To make sure chiller has enough time to refrigeration (about 5 minutes above).
	Heat overload	Reduce heat overload or use larger refrigeration capacity chiller.
Condensate water heavily.	Water temperature is much lower than ambient temperature, high humidity.	To increase water temperature or to keep warm for pipeline.
Water drains slowly from outfall when changing water.	Water Supply Inlet not open.	To open water supply inlet.

Attachment – Schematic

CWFL-3000ENP:



CWFL-4000ENP:



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