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Hayward H400FDN Universal H-Series Pool and Spa Heater User Manual

Model: H400FDN

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1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your Hayward H400FDN Universal H-Series 400,000 BTU Natural Gas Pool and Spa Heater. The Universal H-Series is designed for energy efficiency, high performance, and adaptable installation, making it an ideal choice for heating new or existing pools and spas. Please read this manual thoroughly before attempting any installation, operation, or maintenance procedures.

2. KEY FEATURES

- **New Polymer Header:** Provides superior hydraulic performance, enhancing energy efficiency and protecting against erosion.
- **Forced Draft System:** Ensures consistent airflow through the combustion chamber, maintaining reliable heating performance regardless of external weather conditions.
- **Patented Single Header "V" Baffle Design Heat Exchangers:** Engineered for extended lifespan, rapid heating, and minimal condensation.
- **State-of-the-Art Fin Plate Heat Exchanger with Cupro Nickel:** Offers excellent resistance to salt water and chemical corrosion, ensuring durability.
- **Easy-to-Read LED Control Panel:** Features a digital temperature readout and diagnostic indicators for quick identification of service needs.

3. IMPORTANT SAFETY INFORMATION

WARNING: Failure to follow these safety instructions could result in property damage, serious injury, or death.

- **Professional Installation Required:** Installation and service must be performed by a qualified installer, service agency, or gas supplier. Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage.
- **Gas Safety:** This appliance uses natural gas. Ensure proper ventilation and check for gas leaks after installation. Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **Electrical Safety:** All electrical wiring must be performed by a qualified electrician and comply with local codes and regulations. Ensure the heater is properly grounded.
- **Water Chemistry:** Maintain proper pool/spa water chemistry to prevent damage to the heater's components, especially the heat exchanger.
- **Ventilation:** Ensure adequate air supply for combustion and ventilation of the heater area.
- **Children:** Keep children away from the heater and its controls.

4. SETUP AND INSTALLATION

The Hayward H400FDN heater is designed for flexible installation. Due to the nature of gas and electrical connections, **professional installation is strongly recommended** to ensure safety and compliance with all local codes.

4.1 Placement

Select a location that provides adequate ventilation, is protected from excessive moisture, and allows for easy access for maintenance. Ensure the heater is placed on a level, non-combustible surface.

4.2 Plumbing Connections

The heater features 2-inch x 2 1/2-inch CPVC union plumbing connections. These common unions facilitate installation and service, adapting to larger plumbing for greater efficiencies. Ensure all connections are watertight and properly sealed.

4.3 Gas Line Connection

Connect the natural gas supply line to the heater's gas inlet. All gas connections must be leak-tested using a non-corrosive leak detection solution after installation. Refer to local gas codes for proper sizing and installation of gas lines.

4.4 Electrical Connection

Connect the heater to the appropriate electrical supply as specified in the heater's wiring diagram and local electrical codes. Ensure proper grounding and circuit protection.

4.5 Initial Startup

After all connections are secure and leak-tested, follow the detailed startup procedure in the full installation manual. Ensure the pool pump is running and there is adequate water flow through the heater before ignition.



Image 1: Hayward H400FDN Universal H-Series Pool and Spa Heater. This image shows the exterior of the Hayward H400FDN heater, highlighting its compact design and connection points for plumbing and utilities.

Video 1: Overview of Hayward Universal H-Series Heater. This video provides a general overview of the Hayward Universal H-Series pool and spa heaters, demonstrating key features and benefits. Please note that this video specifically references the H200FDN model, which is part of the same series and shares many similar characteristics with the H400FDN.

5. OPERATING INSTRUCTIONS

5.1 LED Control Panel

The easy-to-read LED Control panel provides a digital temperature readout and diagnostic information. Use the up and down arrows to set your desired water temperature. The panel will display the current water temperature and any active diagnostic codes.

5.2 Heating Performance

The H400FDN is designed to efficiently heat your pool or spa. For example, a 17,000-gallon pool can typically see a temperature increase of approximately 3 degrees Fahrenheit per hour, depending on ambient conditions and insulation.

5.3 Minimum Flow Requirement

The heater requires a minimum water flow volume to operate safely and efficiently. If the water flow is insufficient, the heater will not ignite or will shut down to prevent damage. Ensure your pool pump is operating at an adequate speed to meet this requirement. Some two-speed pumps may not provide sufficient flow on their low-speed setting.

5.4 Initial Operation Odor

During the first few uses, you may notice a slight odor. This is normal and typically results from protective coatings on internal components burning off. The odor will diminish with subsequent use.

6. MAINTENANCE

Regular maintenance ensures the longevity and efficient operation of your Hayward H400FDN heater. Always disconnect power and gas supply before performing any maintenance.

- **Keep Area Clear:** Ensure the area around the heater is free from debris, combustible materials, and obstructions to airflow.
- **Inspect Venting:** Periodically check the exhaust and intake vents for blockages or damage.
- **Clean Heat Exchanger:** Over time, the heat exchanger may accumulate deposits. Consult a qualified service technician for periodic inspection and cleaning.
- **Water Chemistry:** Maintain balanced pool/spa water chemistry to prevent scaling or corrosion within the heater.
- **Winterization:** In colder climates, proper winterization procedures are crucial to prevent freeze damage. Consult your local pool professional for specific instructions.

7. TROUBLESHOOTING

If your heater is not functioning correctly, refer to the following common issues. For complex problems, contact a qualified service technician.

7.1 Heater Not Igniting / No Heat

- **Check Water Flow:** Ensure the pool pump is running and water flow is sufficient. Low flow can prevent ignition.
- **Check Gas Supply:** Verify that the gas valve is open and there is gas pressure.
- **Check Electrical Supply:** Ensure the heater has power and circuit breakers are not tripped.
- **Diagnostic Codes:** Check the LED control panel for any error codes and consult the full manual for their meaning.

7.2 "CE" Control Error Message

Some users have reported a "CE" control error message, particularly after heavy rain. This can indicate moisture has seeped into the control panel. If this occurs, be patient and allow several hours or a day for the unit to dry out. Often, the error will clear, and the heater will resume normal operation without requiring a service call.

7.3 Leaks

If you observe water leaks, immediately shut off the heater and the water supply to the unit. Leaks can indicate issues with plumbing connections or internal components. Contact a professional for diagnosis and repair.

8. SPECIFICATIONS

Attribute	Value
Model Number	H400FDN
BTU Rating	400,000 BTU
Fuel Type	Natural Gas
NOx Emissions	Low NOx
Heat Exchanger Material	Cupro Nickel
Plumbing Connections	2in x 2 1/2in CPVC Union
Item Weight	195 pounds
Manufacturer	Hayward

9. WARRANTY AND SUPPORT

Hayward provides a manufacturer's warranty for its products. It is important to understand the terms and conditions of this warranty.

- **Professional Installation:** The warranty may be affected by who installs the heater. Hayward's official stance is that "EXPERT LINE products are only available through your local pool professional." Owner-installed heaters may not qualify for certain warranty coverages, particularly regarding labor costs for repairs.
- **Labor Costs:** Be aware that even with a valid warranty, labor costs associated with repairs may not be covered if the unit was not installed by an authorized professional.
- **Contacting Support:** For warranty claims, technical assistance, or to locate an authorized service provider, please contact Hayward customer support directly. Refer to the official Hayward website or your purchase documentation for current contact information.

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