GPS Receiver and Heading Sensor
Installation Guide

531478-5_C

HUMMINBIRD.

Accessory
Manual

Thank You!

Thank you for choosing Humminbird®, the #1 name in marine electronics. Humminbird has built its reputation by designing and manufacturing top-quality, thoroughly reliable marine equipment. Your Humminbird accessory is designed for trouble-free use in even the harshest marine environment. In the unlikely event that your Humminbird accessory does require repairs, we offer an exclusive Service Policy. For complete details, see the separate warranty card included with your accessory. We encourage you to read this operations manual carefully in order to get full benefit from all the features and applications of your Humminbird product.

Contact Humminbird Technical Support through our Help Center at **https://humminbird-help.johnsonoutdoors.com/hc/en-us**.

⚠ **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!** The electronic chart in your Humminbird unit is an aid to navigation designed to facilitate the use of authorized government charts, not to replace them. Only official government charts and notices to mariners contain all of the current information needed for the safety of navigation, and the captain is responsible for their prudent use.

⚠ **WARNING!** Compass Safe Distance: Do NOT install the Heading Sensor near ferrous metals or near anything that may create a magnetic field or interference. The Heading Sensor must be installed at least 3 feet (1m) from other magnetic or ferrous materials on the boat.

⚠ **WARNING!** Humminbird is not responsible for the loss of data files (waypoints, routes, tracks, groups, recordings, etc.) that may occur due to direct or indirect damage to the unit's hardware or software. It is important to back up your control head's data files periodically. Data files should also be saved to your PC before restoring the unit's defaults or updating the software. See your Humminbird online account at **humminbird.com**.

⚠ **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.

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 wheelie 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.

ROHS STATEMENT: Product designed and intended as a fixed installation or part of a system in a vessel may be considered beyond the scope of Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

EU DECLARATION OF CONFORMITY: Hereby, Humminbird declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. The declaration of conformity may be consulted at https://www.humminbird.com/Category/Support/FAQ/EU_DoC/.

This product has been so constructed that the product complies with the requirement of Article 10(2) as it can be operated in at least one Member State as examined and the product is compliant with Article 10(10) as it has no restrictions on putting into service in all EU member states.

NOTE: Some features discussed in this manual require a separate purchase, and some features are only available on international models. Every effort has been made to clearly identify those features. Please read the manual carefully in order to understand the full capabilities of your model.

NOTE: The illustrations in this manual may not look the same as your product, but your unit will function in the same way.

NOTE: To purchase accessories for your control head, visit our Web site at **humminbird.com** or Contact Humminbird Technical Support through our Help Center at **https://humminbird-help.johnsonoutdoors.com/hc/en-us**.

NOTE: The procedures and features described in this manual are subject to change without notice. This manual was written in English and may have been translated to another language. Humminbird is not responsible for incorrect translations or discrepancies between documents.

Table of Contents

Overview

The Humminbird Sensor Accessory Kit includes the following items depending on the Sensor model you purchased:

GPS Reciever (AS GR16, AS GR50, AS GRP)	GPS Receiver/Heading Sensor (AS GPS HS)
Sensor with internal GPS Receiver. Cable length is 20 ft (6m).	Sensor with internal GPS Receiver and Compass. Cable length is 20 ft (6m).
Hardware kit for stem or deck mounting	Hardware kit for stem or deck mounting
Installation Guide	Installation Guide

NOTE: The stem mount is not included. To purchase extension cables and other accessories, see our Web site at **humminbird.com** or contact Humminbird Technical Support through our Help Center at **https://humminbird-help.johnsonoutdoors.com/hc/en-us**.

The following functionality will be supported by your trackplotter when it is connected to the Sensor:

- View current position

- View current track (breadcrumb trail)

- View precision speed and heading from your GPS receiver

- Save tracks and waypoints

- Travel a route and navigate from one waypoint to the next

- View the heading from the Heading Sensor (AS GPS HS only)

NOTE: If your control head is a chartplotter, there will be additional functionality when the Sensor is connected to the control head. See your control head operations manual and the Humminbird Waypoint Management Guide for more information. The manuals are included on the CD that was included with your control head, or you can download these manuals from our Web site at **humminbird.com**.

How GPS and Trackplotting Work

Your Humminbird uses GPS to determine your position and display it on a grid.

GPS uses a constellation of satellites that continually send radio signals to the earth. The GPS receiver on your boat receives signals from satellites that are visible to it. Based on time differences between each received signal, the GPS receiver determines its distance to each satellite. With distances known, the GPS receiver mathematically triangulates its own position. With 5 updates per second, the GPS receiver then calculates its velocity and bearing.

GPS was originally intended for military use; however, civilians may also take advantage of its highly accurate position capabilities, typically within +/− 2.5 to 10 meters, depending on your conditions and your Humminbird model. This means that 95% of the time, the GPS receiver will read a location within +/− 2.5 to 10 meters of your actual position.

Your GPS receiver also uses information from WAAS (the Wide Area Augmentation System), EGNOS (the European Geostationary Navigation Overlay Service), and MSAS (the MTSAT Satellite Augmentation System) satellites if they are available in your area.

How the Heading Sensor Works

The magnetic compass is one of the first known instruments for navigation. It relies on the earth's magnetic field to align a magnetic pointer towards North, also known as Magnetic North.

If your accessory includes a Heading Sensor, the control head will display the heading from the internal compass in digital format. The Heading is the direction the boat is pointing, where 000° is North, 090° is East, 180° is South, and 270° is West.

Due to wind and waves, the boat is often traveling in a slightly different direction than its heading. The direction of travel, or Course Over Ground, is provided by the GPS receiver. You can use the compass Heading with the GPS Course Over Ground and Bearing to navigate a route.

A compass' Magnetic North is affected by the local variations in the earth's magnetic field around the globe. Nautical charts will often provide the magnetic declination, or magnetic variation, for a local area so that you can confirm that Magnetic North matches True North. If you have trailered the boat to a new location, the compass' operation may also be affected by a different magnetic zone. The Humminbird control head compensates for magnetic declination and also allows you to make additional adjustments from the menu system. The details of these features are described in this manual.

Installation Preparation

Use the following instructions to install the Sensor accessory on your boat.

Read the instructions in this guide completely to understand the installation requirements before starting the installation.

Supplies: In addition to the hardware included with your Sensor accessory kit, you will need a drill, electrical tape, and an awl or pencil. Depending on your installation requirements, you might also need to purchase extension cables or a stem. See *Section 1: Choose the Mounting Location* for more information.

Installation Overview

1. Choose the Mounting Location

It is important to consider the following information when you choose a mounting location for the Sensor:

- **Interference:** Do NOT mount the Sensor close to a VHF antenna or within the active area of a radar. **If the Sensor includes a compass (AS GPS HS)**, do NOT install it near ferrous metals or near anything that can create a magnetic field. Hardware and cables that handle large currents, such as batteries and power cables, are also examples of equipment that may cause interference.

- **Reception:** Mount the Sensor in an area that has full exposure to the sky. The effective area of reception is 5° above the horizon.

- **Surface:** Whether the Sensor Cable will be routed down through the mounting surface or to the side, or if you're using a stem mount, the mounting surface will influence how you install the Sensor. For details, see *Section 2: Install the Sensor*.

- **Cables:** Test run the Sensor Cable from the chosen mounting location to the Control Head. 10 ft (3m) extension cables may be purchased from Humminbird if your planned cable route exceeds 20 ft (6 m). Maximum cable length, including extension cables, should not exceed 50 ft (16 m).

NOTE: To purchase extension cables, or other related accessories, visit our Web site at **humminbird.com** or contact Humminbird Technical Support through our Help Center at **https://humminbird-help.johnsonoutdoors.com/hc/en-us**.
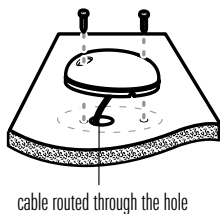
2. Install the Sensor

There are three different options to mount the sensor. Proceed to the section that matches the type of mounting location you will be using, as follows:
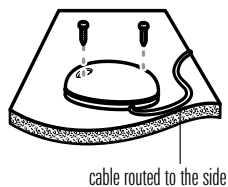

Stem Mount with 1" - 14 Thread

The sensor will be mounted on a stem or antenna pole. *Proceed to Section A*.

stem

cable routed through the hole

Access Under the Mounting Deck

The sensor will be deck mounted and the cable can be routed down through the mounting surface. *Proceed to Section B.*

cable routed to the side

NO Access Under the Mounting Deck

The sensor will be deck mounted and the cable must routed to the side because there is not space for a cable through or underneath the mounting location. *Proceed to Section C.*

A. Stem Mount with 1"-14 Thread

Use the following instructions to stem mount the Sensor:

⚠️ **WARNING!** If your Sensor includes a compass (AS GPS HS), do NOT mount it to a stem mount or antenna pole that contains ferrous metals.

📝 **NOTE:** It is important to review the mounting considerations and test run the cable route as indicated in Section 1 before proceeding with the installation.

1. **If you have a pre-existing stem mount**, skip to step 2.

   **If you need to mount the antenna pole (stem)**, mark the chosen mounting location and drill a 3/4" (19 mm) hole for the cable and cable connector.

   If you have purchased hardware to stem mount your Sensor, follow the instructions included with that hardware to attach the stem to the boat.

2. Screw the sensor base onto the stem first, making sure that the stem pipe does not protrude from the sensor base. (This adds protection to the cable when it is pulled through the pipe stem.) Deburr the pipe edges to reduce cable abrasion.

3. Use electrical tape to secure the NMEA pigtail to the cable.

   📝 **NOTE:** Unless it is needed, leave the NMEA pigtail secured to the cable. If you are connecting the pigtail to a NMEA 0183 device, see *Section 3: Connect to the Control Head* for connection information.

Stem Mount, Attaching the Sensor Base to the Stem

cover

base

stem

Taping the NMEA Pigtail to the Cable
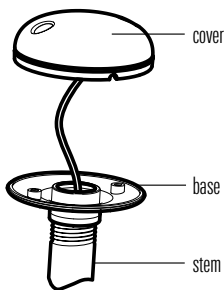

NMEA pigtail cable taped

NMEA pigtail cable out
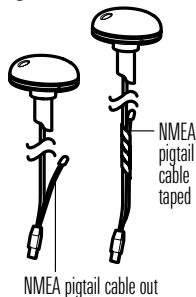
4. Route the Sensor cable through the stem and through the planned cable route. To use extension cables, see the details in *Section 1: Choose the Mounting Location*.

5. **If the Sensor includes a compass (AS GPS HS)**, position the sensor so the arrow on the cover is pointed straight toward the front of the boat in the direction of travel. The arrow should be parallel with the keel.
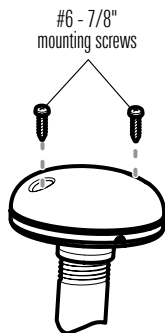
> **NOTE:** Failure to align the sensor correctly will result in incorrect compass readings.

6. Attach the Sensor to its base using the included #6 - 7/8" (22 mm) screws. Hand tighten only.

Positioning the Arrow on the Compass
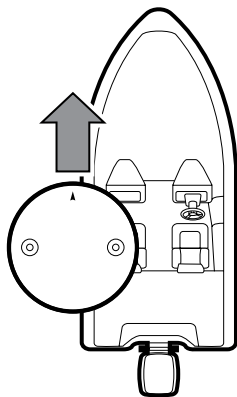
Attaching the Sensor to the Base

#6 - 7/8"
mounting screws

B. Access Under Mounting Location

Use the following instructions to deck mount the Sensor and route the cable down through the mounting surface:

> **NOTE:** It is important to review the mounting considerations and test run the cable route as indicated in Section 1 before proceeding with the installation.

1. Mark the mounting location and drill a 3/4" (19 mm) hole for the cable and cable connector.

2. Secure the NMEA pigtail to the cable with electrical tape.

   > **NOTE:** Unless it is needed, leave the NMEA pigtail secured to the cable. If you are connecting the pigtail to a NMEA 0183 device, see *Section 3: Connect to the Control Head* for connection information.

Taping the NMEA Pigtail to the Cable

NMEA pigtail cable taped

NMEA pigtail cable out

3. Route the Sensor cable through the planned cable route. To use extension cables, see the details in *Section 1: Choose the Mounting Location*.
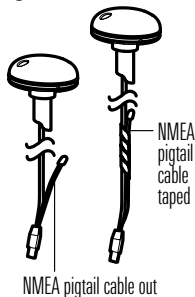
4. Cover the cable hole with the Sensor.

   If the Sensor includes a compass (AS GPS HS), position the sensor so the arrow on the cover is pointed straight toward the front of the boat in the direction of travel. The arrow should be parallel with the keel.

   > **NOTE:** Failure to align the sensor correctly will result in incorrect compass readings.

5. Make sure the Sensor is flush against the surface, and mark the two mounting holes with a pencil or awl.

6. Move the Sensor to the side and drill two pilot holes, using a 5/32" (4 mm) bit.

NOTE: Apply marine-grade silicone caulk or sealant to both screw and drilled holes as needed to protect your boat from water damage.

7. Align the Sensor's screw holes over the pilot screw holes and attach with the #8 - 1 1/4" (32 mm) Phillips head screws. Hand tighten only.

NOTE: If the mounting surface is thin or made of a light-weight material, you may need to add reinforcing material below the mounting surface in order to support the Sensor.

Positioning the Arrow
on the Compass

Attaching the Sensor to
the Mounting Surface

#8 - 1 1/4"
mounting screws

cable routed through the hole

C. No Access Under Mounting Location

Use the following instructions to deck mount the Sensor and route the cable to the side if there is not space for a cable underneath the mounting location.

> **NOTE:** It is important to review the mounting considerations and test run the cable route as indicated in Section 1 before proceeding with the installation.

1. Secure the NMEA pigtail with electrical tape.

   > **NOTE:** Unless it is needed, leave the NMEA pigtail secured to the cable. If you are connecting the pigtail to a NMEA 0183 device, see *Section 3: Connect to the Control Head* for connection information.

2. Route the cable from the Sensor to the Control head.

   - The Sensor has two wire routing notches. Use the cable notch closest to the intended cable route.

   - If holes are required to route the cable, they must be 3/4" (19mm) to allow for the cable connector.

   - To use extension cables, see the details in *Section 1: Choose the Mounting Location*.

Taping the NMEA
Pigtail to the Cable

NMEA
pigtail
cable
taped

NMEA pigtail cable out
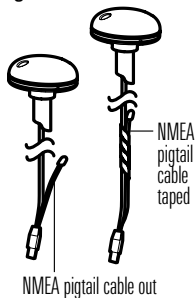
3. With the cable routed, position the Sensor in the planned mounting location.

   If the Sensor includes a compass (AS GPS HS), position the sensor so the arrow on the cover is pointed straight toward the front of the boat in the direction of travel. The arrow should be parallel with the keel.

   NOTE: Failture to align the sensor correctly will result in incorrect compass readings.

4. Make sure the Sensor is flush against the surface, and mark the two mounting holes with a pencil or awl.

5. Move the Sensor to the side and drill the two 5/32" (4 mm) pilot holes.

   NOTE: Apply marine-grade silicone caulk or sealant to both screw and drilled holes as needed to protect your boat from water damage.

6. Align the Sensor's screw holes over the pilot screw holes and attach with the #8 - 1 1/4" (32 mm) Phillips head screws. Hand tighten only.

Positioning the Arrow on the Compass
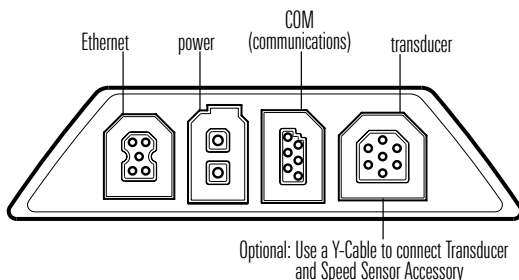
Attaching the Sensor to the Mounting Surface

#8 - 1 1/4" mounting screws

cable routed to the side
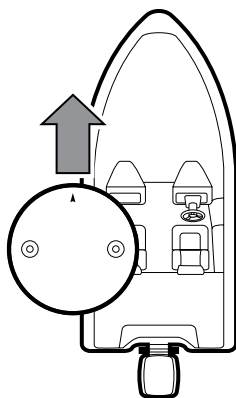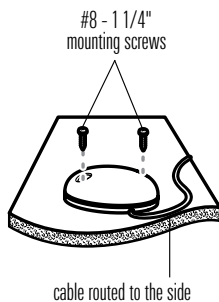
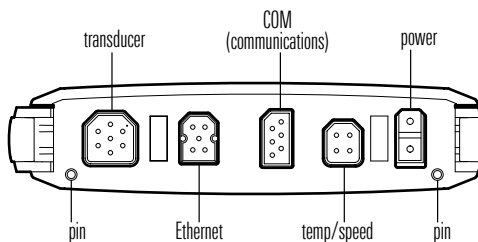Use the following instructions to connect the Sensor cable to the control head.

1. Proceed to the instructions that correspond with your control head model.

   HELIX®: Insert the Sensor's NMEA-COM connector into the control head's COM port. The connectors are keyed to prevent reversed installation, so be careful not to force the connector into the port. See your control head installation guide for details.

HELIX 7 Control Head Ports

Ethernet power COM (communications) transducer

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

HELIX 8, 9, 10, 12 Cable Tray

transducer COM (communications) power

pin Ethernet temp/speed pin

SOLIX®: Connect a separately purchased SOLIX GPS/NMEA 0183 Splitter Data Cable to the Sensor's NMEA-COM connector. See your cable installation guide for more details.

Connect the Data Cable to the NMEA 0183 port on the control head or cable tray (if applicable). See your control head installation guide for details. The ports are labeled and the connectors are keyed to prevent incorrect installation, so do not force the connector into the wrong port.

2. **Optional:** You can connect an optional-purchase device, such as an autopilot, to the Sensor pigtail wires.

GPS Receiver/Heading Sensor
(Optional Accessory Wires)
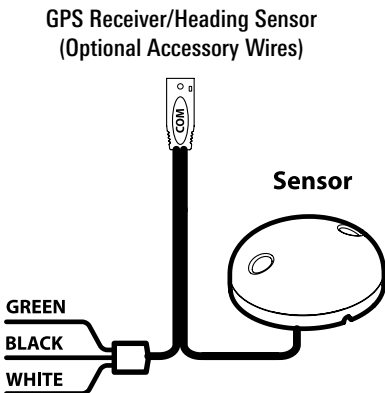
The pinouts are as follows:

- **Black Wire (Ground)**

- **White Wire (Control Head NMEA Out):** outputs the navigation calculations and commands from the control head as IN (Integrated Navigation) NMEA sentences. Connect the white wire to the device's NMEA In wire.

   OR

- **Green Wire (GPS NMEA Out):** outputs GP (Global Positioning) NMEA sentences directly from the Sensor. Connect the green wire to the device's NMEA In wire if it can only read GP NMEA sentences.

NOTE: See your device installation guide to identify the NMEA In wire. The device will connect to the white wire or green wire, depending on its NMEA communication requirements (IN or GP).

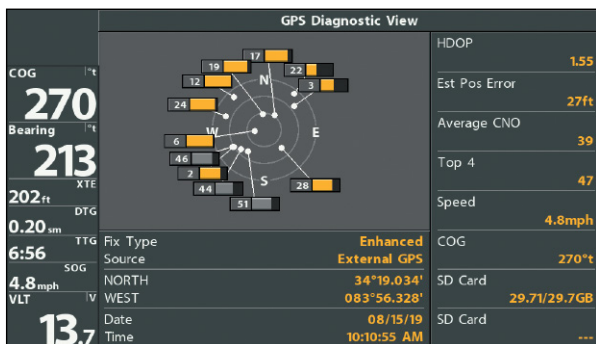**NOTE:** See *Section 5: Turn on NMEA Output and Confirm the Baud Rate* for more information.

WARNING! It is important to finish all installation connections before powering on the control head.

4. Power on and Confirm GPS Reception

Follow the instructions below to power on your Humminbird control head.

HELIX Series

GPS Diagnostic View

1. Press the 🔆 POWER/LIGHT key.

2. When the Title screen is displayed, press the MENU key to access the Start-Up Options Menu.

3. If a functioning transducer is connected, Normal operation will be selected automatically, and your Fishing System can be used on the water. See your control head operations manual for more information.

4. Press the VIEW key repeatedly until the GPS Diagnostic View is displayed on the screen. Confirm that External GPS is displayed and the Fix Type indicates Enhanced or 3D.

- If the GPS Diagnostic View is not displayed in the rotation, press the MENU key twice to open the Main Menu. Select the Views tab > GPS Diagnostic View > Visible.

- If it is connected and detected, the Sensor will also be displayed in the Accessory Test screen.

SOLIX Series

GPS (1) Satellite Sky Chart
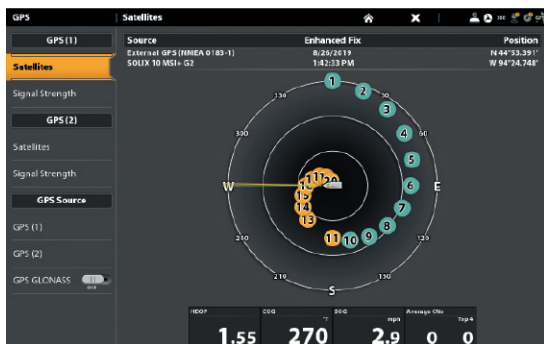
1. Press the ⏻ POWER key.

2. Press the HOME key.

3. Review the top, right corner of the status bar.

Compass: The selected compass/heading sensor is on and heading data is being received

Detected and Active: If a sensor is active and transmitting/receiving, the GPS icon will be white.

Connected but not Detected or Active: If a sensor is not detected on the network, or not transmitting/receiving, it will be completely gray.

GPS Connected but not Transmitting/Receiving: If a sensor is detected, but is not transmitting/receiving, the icon will be partially gray. In this illustration, the GPS receiver is detected, but it doesn't have a GPS fix. This feature will vary with the type of icon represented.

4. If the sensors are active, your system is ready for use on the water.

   • To review satellites and signal strength, press the Home key and select GPS.

   • If the icon is not displaying in the system status bar, check the installation of the accessory and the cable connection to the control head.

5. **Turn on NMEA Output and Confirm the Baud Rate**
(for devices connected to the pigtail only)

If you connected a device to the Sensor pigtail wires, turn on NMEA Output to enable communication and output NMEA 0183 sentences from the control head. It is also important to note the following:

   • If the GPS Receiver/Heading Sensor (AS GPS HS) is connected to the control head, and NMEA Output is turned on, the control head will operate exclusively at a baud rate of 38400. If there is a device attached to the Sensor's pigtail, it also needs to operate at 38400. See your device's installation guide to set the baud rate to 38400.

   • If a GPS Receiver (AS GR16, AS GR50, AS GRP) is connected to the control head, and NMEA Output is turned on, the control head will operate exclusively at a baud rate of 4800. If there is a device attached to the Sensor's pigtail, it also needs to operate at 4800. See your device's installation guide to set the baud rate to 4800.

   • If NMEA Output is turned off, then baud rates 4800, 9600, and 38400 are available on the control head, but the device will not receive NMEA data.

Turn On/Off NMEA Output

HELIX Series

1. Press the MENU key twice.

2. Select Setup tab > NMEA Output.

3. Press the RIGHT or LEFT Cursor keys to select On or Off. (Default = Off)

NOTE: The menu option in your Fishing System will be called NMEA 0183 Output or NMEA Output. If the menu option is not shown under the Setup tab, make sure the User Mode is set to Advanced (Setup tab > User Mode > Advanced).

SOLIX Series

1. Press the HOME key.

2. Select Settings > Network > NMEA 0183 > NMEA 0183 Output.

3. Tap the on/off button.

6. Confirm the Heading Sensor Operation
(Heading Sensors only [AS GPS HS])

It is important to confirm that the Heading Sensor is installed correctly by reviewing the heading digital readout.

NOTE: This procedure should be performed at slow speeds, in calm, open water, in a large area that is far from shallow water, boats, or other obstacles.

HELIX Series

1. Press the MENU key twice to open the Main Menu.

2. Select Navigation tab > North Reference > Magnetic.

3. Press the EXIT key.
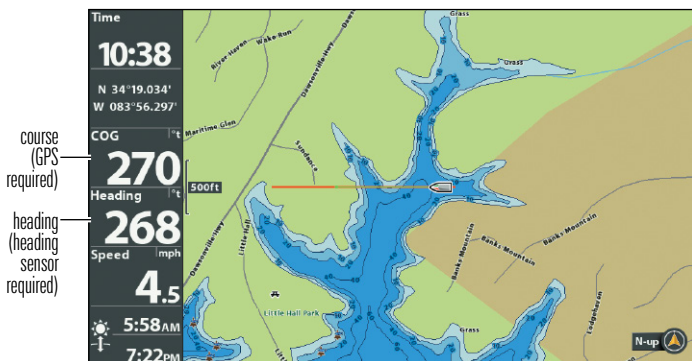
4. Select Setup tab > Select Readouts.

NOTE: If the Select Readouts menu option does not appear under the Setup tab, change the User Mode to Advanced. Select Main Menu > Setup tab > User Mode > Advanced.

1. Select a Readout position and use the RIGHT or LEFT Cursor keys to select Heading. Select another Readout position and select Course.

2. Press the EXIT key until the Main Menu is closed.

3. Press the VIEW key until the Sonar View is displayed on the screen.

4. Navigate the boat in a straight line, in calm, open water at 4.5 mph. Compare the Heading digital readout on the screen with the Course (COG) digital readout. The readouts should be within approximately 5° of each other.
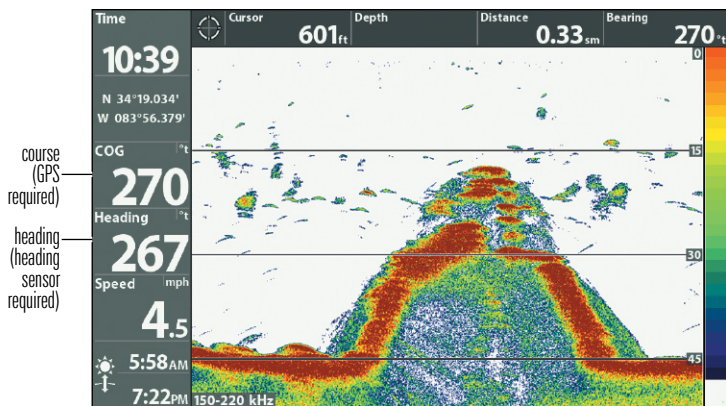
   Adjust: To adjust the zero point of the Heading Sensor, select Main Menu > Navigation tab > Heading Offset. Press the RIGHT or LEFT Cursor keys to adjust the setting.

   If the procedure failed: If the Heading digital readout is significantly different than the COG, the Heading Sensor might be installed in a location with too much magnetic interference. Check the installation location and possible magnetic disturbances in the area.

Confirming the Heading Digital Readout (Chart View)

course (GPS required)

heading (heading sensor required)

Confirming the Heading Digital Readout (Sonar View)

course (GPS required)
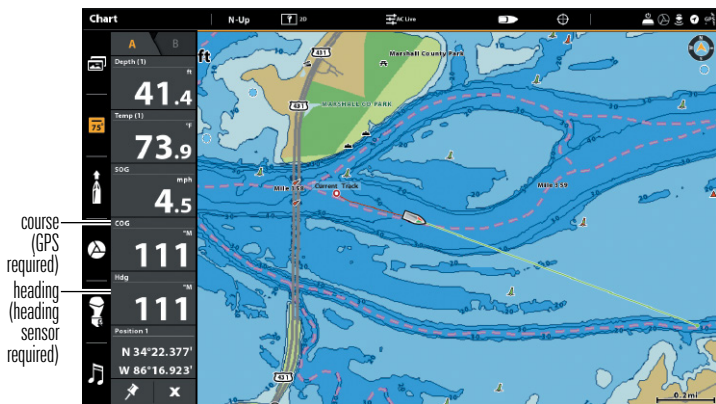
heading (heading sensor required)

SOLIX Series

1. Press the HOME key.

2. Select Settings > General > Units > Compass > Magnetic North.

3. With a Sonar View displayed on-screen, navigate the boat in a straight line, in calm, open water at 4.5 mph. Compare the Heading digital readout on the screen with the Course (COG) digital readout. The readouts should be within approximately 5° of each other.
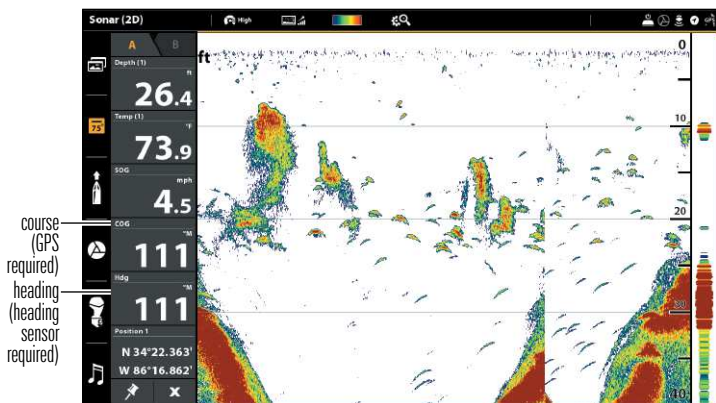
   Adjust: To adjust the zero point of the Heading Sensor, select Settings > Network NMEA 0183 > Data Offsets. Select Heading Adjustment. Tap the on/off button, or press the ENTER key, to turn it on. Press and hold the slider, or press and hold the ENTER key, to adjust the setting.

   If the procedure failed: If the Heading digital readout is significantly different than the COG, the Heading Sensor might be installed in a location with too much magnetic interference. Check the installation location and possible magnetic disturbances in the area.

Confirming the Heading Digital Readout (Chart View)

course (GPS required)

heading (heading sensor required)

Confirming the Heading Digital Readout (Sonar View)

course (GPS required)

heading (heading sensor required)

Views

The following views will be added to the View Rotation when the Sensor is connected to the trackplotter:

Navigation views:

- Bird's Eye View (HELIX Series only)
- Chart View
- Combo View

If the Sensor is connected to a chartplotter, the following views will be added to the view rotation: Bird's Eye View, Chart View, and Combo View. For details about the navigation views and menu options, see your control head operations manual and the Waypoint Management Guide. The manuals are included on the CD that was included with your control head, or you can download these manuals from our Web site at **humminbird.com**.

Bird's Eye View (HELIX Series only)

Bird's Eye View shows a 3-D, perspective view of the track from a point above and behind the boat (the eye point). As the boat turns, the eye point moves to follow the boat.

- To shift the eye point position so that you can look off to the sides, or even behind the boat: Press the RIGHT or LEFT Cursor keys to turn the eye point right or left. Press the UP Cursor key to move the eye point forward, and press the DOWN Cursor key to move the eye point backward.

- Press the EXIT key to move the eye point back to its original position behind and above the boat.

Bird's Eye View

depth

course over ground

latitude and longitude position of the boat

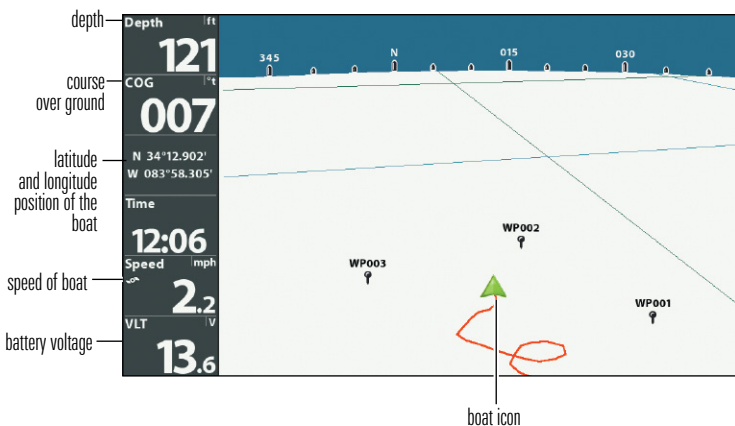speed of boat

battery voltage

boat icon

Chart View

Chart View shows the current track (also known as the position history or breadcrumb trail) showing where the boat has been, along with saved tracks, waypoints, and the current route (when navigating).

Panning: Use the 4-WAY Cursor Control key (HELIX) or the Joystick (SOLIX) to move the grid around on the display in the direction of the key being pressed. When you do this, a cursor is drawn at the center of the screen.
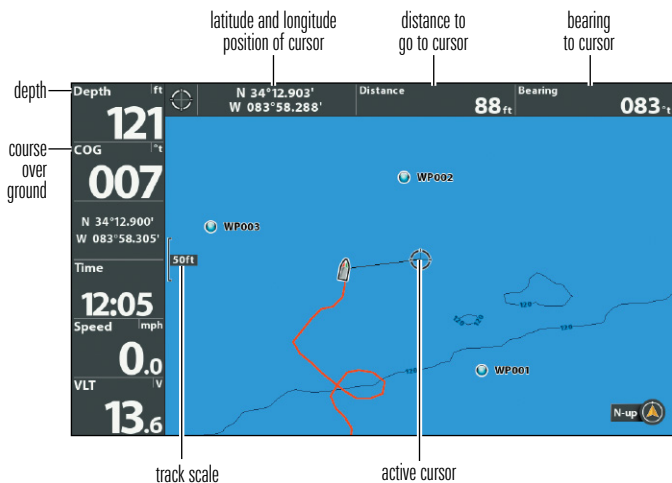
Chart View with Active Cursor (HELIX)

latitude and longitude position of cursor

distance to go to cursor

bearing to cursor

depth

course over ground

track scale

active cursor

Chart View with Active Cursor (SOLIX)

depth

course over ground

bearing to cursor

distance to go to cursor

active cursor

latitude and longitude position of cursor
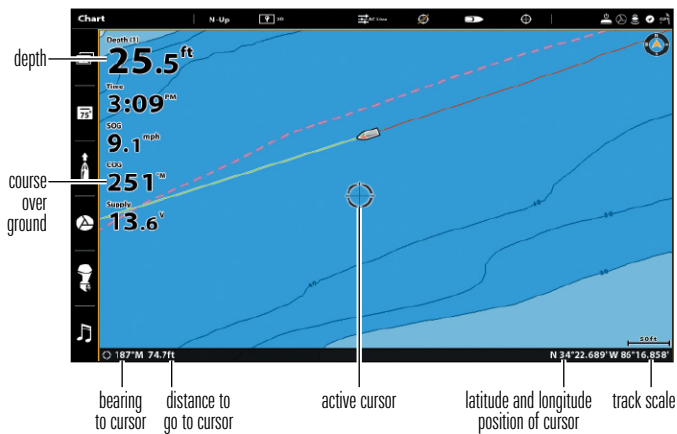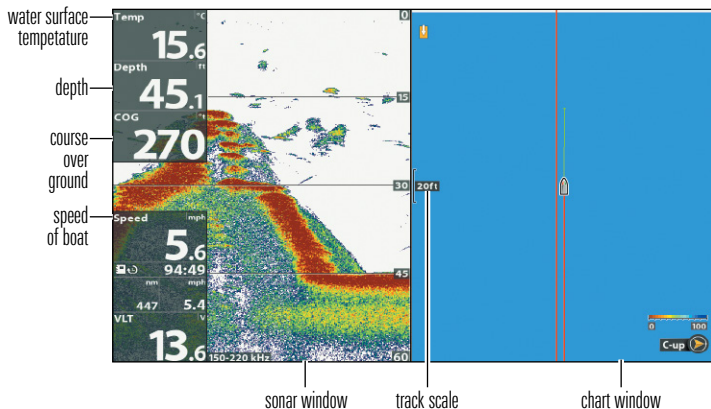
track scale

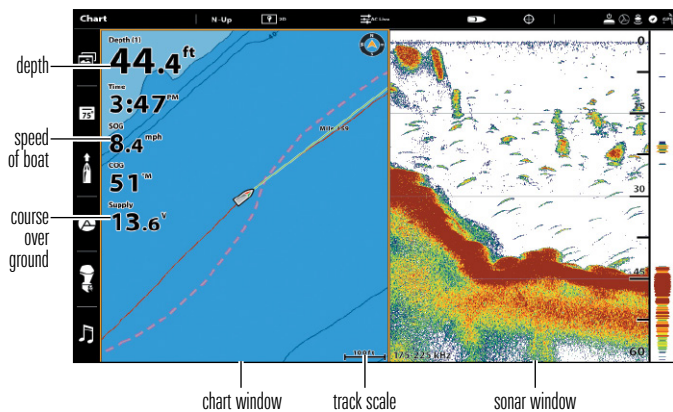# Combo View

Combo View is displayed as a split screen, with Chart View on one side and Sonar View on the other side of the screen.

Combo View (HELIX)

water surface tempetature

depth

course over ground

speed of boat

sonar window   track scale   chart window

Combo View (SOLIX)

depth

speed of boat

course over ground

chart window   track scale   sonar window

View Orientation

The Chart View and Combo View allow you to choose the orientation of the view.

- North-Up: The chart is oriented with North up on the display, and the vessel rotates according to its heading or COG (Course Over Ground).

- Head Up: The vessel's current heading points up, and the chart rotates around the vessel icon so that it always points up on the view. The heading is provided by the connected compass/heading sensor. If a compass is not connected, the vessel will be oriented according to the COG (Course Over Ground).

- Course-Up: During navigation, the intended course or route leg is shown at the top of the view. Objects ahead of the vessel are drawn above the vessel. When the vessel is not navigating, the current heading is displayed.
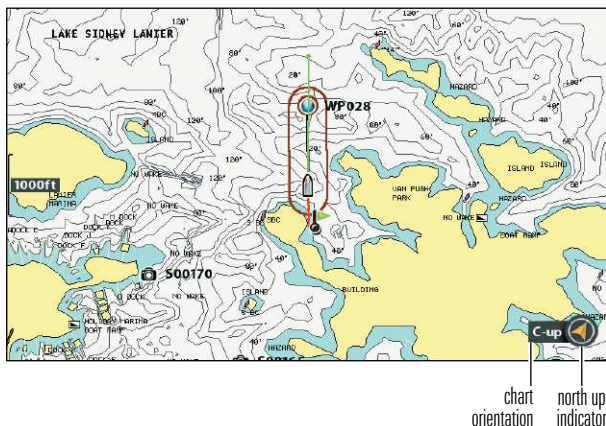
Set the Chart Orientation

HELIX Series

1. Main Menu: Press the MENU key twice. Select the Nav tab.

2. Select Chart Orientation.

3. Select an orientation to apply to the chart.

North-Up Icon: If it is turned on, the North-Up Icon displays the direction of True North. It also displays the View Orientation, and the icon will change as the orientation and the data source change (see *Navigation Menu Tab: North-Up Indicator*).

Chart Orientation set to Course Up

chart
orientation

north up
indicator

When the boat is stationary, it is drawn as a circle.

When the boat is in motion, it changes to a boat shape, pointed in the direction of motion.

NOTE: If a Heading Sensor (AS GPS HS) is attached, the boat icon will always be displayed as a boat shape. It will not change to a circle when the boat is stationary.

SOLIX Series

Use the Preferences menu to change the chart orientation.

1. With a Chart View displayed on-screen, tap Chart in the status bar, or press the MENU key once.

2. Select Chart Options > Preferences > Orientation.

3. Select an orientation to apply to the chart.

QUICK TIP! You can also select the Chart Orientation Menu on the status bar. See the illustration below.

preview window

menu

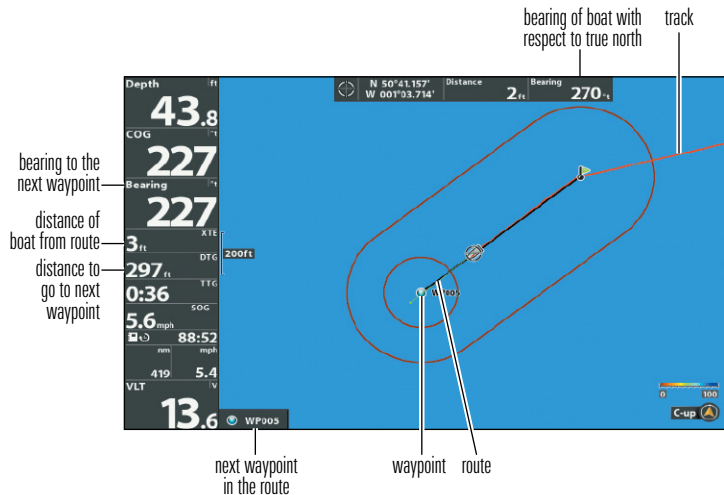selection
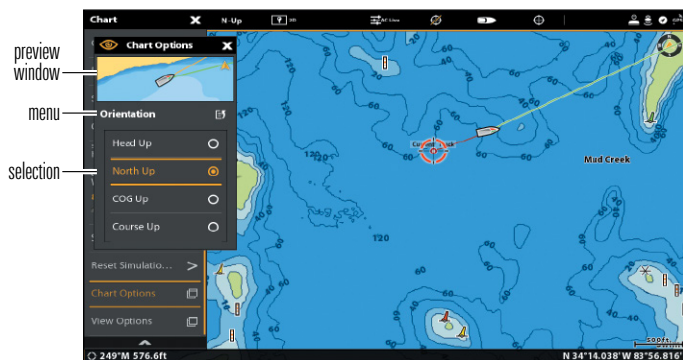
Introduction to Navigation

Your Humminbird control head allows you to mark waypoints, create a route, and start navigating. Waypoints, routes, and tracks can be managed on-screen so you can save your favorites, edit names, and easily return to your favorite destinations.

There are many ways to start navigation or edit navigation data with your Humminbird control head. The instructions in this section review navigation features on the chart views.

NOTE: For details about chartplotters and navigation, see your control head operations manual and the Waypoint Management Guide. The manuals are included on the CD that was included with your control head, or you can download these manuals from our Web site at **humminbird.com**.

Waypoints, Routes, and Tracks

Waypoints, Routes, and Tracks (HELIX)

bearing of boat with respect to true north

track

bearing to the next waypoint

distance of boat from route

distance to go to next waypoint

next waypoint in the route

waypoint

route

Waypoints, Routes, and Tracks (SOLIX)
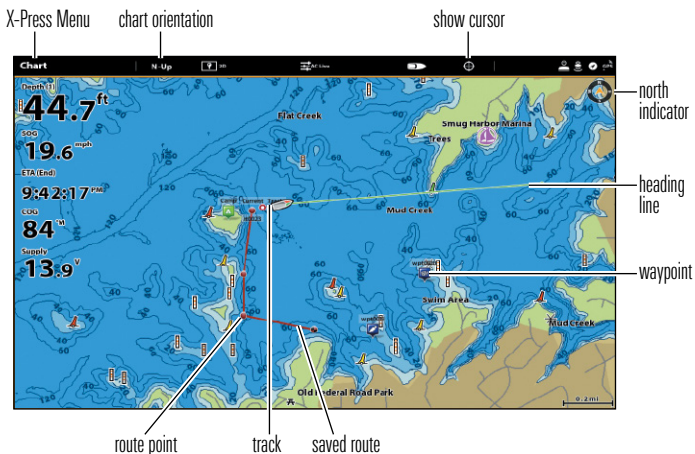
Waypoints are stored positions that allow you to mark areas of interest or navigation points.

Routes link two or more waypoints together to create a path for navigation and are used in trip planning.

A route represents your intended navigation and shows the shortest path from each waypoint to the next. As you travel a route, staying on the route line is the most efficient way to get to your destination, although you should always look out for obstacles not shown on the track. A Route Leg is the path between each waypoint in a route.

Tracks consist of a detailed position history and are displayed as a breadcrumb trail of trackpoints. The Current Track shows the position history since the unit was powered up. You can clear the Current Track or save it at any time. The current track represents your actual path so far.

> **NOTE:** The maximum number of waypoints, routes, and tracks may vary due to your Humminbird control head model. See your control head operations manual for details.

Save, Edit, or Delete a Waypoint

Save your current position as a waypoint

HELIX Series

1. On the Track or Combo view, press the MENU key to display the X-Press Menu.
2. Select Mark, and press the RIGHT Cursor key to save the boat position as a waypoint.

SOLIX Series

1. Using the touchscreen, tap Chart in the status bar.
2. Select Mark.
3. Select Waypoint.

   OR

1. Using the keypad, press the MARK key twice.

Save the cursor position as a waypoint

HELIX Series

1. On the Track or Combo view, use the 4-WAY Cursor Control key to move the cursor to the position you want to save as a waypoint.
2. Press the MENU key to display the X-Press Menu.
3. Select Mark, and press the RIGHT Cursor key to save the cursor position as a waypoint.

SOLIX Series

1. Using the touchscreen, press and hold a position on the Chart View.
2. Select Waypoint.

   OR

1. Using the joystick, move the cursor to a position on the chart.
2. Press the MARK key twice.

> ✍ **NOTE:** When you save a waypoint by any of these methods, a numerical waypoint name is automatically assigned. You can edit the waypoint information later to give it a different name and select an icon to represent it (see *Program or Edit the Waypoint Fields*).

Display the Waypoints submenu

HELIX Series

1. From any view, press the MENU key twice to display the Main Menu.
2. Press the RIGHT Cursor key to select the Navigation tab.
3. Select Waypoints, and press the RIGHT Cursor key to display the Waypoints submenu.

SOLIX Series

1. Press the HOME key.
2. Select the Nav Data tool.

Edit a waypoint

HELIX Series

1. From the Waypoints submenu, select Edit and press the RIGHT Cursor key to display the saved waypoints list.
2. Select the waypoint you want to edit and press the RIGHT Cursor key.
3. Use the 4-WAY Cursor Control key to edit the waypoint name, latitude, longitude, and icon before selecting Save.

To make it easier to select a waypoint to edit, select Sort By and press the RIGHT or LEFT Cursor keys to select a sort order:

- Name shows the waypoints alphabetically.
- Time shows the most recently-created waypoint first.
- Distance shows the closest waypoint first.

SOLIX Series

1. Press the HOME key.
2. Select the NAV Data tool.
3. Under Lists, select Waypoints.
4. Press and hold a waypoint and select Info.
5. Edit the waypoint using the options in the Waypoint Info menu.

   To see the complete list of options to edit the waypoint, select Full Info.

Delete a waypoint

HELIX Series

1. From the Waypoints submenu, select Delete, and press the RIGHT Cursor key to display the saved waypoints list.
2. Select the waypoint you want to delete, then press the RIGHT Cursor key.

   You will be asked to confirm deletion before the waypoint is permanently deleted.

SOLIX Series

1. Press the HOME key.
2. Select the NAV Data tool.
3. Under Lists, select Waypoints.
4. Tap a waypoint or use the joystick to select it.
5. Press the ENTER key.
6. Select Full Info.
7. Select Delete.

Navigate to a Waypoint or Position

Navigate to the cursor position

HELIX Series

1. From the Chart or Combo view, use the 4-WAY Cursor Control key to move the cursor to a position or waypoint on the display.
2. Press the MENU key once to display the Navigation X-Press Menu.
3. Select Go To, and press the RIGHT Cursor key.

   Navigation will begin immediately.

SOLIX Series

1. Using the touch screen, tap a waypoint icon and then tap Chart in the status bar.
2. Select Go To.
3. Select Go To: Point

   OR

1. Using the Joystick, move the cursor to a waypoint and press the GO TO key.
2. Select Go To: Point.

Navigate to a specified waypoint

HELIX Series

1. Press the MENU key once to display the Navigation X-Press Menu.

2. Select Go To, and press the RIGHT Cursor key.

3. Press the DOWN Cursor key to select a waypoint from the saved waypoints list, and press the RIGHT Cursor key to start navigation.

SOLIX Series

1. Press the HOME key.

2. Select the NAV Data tool.

3. Under Lists, select Waypoints.

4. Tap a waypoint or use the joystick to select it.

5. Press the GO TO key.

6. Press the ENTER key, or tap Go To on-screen.

Link waypoints to create a multi-segment route

HELIX Series

Repeat the instructions for navigating to a waypoint.

SOLIX Series

1. Tap Chart in the status bar.

2. Select Go To.

3. Select Quick Route.

4. Tap the chart in the position where you want to mark a route point.

   Undo Last Route Point: Tap the Back icon.

   Cancel Route Creation: Tap the X icon.

5. To start navigation, tap the check icon in the status bar.

> **NOTE FOR HELIX USERS:** When two or more waypoints overlap, or are displayed close together on a chart view, the screen will automatically declutter—waypoint names will shorten and the waypoint icons will change into small blue icons.
>
> To view a **Decluttered Waypoint** at full size, use the 4-WAY Cursor Control key to move the cursor onto a decluttered waypoint icon. When the cursor snaps onto the icon, the full-size waypoint name and icon will be displayed.

Skip a waypoint:

HELIX Series

1. From the Navigation X-Press Menu, select Skip Next Waypoint and press the RIGHT Cursor key.

   If there is not another waypoint to skip to, navigation will be cancelled.

SOLIX Series

1. During navigation, tap Chart in the status bar.
2. Select Go To.

   OR

1. Press the GO TO key.
2. Select Next Point.

Cancel navigation:

HELIX Series

1. From the Navigation X-Press Menu, select Cancel Navigation and press the RIGHT Cursor key.

   Canceling navigation removes the route and any created waypoints.

SOLIX Series

1. During navigation, tap Chart in the status bar.
2. Select Go To.

OR

1. Press the GO TO key.

2. Select Cancel Navigation.

3. Select Save Route or Discard Route.

Add a Waypoint Target or Trolling Grid (HELIX models only)

The Waypoint Target shows a target consisting of concentric circles in various distance ranges centered on the waypoint you choose. The Trolling Grid shows various distance ranges in grid format from the waypoint you choose. The trolling grid can be used as a guide when trolling around a waypoint.

Add a Waypoint Target: From the Waypoints submenu, select Target, and press the RIGHT Cursor key to display the saved waypoints list. Select a waypoint and press the RIGHT Cursor key.

Chart View with Target
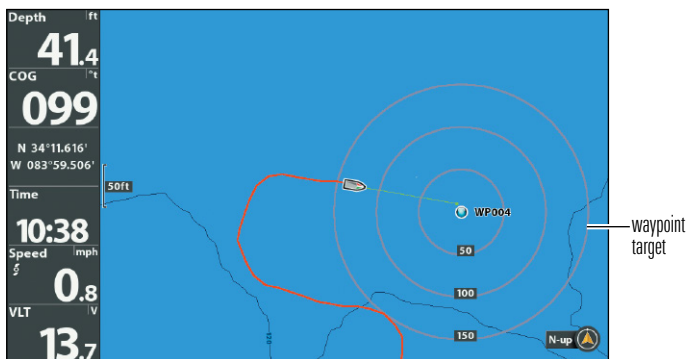
Add a Trolling Grid: From the Waypoints submenu, select Grid, and press the RIGHT Cursor key to display the saved waypoints list. Select a waypoint and press the RIGHT Cursor key. The grid can also be rotated to any heading by adjusting the Grid Rotation setting on the Navigation Main Menu.

Chart View with Grid
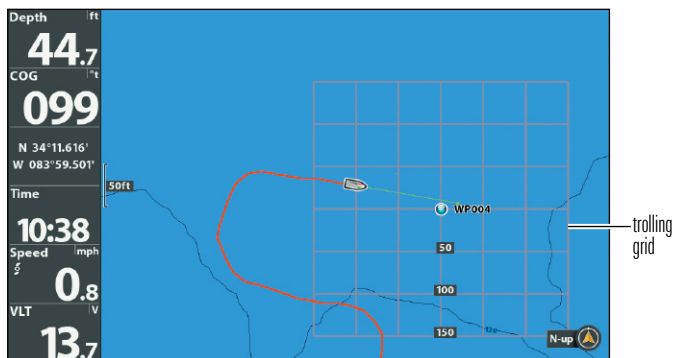
Remove the Target or Trolling Grid: Press the MENU key once, choose Remove Target or Remove Grid from the Navigation X-Press Menu, and press the RIGHT Cursor key.

NOTE: Only one waypoint can have a target or a grid applied to it at one time. If you apply a target or a grid to a new waypoint, the original waypoint will lose its target or grid.

NOTE: The spacing of the rings on the waypoint target and the spacing of the grid lines on the trolling grid are the same as the length of the scale bar on the left edge of the display. Zooming in or out will decrease or increase the spacing, respectively.

Save or Clear a Current Track

Save the current track

HELIX Series

1. From the Navigation X-Press Menu, select Save Current Track and press the RIGHT Cursor key.

    The track will remain on the display but will change from black to gray.

SOLIX Series

1. With a Chart View displayed on-screen, tap Chart in the status bar.
2. Select Save Current Track.

NOTE: When you save a track, a name is automatically assigned to it, but it can be re-named later.

Clear the current track

HELIX Series

1. From the Navigation X-Press Menu, select Clear Current Track, and press the RIGHT Cursor key.

   The track will be removed from the display and permanently deleted.

SOLIX Series

1. With a Chart View displayed on-screen, tap Chart in the status bar.

2. Select Clear Current Track.

Edit, Delete, or Hide Saved Tracks

Display the Saved Tracks submenu

HELIX Series

1. From any view, press the MENU key twice to display the Main Menu, then press the RIGHT Cursor key to select the Navigation tab.

2. Select Saved Tracks, and press the RIGHT Cursor key to display the Saved Tracks submenu.

SOLIX Series

1. Press the HOME key.

2. Select Nav Data tool.

3. Under Options, select Tracks.

Edit a saved track

HELIX Series

1. From the Saved Tracks submenu, select Edit, and press the RIGHT Cursor key to display the saved tracks list.

2. Select the track you want to edit, and press the RIGHT Cursor key.

   When the **Edit Track dialog box** appears, use the 4-WAY Cursor Control key to move between fields. In the Name field, press the UP or DOWN Cursor keys to change the letter or number. All upper and lower case letters are available, as well as digits 0-9 and some punctuation characters. To exit the Name field, press the LEFT or RIGHT Cursor keys or press the EXIT key. Select Save, and press the RIGHT Cursor key to save your changes.

SOLIX Series

1. Tap a track start point or end point. Tap the Track Name.

   OR

   Use the Joystick to move the cursor to a track start point or end point. Press the ENTER key.

2. Edit the track name, style, color, and more from the Track Info menu.

Delete a saved track

HELIX Series

1. From the Saved Tracks submenu, select Delete, and press the RIGHT Cursor key to display the saved tracks list.

2. Select the track you want to delete, and press the RIGHT Cursor key.

   You will be asked to confirm deletion before the track is permanently deleted.

SOLIX Series

1. Tap a track start point or end point. Tap the Track Name.

   OR

   Use the Joystick to move the cursor to a track start point or end point. Press the ENTER key.

2. Select Delete Track.

Hide or display a saved track

HELIX Series

1. From the Saved Tracks submenu, select Edit, and press the RIGHT Cursor key to display the saved tracks list.

2. Select a track, and press the RIGHT Cursor key.

3. Select the Visibility field, and press the UP or DOWN Cursor keys to select Hidden or Visible.

4. Press the EXIT key to return to the Saved Tracks submenu.

SOLIX Series

1. Press the HOME key.

2. Select Nav Data tool.

3. Under Lists, select Tracks.

4. Press and hold a track.

5. Select Info.

6. Toggle Visibility on or off.

Notes

Contact Humminbird

Contact Humminbird Technical Support through our Help Center at **https://humminbird-help.johnsonoutdoors.com/hc/en-us** or in writing to the address below:

Humminbird Service Department
678 Humminbird Lane
Eufaula AL 36027 USA

Social Media Resources:

Facebook.com/HumminbirdElectronics

Twitter.com (@humminbirdfish)

Instagram.com/humminbirdfishing

YouTube.com/humminbirdtv