DasMarine CW-3000

DasMarine CW-3000 Industrial Water Chiller Instruction Manual

Model: CW-3000

1. Introduction

This manual provides essential instructions for the safe and efficient operation and maintenance of your DasMarine CW-3000 Industrial Water Chiller. Please read this manual thoroughly before installation and use to ensure proper function and to prevent damage to the unit or connected equipment. The CW-3000 is designed for thermolysis-type water cooling, suitable for applications such as cooling a single 80W CO2 glass laser tube or below, and for 0.8KW / 1.5KW spindle cooling.

2. Safety Information

- **Electrical Safety:** Ensure the power supply matches the chiller's requirements (110V). Always disconnect power before performing any maintenance or inspection. Do not operate with damaged power cords.
- **Water Safety:** Use distilled or deionized water to prevent mineral buildup and corrosion. Do not operate the chiller without sufficient water in the tank.
- **Placement:** Place the chiller on a stable, level surface with adequate ventilation around all sides to ensure proper heat dissipation. Avoid direct sunlight or heat sources.
- **Temperature Range:** The chiller operates within a temperature range of 1°C to 45°C. It is a thermolysis type, meaning its cooling capacity is dependent on ambient temperature. It does not actively refrigerate to a set temperature like compressor-based chillers (e.g., CW-5000).
- **Emergency Shutdown:** Familiarize yourself with the power switch location for quick shutdown in emergencies.

3. Product Overview and Components

The DasMarine CW-3000 Industrial Water Chiller features a compact design with essential components for effective water cooling.

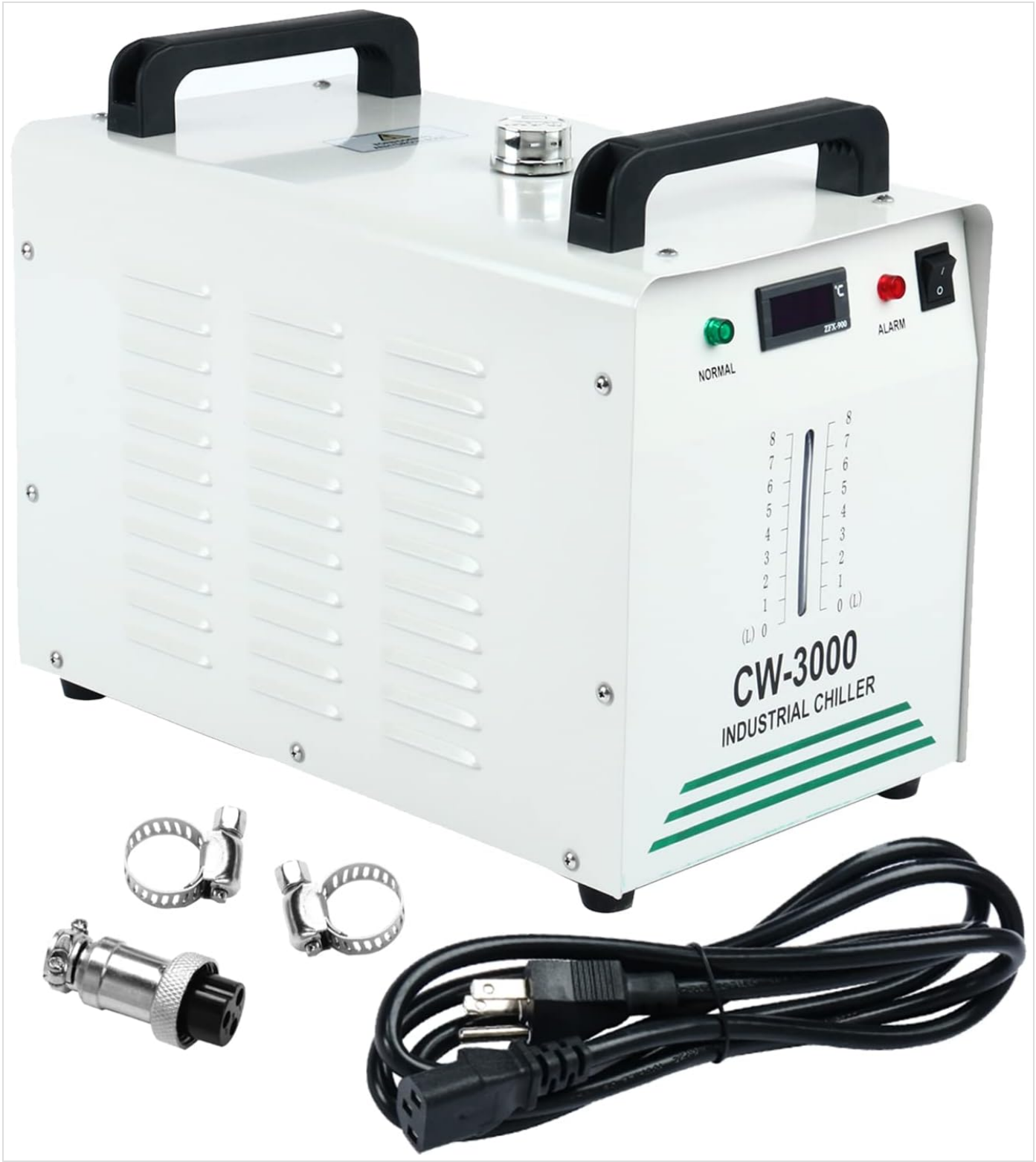

Figure 3.1: DasMarine CW-3000 Industrial Water Chiller with included accessories (hose clamps, power cord, and connector).

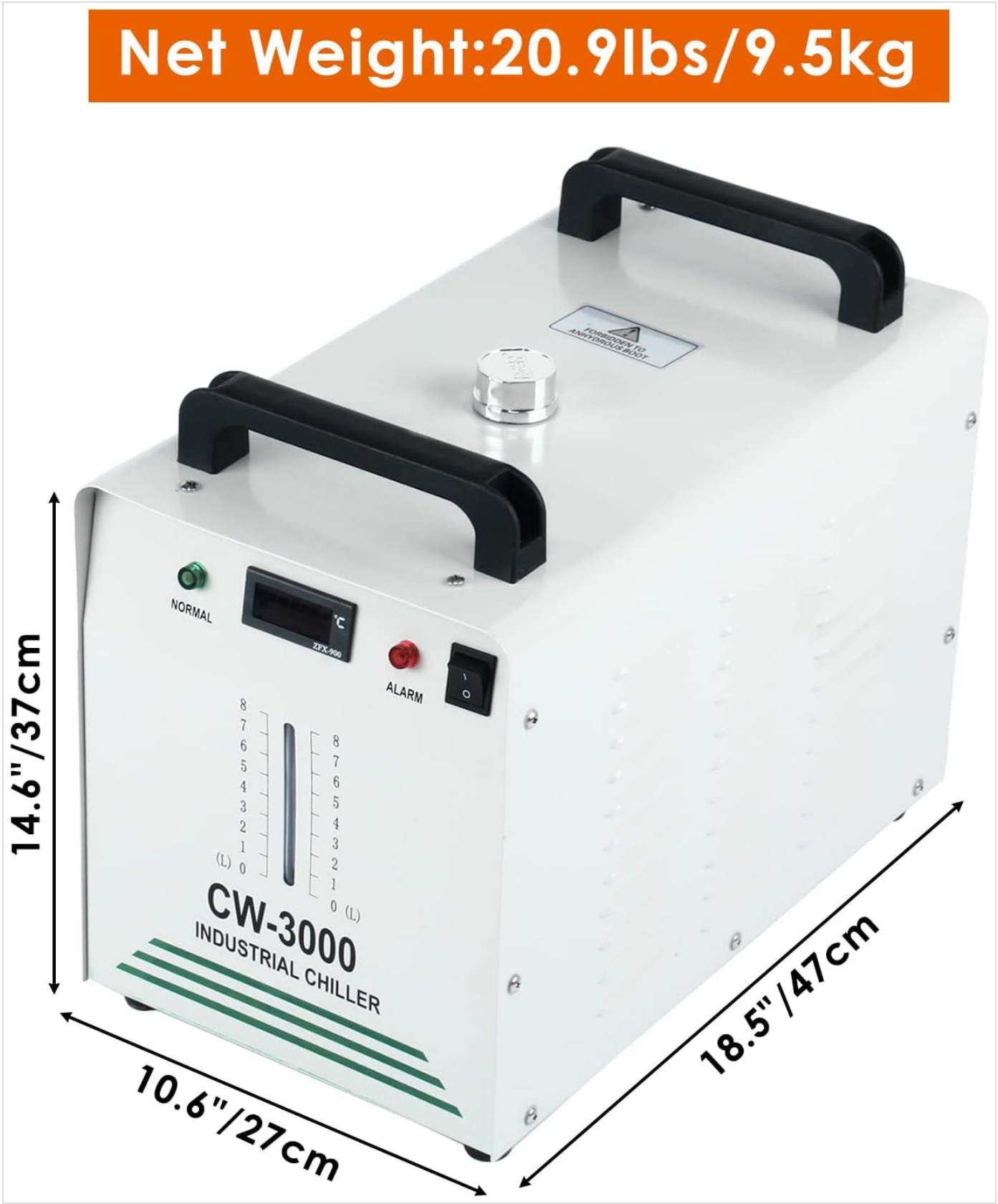

Figure 3.2: Dimensions of the CW-3000 chiller: 14.6 inches (37cm) height, 10.6 inches (27cm) width, and 18.5 inches (47cm) depth. Net weight is 20.9 lbs (9.5 kg).

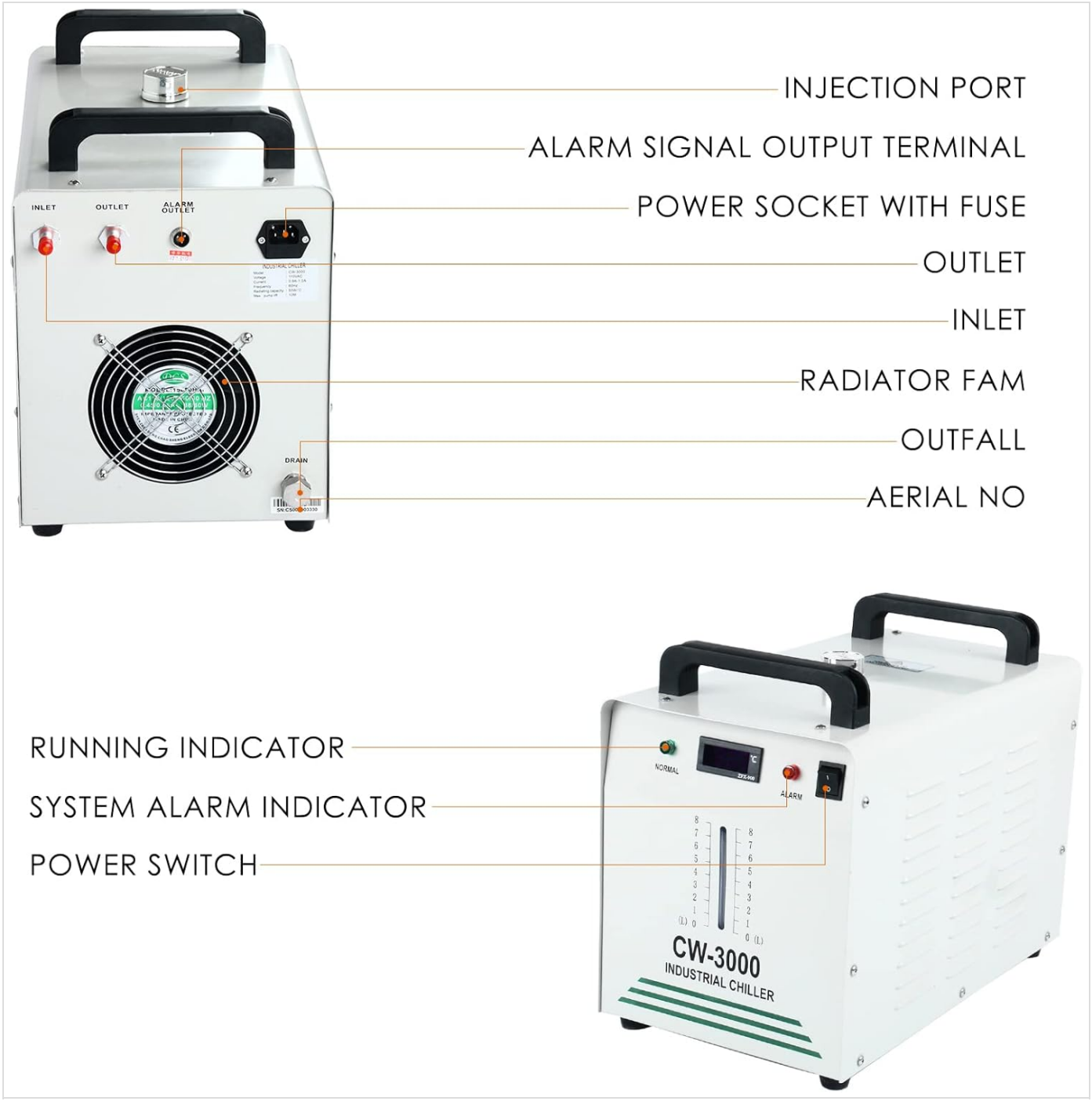

Figure 3.3: Labeled components of the CW-3000. Rear panel shows Injection Port, Alarm Signal Output Terminal, Power Socket with Fuse, Outlet, Inlet, Radiator Fan, Outfall, and Aerial No. Front panel shows Running Indicator (Normal), System Alarm Indicator (Alarm), and Power Switch.

Key Components:

- **Water Injection Port:** Located on top, used for filling the water tank.
- **Water Level Indicator:** Front panel display showing current water volume.
- **Inlet/Outlet Ports:** Connect to the equipment requiring cooling.
- **Drain Port:** For emptying the water tank.
- **Radiator Fan:** Dissipates heat from the water.
- **Temperature Display:** Digital display showing the water temperature.
- **Normal Indicator (Green):** Illuminates when the chiller is operating normally.
- **Alarm Indicator (Red):** Illuminates and an alarm sounds if an issue (e.g., low water flow) is detected.
- **Power Switch:** On/Off control for the unit.
- **Alarm Signal Output Terminal:** Provides a signal for external alarm systems.

4. Technical Specifications

Feature	Specification
Model	CW-3000AG Industrial Chiller
Cooling Type	Thermolysis (Radiator-type)
Cooling Capacity	50W/°C
Water Tank Capacity	8 Liters
Maximum Flow	10 L/min
Maximum Pumping Lift	10 M
Power Source	110V AC, 0.9A-1.0A, 60Hz
Wattage	80 Watts (for connected equipment, chiller itself is passive)
Temperature Range	1°C to 45°C (ambient temperature dependent)
Dimensions (L x W x H)	18.5 x 10.6 x 14.6 inches (47 x 27 x 37 cm)
Item Weight	21.8 pounds (9.9 kg)
Application	Cooling single 80W CO2 glass laser tube or below (emitting rate < 60%), 0.8KW / 1.5KW Spindle Cooling

Note: This is a thermolysis-type water chiller. It does not have a compressor and therefore does not actively refrigerate water to a set temperature. The water temperature will generally be close to the ambient room temperature. For active refrigeration, a CW-5000 or higher model is required.

5. Setup Instructions

1. **Unpacking:** Carefully remove the chiller from its packaging. Inspect for any shipping damage.
2. **Placement:** Position the chiller on a flat, stable surface. Ensure there is at least 10 cm (4 inches) of clear space around all sides for proper ventilation.
3. **Water Filling:**
    - Open the water injection port on the top of the unit.
    - Fill the tank with approximately 8 liters of distilled or deionized water. Do not use tap water as it can cause mineral buildup and damage.
    - Monitor the water level indicator on the front panel. Fill until the level is within the "Normal" range.
    - Close the injection port securely.
4. **Connecting Hoses:**
    - Connect one end of the water hose (not included) to the chiller's "INLET" port and the other end to the "OUTLET" port of your laser or spindle equipment.
    - Connect another water hose from the chiller's "OUTLET" port to the "INLET" port of your laser or spindle equipment.
    - Secure all hose connections with clamps to prevent leaks.
5. **Power Connection:** Connect the power cord to the chiller's power socket and then plug it into a grounded 110V AC power outlet.

6. Operating Instructions

1. **Initial Start-up:**

- After connecting all hoses and filling with water, turn on the power switch.
- The water pump will start, and water will begin circulating. The "Normal" (green) indicator should light up.
- Observe the water level indicator. The level may drop slightly as water fills the connected equipment. If it drops below the minimum, add more water.
- Allow the chiller to run for a few minutes to purge any air from the system.

2. **Monitoring:**
   - Regularly check the temperature display to ensure the water temperature is within acceptable limits for your equipment.
   - Ensure the "Normal" indicator remains green. If the "Alarm" (red) indicator lights up and an audible alarm sounds, refer to the Troubleshooting section.
3. **Shutdown:**
   - Before shutting down the chiller, ensure the connected equipment (e.g., laser) is also turned off.
   - Turn off the power switch on the chiller.
   - For extended periods of non-use, it is recommended to drain the water from the chiller and connected equipment to prevent stagnation or freezing.

7. Maintenance

- **Water Replacement:** Replace the water every 1-3 months, depending on usage and water quality. Always use distilled or deionized water.
- **Cleaning the Radiator:** Periodically inspect and clean the radiator fins to ensure optimal heat dissipation. Use compressed air to remove dust and debris. Ensure the chiller is powered off and unplugged before cleaning.
- **Filter Cleaning:** If your model includes a water filter, clean or replace it as recommended to maintain water flow. (Note: Specific filter details not provided, general advice).
- **Hose Inspection:** Regularly check hoses for kinks, cracks, or leaks. Replace damaged hoses immediately.
- **Winterization (if applicable):** If operating in an environment where temperatures may drop below freezing, drain the water completely or use an appropriate non-corrosive antifreeze solution designed for cooling systems.

8. Troubleshooting

Problem	Possible Cause	Solution
Chiller does not power on.	No power supply; Power cord loose; Blown fuse.	Check power outlet and connections; Ensure power switch is ON; Check and replace fuse if necessary.
Alarm sounds, red indicator lights up.	Low water level; Water flow blockage; Pump malfunction.	Check water level and refill; Inspect hoses for kinks or blockages; Clean pump if accessible; Contact support if pump is faulty.
Water temperature is too high.	Insufficient ventilation; Ambient temperature too high; Radiator fins blocked; Chiller capacity exceeded.	Ensure adequate space around chiller; Operate in a cooler environment; Clean radiator fins; Verify connected equipment's cooling requirements are within CW-3000's capacity. Consider a compressor-based chiller (e.g., CW-5000) for lower temperatures.
Water leakage.	Loose hose connections; Damaged hoses or seals.	Tighten hose clamps; Inspect and replace any damaged hoses or seals.

9. Warranty and Support

Specific warranty details for the DasMarine CW-3000 Industrial Water Chiller are typically provided at the point of purchase or within

separate warranty documentation. Please refer to your purchase receipt or contact the seller directly for warranty claims and support. For technical assistance or inquiries, please contact DasMarine customer support through their official channels or the retailer from whom the product was purchased.

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