GR4 GPS Receiver
Accessory Manual

531248-1-B

HUMMINBIRD.

Matrix™
FISHING SYSTEM

Thank You!

Thank you for choosing Humminbird®, America's #1 name in fishfinders. 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 - free of charge during the first year after purchase, and available at a reasonable rate after the one-year period. 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 our Customer Resource Center at either 1-334-687-0503 or visit our website at **www.humminbird.com.**

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! 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. Handling and/or opening this unit may result in exposure to lead, in the form of solder.

WARNING! This product contains lead, a chemical known to the state of California to cause cancer, birth defects and other reproductive harm.

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Table of Contents

NOTE: *Entries in this Table of Contents which list (International Only) are only available on products sold outside of the US and Canada by our authorized International Distributors. To obtain a list of authorized International Distributors, please visit our website at www.humminbird.com or contact our Customer Resource Center at 1-334-687-0503 to locate the distributor nearest you.*

NOTE: *Entries in this Table of Contents which list (with PC Connect Cable Only) require the purchase of a separate accessory. You can visit our website at www.humminbird.com to order these accessories online or contact our Customer Resource Center at 1-334-687-0503.*

GR4 GPS Connection Kit

The Humminbird® GR4 GPS Connection Kit includes the following items:

- GR4 GPS Antenna Receiver with 20' (6m) cable
- AS YC("Y") cable for multiple accessory attachment
- Hardware kit for stem or deck mounting
- GR4 GPS Receiver Accessory Manual

NOTE: *10 foot extension cables are available as an optional purchase item. These can be used to extend the total GR4 Antenna Cable length up to 50 feet.*

How GPS Works

Your Matrix Fishing System uses GPS and sonar to determine your position, display it on a grid, and provide detailed underwater information. The Global Positioning System (GPS) is a satellite navigation system designed and maintained by the U.S. Department of Defense. GPS was originally intended for military use; however, civilians may also take advantage of its highly accurate position capabilities, typically within +/- 10 meters, depending on conditions. This means that 95% of the time, the GPS receiver will read a location within 10 meters of your actual position. The GR4 GPS Receiver can use 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.

GPS uses a constellation of satellites that continually send radio signals to the earth. Your present position is determined by receiving signals from up to 12 satellites and measuring the distance from the satellites.
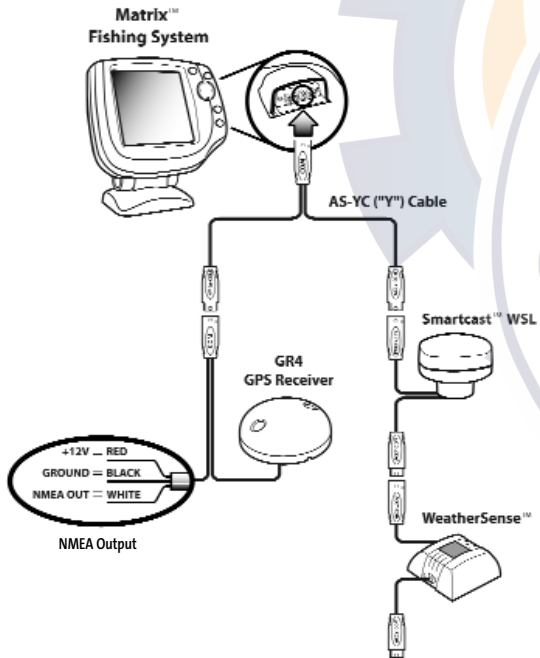
The following GPS functionality is currently supported by the Matrix Fishing System when it is connected to a GPS receiver:

- 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.

Connecting a GR4 GPS Receiver to the Matrix

Here's how to access GPS functionality using your GR4 GPS Receiver Accessory:

1. Attach the GR4 GPS receiver to your Matrix Control Head COM port using the NMEA cable attached to the antenna.

2. If you are already using other Matrix accessories plugged into the COM connector, you will also need to use the AS-YC ("Y") cable included in your GR4 GPS Hardware Kit so that you can use both the accessories and your GPS Receiver at the same time. Attach the COM connector of the "Y" cable directly to your Matrix Control Head COM port. Attach the GR4 GPS receiver to the NMEA-COM connector of the "Y" cable. Re-connect your Matrix accessories to the ACCY-COM connector of the "Y" cable.

3. Power up the Matrix Fishing System (see your Matrix Operation Manual for details).

4. When the Matrix detects the NMEA input from the GPS Receiver, the Combo, Track and Bird's Eye Views will be added automatically to the VIEW key function. A Navigation menu tab and the Navigation X-Press menu will also be added automatically to the Menu system.

Matrix™
Fishing System

AS-YC ("Y") Cable

Smartcast™ WSL

GR4
GPS Receiver

+12V — RED
GROUND — BLACK
NMEA OUT — WHITE

NMEA Output

WeatherSense™

5. The Matrix Control Head outputs NMEA signals thru the "pigtail" cable attached to the end of the GR4 GPS Receiver Cable for connection to devices such as autopilots. Connect the NMEA Out (White Wire) of the cable to the NMEA In of the device you are connecting to your Matrix Fishing System. The pinouts of this cable are as follows:

- Red Wire, +12V (output voltage only)
- Black Wire, Ground
- White Wire, NMEA Out.

CAUTION! Please use caution before connecting the red +12V wire to any other NMEA device. This is an output voltage provided by the Matrix unit and GR4 receiver and should only be connected to those NMEA devices that need a 12 volt input.

GPS Receiver Installation

To optimize performance of the GPS receiver, mount it in an area that has full exposure to the sky. The effective area of reception is 10° above the horizon.

Different circumstances determine the mounting method appropriate for your GPS receiver.

If you have...	Then use:
An antenna stem with standard 1" – 14 thread	Stem Mount with 1" - 14 Thread
Access under mounting location	Access Under Mounting Location
No access under mounting location	No Access Under Mounting Location

Stem Mount with 1" - 14 Thread

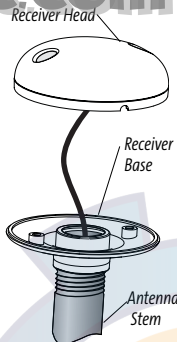Follow these steps to stem mount the GPS receiver:

1. If you have a pre-existing stem mount, skip to step 2. If you need to mount the antenna pole (stem), determine the best location, preplan and test the cable routing to your Matrix unit before any drilling or cutting of your boat surfaces, then route the 20' (6 m) cable to the desired mounting location. Mark the location and drill a ¾" (19 mm) hole for the cable and cable connector.. If you have purchased hardware to stem mount your GPS receiver, follow the instructions included with that hardware to attach the stem to the boat.

NOTE: 10' extension cables may be purchased from Humminbird if your planned cable route exceeds 20' (6 m). Maximum cable length, including extension cables, should not exceed 50' (16 m). Visit our website at www.humminbird.com, or call our Customer Resource Center at 1-334-687-0503 to purchase extension cables.

2. Screw on the receiver base to the stem first, making sure that the stem pipe does not protude from the receiver base. This adds protection to the cable when pulling it through the pipe stem. In addition to this, deburr the pipe edges to reduce cable abrasion.

3. Use electrical tape to secure the NMEA pigtail to the cable as shown in the illustration.

NOTE: Leave the NMEA pigtail secured to the cable unless needed in order to make it easier to remove the GPS Receiver.

4. Route GPS Receiver cable through the stem and continue with the planned cable route.

5. Attach the GPS Receiver to its base using the included #6 - ¼" screws. Hand tighten only.

Receiver Head

Receiver Base

Antenna Stem

Stem Mount, Attaching Receiver Base to Stem

NMEA Pigtail Taped

NMEA Pigtail Cable Out

NMEA Pigtail Taped to Cable

#6 - ¼" Mounting Screws

Cable Route

Stem Stop

Attaching the Receiver to the Base, Making Sure Cable is Not Pinched

Access Under Mounting Location

Follow these steps to deck mount the GPS receiver when you can route the cable down through the mounting surface:

1. Determine the best location, then test route the 20' (6 m) cable fromthe Matrix control head to the planned mounting location of the GPS Receiver.

Access Under Mounting Location

NOTE: 10' extension cables may be purchased from Humminbird if your planned cable route exceeds 20' (6 m). Maximum cable length, including extension cables, should not exceed 50' (16 m). Visit our website at www.humminbird.com, or call our Customer Resource Center at 1-334-687-0503 to purchase extension cables.
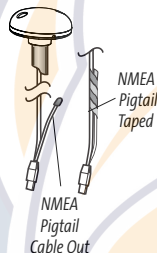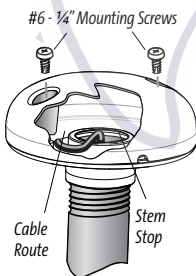
2. Mark the mounting location and drill a ¾" (19 mm) hole for the cable and cable connector. Secure the NMEA pigtail to the cable with electrical tape. Route the cable.

3. Cover the cable hole with the GPS Receiver. Make sure the Receiver is flush against the surface and mark the two mounting holes with a pencil or awl.

4. Move the Receiver 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.

5. Align the GPS Receiver's screw holes over the pilot screw holes and attach with the #6 - ¾" 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 GPS Receiver.

No Access Under Mounting Location

Follow these steps to deck mount the GPS Receiver in a situation where you must route the cable to the side because there is no space for a cable underneath the mounting location.
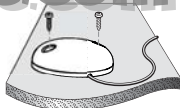
No Access Under Mounting Location

1. Determine the best location, then test route the 20' (6 m) cable from the Matrix control head to the planned mounting location of the GPS Receiver.

NOTE: 10' extension cables may be purchased from Humminbird if your planned cable route exceeds 20' (6 m). Maximum cable length, including extension cables, should not exceed 50' (16 m). Visit our website at www.humminbird.com, or call our Customer Resource Center at 1-334-687-0503 to purchase extension cables.

2. Confirm that the cable length is adequate and route the cable from the Receiver to the Matrix control head. If holes are required to route the cable, they must be ¾" (19 mm) to allow for the cable connector. Secure the NMEA pigtail with electrical tape.

3. The GPS Receiver has two wire routing notches. Use the cable notch closest to the intended cable route.

4. With the cable routed, position the GPS Receiver in the planned mounting location and mark the mounting holes with a pencil or awl.

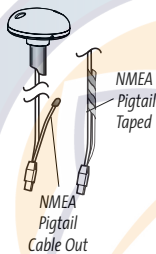5. Move the GPS Receiver to the side and drill the two ⁵⁄₃₂" (4 mm) pilot holes.

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 screw holes of the GPS Receiver over the pilot screw holes, referring to the illustration, and attach with the #6 - ¾" Phillips head screws. Hand tighten only.

NMEA Pigtail Taped

NMEA Pigtail Cable Out

NMEA Pigtail Taped to Cable

Finish Routing the Cable and Check Operation

Follow these steps to finish routing the GPS Receiver cable between the Matrix control head and the Receiver:

1. Secure the cable along its path to the Matrix control head as needed, using cable ties.

2. Plug the GPS Receiver cable to the Matrix control head per the instructions detailed in Connecting a GR4 GPS Receiver to the Matrix..
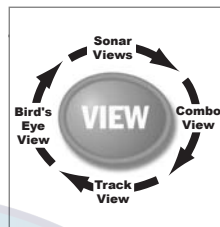
Views

The following views will be added to the View Rotation when a GPS Receiver is connected to the Matrix Fishing System:

Navigation views:

- Bird's Eye View
- Track View
- Combo View

Bird's Eye View

Bird's Eye View - This 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.

When you press the 4-WAY Cursor key in the **Bird's Eye View,** the position of the eye point will shift. This allows you to move and turn the eye point so that you can look off to the sides, or even behind the boat. Pressing the RIGHT or LEFT arrow keys on the 4-WAY Cursor key turns the eye point right or left, while pressing the UP arrow key moves the eye point forward, and pressing the DOWN arrow key moves the eye point backward.

Pressing the EXIT key moves the eye point back to its original position behind and above the boat.

Bird's Eye View

Depth → | N 34°06.560' W 084°12.832' | ← Latitude and Longitude Position of Boat

Speed of Boat

Boat Icon

Water Surface Temperature → 60°F 7.6 mph 177°t ← Bearing of Boat with Respect to North
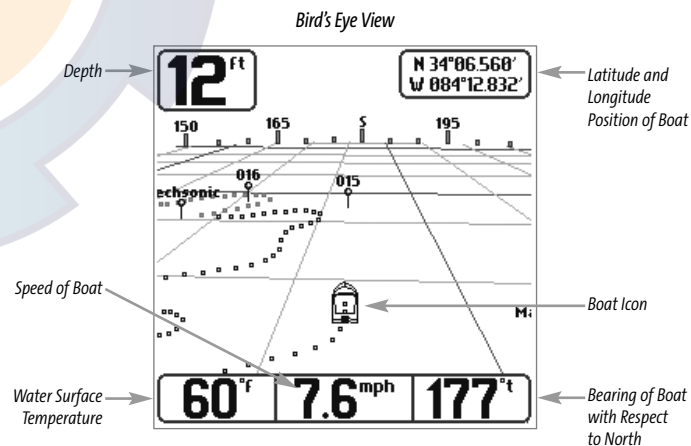
Track View

Track View - This 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).

Track View with Active Cursor

Depth

22 ft

Marina

Track Scale

1000ft

Latitude and Longitude Position of Cursor

Active Cursor

Distance to Go To Cursor

Bearing to Cursor

Techsonic

015

016

DIST 0.35sm   N 34°06.397'
BRG 170°t   W 084°12.628'

243 °t

Bearing of Boat with Respect to North
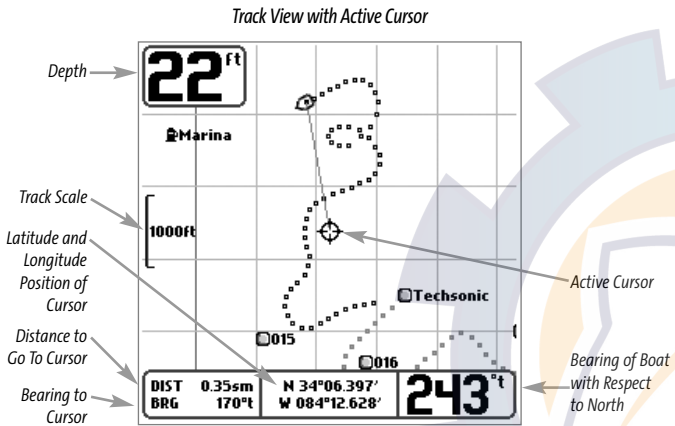
Panning: Use the 4-WAY Cursor keys to move the chart around on the display in the direction of the key being pressed. When you do this, a bullseye cursor is drawn at the center of the screen and is linked to the boat by a gray line, even if the boat is off the screen.

Combo View

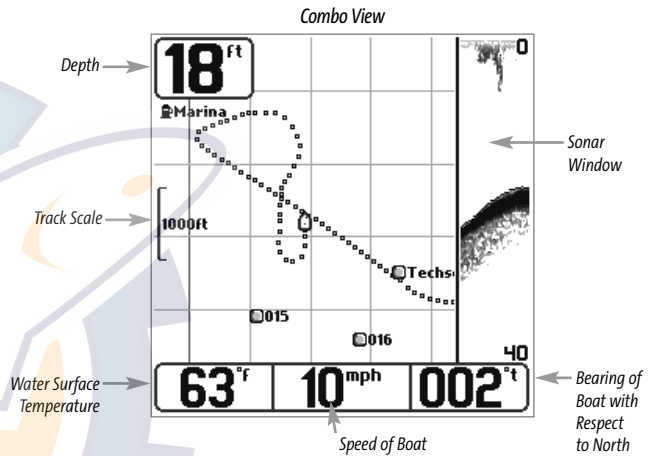**Combo View -** This view is displayed as a split screen, with Track View on the left and Sonar View on the right side of the screen. The width of the sonar window can be changed.

Combo View

Depth

18 ft

Marina

Sonar Window

Track Scale

1000ft

Techs

015

016

Water Surface Temperature

63 °f   10 mph   002 °t

Bearing of Boat with Respect to North

Speed of Boat

View Orientation

Both **Track** and **Combo** views allow you to choose the orientation of the view. When **North-Up orientation** is selected, North is shown at the top of the display. In other words, objects located to the north of the boat are drawn above the boat. When **Course-Up orientation** is selected, the direction of motion of the boat is shown at the top of the display. In other words, objects ahead of the boat are drawn above the boat. In both orientations, the view pans automatically, so that the boat is always centered on the display. When the boat is stationary, it is drawn as a circle. When the boat is in motion, it takes on a boat shape, pointed in the direction of motion (always Up in the Course-Up orientation).

Introduction to Navigation

Use the Matrix Fishing System to establish waypoints at areas of interest and to navigate to those waypoints via a route (representing the shortest intended distance between waypoints). You can also view and save tracks, which represent the actual path of the boat.

Waypoints, Routes and Tracks

Waypoints are stored positions that allow you to mark areas of interest or navigation points. Your Matrix Fishing System can store up to 750 waypoints.

Waypoints, Routes and Tracks

Depth

Route

XTE: Cross Track Error. Distance of Boat from Route

DTG: Distance to Go to Waypoint

Water Surface Temperature

Speed of Boat

Waypoint

Track

BRG: Bearing to Waypoint

Bearing of Boat with Respect to North
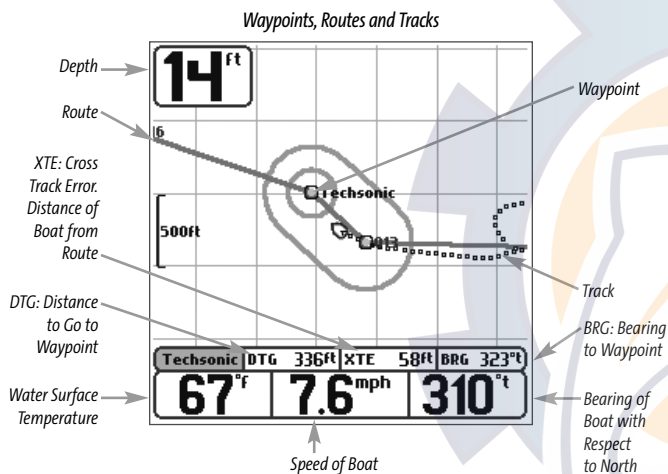
Routes link two or more waypoints together to create a path for navigation, and are used in trip planning. A route represents your intended navigation and shows the shortest path from each waypoint to the next. As you travel a route, staying on the route line is the most efficient way to get to your destination, although you should always look out for obstacles not shown on the chart.

Tracks consist of 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 (maximum of 2000 trackpoints displayed). You can clear the Current Track or save it at any time. Your Matrix Fishing System can store up to 10 saved tracks, each containing 2000 trackpoints. The current track represents your actual path so far.

Save, Edit, or Delete a Waypoint

Save your current position as a waypoint: On any view, press the MENU key to display the X-Press™ menu. Select Mark and press the RIGHT Cursor key to save the current position of the boat as a waypoint.

Save the cursor position as a waypoint: On the Track or Combo view, use the Cursor key to designate the position you want to save as a waypoint. Then press the MENU key to display the X-Press™ menu. Select Mark and press the RIGHT Cursor key to save the current position of the boat as a waypoint.

Save a position from the sonar history: On the Sonar view, use the Cursor key to point to a feature in the sonar history (also called the Sonar Saver feature). Then press the MENU key to display the X-Press™ menu. Select Mark and press the RIGHT Cursor key to save the current position of the boat as a waypoint. The new waypoint will also record the depth at that location.

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 Waypoint submenu on the Navigation Main Menu Tab).

Display the Waypoints Submenu: From any view, press the MENU key twice to display the Main Menu System, then use the RIGHT Cursor key to select the Navigation tab. Select Waypoints and press the RIGHT Cursor key to display the Waypoints submenu.

Program a specific position as a waypoint: To create a waypoint that is NOT your current position, from the Waypoints submenu, select the Create option and press the RIGHT Cursor key. Use the Cursor keys to program a waypoint name, latitude, longitude, and icon before selecting Save.

Edit a waypoint: From the Waypoints submenu, select Edit and press the RIGHT Cursor key to display a list of saved waypoints. Select the waypoint you want to edit and press the RIGHT Cursor key. Use the 4-WAY Cursor Control key to move from field to field, and the UP and DOWN Cursor keys to changes values once you are in a field. In the Waypoint Name, Latitude and Longitude fields, use the UP and 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. In the Waypoint Icon field, use the UP and DOWN Cursor keys to change the icon used to represent the waypoint on the Combo and Track Views. You can exit these fields with the LEFT and RIGHT Cursor keys or by pressing the EXIT key. Select Save and press the RIGHT Cursor key to save your changes.

To make it easier to select a waypoint, 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.

Delete a waypoint: From the Waypoints submenu, select Delete and press the RIGHT Cursor key to display a list of waypoints. Select the waypoint you want to delete, then press the RIGHT Cursor key. You will be asked to confirm deletion before the waypoint is actually deleted.

Navigate to a Waypoint or Position

Navigate to the cursor position: From the Track or Combo view, use the Cursor key to select a position or waypoint to which you want to navigate. Press the MENU key once to display the Navigation X-Press™ menu. Select Go To and press the RIGHT Cursor key. Navigation will begin immediately.

Navigate to a specified waypoint: Press the MENU key once to display the Navigation X-Press™ menu. Select Go To and press the RIGHT Cursor key. Then choose the waypoint to which you would like to navigate from the waypoint list and press the RIGHT Cursor key to select it.

> *NOTE: By repeating the previous instructions, you can add more waypoints to create a longer multi-segment route.*

Skipping a waypoint: 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.

Cancel navigation: From the Navigation X-Press™ menu, select Cancel Navigation and press the RIGHT Cursor key. Canceling navigation removes the route and any waypoints created.

Add a Waypoint Target or Trolling Grid

Waypoint Target

Track Scale

Track View with Target
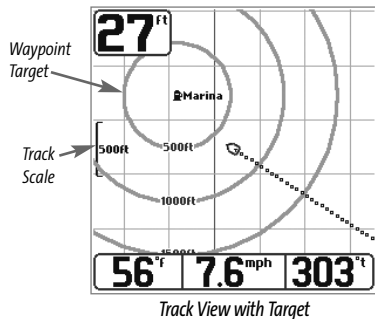
Add or Remove a Waypoint Target: From the Waypoints submenu, select Target and press the RIGHT Cursor key to display a list of waypoints. Select the waypoint you want to target. A target consisting of concentric circles centered on the selected waypoint will appear on all of the navigation views; the target shows various distance ranges from the targeted waypoint. To remove the target, choose Remove Target from the Navigation X-Press™ menu.

Track Scale

Waypoint Trolling Grid

Track View with Grid
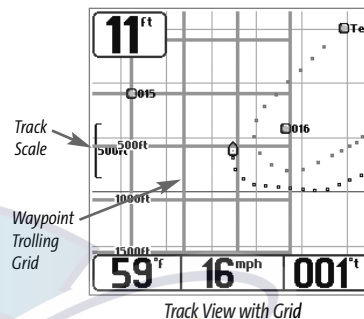
Add or Remove a Trolling Grid: From the Waypoints submenu, select Grid and press the RIGHT Cursor key to display a list of waypoints. Select the waypoint to which you want to add the grid. The trolling grid will appear on all of the navigation views, and can be used as a guide when trolling around a waypoint. The grid can be rotated to any desired heading using Grid Rotation from the Navigation Main menu. To remove the trolling grid, choose Remove Grid from the Navigation X-Press™ menu.

> *NOTE: Only one waypoint can have either a target or a grid 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 is 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: 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. To remove the track completely from the display, see Edit, Delete or Hide Saved Tracks.

> *NOTE: When you save a track, a name is automatically assigned. The track name consists of a date/time stamp, but can be re-named later (see **Edit a Saved Track**).*

Clear the current track: 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 discarded.

Edit, Delete or Hide Saved Tracks

Display the Tracks Submenu: From any view, press the MENU key twice to display the Main Menu System, then use the RIGHT Cursor key to select the Navigation tab. Select Tracks and press the RIGHT Cursor key to display the Tracks submenu.

Edit a saved track: From the Tracks submenu, select Edit and press the RIGHT Cursor key to display the list of saved tracks. Select the track you want to edit and press the RIGHT Cursor key. When the Edit Track dialog box appears, use the Cursor keys to move between fields. In the Track Name field, the UP and DOWN Cursor keys change the letter or number. All upper and lower case letters are available, as well as digits 0-9 and some punctuation characters. You can exit the Track Name field with the LEFT and RIGHT Cursor keys or by pressing the EXIT key. Select Save and press the RIGHT Cursor key to save your changes.

Delete a saved track: From the Tracks submenu, select Delete and press the RIGHT Cursor key to display the list of saved tracks. Select the track you want to delete and press the RIGHT Cursor key. You will be asked to confirm deletion before the track is actually deleted.

Hide or display a saved track: From the Tracks submenu, select Visibility and press the RIGHT Cursor key to display the list of saved tracks. Select the track you want to hide or display and use the Cursor keys to select Hidden or Visible. Press the EXIT key to return to the Tracks submenu.

The Menu System

The menu system is divided into easy-to-use menu modules. The main components of the menu system are:

Start-Up Options Menu - Press the MENU key during the power up sequence to view the Start-Up Options menu.
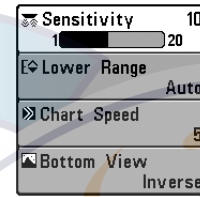

X-Press™ Menu

X-Press™ Menu - The X-Press™ menu allows you to access the settings that are changed frequently without having to navigate through the whole menu system. Press the MENU key once to display the X-Press™ Menu. When you select a menu item from the X-Press™ menu, the menu will collapse, leaving only the menu choice on the screen. Use the UP or DOWN Cursor keys to reactivate the X-Press™ menu.

NOTE: *The X-Press™ Menu choices will vary depending on which view is active when you press the MENU key, as well as whether you are in Normal or Advanced User Mode. Either the Sonar or Navigation X-Press™ Menu will appear, depending on the view you are in.*

Main Menu Tabs - Less frequently-adjusted menus are grouped into the Main Menu System. The Main Menu system is organized under the following tab headings to help you find a specific menu item quickly: Alarms, Sonar, Navigation (if the GPS Receiver is attached), Setup, and Accessories.
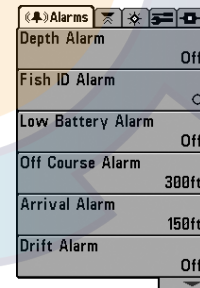
*Main Menu System
Normal User Mode*

Press the MENU key twice for the Main Menu, then use the 4-WAY Cursor LEFT or RIGHT key to select a tab, and use the DOWN or UP key to select a specific menu item under that tab, then use the LEFT or RIGHT keys again to change a menu setting. Press the EXIT key to move quickly to the top of the tab. A down arrow at the bottom of a menu means that you can scroll to additional menu choices using the DOWN Cursor key. A right or left arrow on a menu choice means that you can use the RIGHT or LEFT Cursor keys to make changes or to see more information.

NOTE: *The Main Menu choices will vary depending on whether you are in Normal or Advanced User Mode.*

User Mode (Normal or Advanced) - An Advanced Mode is provided for users who desire the highest level of control over the Matrix Fishing System and Normal Mode for users who desire greater simplicity and fewer menu choices. Additional Advanced menu choices will be displayed throughout the menu system when you navigate to specific menus while in Advanced Mode. Any changes made while in Advanced Mode will remain in effect after you switch back to Normal Mode. For example, if you set specific views to be visible while in Advanced User Mode, and then return to Normal User Mode, those views will still be visible. See *Setup Menu Tab: User Mode* for specific instructions on changing to Advanced User Mode.

Sonar Tab, Normal Mode

Sonar Tab, Advanced Mode

Total Screen Update - when you change any menu settings that affect the Sonar View, the view will update immediately (i.e. you don't have to exit the menu to apply the change to the screen). For instance, by switching between "Inverse" and "Structure ID®" from the X-Press™ menu it is possible to alternate quickly between the two viewing methods.
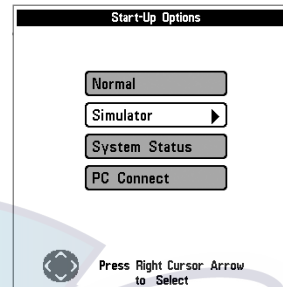
Start-Up Options Menu

Start-Up Options Menu

Press the MENU key when the Title screen is displayed to access the Start-Up Options menu.

Use the UP or DOWN 4-WAY Cursor keys to position the cursor, then the RIGHT Cursor key to select one of the following choices. If you wait too long, the system will default to whichever menu mode happens to be highlighted:

- Normal
- Simulator
- System Status
- PC Connect (use with PC Connect Cable).

See the following paragraphs for more information about each of these choices.

Normal Operation

Use Normal operation for on the water operation with a transducer connected. In addition, your Matrix Fishing System uses advanced transducer detection methods to determine if a transducer is connected. If a functioning transducer is connected, Normal operation will be selected automatically at power up and your Matrix Fishing System can be used on the water.

Exit Normal operation by powering your Matrix Fishing System off.
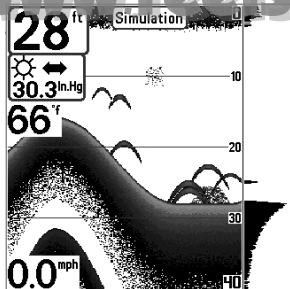
Simulator, Shown with Optional WeatherSense™ Accessory

Simulator

Use the Simulator to learn how to use your Matrix Fishing System before taking your boat on the water. The Simulator is a very powerful tool that simulates on the water operation, providing a randomly-updated display. We recommend going through this manual while using the Simulator, since all of the menus function and affect the display the way they actually do when in Normal operation.

NOTE: *To get the full benefit of the Simulator, it is important to select Simulator manually from the Start-Up Options menu as opposed to letting the Matrix Fishing System enter Simulator automatically (as it will if a transducer is not connected and you do nothing during power up). Manually selecting Simulator from the Start-Up Options menu allows you to pre-configure your Matrix Fishing System for on the water operation. Any menu changes you make will be saved for later use.*

A message will appear on the display periodically to remind you that you are using the Simulator.

Exit the Simulator by powering your Matrix Fishing System off.

System Status

Use System Status to view system connections and to conduct a unit self-test. Exit System Status by powering your Matrix Fishing System off.

The following screens are displayed in turn when you press the VIEW button when using System Status:

• Self Test
• Accessory Test

System Status Self Test Screen

Self Test displays results from the internal diagnostic self test, including unit serial number, Printed Circuit Board (PCB) serial number, software revision, total hours of operation and the input voltage.

Accessory Test Screen

Accessory Test lists the accessories connected to the system.

NOTE: *The speed accessory will be detected only if the paddlewheel has moved since your Matrix Fishing System was powered up.*

NOTE: *GPS will be shown as Connected when your Matrix Fishing System detects your GR4 GPS Receiver.*

PC Connect
(With PC Connect Cable Only)

Use PC Connect to update the software of the Matrix Fishing System control head. This feature requires the use of the PC Connect Cable. Complete instructions are included with the PC Connect Cable accessory.

NOTE: *The PC Connect Cable requires a separate purchase. For more information visit our website at www.humminbird.com or contact our Customer Resource Center at 1-334-687-0503.*

Exit PC Connect mode by powering the Matrix Fishing System off.

Sonar X-Press™ Menu
(Sonar Views Only)

The **Sonar X-Press™ menu** provides access to the settings most frequently-used. Press the MENU key once while in any of the Sonar Views to access the Sonar X-Press™ menu.

NOTE: Menu choices will vary depending on system settings such as whether the unit is set for Advanced User mode.

The Mark menu selection will be added to the Sonar X-Press™ Menu when a GPS is connected to the Matrix Fishing System.

See your Matrix Fishing System Operations Manual for information on the standard Sonar X-Press™ Menu choices.

Sonar X-Press™ Menu

Mark

Mark allows you to mark the position of a waypoint, either at the current boat location, or, if the Cursor is active, at the current Cursor location.

To Mark a Waypoint:

1. Highlight Mark on the Sonar X-Press™ menu.
2. Use the RIGHT 4-WAY Cursor Control key to mark the location of a Waypoint.

Navigation X-Press™ Menu
(Navigation Views Only)

The **Navigation X-Press™ menu** provides access to the settings most frequently used. Press the MENU key once while in the Bird's Eye View, the Track or the Combo View to access the Navigation X-Press™ menu.

NOTE: Menu choices will vary depending on system settings, such as whether you are currently navigating.

The Navigation X-Press™ menu will be added to the menu system when a GPS is connected to the Matrix Fishing System, and will contain the following choices:

- Mark
- Zoom
- Go To
- Save Current Track
- Clear Current Track
- Skip Next Waypoint (Only When Navigating)
- Cancel Navigation (Only When Navigating)
- Remove Target (Only if a Target is Active)
- Remove Grid (Only if a Grid is Active)
- Sonar Window (Combo View Only).

Navigation X-Press™ Menu

Mark

Mark allows you to mark the position of a waypoint, either at the current boat location, or, if the Cursor is active, at the current Cursor location.

To Mark a Waypoint:

1. Highlight Mark on the Navigation X-Press™ menu.
2. Use the RIGHT 4-Way Cursor Control key to mark the location of a Waypoint.

Zoom

Zoom allows you to change the scale of the Bird's Eye, Track and Combo Views.

To Zoom:

1. Highlight Zoom on the Navigation X-Press™ menu.
2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to increase or decrease the Zoom level.

Go To

Go To allows you to start Navigation towards a waypoint. If the Cursor is active, choosing Go To creates a waypoint and starts navigation towards that waypoint; if the Cursor is not active, choosing Go To displays the list of waypoints, so that you can select the waypoint towards which you want to navigate.

To Begin Navigation:

1. Highlight Go To on the Navigation X-Press™ menu.

2. Use the RIGHT 4-WAY Cursor Control key to begin navigation. Navigation will begin immediately if the Cursor is active or the Waypoint selection list will appear. Select a waypoint and navigation will begin immediately.
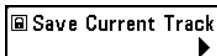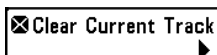
Save Current Track

Save Current Track allows you to save the current track being displayed. After the current track is saved, a new current track is started.

To Save Current Track:

1. Highlight Save Current Track on the Navigation X-Press™ menu.

2. Use the RIGHT 4-WAY Cursor Control key to initiate saving the current track.

3. The Confirm dialog box will appear. To save the current track, press the RIGHT Cursor key once more. To cancel saving the current track, press the LEFT Cursor key.

Clear Current Track

Clear Current Track allows you to clear the current track being displayed and start a new track at the present position.

To Clear Current Track:

1. Highlight Clear Current Track on the Navigation X-Press™ menu.

2. Use the RIGHT 4-WAY Cursor Control key to initiate clearing the current track.

3. The Confirm dialog box will appear. To clear the current track, press the RIGHT Cursor key once more. To cancel clearing the current track, press the LEFT Cursor key.
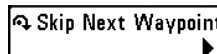
Skip Next Waypoint
(Only When Navigating)

Skip Next Waypoint removes the next waypoint from the current route. This menu choice will only appear when you are currently navigating a route.

To Skip Next Waypoint:

1. Highlight Skip Next Waypoint on the Navigation X-Press™ menu.

2. Use the RIGHT 4-WAY Cursor Control key to initiate skipping the next waypoint.

3. The Confirm dialog box will appear. To skip the next waypoint, press the RIGHT Cursor key once more. To cancel skipping the next waypoint, press the LEFT Cursor key.

Cancel Navigation
(Only When Navigating)

Cancel Navigation discards the current route and exits Navigation Mode. This menu choice will only appear when you are currently navigating a route.

To Cancel Navigation:

1. Highlight Cancel Navigation on the Navigation X-Press™ menu.

2. Use the RIGHT 4-WAY Cursor Control key to initiate canceling navigation.

3. The Confirm dialog box will appear. To cancel navigation, press the RIGHT Cursor key once more. To avoid canceling navigation, press the LEFT Cursor key.

4. The Save Current Route dialog box will appear. Use the RIGHT 4-WAY Cursor key to save the route or the LEFT 4-WAY Cursor key to decline saving the route.

Remove Target
(Only if a Target is Active)

Remove Target removes the waypoint target from the display. This menu choice will only appear when a target has already been applied to a waypoint.

To Remove a Target:

1. Highlight Remove Target on the Navigation X-Press™ menu.

2. Use the RIGHT 4-WAY Cursor Control key to remove the target.

Remove Grid
(Only if a Grid is Active)

Remove Grid removes the waypoint grid from the display. This menu choice will only appear when a grid has already been applied to a waypoint.

To Remove a Grid:

1. Highlight Remove Grid on the Navigation X-Press™ menu.

2. Use the RIGHT 4-WAY Cursor Control key to remove the grid.

Sonar Window
(Combo View Only)

Sonar Window sets the size of the Sonar Window in the Combo View. Sonar Window can only be accessed from the Combo View.

To Set the Size of the Sonar Window in the Combo View:

1. Highlight Sonar Window on the Navigation X-Press™ menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to adjust the size of the sonar window. (Wide, Medium, Narrow, Default = Medium)
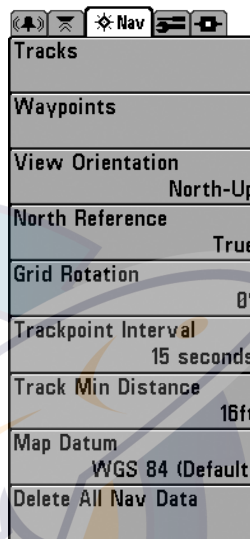
Navigation Menu Tab

Press the MENU key twice to access the Main Menu System, then press the RIGHT cursor key to select the Navigation tab.

NOTE: Menu choices will vary depending on system settings.

The Navigation Menu Tab will be added to the menu system when a Handheld GPS is connected to the Matrix Fishing System, and the following menu choices will appear in the menu tab:

- Tracks
- Waypoints
- View Orientation
- NorthReference
- Grid Rotation
- Trackpoint Interval
- Track Min Distance (Advanced)
- Map Datum (Advanced)
- Delete All Nav Data (Advanced).

Tracks

Tracks allows you to view the Tracks submenu.

To view the Tracks Submenu:

1. Highlight Tracks on the Navigation main menu.

2. Use the RIGHT 4-WAY Cursor Control keys to view the Tracks submenu.
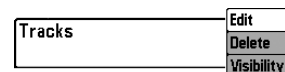
Tracks Submenu

The Tracks Submenu contains the following menu choices:

Edit allows you to select a previously-saved track and edit its name.

Delete allows you to delete a track from a list of previously-saved tracks.

Visibility allows you to display or hide each saved track.

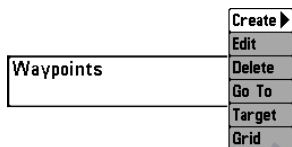| Waypoints	
	▶

Waypoints

Waypoints allows you to view the Waypoints submenu.

To view the Waypoints Submenu:

1. Highlight Waypoints on the Navigation main menu.

2. Use the RIGHT 4-WAY Cursor Control keys to view the Waypoints submenu.

Waypoints	Create ▶
	Edit
	Delete
	Go To
	Target
	Grid

Waypoints Submenu

The Waypoints Submenu contains the following menu choices:

Create allows you to create a new waypoint and edit it immediately. The current boat position will be used as the default, but you can set the coordinates to any valid position. The Icon used to represent the waypoint in the Track and Combo Views can also be changed.

Edit allows you to choose from a list of previously-saved waypoints, then edit the Name, Position (Latitude and Longitude) and select the Icon that will be used to represent the waypoint in the Track and Combo Views.

Delete allows you to delete a waypoint from the list of saved waypoints.

Go To allows you to select a waypoint and start navigation toward that waypoint, or add that waypoint to the end of the current route.

Target allows you to apply a target to a waypoint selected from the list of waypoints.

Grid allows you to apply a trolling grid to a waypoint selected from the list of waypoints.

View Orientation	
◀ North-Up	▶

View Orientation

View Orientation allows you to select whether the Track and Combo Views should be drawn North-Up or Course-Up.

To change the View Orientation setting:

1. Highlight View Orientation on the Navigation main menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the View Orientation setting. (North-Up, Course-Up, Default = North-Up)

NOTE: The View Orientation setting does not apply to the Bird's Eye View.

North Reference	
◀ True	▶

North Reference

North Reference allows you to have bearings displayed with one of two orientations: True North or Magnetic North.

To change the North Reference setting:

1. Highlight North Reference on the Navigation main menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the North Reference setting. (True, Magnetic, Default = True)

Grid Rotation	0°
0	89

Grid Rotation

Grid Rotation allows you to set the orientation of the trolling grid in degrees, where a setting of 0° displays a standard North, South, East, West alignment. See Waypoints for information on how to set a Grid.

To change the Grid Rotation setting:

1. Highlight Grid Rotation on the Navigation main menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Grid Rotation setting. (0° to 89°, Default = 0°)

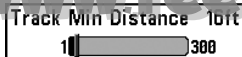| Trackpoint Interval	
◀ 15 seconds	▶

Trackpoint Interval

Trackpoint Interval allows you to select the time period between trackpoints. The current track can only contain up to 2000 trackpoints, so longer time periods cause the track to extend back further in time, but will be less detailed.

NOTE: Trackpoint Interval works in conjunction with Track Min Distance. Both conditions must be met before a trackpoint is added to the current track.

To change the Trackpoint Interval setting:

1. Highlight Trackpoint Interval on the Navigation main menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Trackpoint Interval setting. (1 second, 5 seconds, 10 seconds, 15 seconds, 30 seconds or 60 seconds, Default = 15 seconds)

NOTE: During slow travel or drift, setting both Trackpoint Interval and Track Min Distance to small values will allow you to increase the track resolution.

Track Min Distance
(Advanced)

Track Min Distance allows you to set a minimum distance of travel before a trackpoint is added to the track.

NOTE: Track Min Distance works in conjunction with Trackpoint Interval. Both conditions must be met before a trackpoint is added to the current track.

NOTE: See Setup Menu Tab: User Mode in your Matrix Fishing System Operations manual.

To change the Track Minimum Distance setting:

1. Make sure you are in Advanced User Mode, then highlight Track Min Distance on the Navigation main menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Track Min Distance setting. (1 to 300 feet or 1 to 100 meters *[International Units Only]*, Default = 16 ft, 5 m)

NOTE: During slow travel or drift, setting both Trackpoint Interval and Track Min Distance to small values will allow you to increase the track resolution.
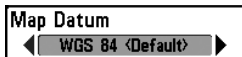
Map Datum
(Advanced)

Map Datum allows you to change the map coordinate system used by the Matrix Fishing System to match those of a paper map.

NOTE: See Setup Menu Tab: User Mode in your Matrix Fishing System Operations manual.

To change the Map Datum setting:

1. Make sure you are in Advanced User Mode, then highlight Map Datum on the Navigation main menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Map Datum setting. (Default = WGS 84)
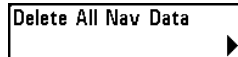
Delete All Nav Data
(Advanced)

Delete All Nav Data allows you to delete all saved Tracks and Waypoints. This menu choice should be used with caution.

NOTE: See Setup Menu Tab: User Mode in your Matrix Fishing System Operations manual.

To Delete All Navigation Data:

1. Make sure you are in Advanced User Mode, then highlight Delete All Nav Data on the Navigation main menu.

2. Use the RIGHT 4-WAY Cursor Control key to delete all navigation data.
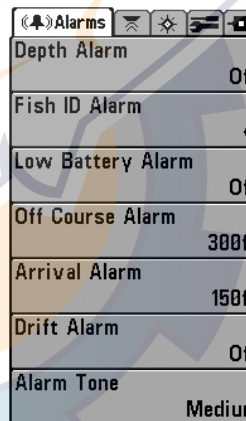
Alarms Menu Tab

From any view, press the MENU key twice to access the Main Menu System. The Alarms tab will be the default selection.

NOTE: When an alarm is triggered, you can silence it by pressing any key. The alarm will be silenced, and will not be triggered again until a new instance of the alarm condition is detected.

The following menu choices will be added to your Alarms Menu Tab when a Handheld GPS is connected to the Matrix Fishing System:

- Off Course Alarm
- Arrival Alarm
- Drift Alarm.

Alarms Menu

See your Matrix Fishing System Operations Manual for information on the standard Alarm Menu choices.
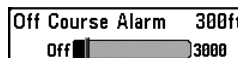
Off Course Alarm

Off Course Alarm sounds when the boat has moved too far off course based on the menu setting when navigating. Off Course Alarm allows you to set how far the boat is allowed to move off course before the Off Course Alarm will sound.

Off Course Limits

0.25nm   ☐017 ⬤·········⬤START

017 | DTG0 29nm XTE 289ft BRG 268°t
63°f | 9.8mph | 270

Arrival Alarm Circle

To change the Off Course Alarm setting:

1. Highlight Off Course Alarm on the Alarms main menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Off Course Alarm setting. (Off, 30 to 3000 feet, 10 to 1000 meters *[International Models Only]*, Default = 300 ft, 100 m)

Arrival Alarm

Arrival Alarm   150ft
Off ▉▕▁▁▁▁▁▁▏3000

Arrival Alarm sounds when the boat has either exceeded the distance to the destination waypoint, or has entered the Arrival Alarm Circle, based on the menu setting when navigating. Arrival Alarm allows you to set how close the boat must be to the destination waypoint before the Arrival Alarm will sound.

To change the Arrival Alarm setting:

1. Highlight Arrival Alarm on the Alarms main menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Arrival Alarm setting. (Off, 30 to 3000 feet, 10 to 1000 meters *[International Models Only]*, Default = 150 ft, 50 m)

Drift Alarm

Drift Alarm   Off
Off ▉▕▁▁▁▁▁▁▏3000

Drift Alarm sounds when the boat has exceeded the distance from the boat's anchored position, based on the menu setting. Drift Alarm allows you to set the size of a perimeter around the boat's anchored position; if the anchored boat drifts outside of that perimeter, the Drift Alarm will sound.

13ft   Drift Alarm Circle

200ft

60°f | 0.9mph | 253°t

Drift Alarm Perimeter
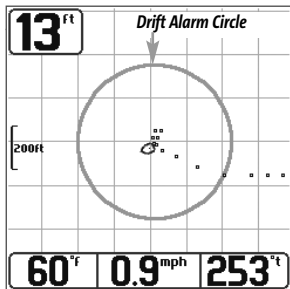
To change the Drift Alarm setting:

1. Highlight Drift Alarm on the Alarms main menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Drift Alarm setting. (Off, 30 to 3000 feet, 10 to 1000 meters *[International Models Only]*, Default = Off)

📢 ⤢ ☀ ⬒ Setup ⬛

| Units - Depth |
| Feet |
| Units - Temp |
| °f |
| Units - Distance |
| Statute Miles |
| Units - Speed |
| mph |
| User Mode |
| Advanced |
| Language |
| English |
| Triplog Reset |
| Restore Defaults |
| Select Views |
| Select Readouts |
| Depth Offset |
| 0.0ft |
| Temp. Offset |
| 0.0° |
| Speed Calibration |
| 0 % |
| Local Time Zone |
| EST (UTC-5) |
| Daylight Saving Time |
| Off |
| Position Format |
| dd°mm.mmm' |
| Time Format |
| 12-Hour |
| Date Format |
| mm/dd/yy |
| NMEA Output |
| Off |

Setup Menu Tab

Setup Menu Tab

From any view, press the MENU key twice to access the tabbed Main Menu System, then press the RIGHT cursor key until the Setup tab is selected.

NOTE: Menu choices will vary depending on system settings such as whether the unit is set for Advanced User mode and what accessories are attached to the unit.

The following menu choices will be added to your Setup Menu Tab when a Handheld GPS is connected to the Matrix Fishing System:

- Units - Distance
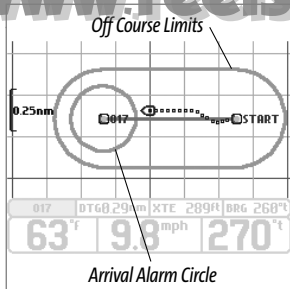- Units - Speed
- Triplog Reset
- Local Time Zone (Advanced)
- Daylight Savings Time (Advanced)
- Position Format (Advanced)
- Time Format (Advanced, International Only)
- Date Format (Advanced, International Only)
- NMEA Format.

See your Matrix Fishing System Operations Manual for information on the standard Setup Menu choices
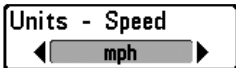
Units - Distance

Units - Distance selects the units of measure for all distance-related readouts.

To change the Units - Distance setting:

1. Highlight Units - Distance on the Setup menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Units - Distance setting. (Domestic Models: Statute Miles, Nautical Miles; Default = Statute Miles; International Models: Meters/Kilometers, Meters/Nautical Miles, Feet/Statute Miles, Feet/Nautical Miles; Default = Meters/Kilometers)

Units - Speed

Units - Speed selects the units of measure for speed-related readouts.

To change the Units - Speed setting:

1. Highlight Units - Speed on the Setup menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Units - Speed setting. (kph *[International Models Only]*, mph, kts, Default = kph for International models and mph for Domestic models)

Triplog Reset

Triplog Reset resets the Triplog to zero. The Triplog provides the following information: timer for elapsed time, distance traveled since last reset, and average speed.

NOTE: See Setup Menu Tab: Select Readouts (Advanced) in your Matrix Fishing System Operations manual to find out how to display Triplog information on the screen.

To Reset Triplog:

1. Highlight Reset Triplog on the Setup menu.

2. Use the RIGHT 4-WAY Cursor Control key to initiate Triplog Reset.

3. The Confirm dialog box will appear. To reset the Triplog, press the RIGHT Cursor key once more. To cancel Reset Triplog, press the LEFT Cursor key.

Local Time Zone
(Advanced)

Local Time Zone selects your time zone in reference to the time reported by the GPS receiver when Time+Date is selected as a Digital Readout on the Sonar View (see *Select Readouts*). This menu choice is available only when in Advanced User Mode (see *Setup Menu Tab: User Mode*.)

NOTE: See Setup Menu Tab: Select Readouts and User Mode in your Matrix Fishing System Operations manual.

To change the Local Time Zone:

1. Make sure you are in Advanced User Mode, then highlight Local Time Zone on the Setup menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Local Time Zone (Default = EST [UTC-5] - Eastern Standard Time).

Daylight Savings Time
(Advanced)

Daylight Savings Time adjusts the time display to account for local Daylight Savings Time. Selecting On adds one hour to the time display adjusted for your local time zone. Selecting Off leaves the time display as adjusted for your local time zone. This menu choice is available only when in Advanced User Mode (see *Setup Menu Tab: User Mode*.)

NOTE: See Setup Menu Tab: User Mode in your Matrix Fishing System Operations manual.

To change the Daylight Savings Time setting:

1. Make sure you are in Advanced User Mode, then highlight Daylight Savings Time on the Setup menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to turn Daylight Savings Time On or Off. (Off, On, Default = Off)

Position Format
(Advanced)

Position Format selects the format of the latitude and longitude position display. This menu choice is available only when in Advanced User Mode (see *Setup Menu Tab: User Mode.*)

> *NOTE: See Setup Menu Tab: User Mode in your Matrix Fishing System Operations manual.*

To change the Position Format setting:

1. Make sure you are in Advanced User Mode, then highlight Position Format on the Setup menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Position Format. (dd.ddddd°, dd°mm.mmm', or dd°mm'ss", Default = dd°mm.mmm')
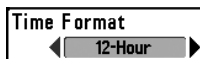
Time Format
(Advanced, International Only)

Time Format changes the time format used by the unit. This menu choice is available only when in Advanced User Mode (see *Setup Menu Tab: User Mode.*) *International Models Only.* Time Format selects a 12 hour or 24 hour format for the time of day displayed when Time + Date is selected as a Digital Readout on the Sonar View (see *Select Readouts*).

> *NOTE: See Setup Menu Tab: Select Readouts and User Mode in your Matrix Fishing System Operations manual.*

To change the Time Format:

1. Make sure you are in Advanced User Mode, then highlight Time Format on the Setup menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Time Format. (12 hour, 24 hour, Default = 12 hour)

Date Format
(Advanced, International Only)

Date Format changes the date format used by the unit. This menu choice is available only when in Advanced User Mode (see *Setup Menu Tab: User Mode.*) *International Models Only*. Date Format selects the format for the date display when Time + Date is selected as a Digital Readout on the Sonar View. (see *Select Readouts*).

> *NOTE: See Setup Menu Tab: Select Readouts and User Mode in your Matrix Fishing System Operations manual.*

To change the Date Format:

1. Make sure you are in Advanced User Mode, then highlight Date Format on the Setup menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the Date Format. (mm/dd/yy, dd.mm.yy or yy.mm.dd, Default = mm/dd/yy)
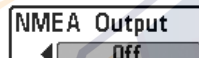
NMEA Output
(Advanced)

NMEA Output turns the NMEA output on or off. This menu choice is available only when in Advanced User Mode (see *Setup Menu Tab: User Mode.*)

> *NOTE: See Setup Menu Tab: User Mode in your Matrix Fishing System Operations manual.*

The following NMEA sentences are output:

DPT- Depth
MTW - Water Temperature
GLL - Lat/Lon Position
GGA - GPS Fix Data
RMC - Recommended Minimum Specific GNSS Data
VTG - Course Over Ground and Ground Speed
ZDA - Time and Date

When navigating, the following NMEA sentences are also output:

APB - Autopilot Sentence B
BWR - Bearing and Distance to Waypoint
RMB - Recommended Minimum Navigation Info

To turn NMEA Output on or off:

1. Make sure you are in Advanced User Mode, then highlight NMEA Output on the Setup menu.

2. Use the LEFT or RIGHT 4-WAY Cursor Control keys to change the NMEA Output to On or Off (Off, On, Default = Off)

Troubleshooting

Before contacting the Humminbird® Customer Resource Center, please read the following section. Taking the time to review these troubleshooting guidelines may allow you to solve a performance problem yourself, and therefore avoid sending your unit back for repair.

Fishing System Doesn't Power Up

If your Matrix Fishing System doesn't power up, use the Installation Guide that also comes with it for specific confirmation details, making sure that:

- the power cable is properly connected to the Matrix Fishing System control head,
- the power cable is wired correctly, with red to positive battery terminal and black to negative terminal or ground
- the fuse is operational
- the battery voltage of the power connector is at least 10 Volts.

Correct any known problems, including removing corrosion from the battery terminals or wiring, or actually replacing the battery if necessary.

Fishing System Defaults to Simulator with a Transducer Attached

A connected and functioning transducer will cause the newly-started Matrix Fishing System to go into Normal operating mode automatically. If, when you power up the Matrix Fishing System, it goes into Simulator mode automatically, even though a transducer is already connected, this means that the control head is not detecting the transducer. Perform the following troubleshooting tasks:

- Using the Installation Guide that also comes with your Matrix Fishing System, check to make sure that the transducer cable is securely connected to the Matrix Fishing System. Reconnect if necessary, and power up the Matrix Fishing System again to see if this fixes the problem.
- Replace the non-functioning transducer with a known good transducer if available and power up the control head again.
- Check the transducer cable. Replace the transducer if the cable is damaged or corroded.

Display Problems

There are several main conditions or sources of possible interference that may cause problems with the quality of the information displayed on the control head. Look in the following table for some symptoms of display problems and possible solutions:

Problem	Possible Cause
The control head loses power at high speeds.	If the power output of your boat's engine is unregulated, the control head may be protecting itself using its over-voltage protection feature. Make sure the input voltage does not exceed 20 Volts.
When the boat moves at higher speeds, the bottom disappears or suddenly weakens, or the display contains gaps.	The transducer position may need to be adjusted. A mix of air and water flowing around the transducer (cavitation) may be interfering with the inter-pretation of sonar data. See your Installation Guide for suggestions on adjusting the transducer position.
	Electrical noise from the boat's engine may be interfering with sonar reception. See *Finding the Cause of Noise* for more information.
There are no fish detected, even when you know they are in the water under the boat, or sonar readings seem weak or faulty.	Sonar readings may be affected if the transducer is not positioned correctly (i.e. mounted at an angle, not straight down), or there is some kind of mechanical interference, either because it is mounted inside a hull that is too thick for proper sonar transmission, the bond between the transducer and the hull is not airtight, or because the transducer is dirty. Check with your Installation Guide for guidance on re-positioning the transducer, and make sure the transducer is clean.
	Low battery voltage may be affecting the power of signal transmission.
	Electrical noise from the boat's engine may be interfering with sonar reception. See *Finding the Cause of Noise* for more information.

Finding the Cause of Noise

Electrical noise usually affects the display with many black dots at high speeds, and high sensitivity readings. One or more of the following sources can cause noise or interference:

Possible Source of Noise	Isolation
Other electronic devices	Turn off any nearby electronic devices to see if the problem goes away, then turn them on one at a time to see if the noise re-appears.
The boat's engine	To determine whether the boat's engine is the source of the noise, increase the RPMs while the boat is in neutral and stationary to see if the noise increases proportionately; if noise appears when you rev the engine, the problem could be the spark plugs, alternator, or tachometer wiring. Replace the spark plugs with resistor plugs, install an alternator filter, or route the control head power and transducer cables away from the engine wiring.
Cavitation from the boat's propeller	Turbulence created by the propeller can cause noise; make sure the transducer is mounted at least 15" (38 cm) from the propeller, and that the water flows smoothly over the face of the transducer at all times.

Matrix Fishing System Accessories

Accessories customize the Matrix Fishing System to your needs and enable you to stay on the edge of new technology. When an accessory is connected to the Matrix Fishing System, additional menus and readouts are added automatically to the Main Menu System. Accessories available today that are supported by your Fishing System include:

WeatherSense™ Fishing Condition Monitor: purchase and plug in the WeatherSense™ accessory to your Matrix Fishing System to obtain barometric pressure readouts and trend data in real time.

Wireless Sonar Link (WSL): purchase the Wireless Sonar Link (WSL) accessory to receive remote sonar signals from a SmartCast™ Remote Sonar Sensor (RSS). Radio signals from the RSS are received by the WSL and are transmitted over the Accessory Bus to the Matrix Fishing System.

PC Connect Cable: Purchase the PC Connect Cable to connect the Matrix Fishing System to a PC in order to upload product software updates and new features obtained from **www.humminbird.com**. This accessory requires the MSWindows-compatible HumminbirdPC™ software downloaded from our website to your PC in order to communicate with the Matrix Fishing System.

Be sure to check out our website **www.humminbird.com** for additional new and exciting accessories to grow your Matrix Fishing System!

*NOTE: Each accessory requires a separate purchase. You can visit our website at **www.humminbird.com** or contact our Customer Resource Center at 1-334-687-0503 for additional details.*

Contact Humminbird®

Contact the Humminbird® Customer Resource Center
in any of the following ways:

By Telephone
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By e-mail
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