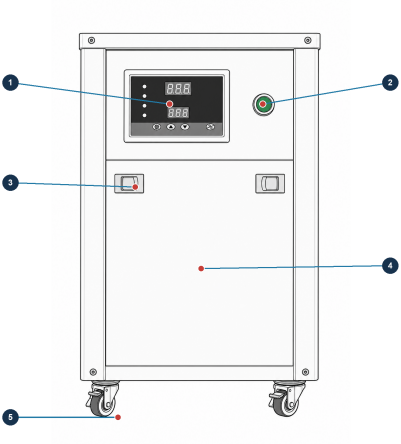
OPERATOR MANUAL NO. 13925

USS-ZWC00020

INDUSTRIAL WATER CHILLER

Installation • Operation • Maintenance • Troubleshooting

ACTUAL FRONT PANEL



1. Temperature controller
2. Green START button
3. Recessed door handles
4. Lower service door
5. Locking casters

Nameplate and cabinet stickers are omitted. Use the unit nameplate for final electrical ratings.

Cooling	Supply option	Tank
1700 W	110 / 220 V AC	7.5 L

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1. SAFETY INFORMATION

DANGER High voltage is present inside the cabinet. Isolate power before opening any panel. Electrical work must be performed by qualified personnel.

Before Use

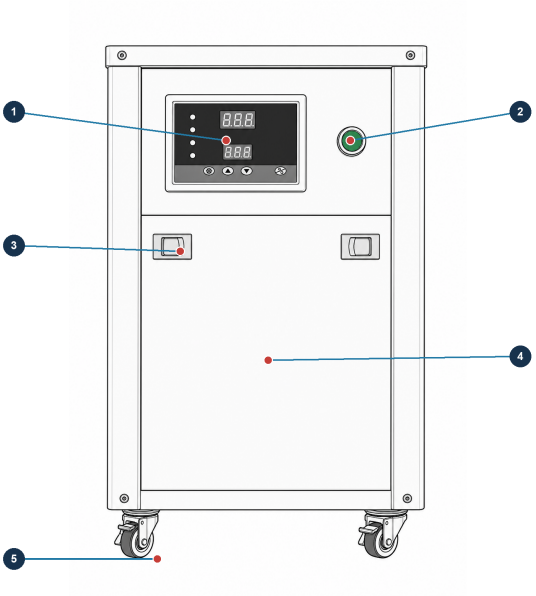
- Read this manual before installation or operation. Keep it near the equipment.
- Confirm the unit nameplate voltage and frequency. Provide protective grounding.
- Fill the tank before startup. Never run the pump or chiller without water.
- Use clean filtered water only. Do not use oil, corrosive, flammable or unapproved fluids.
- Keep hoses clear of kinks and blockage. Repair leaks before operation.
- Install indoors on a level surface. Protect from rain, splash, sunlight and corrosive air.
- Keep the fan exhaust and air inlet unobstructed. Do not place objects on the unit.
- Stop the connected process load when an alarm occurs. Do not repeatedly reset a fault.

REFRIGERANT This unit uses R410A. Sealed-system service requires qualified refrigeration personnel.

2. PRODUCT OVERVIEW

The USS-ZWC00020 supplies temperature-controlled cooling water to industrial process equipment. It integrates a rotary compressor, air-cooled condenser, SUS304 coil evaporator, magnetic pump, 7.5 L tank and electronic protection controller.

ACTUAL FRONT PANEL



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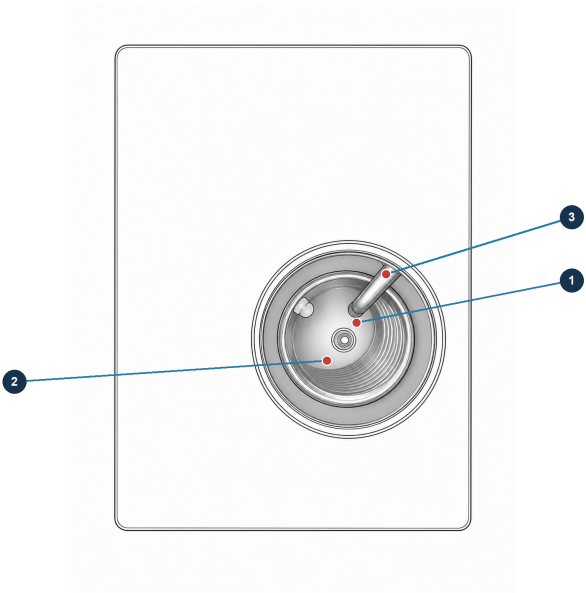
Key Functions

- Automatic temperature control from 5°C to 32°C.
- Low water, flow, high/low temperature and cooling-fault protection.
- External dry-contact protection output for process-load interlock.

3.1 TOP WATER-FILL OPENING

TOP WATER-FILL OPENING



1. Water-fill opening
2. Stainless-steel tank
3. Internal stainless pipe

ADD WATER HERE — Use clean filtered water. Fill to the normal operating level; do not overfill.

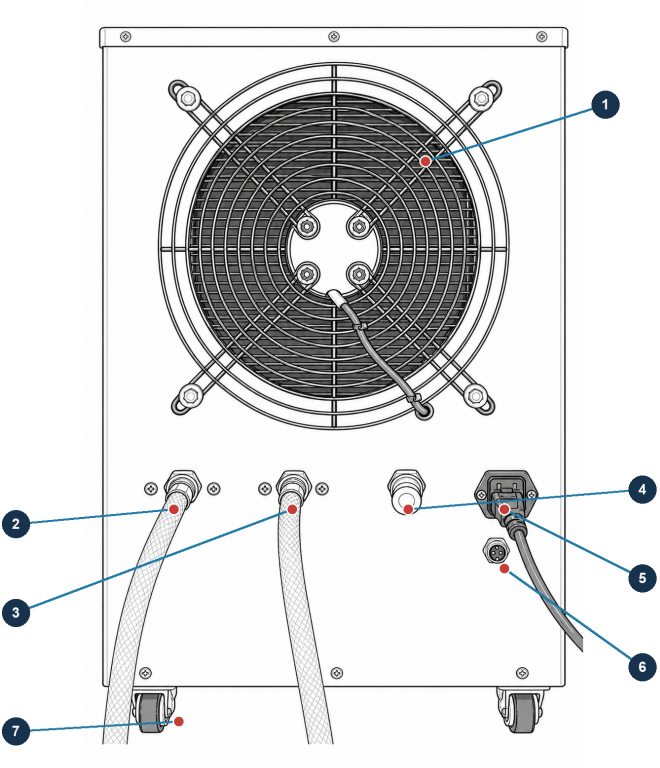
Filling Rules

- Use clean filtered water or water of comparable cleanliness.
- Fill to the normal operating level. Do not allow water to overflow onto the cabinet.
- After circulation removes air from the hoses, recheck the tank level and top up if needed.
- Do not add oil, corrosive fluid, flammable fluid or unapproved antifreeze.

DO NOT RUN DRY Confirm adequate water level before every startup.

3.2 REAR PANEL & CONNECTIONS

REAR PANEL — CONNECTION POINTS



1. Cooling fan
2. Water inlet (return)
3. Water outlet
4. Drain port
5. AC power inlet
6. Protection signal
7. Casters

Protection signal: pins 1 and 3 are closed during normal operation and open on alarm.

FLOW DIRECTION Process return → WATER INLET → chiller → WATER OUTLET → process load.

4. TECHNICAL SPECIFICATIONS

VERIFY 110 V AC and 220 V AC versions are factory options. Confirm voltage and frequency on the unit nameplate.

Item	Rating
Model	USS-ZWC00020
Cooling capacity	1700 W / 5830 Btu/h
Total input power	1050 W
Power supply	110 V AC or 220 V AC; factory option
Frequency	As marked on the unit nameplate
Refrigerant	R410A; capillary control
Compressor	Hermetic rotary; 600 W motor
Condenser	Copper tube / aluminum fins
Evaporator	SUS304 stainless steel coil
Control range	5°C to 32°C
Pump	Magnetic; 34 m head / 20 L/min
Tank	7.5 L
Protection	Overheat, overload, anti-freeze
Net weight	35 kg
Dimensions	W380 × H600 × L480 mm

5. QUICK INSTALLATION — 6 STEPS

Use this page as a first-start checklist. Detailed requirements follow on the next pages.

1	**Unpack and inspect** Check the cabinet, accessories, hoses and manual for damage or missing items.
2	**Connect the water circuit** Connect chiller OUTLET to the process inlet and process return to chiller INLET. Close DRAIN.
3	**Add cooling water** Open the top fill opening. Add clean filtered water to the normal level; do not overfill.
4	**Verify power and start** Confirm the nameplate is 110 V or 220 V AC as ordered. Ground the unit, connect power and press START.
5	**Check circulation and level** Inspect for leaks. Initial air bubbles may briefly affect flow; recheck and top up after circulation.
6	**Set temperature and observe** Adjust the setpoint, monitor the first cooling cycle and avoid frequent power cycling.

FIRST START If water temperature is already below the setpoint, the fan and compressor may remain off; this is normal.

6.1 SITE PREPARATION

Site Requirements

- Clean, ventilated, low-dust indoor location; firm and level floor.
- Leave service access around side panels and rear connections.
- Do not trap hot exhaust air against a wall or nearby equipment.
- Protect the unit from rain, splash, direct sunlight and corrosive atmospheres.
- Keep the top fill opening, side panels and rear connections accessible.

Placement

1. Move the unit into position and secure the casters if required.
2. Level the cabinet so the tank and water-level indication remain accurate.
3. Remove packaging and confirm the fill opening and ventilation paths are clear.
4. Keep clearance for hose bends, service access and hot-air discharge.

VENTILATION Recirculated hot exhaust air can cause high-temperature alarms and poor cooling.

6.2 WATER CIRCUIT & FILLING

Connect the Hoses

1. Connect WATER OUTLET to the inlet of the process equipment.
2. Connect the process return line to WATER INLET.
3. Confirm the DRAIN port is closed and capped or valved as supplied.
4. Route hoses without sharp bends, crushing or high points that trap excessive air.
5. Support hoses so their weight does not strain cabinet connections.

Fill and Prime

1. Open the top fill opening and add clean filtered water to the normal level.
2. Start the unit and immediately inspect every joint for leakage.
3. Allow trapped air to leave. A brief flow alarm may occur during initial priming.
4. Stop if flow does not stabilize; check hose routing, filter and pump.
5. Recheck tank level after circulation and add water if it has dropped.

LEAK CHECK Do not leave the first startup unattended.

6.3 ELECTRICAL & COMMISSIONING

QUALIFIED PERSONNEL ONLY Connect the chiller to a correctly rated, protected and grounded circuit.

Electrical Connection

1. Confirm the unit is the ordered 110 V AC or 220 V AC version. Match site voltage and frequency to the nameplate.
2. Connect protective earth before energizing the unit.
3. If used, wire the protection-signal output to the process-load interlock.
4. Normal operation: connector pins 1 and 3 are closed. An alarm opens the contact.

Commissioning Checklist

Check	Condition
□	Tank filled; drain closed
□	Hoses correctly connected; no kinks or leaks
□	Stable flow and normal pump sound
□	Fan runs when cooling is demanded
□	Temperature display is stable and plausible
□	Protection contact responds correctly

7. OPERATION

Startup

1. Verify water level and correct inlet/outlet connections.
2. Confirm the process load and interlock are ready.
3. Turn on the supply and press the green START button.
4. Observe the display, pump, fan and water circuit. Stop for leakage, abnormal noise or persistent alarm.

Normal Operation

- The controller starts and stops cooling automatically around the set temperature.
- Monitor the first production run after installation or maintenance.
- Keep airflow open and check that process temperature remains stable.
- Avoid frequent power cycling; allow each operating state to stabilize.

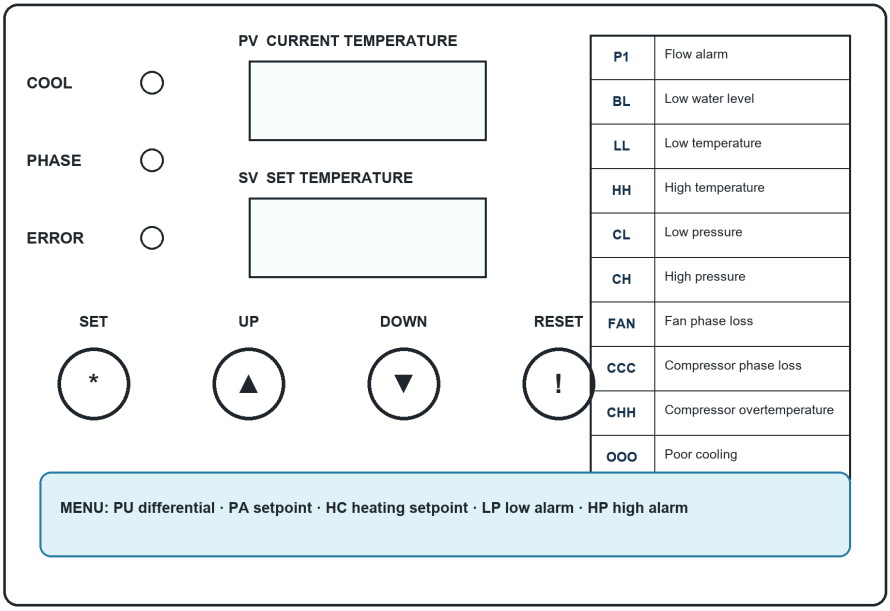
Shutdown

1. Stop or unload the connected process equipment.
2. Press the START/STOP control as configured, then isolate supply power if required.
3. For extended shutdown, isolate power, drain and clean the tank.

ALARM RESPONSE Protect the connected load first. Record the displayed code, then correct the cause before reset.

8. CONTROLLER & SETTINGS

TEMPERATURE CONTROLLER



Set Temperature

1. Press and hold SET for about 5 seconds.
2. Use UP or DOWN to select a menu code; press SET to enter.
3. Adjust the value with UP/DOWN, then press SET to save.
4. For direct setpoint adjustment, use UP/DOWN when the main display is active.

FACTORY SETTINGS Change PU, LP, HP or other protection values only for a defined commissioning reason. Record the original value first.

9. MAINTENANCE

ISOLATE POWER Disconnect power and wait for the fan to stop before cleaning or opening panels.

Interval	Task
Before each use	Water level; hoses; leaks; display; airflow; abnormal noise
Monthly	Clean condenser fins; clean tank; inspect/clean filter element
Dusty sites	Shorten condenser-cleaning interval
Long shutdown	Drain, clean and dry accessible water-path parts

Condenser Cleaning

1. Open the required side panel after power isolation.
2. Blow clean compressed air through the fins until airflow is clear.
3. Do not bend fins or force debris deeper into the heat exchanger.
4. Reinstall all panels before operation.

Water Circuit

Drain dirty water, rinse the tank, clean or replace the filter element, refill and leak-check. Do not use corrosive cleaners.

10. ALARMS & DISPLAY CODES

Code	Meaning	First action
P1	Flow alarm	Check hoses, filter, pump and flow path.
BL	Low water level	Refill with clean water; check for leaks.
LL	Low temperature	Stop; verify setpoint and freezing risk.
HH	High temperature	Reduce load; improve airflow; clean condenser.
CL	Low pressure	Stop and contact qualified refrigeration service.
CH	High pressure	Check fan/airflow; clean condenser; service if repeated.
FAN	Fan phase loss	Isolate power; qualified electrical inspection.
CCC	Compressor phase loss	Isolate power; qualified electrical inspection.
CHH	Compressor overtemperature	Stop; cool down; check load and ventilation.
OOO	Poor cooling	Clean condenser; reduce load; service if unresolved.

RESET ONLY AFTER CORRECTION Repeated resets can damage the chiller or connected process equipment.

11. SERVICE & FAULT ISOLATION

Symptom	Check first
No display / no start	Selected voltage; site breaker; cabinet air switch; plug and power inlet
Low or unstable flow	Tank level; hose kinks; filter; trapped air; pump sound
High water temperature	Process load; fan; ventilation; condenser cleanliness
Poor cooling	Setpoint; heat load; condenser; fan; refrigeration service if unresolved
Repeated water loss	Tank, drain, hoses, fittings and process equipment for leakage

Before Contacting Service

- Record model, serial number, supply voltage, displayed code and water temperature.
- Check water level, hose blockage/kinks, filter condition and visible leakage.
- Check condenser cleanliness, fan operation and ventilation.
- Do not open the sealed refrigeration system or bypass protection devices.

SEALED SYSTEM Pressure alarms, refrigerant recovery and charging require qualified refrigeration service.

12. STORAGE & EQUIPMENT RECORD

Extended Storage

Disconnect power, drain and clean the tank, dry accessible water-path parts, cap the fittings and store the unit upright in a clean, dry area protected from dust and freezing.

Equipment Record	Value
Model	USS-ZWC00020
Voltage version	□ 110 V AC □ 220 V AC
Serial No.	
Installation date	
Set temperature	
Service contact	

DOCUMENT CONTROL This manual is based on the supplied source manual, installation-flow reference and actual front, top and rear photographs. Final electrical and refrigerant data must be confirmed against the unit nameplate.

Warranty card and commercial warranty terms are supplied separately.