



Hanli Laser Chillers

Method of application

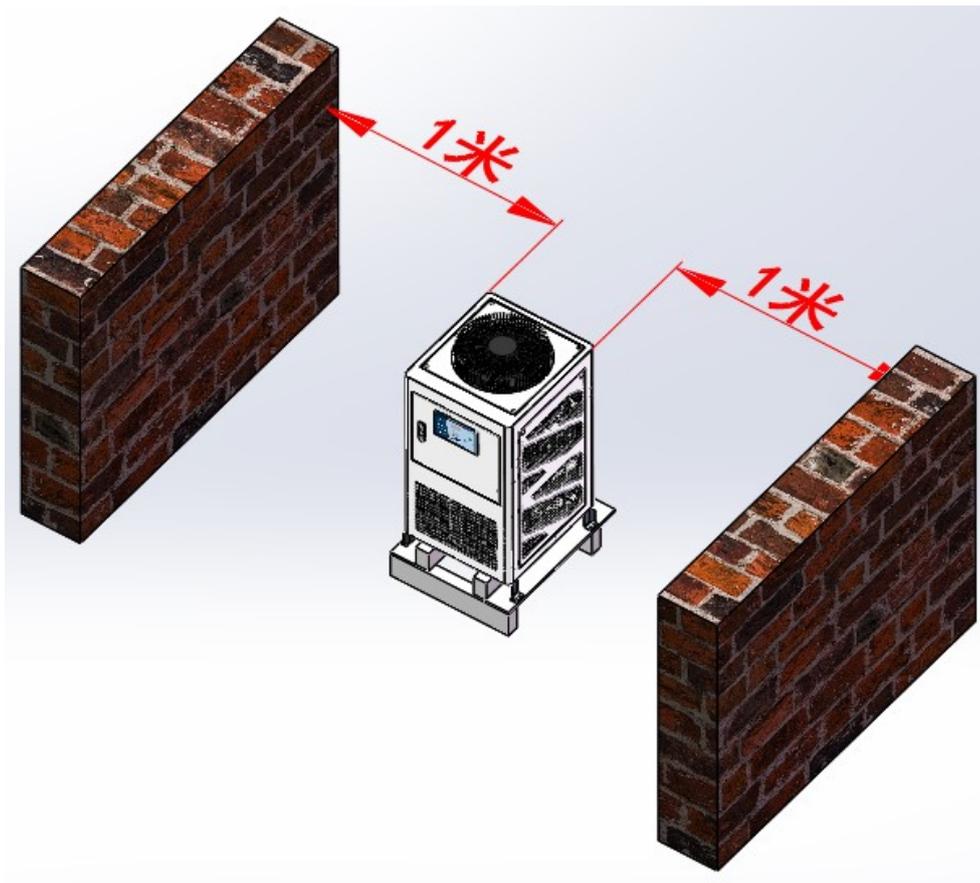
Maintaining

Simple maintenance

Installation and use of equipment

Installation of equipment: installation environment

The equipment is equipped with a brakeable universal rolling wheel, which is easy to move and can be installed close to the host. The unit should be placed in a well-ventilated place with good heat dissipation effect. As shown in the figure, there should be a space of 1m around the unit, and there should be no obstructions to dissipate heat. There must be 3m of space in the mouth. The height above the machine is more than 3 meters.



Installation and use of equipment

Installation of equipment: installation of pipelines

Installation and operation of equipment1. The installation of the equipment

The integrated equipment is equipped with brakeable universal rolling wheels, which is convenient to move and can be installed close to the host. The unit should be placed in a well-ventilated place with good heat dissipation. There should be 1.5m space around the unit.

There should be a space of 3m for the shelter and the vent.2. Operation and use After the chiller is installed and fixed according to the above requirements, connect the inlet and outlet water pipes firmly, and the water tank is filled with enough pure water; after connecting the inlet and outlet pipes, the water pump is drained; the power supply and the alarm are connected according to the technical requirements of the equipment Signal circuit; Turn on the power MCB, set the set temperature and alarm temperature, and then it can run. For units with three-phase power supply, after closing the power MCB, if the power indicator light turns green, it means that the power phase sequence is correct, otherwise the phase sequence is wrong, and the power phase sequence must be adjusted. After the phase sequence is correct, the required temperature can be adjusted. Start up and run. Note: The phase sequence of the water pump, fan, and compressor has been adjusted to the same before leaving the factory. Do not make a single adjustment, otherwise it will cause damage to the water pump, compressor, etc.

Installation and use of equipment

use of equipment (一)

1. Instrument interface description



2. Low temperature setting method Press the set button on the main interface, when the low temperature set temperature column is flashing, press the up and down buttons to adjust the set value, press the set button to confirm and save, and press the power button to exit

3. Normal temperature setting method On the main interface, press the key to switch the normal temperature bar: as follows:



Installation and use of equipment

use of equipment (二)

Normal temperature set temperature value = low temperature set temperature + fixed temperature difference
fixed temperature difference The default value for fixed temperature difference production is: 3 (generally no need to adjust)
Fixed temperature difference adjustment method:

Press  +  for about 7s at the same time to enter the administrator menu, the current display interface:



Press setting button to enter the setting, Press the up and down button to adjust the set value, After pressing the set button to confirm the save, press the power button to exit Generally, the default production settings are as followed:

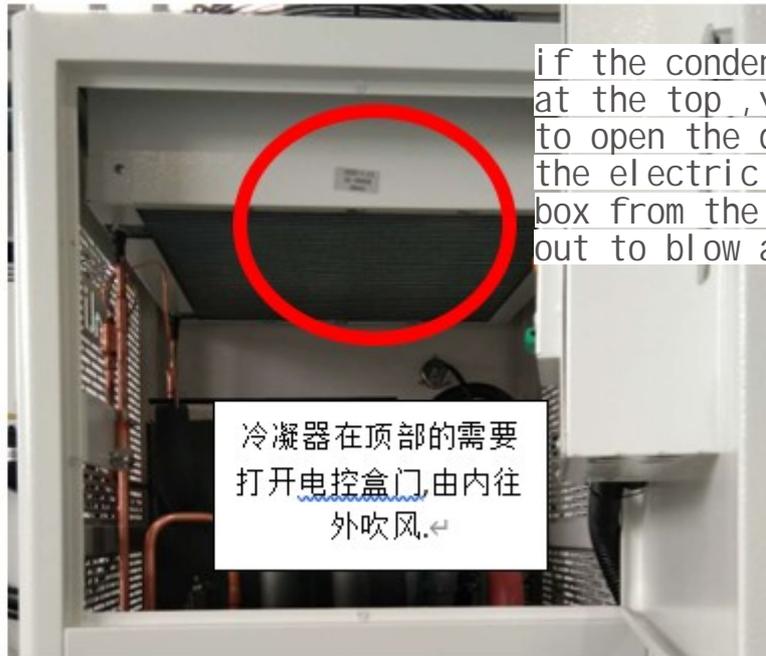
Summer set temperature value: Low temperature 26 normal temperature 29

Winter setting temperature value: Low temperature 23 normal temperature 26

Maintenance of equipment

The summer maintenance

一、clean up dust regularly



On both sides of the door side filter screen and condenser

二、reset switch



Maintenance of equipment

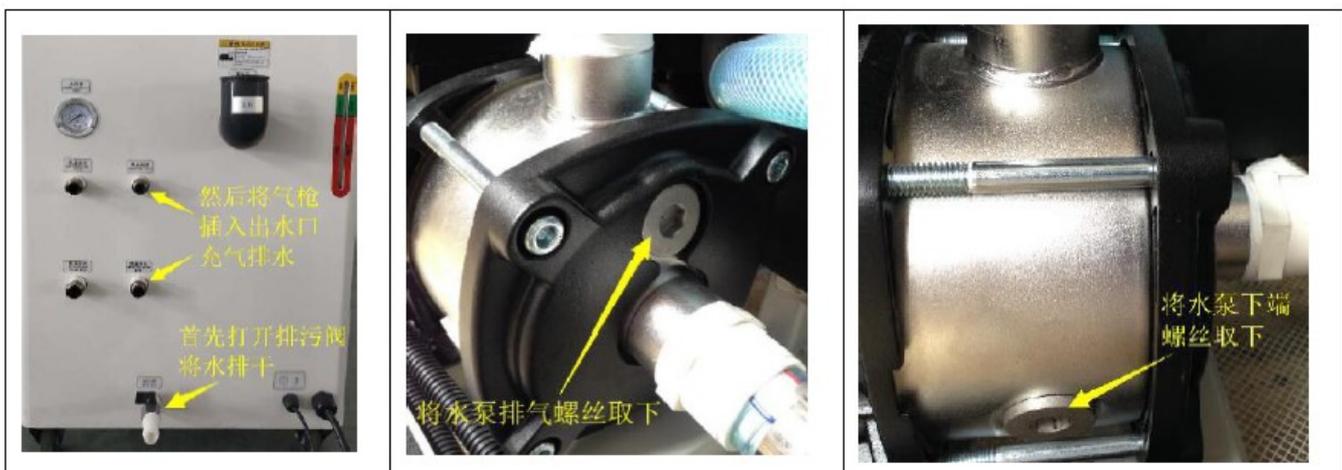
Winter maintenance (anti-freezing method)

Liquids have a "freezing point". When the temperature of the liquid is lower than this "freezing point" temperature, it will solidify to form a solid, and the volume of deionized water or distilled water will become larger during the solidification process, which will "broke" the water cooling tube and the sealed connection. damage. In order to avoid damage to the laser tube, output head, and water cooler caused by the solidification of the cooling liquid, there are three solutions as follows:

- 1) In the case of local power failure, do not turn off the water chiller at night. At the same time, for energy saving considerations, please adjust the low and normal temperature water temperature to 5 ~ 10 to ensure that the coolant is in a circulating state and the temperature is not lower than the freezing point.
- 2) When the equipment is not used for a long time, drain the coolant in the laser and water cooler. The following is the drainage method:

Drain the water, and then insert the air gun into the water outlet to inflate and drain

After the water pump is exhausted, the drain screw is removed and the water is released, and then installed



- 3) Use antifreeze as the coolant: when the environment of use is often power-off and does not have the conditions for the daily coolant to be drained, antifreeze must be used. The basic liquid of antifreeze is generally composed of alcohol and water. It requires high boiling point and flash point, high specific heat and conductivity, low low-temperature viscosity, not easy to foam, and does not corrode metal parts, rubber hoses, etc. When selecting or mixing antifreeze, its freezing point should be about 5° C lower than the lowest temperature of the environment in which it is used.

Maintenance of equipment

Winter maintenance (anti-freezing option)

Use special antifreeze of a professional brand, do not use ethanol instead.

It is recommended to use foreign brands such as DowthermSR-1 products represented by Dow Chemical in the United States or CLARIANT brand.

There are two types of antifreeze suitable for Laser systems:

- 1) Antfrogen[®]N glycol-water type;
- 2) ANTFROGEN[®]L Propylene Glycol - Water;

Domestic brands recommend LM series products represented by Chaoyang Sunshine Chemical

Note: Any antifreeze can not completely replace deionized water and cannot be used for a long time throughout the year. After winter, the pipeline must be cleaned with deionized or distilled water, and deionized or distilled water must be used as the coolant. If possible, we still recommend to improve the electricity environment, keep the water chiller from shutting down, or upgrade the cooling water circuit design to make daily cooling water emptying easier and faster

三、 Notes

1. If the machine is shut down for a long time, the water tank should be drained, and clean air should be used for deep draining. At the same time, drain the water in the water pump and the filter of the water cooler.
2. If there is still any problem, pls call us at+8613628622086

Maintenance of equipment

Winter maintenance (equipment drainage)

If the chiller is not used for a long time, it is recommended that the user drain the water inside the water tank and the pipeline to prevent the motor from being damaged due to low temperature and freezing, and the filter inside the water tank will be blocked due to fouling. The drainage methods are as followed



1. Drain the water in the water tank from the drain valve at the lower end of the equipment connecting pipe
2. Remove the 4 water pipes from the chiller joints and blow air into each of the joints with an air gun until the remaining water is blown out
3. Remove the drain nut at the lower end of the water pump and drain the water in the pump
4. Open the filter cup and drain the water out of the deionization cup

Maintenance of equipment

Water filter cleaning process (water tank built-in filter cleaning)

一. Clean the suction filter at the bottom of the water tank:



Open the side door of the chiller, and you will see the water filling tank of the equipment as shown in the picture below



After opening the top of the tank, you will see the suction filter at the bottom of the tank (as shown in the picture above).



Rotate the suction filter counterclockwise at the bottom and blow the dirt and impurities on the filter screen with an air gun

Maintenance of equipment

Water filter cleaning process (cleaning of Y-type filter) cleaning of Y-type filter



Open the side door of the chiller, and you will see the Y-shaped water filter of the equipment as shown in the picture below



Use the movable spanner to twist the hexagonal counter-clockwise at the lower end of the Y type water filter (need two movable spanners, the left side of the upper go to live, the right side of the counter-clockwise screw down) you can see the Y type water filter inside the filter

Use an air gun to clean the dirt and impurities on the filter screen inside the Y-type water filter

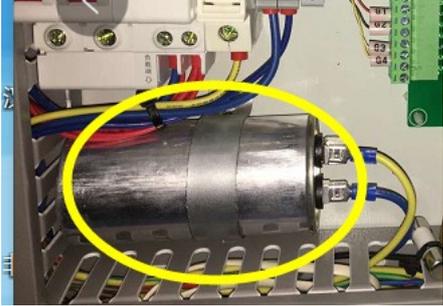
Simple maintenance of equipment

Device alarm code

Alarmcode description	
Alarm code	Fault description
E01	Temperature probe failure
E02	High temperature alarm
E03	Chlorine pressure alarm
E04	The phase sequence alarm
E05	Water flow switch alarm
E06	The water level switch alarm
E07	Compressor overload
E08	Low temperature alarm

Simple maintenance of equipment

equipment failure (E02)

Name	picture	Function and effect	common faults and code	Solution
Leakage protector		master control switch	The equipment is not energized and tripped	Check whether the motor is short circuit to ground
Compressor capacitance		220V compressor accessories	Compressor does not start E02 high temperature alarm	Replace the capacitance

Simple maintenance of equipment

equipment failure (E02)

name	picture	Function and effect	common faults and code	Solution
compressor		Drive the flow of refrigerant	Compressor does not start, no refrigeration E02 high temperature alarm	<p>Check whether the power supply line is loose</p> <p>Replace the same capacitor for 220V equipment</p>
Fan		A cooling component of a refrigeration system	No refrigeration E02 high temperature alarm	Check the power supply

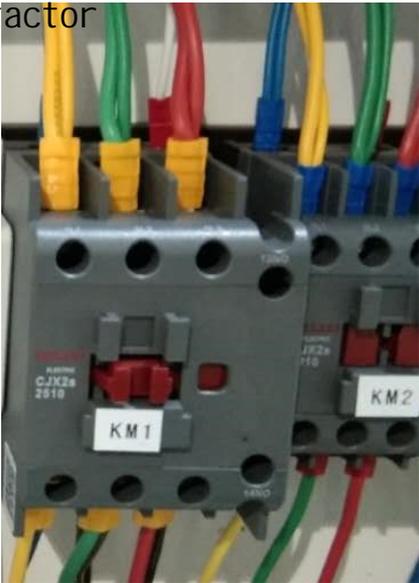
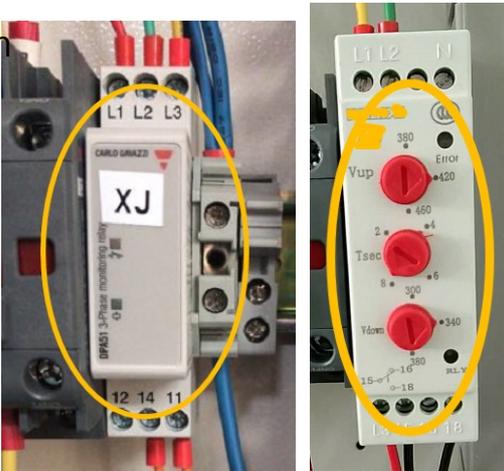
Simple maintenance of equipment

equipment failure (E02,E03)

name	picture	Function and effect	common faults and code	Solution
condenser		<p>The fluorine system changes from a gas to a liquid in its interior, giving off heat</p>	<p>Dust, no refrigeration</p>	<p>E02 high temperature alarm</p> <p>Clean the condenser once half a month</p>
pressure controlled		<p>Protect the normal operation of fluorine system</p>	<p>E03 Fluorine pressure alarm</p>	<p>The equipment must be well ventilated. The operating temperature of the equipment should be between 0° C and 40° C. The air inlet should be unobstructed within one meter, and the air outlet must be unobstructed within three meters. Check whether the condenser and the condenser dust screen are dirty or not</p>

Simple maintenance of equipment

equipment failure (E04)

name	picture	Function and effect	common faults and code	solution
a.c. contactor		Control the start and stop of the motor	No suction or power up or down	Inspection and replacement
phase rotation relay		Three - phase electrical system in the protection of the motor running direction is correct, the power supply is normal	E04 phase sequence alarm	<p>Check whether the three-phase fire line voltage is 380V ± 10%</p> <p>Arbitrarily replace the two fire wires between the main power supply</p>

Simple maintenance of equipment

equipment failure(E05)

name	picture	Function and effect	common faults and code	solution
Flow switch		<p>Test whether the flow value of the water circulation system meets the design requirements</p>	<p>E05 flow alarm</p>	<p>Check whether the water pipe is dirty and blocked or folded. Clean the filter screen to check whether the water pump is running</p>
water pump		<p>The main power of the water circulation system</p>	<p>E05 flow alarm</p>	<p>Detection of the power supply</p>

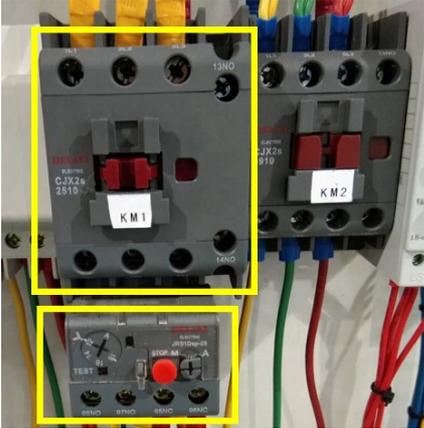
Simple maintenance of equipment

equipment failure (E05,E06)

name	picture	function and effect	Common faults and code	solution
water level		<p>Test whether the injection water meets the design requirements</p>	<p>Normal water level is a necessary condition for the initial operation of the whole system</p> <p>E06 low level alarm</p>	<p>add water</p>
Y-filter		<p>Small particulate matter in a secondary filtration system</p>	<p>E05 Flow alarm</p>	<p>Please clean it with pure water or softened water once a month</p>

Simple maintenance of equipment

equipment failure (E05)

name	picture	function and effect	Common faults and code	Solution
overload relay		<p>Test whether the motor operation meets the design requirements -</p>		<p>Please clean it with pure water or softened water once a month</p>
Suction filter		<p>the filtration of large particulate matter in the water circulation system</p>	<p>E05 Flow Alarm</p>	

Simple maintenance of equipment

equipment failure (E02)

Name	Picture	function and effect	Common faults and code	solution
evaporator		Refrigeration parts	More scale, no refrigeration E02 high temperature alarm	Please clean it with pure water or softened water once a month