villastar YC-020

Villastar Pool Heat Pump User Manual

Model: YC-020

1. Product Overview

The Villastar YC-020 Pool Heat Pump is an energy-efficient solution designed to heat swimming pools, extending the usable swimming season. This heat pump is suitable for both inground and above-ground pools, providing consistent warmth with optimized energy consumption.

Image 1.1: Front view of the Villastar YC-020 Pool Heat Pump.

1.1 Key Features

- **Heating Capacity:** Provides 68,000 BTU/hr output, suitable for pools up to 14,000 gallons.
- **Energy Efficiency:** Features a thermal conversion rate (COP) of 5.67, indicating efficient heat generation per unit of electricity.
- **Operating Temperature Range:** Functions effectively in outdoor temperatures from 19.4°F to 109.4°F, heating water up to 104°F.
- **Durable Construction:** Constructed with a robust galvanized steel casing for enhanced durability and resistance to rust.
- **Titanium Heat Exchanger:** Equipped with a pure titanium water heat exchanger for efficient and corrosion-resistant heat transfer.
- **User-Friendly Interface:** Features an LED display for water temperature and intuitive control settings.

Image 1.2: Various angles of the Villastar YC-020 Pool Heat Pump, showcasing its design and connections.

1.2 Pool Compatibility

This heat pump is designed for versatility, accommodating various pool types and sizes:

- Inground pools up to 14,000 gallons.
- Above-ground pools up to 13,000 gallons.
- Suitable for pool dimensions ranging from 13 x 26 ft to 19 x 38 ft.

Image 1.3: Examples of compatible pool types, including inflatable, frame, and small inground pools.

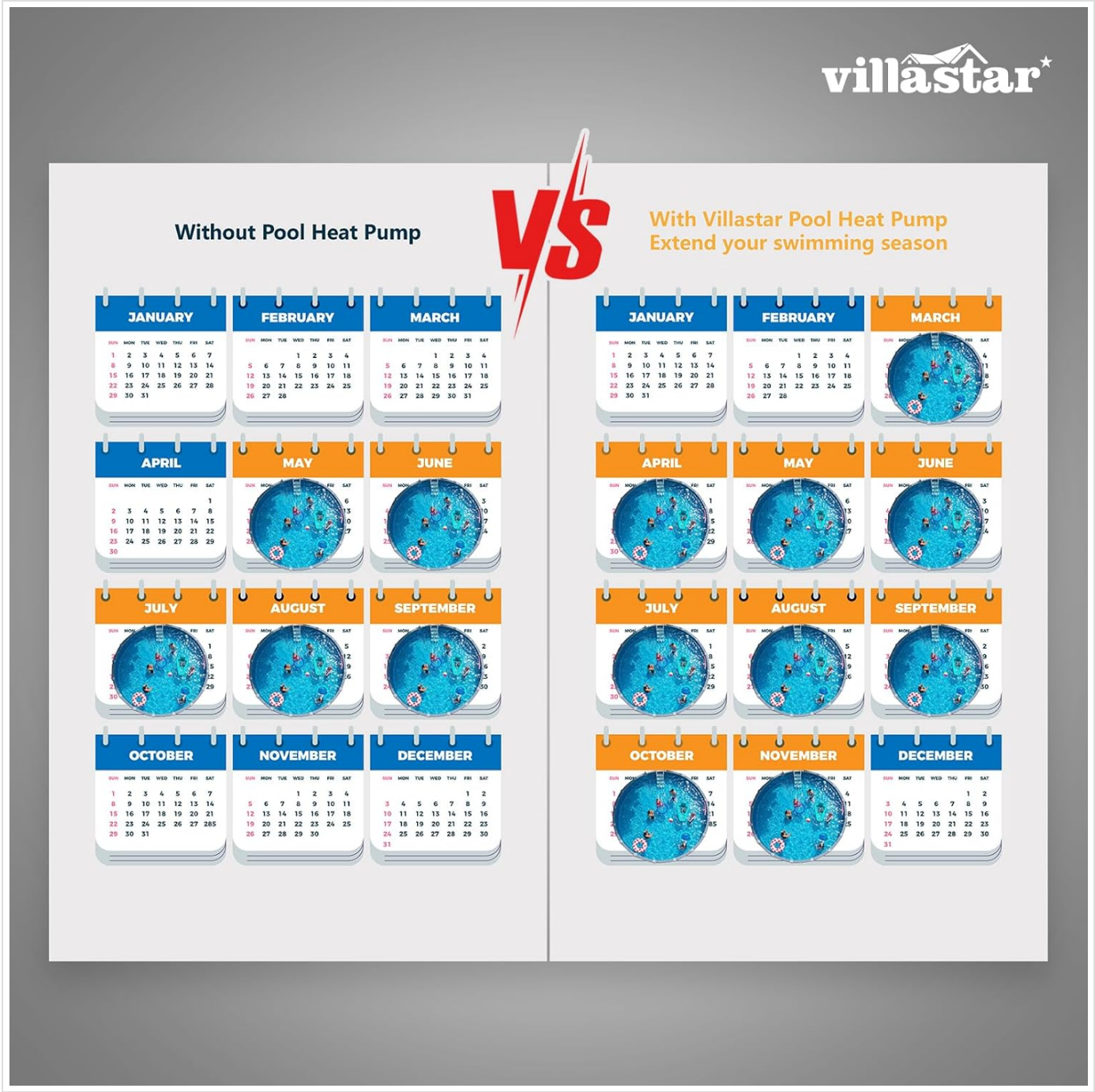

Image 1.4: Calendar comparison illustrating the potential extension of the swimming season when using the Villastar Pool Heat Pump.

2. Safety Information

Read all safety warnings and instructions carefully before installing, operating, or performing maintenance on the heat pump. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- Always disconnect power before servicing the unit.
- Ensure proper grounding to prevent electrical hazards.
- Do not operate the unit if any part is damaged or if the power cord is frayed.
- Keep children and pets away from the unit during operation.
- Ensure adequate ventilation around the unit. Do not block air intake or exhaust.
- Installation must comply with all local electrical and plumbing codes.

3. Package Contents

Verify that all components are present and undamaged upon unpacking. If any items are missing or damaged, contact customer support immediately.

- Villastar YC-020 Pool Heat Pump Unit
- User Manual (located inside the metal housing)
- Water Pipe Connectors (1.2"/32mm)
- Hoses and necessary fittings
- Mounting feet/pads

Image 3.1: The heat pump unit shown with its accompanying accessories and user manual.

4. Setup and Installation

Proper installation is crucial for the heat pump's performance and longevity. While the unit is designed for easy setup, it is recommended to consult a qualified professional for electrical connections.

4.1 Site Selection

- Choose a location with adequate airflow, away from obstructions.
- Ensure the ground is level and stable enough to support the unit's weight (Net Weight: 168 lbs).
- Position the unit close to the pool and existing filtration system to minimize plumbing runs.

4.2 Plumbing Connections

The heat pump should be installed after the pool filter and before any chemical feeders (e.g., chlorinator) in the pool's circulation system.

1. Connect the pool's return line from the filter to the heat pump's water inlet.
2. Connect the heat pump's water outlet to the pool's return line leading back to the pool.
3. Use the provided 1.2"/32mm water pipe connections and ensure all connections are secure and leak-free.

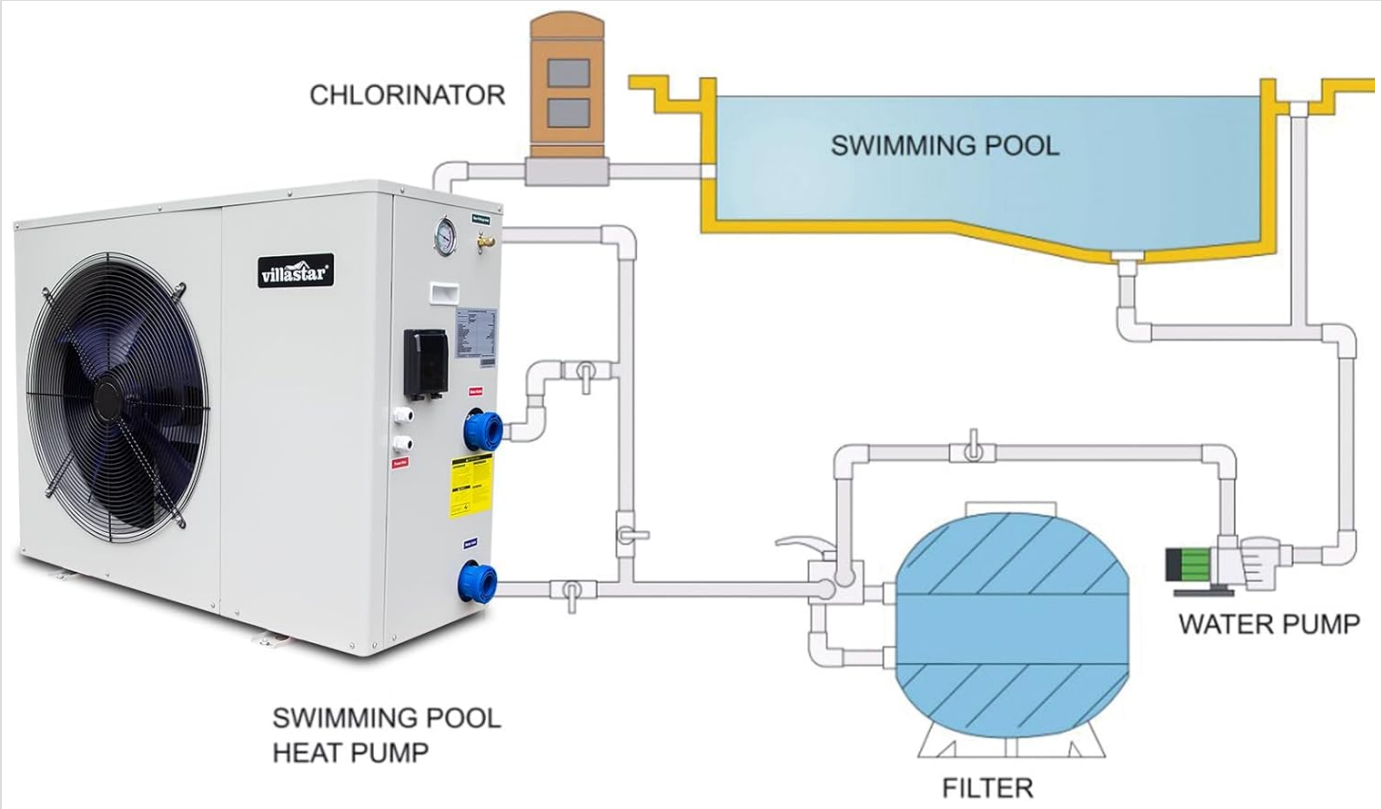

Image 4.1: Schematic diagram illustrating the typical plumbing connections for the heat pump within a pool's filtration system.

Image 4.2: An example of the heat pump installed in a backyard setting, connected to a pool's existing pump and filter.

4.3 Electrical Connections

The unit requires a 230V/60Hz power supply. Electrical installation should be performed by a qualified electrician to ensure compliance with local codes and safety standards.

- Ensure the power circuit is dedicated and adequately sized for the heat pump's maximum current draw (25.5A).
- Install appropriate circuit breakers and disconnects as required by local regulations.

4.4 Initial Startup

1. After plumbing and electrical connections are complete, ensure the pool pump is running and water is flowing through the heat pump.
2. Turn on the power supply to the heat pump.
3. The LED display will illuminate. Set your desired water temperature using the control panel.
4. Allow the unit to run for several hours to begin heating the pool water. The time required to reach the desired

temperature will vary based on pool size, ambient temperature, and initial water temperature.

5. Operation

The Villastar YC-020 Pool Heat Pump is designed for straightforward operation.

5.1 Control Panel

The unit features an LED display that shows the current water temperature and allows for adjustment of settings. Refer to the detailed instructions in the physical user manual for specific button functions and menu navigation.

5.2 Temperature Settings

- **Heating Temperature Range:** 46°F - 104°F.
- **Cooling Temperature Range:** 46°F - 82°F (if cooling function is available on your model).
- Adjust the desired temperature using the up/down arrows on the control panel.

5.3 Operating Tips

- For optimal heating, run the heat pump during the warmest parts of the day.
- Use a pool cover to minimize heat loss, especially overnight.
- Ensure the pool's filtration system is running whenever the heat pump is operating.

6. Maintenance

Regular maintenance ensures the longevity and efficient operation of your heat pump.

6.1 Routine Checks

- **Clean Coils:** Periodically inspect and clean the evaporator coils (fins) to remove dirt, leaves, and debris. A clean coil ensures efficient heat exchange.
- **Clear Airflow:** Ensure that there are no obstructions around the unit that could impede airflow to the fan or coils.
- **Check for Leaks:** Regularly inspect plumbing connections for any signs of water leaks.
- **Inspect Electrical Connections:** Ensure all electrical connections are secure and free from corrosion.

6.2 Winterization (for cold climates)

If you live in an area where temperatures drop below freezing, proper winterization is essential to prevent damage to the unit.

1. Disconnect the power supply to the heat pump.
2. Drain all water from the heat pump's plumbing lines and heat exchanger. This may involve disconnecting hoses and opening drain plugs.
3. Store the unit in a protected area if possible, or cover it with a breathable, waterproof cover if it remains outdoors.

7. Troubleshooting

This section provides solutions to common issues you might encounter. For problems not listed here, or if solutions do not resolve the issue, contact customer support.

Problem	Possible Cause	Solution
Heat pump not turning on	No power supply Circuit breaker tripped Faulty wiring	Check power connection and wall outlet Reset circuit breaker Consult an electrician
Water not heating sufficiently	Low ambient temperature Dirty evaporator coils Incorrect temperature setting Insufficient water flow	Heat pump efficiency decreases in cold weather Clean coils Adjust desired temperature Ensure pool pump is running and filter is clean
Unit making unusual noise	Debris in fan Loose components Compressor issue	Inspect and remove debris Check for loose panels or screws Contact customer support
Water leakage	Loose plumbing connections Condensation Internal leak	Tighten connections Condensation is normal during operation; check drain hose Contact customer support

8. Specifications

Detailed technical specifications for the Villastar YC-020 Pool Heat Pump.

Specification	Value
Model Number	YC-020
Heating Capacity (BTU/hr)	68,000
Power Input (BTU/hr)	11,752 (at 80°F Air, 80°F Water, 63% RH)
COP (Coefficient of Performance)	5.67 (at 80°F Air, 80°F Water, 63% RH)
Power Supply	230V/60Hz
Max Current (A)	25.5
Setting Temperature Range (Heating)	46°F - 104°F
Running (Air) Temperature Range	19.4°F - 109.4°F
Net Dimensions (LxWxH)	40 x 17 x 32 inches
Net Weight	168 lbs
Noise Level	62 dB(A)

Image 8.1: Dimensional overview of the Villastar YC-020 Pool Heat Pump.

9. Warranty and Support

For warranty information and customer support, please refer to the specific details provided within the physical user manual included with your product. It is recommended to keep your purchase receipt for warranty claims.

If you require technical assistance or have questions regarding your Villastar Pool Heat Pump, please consult the contact information provided in your product documentation.

Related Documents - YC-020

	[Villastar Swimming Pool Air Source Heat Pump Installation & Operation Manual (Model YC-020)] This comprehensive manual guides users through the installation, operation, safety, and maintenance of the Villastar Swimming Pool Air Source Heat Pump, model YC-020. Learn about its working principles, technical specifications, and troubleshooting.
	[Villastar MiniPool Heat Pump YC-005 Installation and Operation Manual] Comprehensive installation and operation manual for the Villastar MiniPool Heat Pump Model YC-005. This guide provides technical specifications, detailed installation steps for above-ground and in-ground pools, electrical wiring diagrams, troubleshooting fault codes, and material preparation lists to ensure optimal performance and longevity of your swimming pool heat pump.
	[VEVOR YC-5532 Pool Handrail: Installation and Safety Guide] This document provides essential safety instructions, assembly precautions, component details, and installation guidance for the VEVOR YC-5532 pool handrail. Ensure safe and proper setup for your swimming pool.
	[VEVOR Pool Handrails YC-3022/YC-3223 Installation and Safety Guide] Official installation and safety guide for VEVOR Pool Handrails, models YC-3022 and YC-3223. Provides essential product information, safety precautions, assembly guidance, and support contact details.