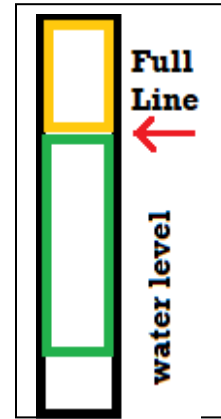


## S-series Water Chiller Instructions

Please go over the instructions below before using the chiller.

### Startup procedures

- 1) Remove the cap on the back and fill with distilled water until the water level reaches below the "Full" line. **This ensures accurate reading and good cooling efficiency.**
- 2) Connect the chiller's water outlet to the laser machine's water inlet. Connect the chiller's water inlet to the laser machine's water outlet.
- 3) Make sure the power button is off. Connect the AC power cord from the back of the chiller to a wall mount AC outlet.
- 4) Power up the chiller. Check the water flow direction. Check for any leaks.



### Operation

By default, the water temperature is set to **22° Celsius (71° F)** which is the default setting and recommended setting. When the water is over the set temperature, the chiller will start to cool down the water to the setting temperature. **The minimum set temperature must be more than 18 Celsius.**

### Built-in Warmer

When the water temperature is below **13° C**, the heater will warm the water up to **15° C** to avoid freezing the laser tube.

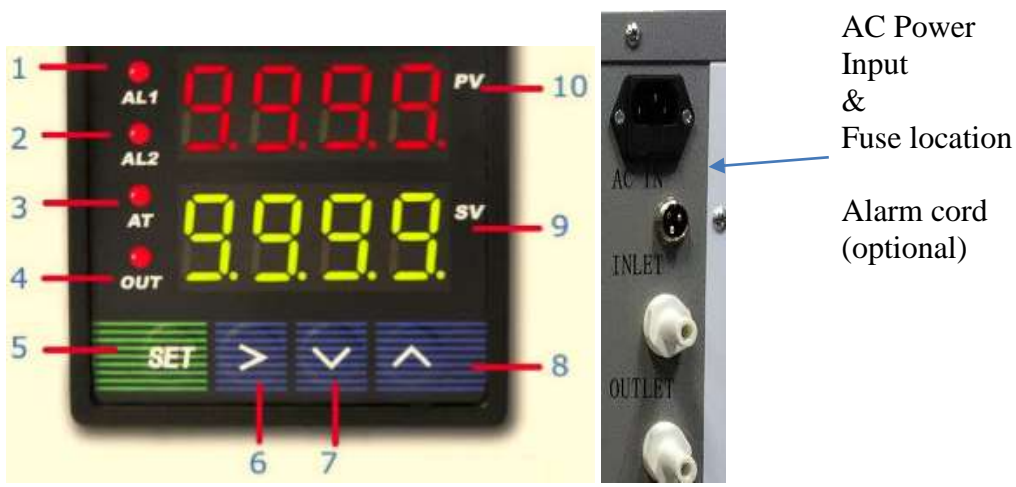
**Note: The heater is not designed to heat the water up to the set temperature.**

### Alarm

- 1) **Water temperature is lower than 15° C.**  
Small beeping sound in low frequency and blue LED will be flashing to notify low water temperature. Once the temperature reaches 15° C, the beeping will stop and blue LED will stop flashing.
- 2) **Water is not flowing.**  
Loud beeping.
- 3) **Temperature is getting too high.**  
Loud beeping.

**In Case 2 and 3, left and right alarm pins become open circuit when alarm occurs. The middle pin is not used.**

## Chiller Control Instruction with JLD612



- 1 -- AL1, compressor working.
- 2 -- AL2, valve triggered for low power chilling.
- 7 -- Decrease temperature.
- 8 -- Increase temperature.
- 9 -- Set temperature for cooling. (**Recommend at 22° C, should not be lower than 18° C**)
- 10-- Water temperature reading.

## Cautions and Conditions

- 1) Water pump will be damaged when running without water.
- 2) Air filters must be cleaned regularly (unscrew two screws on the side doors for some models). Leaves space around the chiller for proper ventilation.
- 3) Distilled water is recommended to prevent bacterial growth. Change the water every 3 - 6 months, or when you notice that your water is getting dirty.
- 4) **Do not power on immediately after powering off the chiller, it could possibly blow the fuse** (fuse is located under the power socket on chiller). Please wait for about 30 seconds.
- 5) To ensure an accurate temperature reading, keep the water level at the high line because the heater's sensor is not the same as the sensor for PV (Current water temperature).
- 6) To avoid water back flow from the machine when draining, drain water from the bottom of the chiller at the drain plug first.

## Specification

Heater power: 500W

Water Inlet/Outlet diameter: 10 mm

Ambient Temperature:  $\leq 35^{\circ}\text{C}$  (95°F)

Maintain Water Temperature: 18~24°C

Built in water flow alarm and high/low temperature alarm

## Trouble Shooting

- 1) **Chiller does not turn on when switch is on.**  
Check if the water pump is running. If not, the fuse could be blown. Replace the fuse.
- 2) **Water was not heated up to set temperature more than 15°C.**  
It is normal as the heater will only heat the water up to approximately 15°C.
- 3) **Water was not chilled to set temperature lower than 15°C.**  
It is normal as the S-series restricts the cooling function to minimum 15°C.
- 4) **Chiller does not cool down the water to 22°C.**  
Quick Check: Turn off the laser power and see if the chiller can cool down the water. If it does, it means the chiller is still functioning but not able to cool down high water temperature.
  - a) Make sure you are using the appropriately sized water chiller for your laser tube power. If not, you may need to upgrade to a higher power water chiller.
  - b) If your compressor's performance is getting worse, it could potentially be that there is not enough refrigerant left in your water chiller. Replacement of the chiller is needed at that point.
- 5) **Water did not warm up to 15°C.**  
Make sure the water is filled up to the full level. The heater takes time to warm up water depending on volume. To make the heating function work properly, the water needs to be filled to the full level.
- 6) **When I power on the chiller the water heated up, however the temperature reading was much higher/lower than the set temperature. (E.g. 30°C instead of 22°C / 9°C instead of 22°C)**  
Make sure the water is filled to the full level when you power on the chiller. Not filling up the water could cause a faulty reading. You can touch the silicone tubing to verify whether the water is warm or cool. If the silicone tubing is cool it means the water is cold and it is just a faulty reading due to not enough water. If the tubing is very warm, the chiller might be damaged. You may turn off the chiller until the water temperature goes down and then power it on again to verify. If it does not function as intended, turn off the chiller and seek assistance from LightObject. Repair or replacement might be needed to prevent damage to your laser tube.
- 7) **Is there any way that I can turn off the beeping alert?**  
Unfortunately, there is no way to turn it off. Please read "Alarm" section to understand the reasons for the beeping sound.
- 8) **There is a loud beeping sound. The water is full, water temperature is in normal range and I don't see a kink in the tube.**  
Power off, and unplug power. Remove side cover panels and check if there is a kink in the silicone tubing inside the chiller.
- 9) **Chilling never stops?** The setting might be changed. Please set AH1 value to 2.
- 10) **Temperature reads EEEE?** Temperature sensor connection may be loose on the 612 controller.