Saved from manuals.plus.
Open the live page for links to other documents and user manuals.

Tuhorse TH402313M230

Tuhorse 3 HP 4-inch Submersible Well Pump

MODEL: TH402313M230

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Tuhorse 3 HP 4-inch Submersible Well Pump, Model TH402313M230. This complete set includes a 13-stage pump-end, a 3 HP heavy-duty oil-cooled submersible motor, and a dual capacitor metal-cased control box.

2. Safety Information

Always prioritize safety during installation and operation. Failure to follow these instructions may result in personal injury, equipment damage, or electric shock.

- **Electrical Hazard:** Ensure the electrical power source is disconnected before performing any installation, maintenance, or inspection tasks on the pump or control box.
- **Qualified Personnel:** Installation and electrical connections should only be performed by qualified and licensed professionals.
- **Grounding:** Ensure the pump and control box are properly grounded according to local electrical codes.
- **Water Quality:** This pump is designed for clean water applications. Pumping abrasive materials can damage the pump.

Warning! Disconnect the electrical power source before opening the control box cover.

3. Product Overview

The Tuhorse TH402313M230 is a robust submersible well pump designed for reliable water supply. Key features include:

- Fits 4-inch ID and larger wells. The pump's maximum diameter point is 3-7/8 inches.
- 1.5-inch NPT brass outlet (discharge).
- 13 stages for efficient water lifting.
- Cut-off head of 450 feet.
- Rated flow of 23 GPM, with a maximum flow of 30 GPM.

- Metal-cased control box includes a 120uF start and 45uF run capacitor.
- Meets NEMA industrial standards, manufactured under ISO 9001:2000, and conforms to IEC34-ICE standards.

This pump is suitable for use up to 350 feet with open flow or up to 300 feet in a system with a pressure tank.

4. Setup and Installation

Careful installation is crucial for the longevity and performance of your submersible well pump. Refer to local codes and regulations for specific requirements.

4.1 Component Identification

Before installation, familiarize yourself with the main components:

- **Submersible Pump:** The main unit consisting of the motor and pump-end.
- **Control Box:** Houses the capacitors and motor overload protectors.
- **Power Cable:** Connects the pump motor to the control box.

4.2 Mechanical Installation

1. **Well Casing:** Ensure the well casing is at least 4 inches in internal diameter to accommodate the pump.
2. **Discharge Pipe:** Connect a 1.5-inch NPT discharge pipe to the pump's brass outlet. Ensure all connections are watertight.
3. **Check Valve:** An external check valve (not included) is required in a water-tight system to prevent backflow. It is not required for free-flow applications.
4. **Lowering the Pump:** Carefully lower the pump into the well, ensuring it is suspended at the correct depth, typically above the well bottom to avoid sediment intake and below the dynamic water level.

4.3 Electrical Connection

The pump operates on 230V, 60Hz, Single Phase Power. The motor uses 3 wires plus 1 ground wire. The control box is designed for this configuration.

1. **Control Box Wiring:** The connector terminal inside the control box accepts up to AWG #6 wire. Connect the pump's motor wires (Yellow, Black, Red) and ground wire to the corresponding terminals in the control box.
2. **Power Supply:** Connect the main power supply (L1, L2, Ground) to the designated terminals in the control box.
3. **Verification:** Double-check all electrical connections for tightness and correct polarity before applying power.

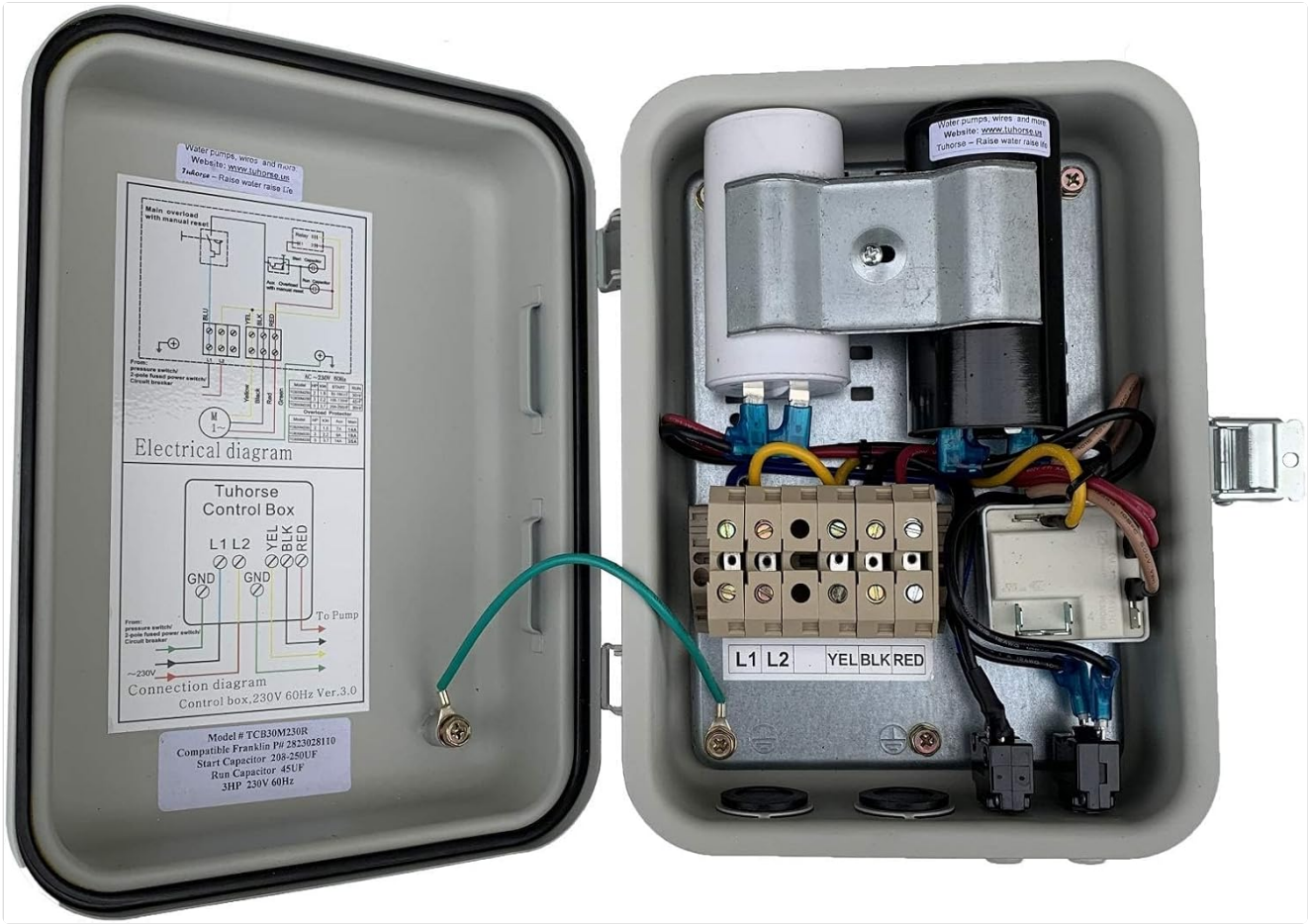

Figure 1: Internal view of the Tuhorse control box showing wiring terminals and a detailed electrical diagram. This image illustrates the connection points for the pump motor wires (Yellow, Black, Red) and the main power supply (L1, L2, Ground).



Figure 2: External view of the Tuhorse dual capacitor control box. The label provides specifications for power voltage (V220, V230), frequency (50/60Hz), capacitor values (Run and Start), and overload protection current ratings for various HP motors.

5. Operating Instructions

Once installed and wired correctly, the pump system is ready for operation.

1. **Initial Start-up:** After ensuring all connections are secure and the pump is submerged, apply power to the

control box. The pump should start operating.

2. **Check for Leaks:** Monitor the discharge pipe and connections for any leaks.
3. **Performance Monitoring:** Observe the water flow and pressure. The pump is rated for 23 GPM and can achieve a maximum flow of 30 GPM.

5.1 Flow vs. Total Dynamic Head (TDH)

The pump's performance varies with the total dynamic head (TDH), which includes vertical lift, friction loss, and pressure requirements. Refer to the performance curve for expected flow rates at different heads.

- 29 GPM at 260 ft TDH
- 26 GPM at 300 ft TDH
- 23 GPM at 340 ft TDH
- 19 GPM at 400 ft TDH



Figure 3: Performance curve chart for Tuhorse 4-inch 23GPM series submersible well pumps. This graph shows the relationship between head (H in feet and meters) and flow rate (Q in L/min, US.GPM, IMP.GPM, and m^3/h) for different HP models (2HP, 3HP, 5HP) within the series. Model TH402313M230 corresponds to the 3HP curve (023-13).

6. Maintenance

The Tuhorse submersible well pump is designed for minimal maintenance. However, periodic checks can help ensure optimal performance and extend its lifespan.

- **System Monitoring:** Regularly check for consistent water pressure and flow. Any significant changes may indicate an issue.
- **Electrical Connections:** Periodically inspect the control box and wiring for any signs of wear, corrosion, or loose connections (ensure power is disconnected first).
- **Well Condition:** Ensure the well remains free of excessive sediment or debris that could impact pump operation.

7. Troubleshooting

If you encounter issues with your pump, consider the following general troubleshooting steps. For complex problems, contact a qualified technician.

- **No Power:** Check the circuit breaker or fuse for the pump circuit. Verify power supply to the control box.
- **Pump Not Starting:** Ensure all wiring connections are secure. The control box has motor overload protectors; check if they have tripped.
- **Low Flow/Pressure:** Check for blockages in the discharge pipe or check valve. Ensure the well water level is adequate.
- **Frequent Cycling:** This could indicate a problem with the pressure tank (if used) or a leak in the system.

8. Specifications

Specification	Detail
Brand	Tuhorse

Model Number	TH402313M230
Power Source	AC 230V 60Hz
Voltage	230 Volts
Wattage	2.2 KW
Item Weight	53 Pounds
Maximum Flow Rate	30 Gallons Per Minute
Rated Flow Rate	23 Gallons Per Minute
Maximum Lifting Height (Cut-off Head)	450 Feet
Material	Stainless Steel
Style	Submersible
Discharge Outlet	1.5 inch NPT Brass
Well Compatibility	4 inch ID and larger
Package Dimensions	43 x 11 x 7 inches
UPC	616576235700

9. Warranty

This Tuhorse submersible well pump comes with a**1-year warranty** from the date the item is received. Please retain your proof of purchase for warranty claims.

10. Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact Tuhorse customer support. Refer to the Tuhorse website or your purchase documentation for contact information.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

Open the live page

https://manuals.plus/asin/B0891V8124

More documents and user manuals: **https://manuals.plus/**