



HiSpeed

LASER SYSTEM

Dongguan Hispeed Laser Technology Ltd

Industrial chiller installation instructions

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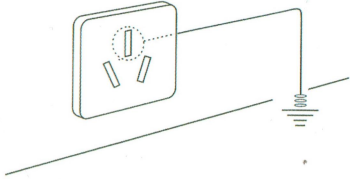
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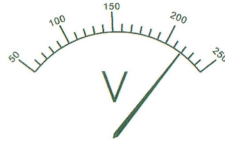
CAUTIONS

- 1** Please ensure that the power supply and electrical outlet are in good contact and the earth wire must be firmly grounded!

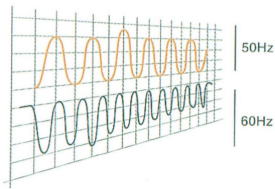


- 2** Please make sure there is stable and normal voltage for the working chiller!

As the refrigeration compressor is more sensitive to the power supply and voltage, so the operating voltage of our standard product is of 200 ~ 250V (110V model is of 100 ~ 130V). If you do need a wider operating voltage range, customization is available for us.



- 3** Unmatched power frequency can cause the chiller damage! Please choose model of 50Hz or 60Hz according to actual circumstance.



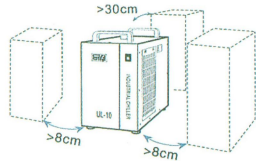
- 4** To protect the pump, it's strictly forbidden to run the chiller without water in the storage water tank!

The new machine is packed after draining whole water in the tank, so please make sure the tank has water inside before machine starting, otherwise it's easily to have the pump damaged. When the water level is below the green (NORMAL) range of the water level gauge, the cooling capacity of our chiller will go down slightly. Hence please ensure the water level is within the green (NORMAL) range. To drain through circulating pump is strictly prohibited!



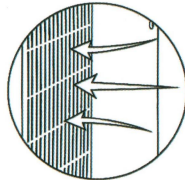
- 5** Please be sure that the airinlet and dair outlet are in good ventilation!

There must be at least 50cm from obstructions to the air outlet which is on the top of the chiller, and should leave at least 30cm between obstructions and the side air inlet.



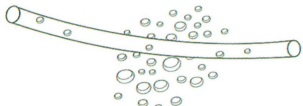
- 6** The filter screen must be regularly cleaned!

It's essential to unpick and wash the dust gauze, or the serious blockage will cause breakdown to the chiller.



- 7** Please pay attention to the effect of the condensate water!

There must be at least 50cm from obstructions to the air outlet which is on the top of the chiller, and should leave at least 30cm between obstructions and the side air inlet.



PROFESSIONAL USE ONLY!



The appliance is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction, children being supervised not to play with the appliance!

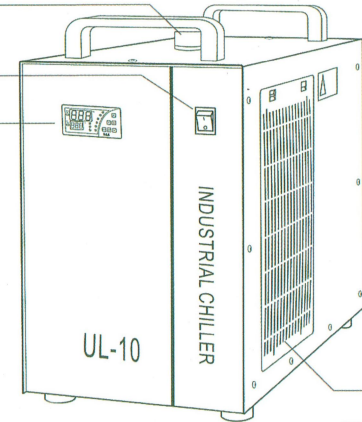
CONTOUR AND PARTS INTRODUCTION

Front

WATER SUPPLY INLET

POWER SWITCH

TEMPERATURE CONTROLLER



AIR INLET (FILTER GAUZE)

Back

COOLING WATER INLET

COOLING WATER OUTLET

ALARM OUTPUT TERMINAL

POWER SOCKET (WITH FUSE)

AIR OUTLET

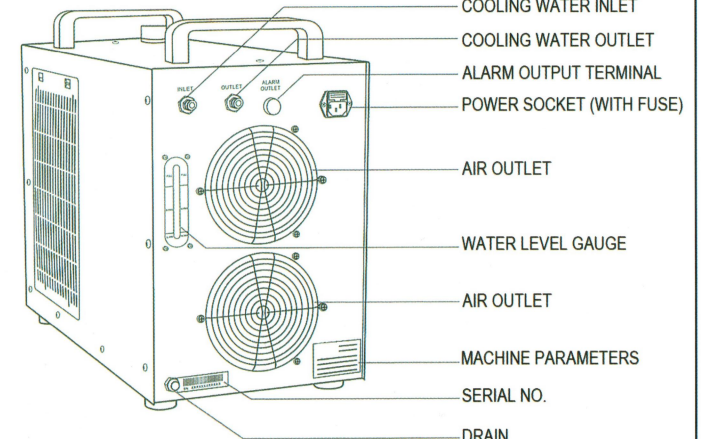
WATER LEVEL GAUGE

AIR OUTLET

MACHINE PARAMETERS

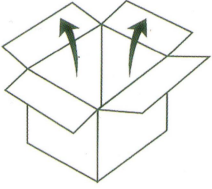
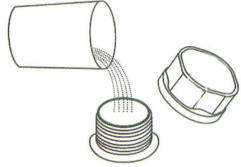
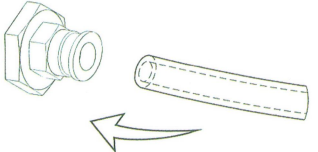
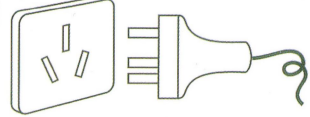

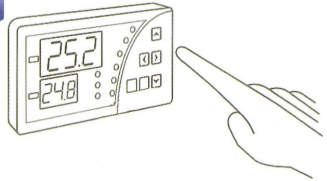
SERIAL NO.

DRAIN



INSTALLATION

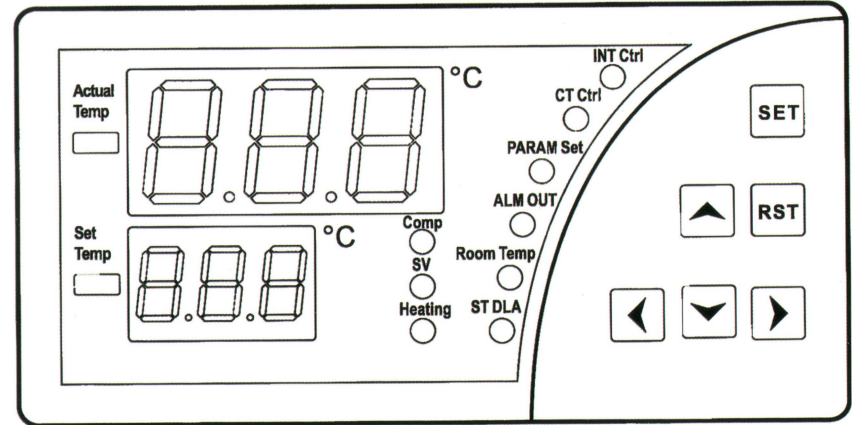
It is very simple to install this industrial cooling machine. The installation for the first time of the new machine can be carried out by following steps:

<p>1</p>  <p>Open the package to check if the machine is intact and all the necessary accessories are completed.</p>	<p>2</p>  <p>Open the injection port to feed cooling water. (Do not spill out the water!) Observing the water level gauge and adding water slowly, be careful not to have the water overflowed! For the cooling of carbon steel equipment, the water should be added an appropriate amount of cooling water additive (anti-corrosion water aqua). Users in cold area should use noncorrosive antifreeze fluid.</p>
<p>3</p>  <p>Connect the water inlet and outlet pipes well according to system conditions.</p>	<p>4</p>  <p>Plug in power and turn on the power switch. (Do not start up without water in the water tank!) (1) Power switch turned on, the circulation pump of the chiller starts working. The first time of operating may cause more bubbles in the pipe leading to a flow alarming occasionally, but running for a few minutes later, it will go back to normal. (2) After the first boot, you must immediately check whether the water pipe leaks. (3) Power switched on, if the water temperature is below the set value, it is normal that fans and other components of the machine do not work. The temperature controller will automatically control the working conditions of the compressor, magnetic valve, fans and other parts based on the set controlling 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.</p>
<p>5</p>  <p>Check the water level in the water tank. The first startup of the new chiller empties the air in the water pipe, leading a slight water level decline, but in order to keep the water level in the green area, it's allowed to add adequate water again. Please observe and record the current water level, and inspect it again after the chiller running for a period of time, if the water level drops obviously, please re-inspect the water pipeline leakage.</p>	<p>6</p>  <p>Adjust parameters of temperature controller Default setting of CWUL-05/10 series UV laser chiller temperature controller is 25°C water temperature cooling UV parameter, usually do not need to adjust the control parameter, but if special require for specific temperature, please refer P16 of «Operation and Parameters adjustment»</p>

Operation and parameters adjustment

T- 506 new temperature controller does not need to be adjusted the controlling parameters It will self-adjust controlling parameters for meeting equipment cooling requirements
T- 506H new intelligent temperature controller works in defaulted constant temperature control mode with water temperature setat 25 °C which can be adjusted as needed.
T- 506 and T-506H temperature controllers have the same functions and structure except default settings.

1. Temperature control panel introduction



(1) 温控器工作状态指示灯(如图)

Comp	ON, compressor working
SV	ON, solenoid valve working
Heating	ON, heating rod working
INT Ctrl	ON, controller working in intelligent control mode
CT Ctrl	ON, controller working in constant temperature control mode
PARAM Set	ON, controller working in parameters setting mode
ALM OUT	ON, alarm output status
Room Temp	ON, displaying room temperature
STDLA	ON, starting up delay status

- Press ∇ button to show the room temperature, seconds later default display restored. (Meanwhile, Room Temp light is on, displaying room temperature)
- \triangle/∇ buttons are for modifying parameters values and \langle/\rangle buttons are for switching parameter
- RST button: confirm.
- SET button: setting function.

2. Restore to factory settings

Before machine startup, press and hold \wedge / \vee buttons until the controller displays rE, 6 seconds later after releasing the buttons, the controller works in normal order. All parameters values settings of the controller have been restored to factory settings.

3 Thermostat parameters list

Order	Code	Item	Range	T-506 controller factory setting	Notes
1	F0	Temperature setting	-20~ 40	25.0	Cooled water temperature , constant temperature working available
2	F1	Temperated iffrence values	-15~+5	-2.0	Intelligent temperature control mode parameter, control temperature difference between water and ambient. Constant temperature mode not available
3	F2	Cooling hysteresis	0.1~3.0	0.1	This parameter contro1 water temperature precise, the value more small, the precious more high but energy efficiency ratio will worse.
4	F3	Way of control	0~1	0	1"Intelligent temperature mode, 0"Constant temperature i mode. UV laser recommend use constant temperature mode.
5	F4	Alarm for over high water temperature	1~20	10.0	When water temperature up to F0+F4 the chiller will alarm , the alarm code display E2
6	F5	Alarm for over low water temperature	1~20	15.0	When water temperature low to F0+F4 the chiller will alarm , the alarm code display E3
7	F6	Alarm for over high room temperature	40~50	45.0	When temperature of inlet air of chiller higher than F6, the chiller will alarm the alarm code display E1".
8	F7	Password	00~99	8	User menu password can change
9	F8	The allowed highest water temperature	(F9+1)~40	30	Intelligent temperature mode parameter, constant temperature mode not available.
10	F9	The allowed lowest water temperature	1 ~(F8-1)	20.0	Intelligent temperature mode parameter, constant temperature mode not available.

5. General settings adjustment

Press SET bullon to enter into the user-defined state. Meanwhile, PARAM SET is on, controller in parameters setup status.

Under constant temperature mode, the control panel displays the set temperature value (default value is 25).

At this moment, press \wedge or \vee button to change settings. After modifying the value, press RST button to save and exit, then new parameters take effect, or press SET buttonto exit without saving parameters. (Means FO modified to new values, the chiller is running under new values)If there is no more action within 20 seconds, it wi automatically exit modifying status without saving parameters.

6. Advanced settings adjustment

- Press and hold the \wedge button while press SET button for 5 seconds until 00 displayed in upper window and PAS in lower window. Then press \wedge or \vee button to select the password (default setting is 8), and then press the SET button, if the password is correct, F0 displays, entering into setup status, D1 flashing to indicate that the controller is under parameters setup status. If the password is incorrect, it returns to temperature display.
- Enter setup state, press \langle or \rangle button to switch parameter iterns circularly, then press \wedge or \vee button to modi(y)l he. parameter values. Press enter RST button at any time to exit parameters setup with saving modified parameters and relum to temperature display. then chiller runs under the new parameters. If no button is pressed within 20 seconds, the controller will automatically exit parameters setup without saving the modified parameters (under parameters setup status, system running in original parameters). Under parameters setup status, SET button does not work.

Note:

- During parameters setting condition, system runs under original parameters.
- Under constant temperature control mode, the water temperature is controlled by parameter F0;
- Under intelligent control mode, the water temperature will be automatically adjusted according to temperature changes. The temperature difference is commanded byF1.

6. Advanced parameters adjustment case:

- (1)、Case1 : 26.8℃ cooling UV laser settings
Chiller under constant temperature control mode, press SET button will display setting water temperature value (F0) then press Δ or ∇ buttons to modify setting temperature value, set the temperature to 26.8℃, press RST button save parameter and exist then back to the temperature display (If there is no any action within 20 seconds, the controller will automatically exit parameters setting return to temperature display without saving the modified parameters)
- (2)、Case: 16℃ cooling UV laser settings
Chiller under constant temperature control mode, press SET button will display setting water temperature value (F0), then press Δ or ∇ buttons to modify setting temperature value, set the temperature to 16.0℃, press RST button save parameter and exist then back to the temperature display (If there is no any action within 20 seconds, the controller will automatically exit parameters setting return to temperature display without saving the modified parameters)
- (3)、Case3: Change alarm temperature of water temperature, water temperature higher 5℃ than set value will alarm, lower 10℃ than set value will alarm.
Press and hold Δ button while press SET button lasts 5 seconds the temperature controller will display 0, then press Δ button modifies 0 to 8 (default setting password), and then press SET button will enter setting content code display turns to F0 if password corrects (Will restore to actual water temperature if password incorrect). Press Δ or ∇ button change the content code to F4, and press SET button enter setting parameter values, press Δ or ∇ button set the parameter to 5, return to content code after complete setting, and then press Δ or ∇ button modifies the content code to F5, press Δ or ∇ button set up the parameter to 10, then press RST button save and save parameter and exist then back to the temperature display (If there is no any action within 20 seconds, the controller will automatically exit parameters setting return to temperature display without saving the modified parameters)

Order	Code	Item	case 1 Set value	case 1 Set value	case 1 Set value	T-506H Temperature controller Factory Setting
1	F0	Temperature setting	26.8	16.0	25.0	25.0
2	F1	Temperature difference values	-2.0	-2.0	-2.0	-2.0
3	F2	Cooling hysteresis	0.1	0.1	0.1	0.1
4	F3	Way of control	0	0	0	0
5	F4	Alarm for over high water temperature	10.0	10.0	5.0	10.0
6	F5	Alarm for over low water temperature	15.0	15.0	10.0	15.0
7	F6	Alarm for over high room temperature	45.0	45.0	45.0	45.0
8	F7	Password	8	8	8	8
9	F8	The allowed highest water temperature	30.0	30.0	30.0	30.0
10	F9	The allowed lowest water temperature	20.0	20.0	20.0	20.0

ALARM AND OUTPUT PORTS

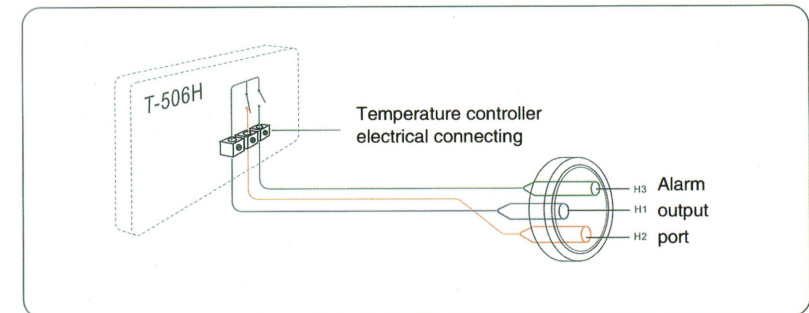
In order to guarantee the equipment will not be damaged while cooling water circulation is out of control, CWUL-05/10 series UV laser chiller equip with alarm protection function.

1. Alarm function

- (1) Alarm display: When chiller alarm, error code and water temperature will alternate display.
- (2) suspend the alarm sound: Under alarming status press any buttons can stop the alarm sound, but the alarm will lift until alarm cause solved.
- (3) Alarm causes and working status table

Condition	Display	Alarm code	Buzzer	Input Port H1、H2	Input Port H1、H3
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

2. Alarm output port and wiring diagram



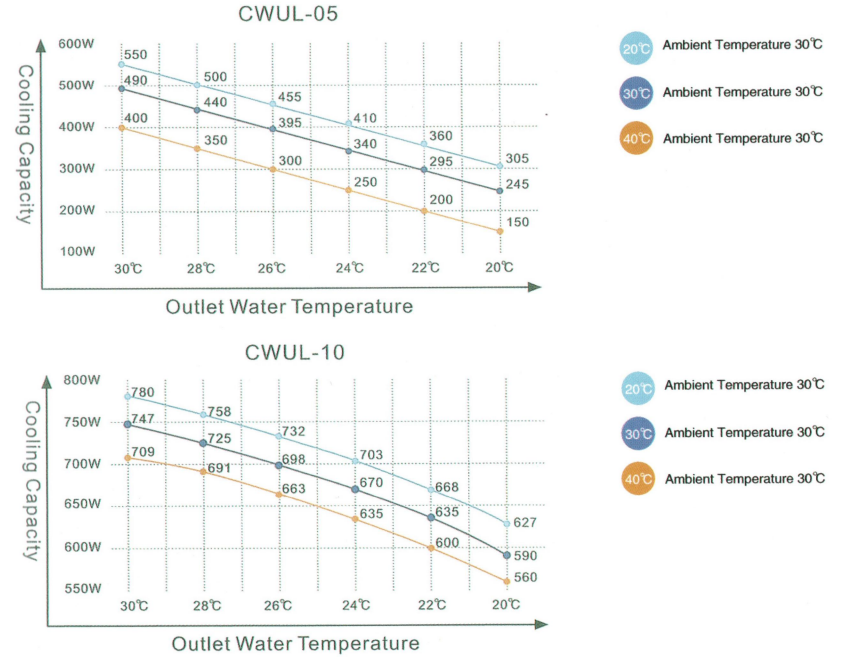
Note: the flow alarm is connected to the normally open relay and normally closed relay contacts, requiring operating current less than 5A, working voltage less than 300V.

TECHNICAL PARAMETERS

Model	CWUL-05	CWUL-10
Voltage	AC 1P 220V	AC 1P 220V
Frequency	50 HZ	50 HZ
Current	0.25-2.1 A	0.25-2.3 A
Compressor power	0.17 KW	0.32 KW
	0.23 HP	0.23 HP
Nominal cooling capacity	1262 Btu/h	2763 Btu/h
	0.37 KW	0.81 KW
	318 Kcal/h	696 Kcal/h
Refrigerant	R-134a	R-134a
Refrigerant charge	280g	300g
Precision	±0.2℃	±0.3℃
Reducer	Capillary	
Protection	Overcurrent protection for compressor, flow alarm, over temperature alarm	
Pump power	50W	
Tank capacity	6L	
Inlet and outlet	External Φ10mm barbed connector	Φ10mm speedy connector
MAX. LIFT	12M	
MAX. FLOW	13L/MIN	
N.W.	23Kgs	24 Kgs
G.W.	26Kgs	27 Kgs
Dimension	58x29x47cm (LxWxH)	
Package dimension	70x43x58 cm (LxWxH)	

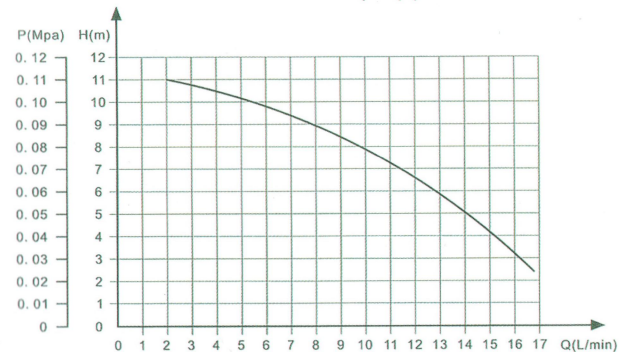
WATER PUMP PERFORMANCE CURVE

Performance curve of chiller under ambient temperature 20℃、30℃ and 40℃:



WATER PUMP PERFORMANCE CURVE



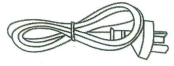


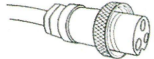
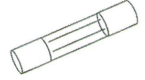
50W DC water pump performance curve



SIMPIE TROUBL ESHOOTING

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 awater pipe directly connect tothe water outlet and inlet butstill 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 astable	To improve the power supply circuit or use a voltage regulator
	Improper parameter settings on	To reset controlling parameters or restore factory settings
	Switch the power frequently	To ensure there is sufficient time for refrigeration (more than 5 minuets)
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	Increase water temperature or to preserve heat for pipeline
Water drains slowly from drainage nozzle during water changing		

PACKING LIST

1 1 unit of industrial chiller 	2 1 copy of user manual 	3 1 pc of power cord 	4 1 pc of connection hose 
5 2 pcs of sealed hoop (optional) 	6 1 pc of alarm signal output plug 	7 1 pc of spare fuse (Held in the spare fuseholder of power socket) 	



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