

HELIX® SERIES CONTROL HEAD Installation Instructions

Overview

Follow the instructions in this installation guide to gimbal mount the control head. We encourage you to read this guide before starting the installation, so you may understand the installation requirements.

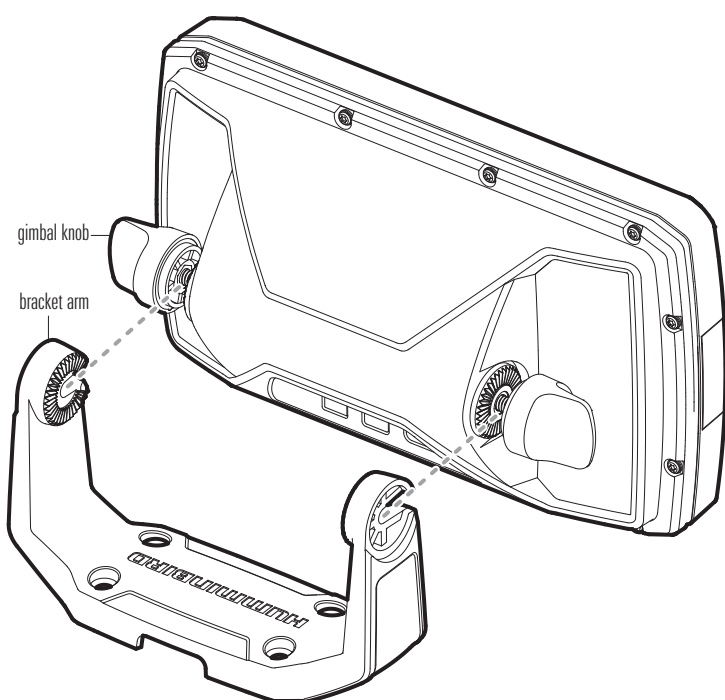
Supplies: In addition to the hardware supplied with your control head, you will need a 3 Amp fuse, powered hand drill and various drill bits, Phillips head screwdriver, pencil, safety glasses and dust mask, marine-grade silicone sealant, dielectric grease (optional), extension cables (optional), Ethernet cables (optional), and accessory cables (optional). Also, see **Connect the Control Head to Power** to determine the type of connection and equipment you will need for the installation.

Accessories and Ethernet: Accessories and Ethernet equipment are available for purchase at **humminbird**. The installation guides are available with the product, or they can be downloaded from our Web site.

HELIX GPS: The transducer installation instructions in this guide do not apply to the chartplotter model.

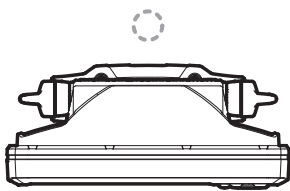
1. Plan the Mounting Location

1. Install the gimbal knobs into each side of the control head. Tighten the knobs just enough so you can slide the control head into the gimbal bracket arms.

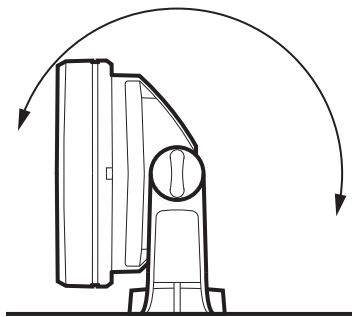


2. Place the assembled control head in various locations to determine the best mounting location with the following requirements:
 - a stable, protected surface to protect the control head from excessive wave shock, vibration, and water
 - sufficient space for the control head tilt range
 - visibility during operation, as well as easy installation and removal
 - access above and below the mounting surface to pass the cables through to the control head
 - space for the 1" (25 mm) cable hole, under the bracket or 2" to 4" (50 to 100 mm) behind the chosen mounting location

Planning for the Cable Hole
behind the bracket (shown) or under the bracket



Planning for the Tilt Range

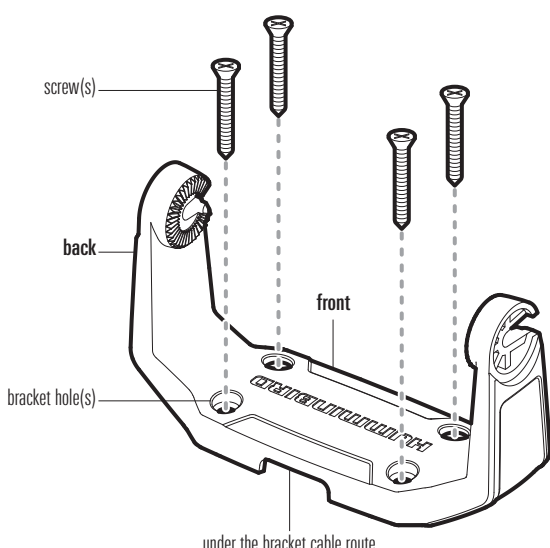


3. Test route all cables (transducer, power, accessory, Ethernet) to the control head mounting location.
4. After you have selected the mounting location, loosen the gimbal knobs and remove the control head from the gimbal bracket.

2. Install the Gimbal Bracket

1. Place the gimbal bracket in the chosen position on the mounting surface. Mark the four mounting screw locations using a pencil or center punch.
2. Set the gimbal bracket aside and drill the four mounting screw holes using a 9/64" (3.5 mm) drill bit.
3. **To run the cables through a hole under the bracket**, mark and drill a 1" (25 mm) hole, centered between the four mounting holes. Press the grommet into place on the hole. Proceed to **Connect the Control Head to Power**. You will complete the bracket installation (steps 4 and 5) after you route the cables to the control head.

To run the cables through a hole close to the bracket, mark and drill a 1" (25 mm) hole 2" to 4" (50 to 100 mm) near the bracket. Press the grommet into place on the hole.



- Place the mounting bracket on the mounting surface aligned with the drilled holes, and fill the mounting holes with marine-grade silicone sealant. Insert the four #8 x 1.25" (32 mm) screws into the mounting holes. **Hand-tighten only!**
- Slide the control head into the bracket. Adjust the control head viewing angle as needed, and tighten the gimbal knobs until the assembly is secured. **Hand-tighten only!**

3. Connect the Control Head to Power

It is important to review the following information before you start the power installation:

- Cable Length:** A 6' (2 m) long power cable is included. You may shorten or lengthen the cable using multi-stranded copper wire. See the **Recommended Power Cable Extension Information** table for details.

Recommended Power Cable Extension Information

Extension Length	Wire Gauge
1 to 6 ft	18 AWG
6 to 12 ft	14 AWG
12 to 24 ft	12 AWG

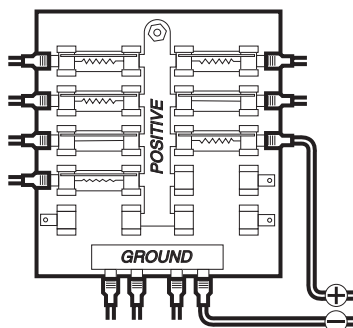
Please consult a U.S. Coast Guard ABYC-approved wire gauge diagram or a certified NMEA Marine Electronics Installer.

- Power Supply:** The control head must be connected to a 12 VDC power supply using a 3 Amp fuse.
- Fuse Panel or Battery:** The control head power cable can be connected to the electrical system of the boat at the fuse panel (usually located near the console), or directly to the battery. In order to minimize the potential for interference with other marine electronics, a separate power source (such as a second battery) may be necessary.

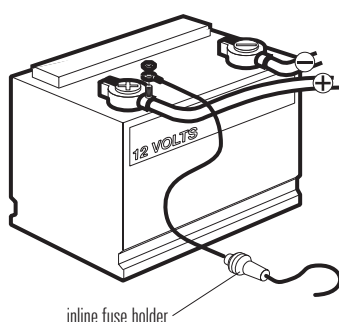
- WARNING!** Some boats have 24 or 36 Volt electric systems, but the control head **MUST** be connected to a 12 VDC power supply.
- WARNING!** Make sure that the power cable is disconnected from the control head at the beginning of this procedure.
- WARNING!** Humminbird® is not responsible for over-voltage or over-current failures. The control head must have adequate protection through the proper selection and installation of a 3 Amp fuse.

- Confirm that the power cable is disconnected from the control head.
- Connect the power cable wires to the fuse panel or battery as follows:

Fuse Terminal Connection: Use crimp-on type electrical connectors (not included) that match the terminal on the fuse panel. Attach the black wire to ground (–), and the red wire to positive (+) 12 VDC power. Install a 3 Amp fuse (not included).



Battery Connection: Install an inline fuse holder (not included) and a 3 Amp fuse (not included). Attach the black wire to ground (–), and the red wire to positive (+) 12 VDC power.





NOTE: For multi-control head installations and troubleshooting information, download the Power Troubleshooting Guide from our Web site at humminbird.com. Also, see the Operations Summary Guide to set the Low Battery Alarm and use Standby Mode to conserve power.

4. Route and Connect the Cables

1. **Sonar Models:** Connect the transducer cable to the transducer port on the control head. The ports are labeled and the connectors are keyed to prevent incorrect installation, so do not force the connector into the wrong port.



NOTE: See your transducer installation guide for details on routing the transducer cable.

Optional: If you are installing the Speed Sensor accessory, you will need the Sonar/Speed Y-Cable (separate purchase required). Connect the transducer cable connector and the speed sensor cable connector to the corresponding connectors on the Y-Cable.

2. **Accessories (optional):** Install optional accessories using the guides provided with them.
3. **Ethernet Models (optional):** Install Ethernet cables and hardware using the Ethernet Installation Guide.
4. Route all cables (power, transducer, accessories, Ethernet) to the control head. Your boat may have a pre-existing wiring channel or conduit that you can follow. Route the cables as far as practical from the antenna cable of VHF radios or tachometer cables to reduce the possibility of interference.

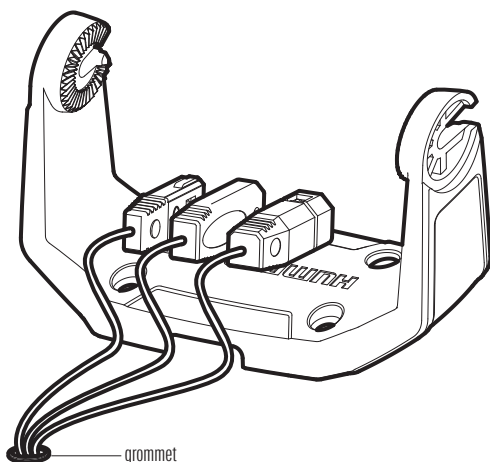


CAUTION! Do NOT mount the cables where the connectors could be submerged in water or flooded. If cables are installed in a splash-prone area, it may be helpful to apply dielectric grease to the inside of the connectors to prevent corrosion. Dielectric grease can be purchased separately from a general hardware or automotive store.

5. Pass the cables through the cable hole.

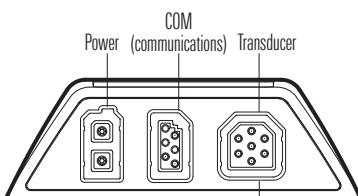
If you routed the cables through a hole under the bracket, finish the bracket and control head installation. See *Install the Gimbal Bracket*, step 4 and step 5.

Routing Cables to the Control Head



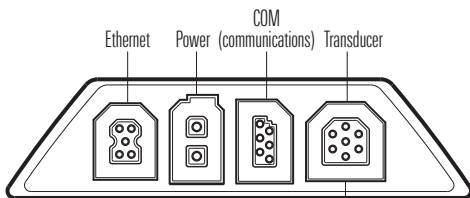
6. Insert the cable connectors into the correct ports on the control head. Refer to the illustration that matches the number of ports on your control head.

Control Head with 3 Ports



Optional: Use a Y-Cable to connect Transducer and Speed Sensor Accessory

Control Head with 4 Ports (includes Ethernet)



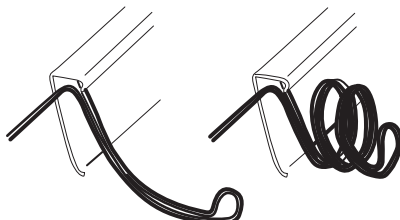
Optional: Use a Y-Cable to connect Transducer and Speed Sensor Accessory

7. Confirm there is enough cable slack to allow for the control head to pivot through its full tilt range and for connecting or disconnecting the cables.



NOTE: If there is excess cable that needs to be gathered at one location, dress the cable routed from both directions so that a single loop is left extending from the storage location. Doubling the cable up from this point, form the cable into a coil. Storing excess cable using this method can reduce electronic interference.

Storing Excess Cable



5. Test the System Installation

1. Press the POWER key to turn on the control head.
2. While the Title screen is shown on the display, press the MENU key.
3. Press the DOWN Cursor key to choose **System Status**, and press the RIGHT Cursor key to select it.



NOTE: If you wait too long to select a start-up option, the system will start the mode that is already highlighted, and you will have to start again.

4. **Accessories:** Press the VIEW key. Review the Accessory Test View to confirm accessories are listed as connected.
 - If a connected accessory is shown as unconnected, confirm the cable connections.
 - The speed will be detected only if the temp/speed paddlewheel (optional) has moved since the control head has been powered on.
5. **GPS Models:** Press the VIEW key. Review the GPS Diagnostic View and confirm that a **latitude/longitude position** is displayed and the **Fix type** is listed as Enhanced or 3D.
6. **Power Off:** Press and hold the POWER key to power off the unit.
7. **HELIX GPS:** Your chartplotter is ready for on-the-water operation. Press the POWER key. When the Title screen is displayed, press the MENU key. Select Normal from the Start-up options menu.

Sonar Models: Test and finalize the transducer installation using the instructions in the transducer installation guide. When the transducer test and installation are completed, your control head is ready for on-the-water operation. When you power on the control head, it will start Normal mode automatically if a functioning transducer is detected.



NOTE: For operations information, see the Operations Summary Guide included with your control head and the control head operations manual.

Important Notices



WARNING! Disassembly and repair of this electronic unit should only be performed by authorized service personnel. Any modification of the serial number or attempt to repair the original equipment or accessories by unauthorized individuals will void the warranty.



WARNING! This device should not be used as a navigational aid to prevent collision, grounding, boat damage, or personal injury. When the boat is moving, water depth may change too quickly to allow time for you to react. Always operate the boat at very slow speeds if you suspect shallow water or submerged objects.



WARNING! Do not travel at high speeds with the unit cover installed. Remove the unit cover before traveling at speeds above 20 mph.

FCC NOTICE: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



CAUTION! This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ENVIRONMENTAL COMPLIANCE STATEMENT: It is the intention of Johnson Outdoors Marine Electronics, Inc. to be a responsible corporate citizen, operating in compliance with known and applicable environmental regulations, and a good neighbor in the communities where we make or sell our products.

WEEE DIRECTIVE: EU Directive 2002/96/EC "Waste of Electrical and Electronic Equipment Directive (WEEE)" impacts most distributors, sellers, and manufacturers of consumer electronics in the European Union. The WEEE Directive requires the producer of consumer electronics to take responsibility for the management of waste from their products to achieve environmentally responsible disposal during the product life cycle.

WEEE compliance may not be required in your location for electrical & electronic equipment (EEE), nor may it be required for EEE designed and intended as fixed or temporary installation in transportation vehicles such as automobiles, aircraft, and boats. In some European Union member states, these vehicles are considered outside of the scope of the Directive, and EEE for those applications can be considered excluded from the WEEE Directive requirement.



This symbol (WEEE wheeled bin) on product indicates the product must not be disposed of with other household refuse. It must be disposed of and collected for recycling and recovery of waste EEE. Johnson Outdoors Marine Electronics, Inc. will mark all EEE products in accordance with the WEEE Directive. It is our goal to comply in the collection, treatment, recovery, and environmentally sound disposal of those products; however, these requirements do vary within European Union member states. For more information about where you should dispose of your waste equipment for recycling and recovery and/or your European Union member state requirements, please contact your dealer or distributor from which your product was purchased.