Raymarine T70330

Raymarine EV-150 Power Pilot System User Manual

Model: T70330
Brand: Raymarine

1. Introduction and System Overview

The Raymarine EV-150 Power Pilot system is a comprehensive marine autopilot solution designed to provide precise course keeping and advanced navigation capabilities for vessels with hydraulic steering systems. This system integrates several key components to deliver reliable and efficient autopilot functionality, enhancing your boating experience by reducing steering fatigue and improving navigational accuracy.
The EV-150 Power Pilot system includes the p70Rs Control Head for intuitive operation, the ACU-150 Actuator Control Unit for power management, the EV1 Sensor Core for accurate heading and motion data, an EV1 Cabling kit for system interconnection, and a 1.0L Hydraulic Pump for steering control.

2. System Components

The EV-150 Power Pilot system comprises several interconnected units, each playing a vital role in the autopilot's operation.

2.1. System Components Overview



This image displays the primary components of the Raymarine EV-150 Power Pilot system. From left to right, it shows the p70Rs Control Head, the EV1 Sensor Core (white dome), the ACU-150 Actuator Control Unit (grey box), and the 1.0L Hydraulic Pump (black cylinder with silver block).

2.2. p70Rs Control Head

The p70Rs Control Head serves as the primary user interface for the autopilot system. It features a bright, clear display and intuitive controls for setting course, engaging autopilot modes, and accessing system settings. The rotary knob and push buttons allow for easy navigation through menus and adjustments.

2.3. ACU-150 Actuator Control Unit

The ACU-150 is the central processing unit for the autopilot, managing power to the hydraulic pump and processing data from the EV1 Sensor Core and control head. It acts as the brain of the system, translating commands into steering actions.

2.4. EV1 Sensor Core

The EV1 Sensor Core is a sophisticated 9-axis sensor that provides highly accurate heading, pitch, roll, and yaw rate data to the ACU-150. Its solid-state design ensures reliable performance and quick calibration, contributing to precise course keeping.

2.5. 1.0L Hydraulic Pump

The 1.0L Hydraulic Pump is responsible for physically moving the vessel's rudder or outboard motor to steer the boat according to the autopilot's commands. It is designed for hydraulic steering systems and is powered and controlled by the ACU-150.

2.6. EV1 Cabling Kit

The EV1 Cabling Kit provides all necessary cables for connecting the various components of the EV-150 system, including power, data (SeaTalkng/NMEA 2000), and hydraulic pump connections. Proper cabling is crucial for system

integrity and performance.

3. Setup and Installation

Proper installation is critical for the optimal performance of your EV-150 Power Pilot system. It is recommended that installation be performed by a qualified marine electronics technician.

3.1. Component Placement

- **p70Rs Control Head:** Mount in a location easily accessible from the helm, ensuring clear visibility and protection from direct sunlight and harsh weather.
- **ACU-150 Actuator Control Unit:** Install in a dry, protected area, typically near the helm or within a console, ensuring adequate ventilation. The unit should be securely mounted to prevent movement.
- **EV1 Sensor Core:** Mount in a location free from magnetic interference, as close to the vessel's center of gravity as possible. Ensure it is level and securely fastened.
- **1.0L Hydraulic Pump:** Install the pump in a secure, dry location, ensuring hydraulic lines can be routed without kinks or excessive bends. Proper bleeding of the hydraulic system after installation is essential for correct operation.

3.2. Electrical and Data Connections

The system utilizes a SeaTalkng/NMEA 2000 network for communication between components. Ensure all connections are secure and properly terminated. Power connections to the ACU-150 and hydraulic pump should use appropriate gauge tinned wire, as specified in the detailed installation guide.
For detailed visual instructions on component installation and wiring, please refer to the official Raymarine installation videos and guides.

4. Operating Instructions

The p70Rs Control Head provides intuitive control over the autopilot system. Familiarize yourself with its interface for effective navigation.

4.1. Basic Operation

- **Power On:** Ensure all components are powered on. The p70Rs display will show current heading and system status.
- **Standby Mode:** The system typically starts in Standby mode, indicated on the p70Rs display. In this mode, the autopilot is active but not controlling the steering.
- **Engaging Auto Mode:** Press the **AUTO** button on the p70Rs to engage the autopilot. The system will then maintain the current heading.
- **Changing Course:** Use the rotary knob or the +/- 1 and +/- 10 degree buttons to adjust the desired heading.

4.2. Advanced Trolling Patterns

The p70Rs Control Head offers several pre-set trolling patterns to assist with fishing and search operations. These patterns can be accessed via the 'Mode' menu.

- **Accessing Patterns:** From the main menu, select 'Mode', then 'Pattern'.

- **Available Patterns:**
  - **Box Search:** For systematic searching of an area.
  - **Circle:** Steers the vessel in a circular pattern.
  - **Zigzag:** Steers the vessel in a back-and-forth pattern.
  - **Cloverleaf:** A complex pattern for thorough area coverage.
  - **Spiral:** Steers the vessel in an expanding or contracting spiral.
  - **Circle against Heading:** A circular pattern relative to the current heading.
  - **Figure of 8:** Steers the vessel in a figure-eight pattern.
  - **Pattern Search:** A grid-like search pattern.
  - **180° Turn:** Executes a quick 180-degree turn.
- **Customizing Patterns:** Most patterns allow for customization of parameters such as direction (Port/Starboard) and radius (e.g., 0.10 nautical miles for Circle pattern). Use the 'Edit' option within the pattern selection screen to adjust these settings.

4.3. Integration with Chartplotters (NMEA 2000)

The EV-150 system is designed to integrate seamlessly with compatible chartplotters, such as the Garmin GPSMAP 741xs, via the NMEA 2000 network. This allows for advanced navigation features:

- **Waypoint Navigation:** Plot a course or set a waypoint on your chartplotter, then select 'Go To' on the chartplotter. The autopilot will automatically steer the vessel along the programmed route.
- **Route Following:** The autopilot can follow complex routes pre-programmed on your chartplotter, providing hands-free navigation.

5. Maintenance

Regular maintenance ensures the longevity and reliable operation of your Raymarine EV-150 Power Pilot system.

- **Routine Checks:** Periodically inspect all cabling for signs of wear, corrosion, or damage. Ensure all connections are tight and secure.
- **Hydraulic System:** Regularly check the hydraulic fluid level and inspect for any leaks. Ensure the hydraulic lines are free from kinks or obstructions. Bleed the system as needed, especially after any maintenance involving the hydraulic lines or pump.
- **Software Updates:** Check the Raymarine website for the latest software updates for your p70Rs Control Head and ACU-150. Keeping software up-to-date ensures optimal performance and access to new features.
- **Cleaning:** Clean the p70Rs Control Head display and unit surfaces with a soft, damp cloth. Avoid abrasive cleaners or solvents.

6. Troubleshooting

This section provides basic troubleshooting steps for common issues. For more complex problems, consult the full Raymarine EV-150 Power Pilot installation and operation manual or contact Raymarine technical support.

Problem	Possible Cause	Solution
Autopilot not engaging or holding course.	Insufficient hydraulic fluid, air in hydraulic lines, sensor core calibration needed, power supply issue, NMEA 2000 network issue.	Check hydraulic fluid and bleed system. Perform EV1 Sensor Core calibration. Verify power connections and NMEA 2000 network integrity.
p70Rs Control Head display is blank.	No power to the unit, loose power cable, unit fault.	Check power supply and connections. Ensure vessel's main power is on. If problem persists, contact support.
Erratic steering or "snaking" behavior.	Improper calibration, air in hydraulic system, incorrect response level setting.	Recalibrate the EV1 Sensor Core. Bleed hydraulic lines. Adjust the autopilot's response level setting on the p70Rs control head.

7. Specifications

Feature	Detail
Brand	Raymarine
Model Name	T70330
Included Components	EV-150 Power Pilot (p70Rs Control Head, ACU-150, EV1 Sensor Core, EV1 Cabling kit, 1.0L Hydraulic Pump)
Voltage	12 Volts
Item Weight	8 Pounds
Item Dimensions (LxWxH)	3 x 9.8 x 7.9 inches
UPC	723193817629
Specification Met	RoHS, REACH

8. Warranty and Support

Raymarine products are built to high standards and come with comprehensive warranty coverage.

- **Standard Warranty:** The EV-150 Power Pilot system typically includes a 3-year warranty with product registration. Refer to the official Raymarine warranty documentation for full terms and conditions.
- **Extended Protection Plans:** Additional protection plans may be available for purchase, offering extended coverage beyond the standard warranty period.

- **Technical Support:** For technical assistance, troubleshooting beyond this manual, or warranty claims, please contact Raymarine customer support through their official website or designated service centers.

© 2024 Raymarine. All rights reserved.

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