



Pool & Spa Heat Pumps

Comfort Wave MAX Series

XE, XL and XR

Installation, Operation and Care Manual

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1. INTRODUCTION

Thank you for choosing the **Comfort Wave® Pool & Spa Heat Pump**. This product has been engineered to provide reliable, energy-efficient pool and spa heating while meeting or exceeding applicable industry standards.

Comfort Wave heat pumps are self-contained systems designed specifically for aquatic heating applications. Each unit incorporates a high-efficiency scroll compressor, advanced electronic controls with onboard diagnostics, and a corrosion-resistant titanium heat exchanger for long service life.

Unlike gas or oil-fired heaters, heat pumps extract thermal energy from ambient air. As a result, they typically operate for longer periods at lower energy input, delivering significant operating cost savings while maintaining consistent water temperature.

2. IMPORTANT SAFETY INFORMATION

This manual contains important safety instructions. Always read and follow all warnings, cautions, and notices.

WARNING – Indicates a hazardous situation that could result in personal injury or death.

CAUTION – Indicates a situation that could result in equipment damage or reduced performance.

NOTICE – Highlights important installation or operational information.

General Safety Guidelines

- Installation and electrical work must be performed by qualified professionals.
- Disconnect all electrical power before servicing the unit.
- Outdoor installation only unless otherwise approved by the manufacturer.
- Maintain required clearances for airflow and service access.
- Children must be supervised and should not operate or play near the equipment.

3. PRODUCT OVERVIEW & TECHNOLOGY

Comfort Wave heat pumps utilize advanced air-source heat pump technology. Warm air is drawn across the evaporator coil, transferred through a sealed refrigerant circuit, and delivered to the pool or spa water via a titanium heat exchanger.

Key Features

- High-efficiency scroll compressor
- Titanium corrosion-resistant heat exchanger
- Digital control panel with service analyzer
- Quiet top-discharge airflow design
- Designed for continuous duty operation

4. MODEL SPECIFICATIONS

Comfort Wave heat pumps are available in multiple residential and commercial capacities. Refer to the unit nameplate for exact electrical and performance ratings.

Typical Operating Limits:

- Maximum water temperature: 104°F (40°C)
- Refrigerant: R-410A
- Electrical supply: Model-specific (see nameplate)

Proper water chemistry is essential. Maintain balanced pH, sanitizer, alkalinity, and dissolved solids to prevent premature damage.

5. INSTALLATION REQUIREMENTS

Site Selection & Clearances

- Install outdoors only.
- Position unit close to the circulation pump and filter.
- Avoid enclosed or partially enclosed areas.
- Maintain minimum clearances:
 - 48 inches above unit
 - 12 inches on air intake sides
 - 6 inches minimum on service-approved side

Equipment Pad & Anchoring

- Mount unit on a level concrete pad or structural base.
- Minimum pad size: 36 in. x 36 in.
- In hurricane-prone regions, anchor unit per local building codes using approved anchor brackets.

Water Plumbing

Plumbing sequence must be: **Pool Pump** → **Filter** → **Heat Pump** → **Pool/Spa**

- Use Schedule 40 or 80 PVC piping.
- Install all chemical feeders downstream of the heater.
- Verify adequate water flow before operation.
- A bypass loop is not required unless flow exceeds maximum limits.

Multiple Unit Installations

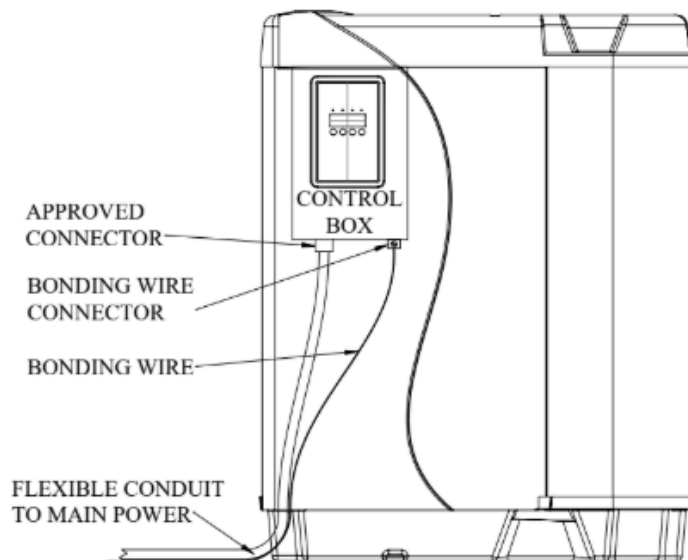
- Multiple heaters must be plumbed in parallel.
- Balance water flow evenly between units.
- Pressure switch adjustment may be required when installed below water level.

Electrical Supply & Bonding

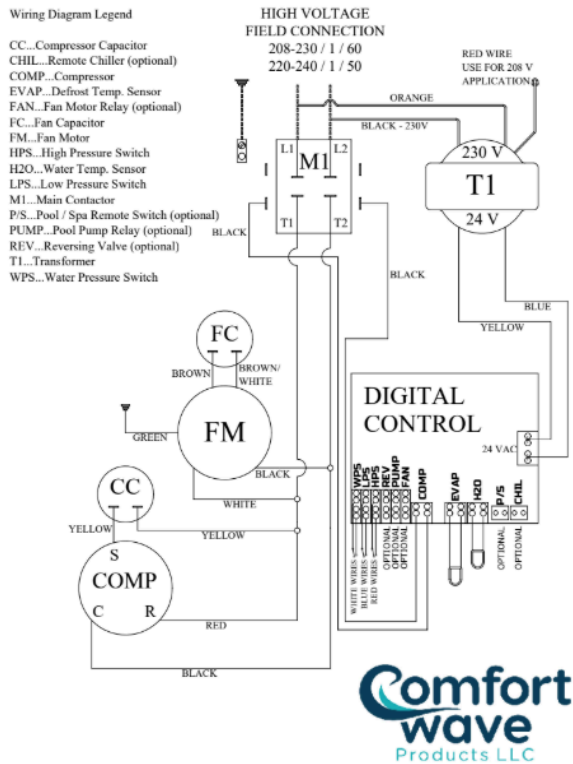
- Electrical work must comply with NEC and local codes.

- Install a dedicated disconnect within sight of the unit.
- Bond all metallic components of the pool system together using a solid copper bonding conductor.

6. ELECTRICAL CONNECTIONS & DIAGRAMS



- Verify voltage and phase before connecting power.
- Connect supply conductors to labeled terminals (L1, L2, L3 where applicable).
- Connect equipment grounding conductor to grounding terminal.
- Three-phase models include phase-loss and phase-reversal protection.



7. CONTROL PANEL & USER INTERFACE

The Comfort Wave digital control displays water temperature, operating mode, and diagnostic messages.

Control Buttons

- **SET** – Select operating mode
- **UP / DOWN** – Adjust temperature or settings

Operating Modes

- OFF
- Pool Heating
- Spa Heating
- Heat / Cool (select models)

Set point ranges:

- Pool: 51°F – 95°F
- Spa: 51°F – 104°F

8. INITIAL START-UP PROCEDURE

1. Verify electrical power is ON.
2. Ensure the water circulation pump is operating.
3. Set the desired temperature.
4. Compressor and fan will engage after a time delay.
5. Condensation during operation is normal and expected.

9. OPERATING INSTRUCTIONS

The heat pump will automatically cycle to maintain the selected water temperature. Continuous operation during initial heat-up is normal and expected.

10. DISPLAY MESSAGES & DIAGNOSTIC CODES

The onboard service analyzer monitors system operation and displays fault codes when necessary. Common messages include:

FLO- Filter pump is off or low water flow

LP- low refrigerant pressure- Call for service

HP- High pressure

DEF- Defrost cycle

If repeated fault codes occur, contact the manufacturer.

11. TROUBLESHOOTING GUIDE

The unit won't start or the unit doesn't heat.

- Check power supply
- Verify temperature set point
- Confirm water flow
- Fan runs but no heat
- Unit may be in defrost mode
- Time delay active
- Water temperature not increasing
- Excessive heat loss
- Dirty evaporator coil
- Improper installation location

12. MAINTENANCE & CARE

- Inspect air coil annually
- Rinse coil using low-pressure water
- Keep area around unit clear of debris
- Maintain proper pool water chemistry

Do not use high-pressure washers.

13. SEASONAL SHUTDOWN (WINTERIZING)

1. Turn off electrical power.
2. Disconnect water connections.
3. Drain all internal water.
4. Reconnect fittings after draining.
5. Cover unit to prevent debris accumulation.

14. SERVICE & TECHNICAL SUPPORT

All service must be performed by an authorized service center. Unauthorized repairs may void the warranty.

When requesting service, have the following available:

- Model number
- Serial number
- Installation date

15. WARRANTY INFORMATION

Comfort Wave® heat pumps are covered by limited residential and commercial warranties. Coverage terms vary by model and application.

- 10 Year parts warranty
- 3 Year labor warranty

Warranty coverage applies only when the unit is installed and maintained in accordance with this manual.

Retain proof of purchase for warranty validation.