

K1 Cooling Water Refill System

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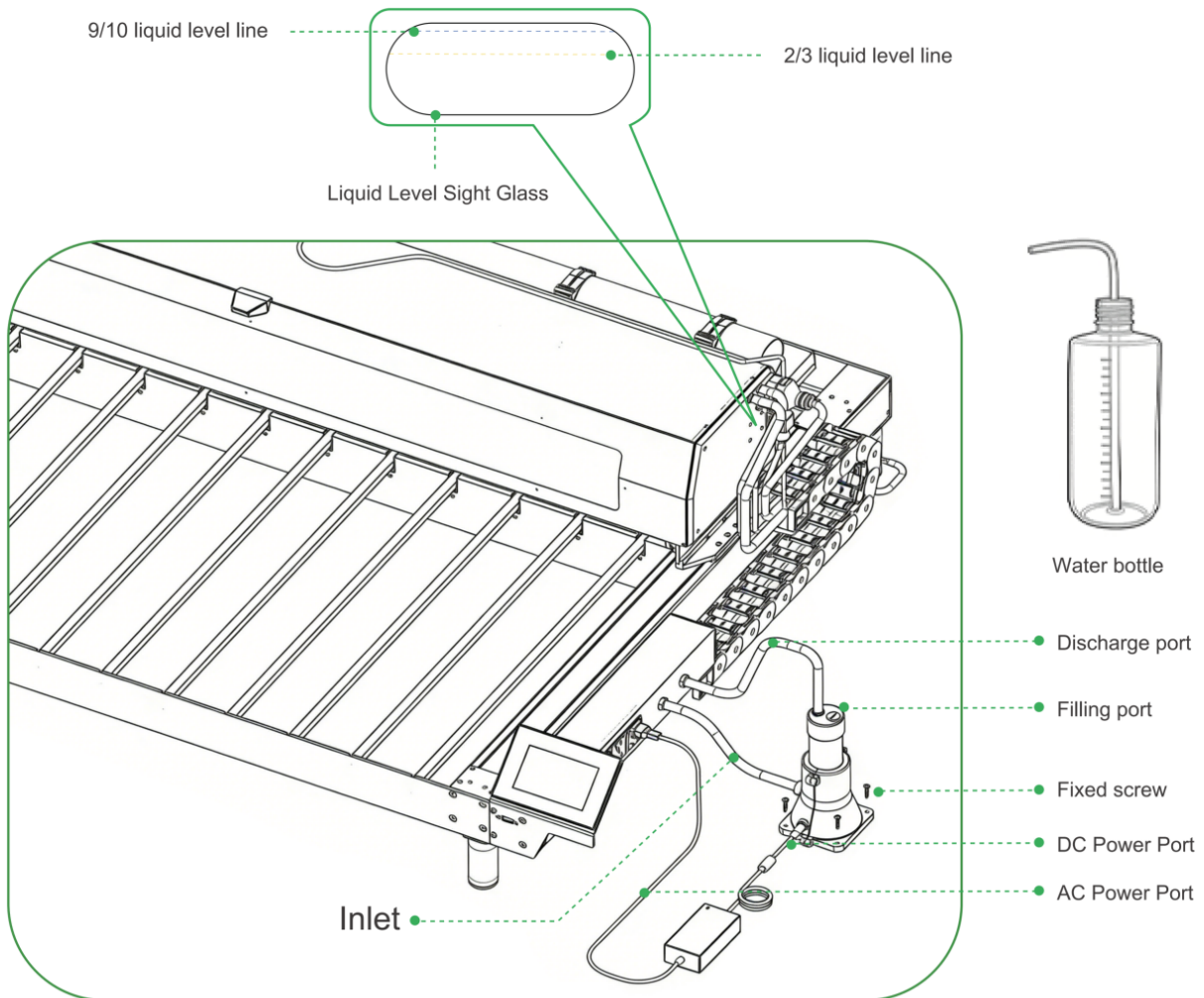
This system provides basic heat dissipation for the CO₂ laser tube through circulating water, ensuring stable operating temperatures during use and preventing performance degradation or damage caused by overheating.

When the ambient temperature drops below 0°C, it is recommended to add an appropriate amount of antifreeze or dedicated coolant to the cooling water to prevent freezing, which could block the tubing or damage the laser tube. This ensures stable and reliable operation of the cooling system in low-temperature environments.

Instructions for the Hydration Device

1. Purpose: This device is designed for customers who have purchased K1, K1 Pro, K1 Max, or similar models but did not acquire the corresponding industrial chiller. It facilitates the convenient replenishment of coolant for the machine.

2. Interface Definition and Operational Process



- Secure the water replenishment unit to the wooden table using 4 self-tapping screws;
- Install the water pipes and cables as shown in the diagram;
- Unscrew the cap of the fill port (turn counterclockwise to open), then pour the coolant from the bottle into the reservoir. If the operating temperature is below 0°C, add antifreeze to the coolant at the specified ratio (check Item 4 for details).
- After turning on the machine's main power, the replenishment unit will pump coolant into the machine. Pour the coolant in multiple batches until the liquid level at the observation window exceeds 9/10;
- Wait 10 minutes to observe if the liquid level falls significantly (to check for leaks). If the level remains stable, the coolant filling is complete. During subsequent use, if the liquid level falls below 2/3, promptly replenish the coolant.

3. Precautions for Use:

- Due to transportation requirements, the machine's coolant will be drained prior to packing and shipment. Therefore, the initial coolant refill will take longer, estimated at 20 to 30 minutes. Ensure the liquid level exceeds 9/10 before using the machine after refilling.
- Always disconnect the machine's power supply before refilling or replacing coolant.
- The machine must use purified water (high-purity deionized water). Do not use tap water, mineral water, wastewater, or other non-compliant water sources. Substandard water quality will impair cooling efficiency and shorten the cooling system's lifespan.
- Before operation, ensure all containers and pipes in contact with coolant are clean. During operation, prevent dust, grease, and other contaminants from entering the coolant.
- When the machine remains unused for extended periods (over 6 months) but is planned for future use, we recommend replacing the coolant. Before each startup, check the coolant level. If the level falls below 2/3, add an appropriate amount of coolant.

4. Determine the quantities of antifreeze (propylene glycol-based antifreeze) and purified water; antifreeze must be provided by the customer.

Local Annual Lowest Temperature (°C)	Recommended concentration (%)	Antifreeze (ml)	Pure water (ml)
$T > 0$	0	0	1500
$-10 \leq T \leq 0$	20	300	1200
$-20 \leq T \leq -10$	35	525	975
$-30 \leq T \leq -20$	45	675	825
$-40 \leq T \leq -30$	50	750	750
$-50 \leq T \leq -40$	60	900	600

*The machine requires a coolant capacity of 1500 ml.

5. YouTube tutorial link: @Tyvokspiderlaser



Youtube

