

# Fishfinder<sup>®</sup> 90/140

*owner's manual*



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## INTRODUCTION

This manual contains information about the Garmin® Fishfinder® 90 and the Garmin Fishfinder 140.

### Product Registration

Help us better support you by completing our online registration today! Have the serial number of your Fishfinder ready, and connect to our Web site (<http://www.garmin.com>). Click on **Product Registration**.

Use this area to record the serial number (8-digit number located on the back of the box). Keep your original sales receipt in a safe place, or attach a copy inside the manual.

Serial Number: \_ \_ \_ \_ \_ \_ \_ \_

### Contact Garmin

If you have difficulty while using your Fishfinder, or if you have any questions, in the U.S.A. contact Garmin Product Support by phone: 913/397.8200 or 800/800.1020, Monday–Friday, 8 AM–5 PM Central Time; or go to <http://www.garmin.com/support/>, and select **Product Support**.

In Europe, contact Garmin (Europe) Ltd. at 44/0870.8501241.

## Caring for the Fishfinder

The Fishfinder case is constructed of high quality materials and does not require user maintenance except cleaning.

### **Cleaning the Case**

Clean the Fishfinder's outer casing (except for the screen) using a cloth dampened with a mild detergent solution, and then wipe it dry. Avoid chemical cleaners and solvents that may damage plastic components.

### **Cleaning the Screen**

The Fishfinder screen should be cleaned using a soft, clean, lint-free cloth and eyeglass cleaner. Apply the liquid to the cloth, and then gently wipe the screen with the moistened cloth.



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**WARNING:** *The Fishfinder screen is coated with a special anti-reflective coating which is very sensitive to skin oils, waxes, and abrasive cleaners. CLEANERS CONTAINING AMMONIA WILL HARM THE ANTI-REFLECTIVE COATING. It is very important to clean the screen using an eyeglass lens cleaner which is specified as safe for anti-reflective coatings and a clean, lint-free cloth.*

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### **Storage**

Do not store the Fishfinder where prolonged exposure to temperature extremes may occur (such as in the trunk of a car), because permanent damage may result.

### **Water Immersion**

The Fishfinder is waterproof to IEC Standard 60529 IPX7. It can withstand immersion in 1 meter of water for 30 minutes. Prolonged submersion can cause damage to the Fishfinder. After submersion, be certain to wipe and air dry the Fishfinder before reuse.

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## Warning

This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This Notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our Web site at <http://www.garmin.com/prop65>.

## GETTING STARTED

To get the most out of your new Fishfinder:

- Before you install and use your Fishfinder, read and learn the information in this manual.
- Assemble and install the hardware (page 4).
- Practice using your Fishfinder in simulator mode (page 3).
- Use the Fishfinder (page 12).

### Understanding Sonar

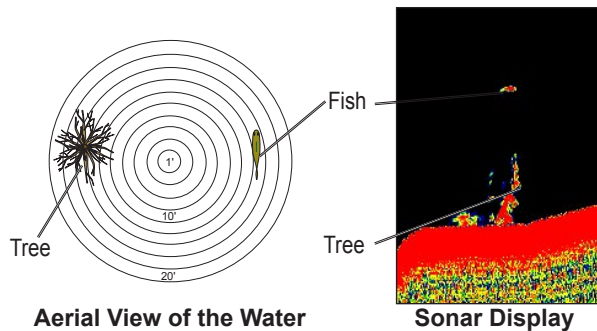
The transducer that you mount on your vessel sends sound waves toward the bottom of the water in a cone-shaped pattern. When a sound wave strikes an underwater object (such as the bottom, a structure, or a fish), sound is reflected back to the transducer. The transducer collects the reflected sound waves and sends the data to the Fishfinder to be processed and shown on the screen. The underwater data is shown on the screen in the order that it is returned; the first returned is the first on the screen.

Generally speaking, if the only thing between the transducer and the bottom is water, the first strong return comes from the bottom directly below the transducer, and this sets the bottom level. Weaker secondary returns provide the detailed data. Stronger returns appear in darker hues.

### ***Understanding the Fishfinder Screen***

The transducer sends a beam down to the bottom of the water, much like the beam of a flashlight. The beam starts small near your vessel and expands as it gets to the bottom.

The Fishfinder screen does not display a three-dimensional representation of the underwater environment; the screen is in two dimensions, much like if you took a picture of an aquarium. Only the depth of the item in the water appears. The screen does not show you where an item is located horizontally in the water, as shown in the following drawings. The fish is not directly above the tree in reality, but it might look like it is on the Fishfinder screen.

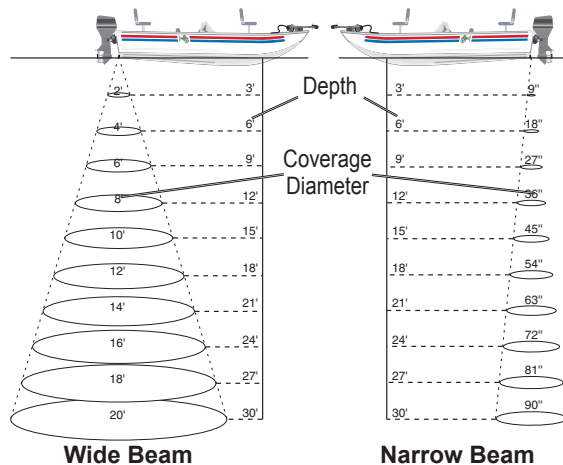


### Understanding Transducer Coverage

The bottom area covered by the transmitted sound waves is determined by the beam width of the transducer and the water depth. The Fishfinder can transmit either a narrow or wide beam.

The narrow beam provides crisp bottom and structure detail, but the coverage area is limited. As shown in the following illustration, at a 30-foot depth, the narrow beam covers the area of a 6-foot circle.

The wide beam covers a much larger area, but with some loss of bottom and structure detail. In the following illustration, at a 30-foot depth, the wide beam covers the area of a 20-foot circle.

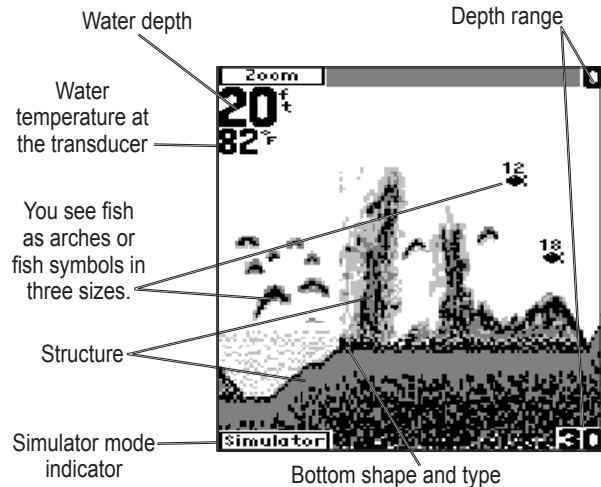


## Using Simulator Mode

Use simulator mode to practice and learn the operation of the Fishfinder. If the Fishfinder does not detect a transducer at startup, it automatically starts in simulator mode.

While in simulator mode, the Fishfinder displays a bottom scene, and you can control the Fishfinder (except the Gain and Auto Gain options) just as if it were on the water. If no keys are pressed for two minutes, the Fishfinder automatically resets to default settings while in simulator mode.

To exit simulator mode, turn off the Fishfinder.



## INSTALLING YOUR FISHFINDER

Make sure you completely read and understand all instructions before you install and use your Fishfinder. If you have problems, contact Product Support, or seek other professional assistance.

You can install the Fishfinder hardware on a transom or on a trolling motor. Before installation, make sure the wiring harness can reach the Fishfinder and transducer locations.

Check the packing list below. If you are missing any items, contact your Garmin dealer.

### Packing List (one of each, unless otherwise noted):

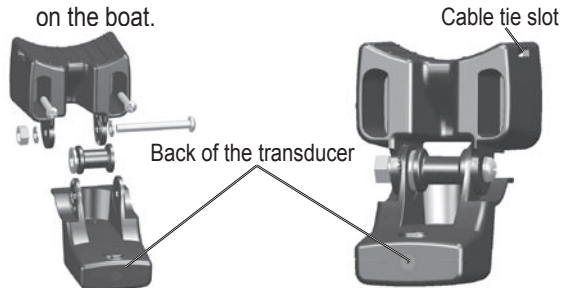
- |   |                                       |
|---|---------------------------------------|
| <b>A</b> —Fishfinder sonar unit   | <b>I</b> —Trolling motor mount gasket |
| <b>B1</b> —Swivel mount bracket<br>(Fishfinder 140; optional for<br>Fishfinder 90); or <b>B2</b> —Tilt mount<br>bracket (Fishfinder 90) | <b>J</b> —5 mm Flat washers (2)       |
| <b>C</b> —Swivel base (Fishfinder 140)  | <b>K</b> —5 x 30 mm Screws (2)        |
| <b>D</b> —Mounting knobs  | <b>L</b> —10-32 Lock nut              |
| <b>E</b> —Mounting knob spacer  | <b>M</b> —4 x 12 mm Screws (4)        |
| <b>F</b> —Snap ring   | <b>N</b> —10-32 x 1.75 Screw          |
| <b>G</b> —Transducer with power cable   | <b>O</b> —1/4" Cable clamps (2)       |
| <b>H</b> —Transducer mount  | <b>P</b> —Plastic spacer              |
|   | <b>Q</b> —1/4" Rubber washer          |
|   | <b>R</b> —Cable tie, 5.6" (4)         |
|   | <b>S</b> —Cable tie, 20"              |



## Installing the Transducer

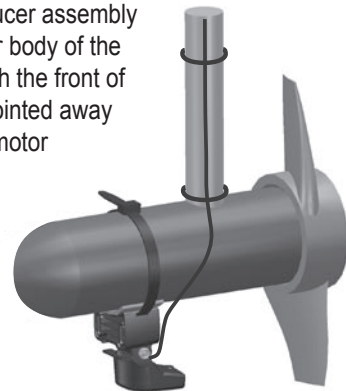
### Assembling the Transducer

1. Insert the rubber washer (Q) and plastic spacer (P) into the transducer (G) at the same time. DO NOT lubricate the rubber washer.
2. Route the cable toward the back of the transducer. Slide the transducer into the transducer mount (H).
3. Place a 5 mm flat washer (J) on the 10-32 x 1.75" screw (N), and insert the screw through the transducer mount, spacer, and rubber washer.
4. Place the remaining 5 mm flat washer on the exposed end. Install the 10-32 lock nut (L) tight. You can tighten the transducer further after installation on the boat.



### Mounting the Transducer on a Trolling Motor

1. Slide the large cable tie (S) through the slot on the transducer mount (H) with the ridges of the band facing up until equal lengths extend on both sides of the mount. (**NOTE:** For cold water, or heavy timber or debris areas, a metal 4-5" worm gear clamp is recommended.)
2. Position the mount gasket (I) on the curved top of the transducer mount.
3. Place the transducer assembly against the motor body of the trolling motor, with the front of the transducer pointed away from the trolling motor propeller.

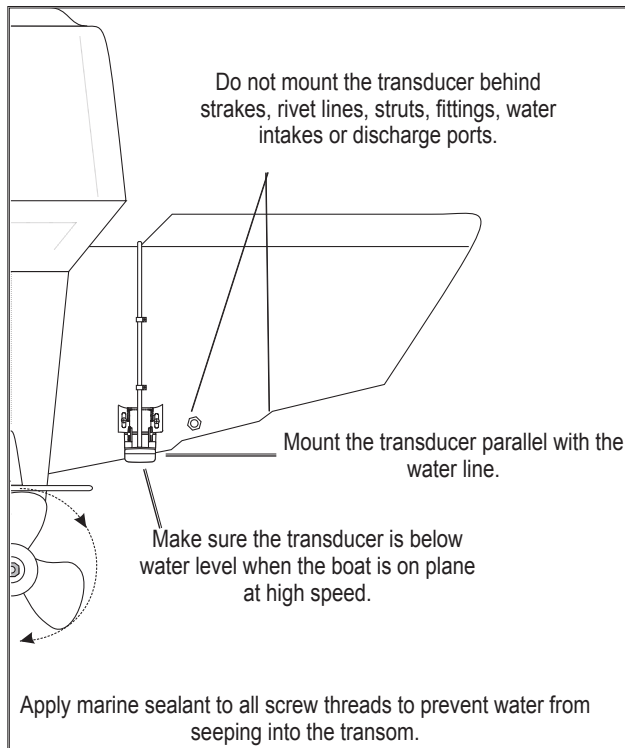


4. Wrap the two ends of the cable tie around the motor body. Place the pointed end of the cable tie through the fastener hole on the opposite end and pull it through until it is snug but not tight. (The cable tie clicks when you pull it.)
5. Position the transducer so that it is parallel with the bottom when in use, and make sure the gasket is aligned properly. Pull the cable tie end until tight. Trim off the excess, if necessary. Tighten the 10-32 locking nut until it touches the mounting bracket and then tighten 1/4 turn more. (Do not overtighten.)
6. Route the 30' (9 m) transducer cable using the supplied cable ties to secure the cable to the motor shaft. You can fill the forward-facing portion (except the cable tie pocket) of the transducer mount with sealant to avoid accumulating debris.

### ***Mounting the Transducer on a Transom***

When selecting a transom mount location, consider the following for optimal performance:

- For your sonar to operate properly, the transducer must be located in calm water. DO NOT mount the transducer behind strakes, rivet lines, struts, fittings, water intake, discharge ports, eroding paint, or anything that creates turbulence.
- Mount the transducer as close to the center of the boat as possible.
- DO NOT cut the transducer lead. (This voids your warranty.)
- DO NOT mount the transducer in locations where it might be jarred when launching, hauling, trailering, or storage.
- DO NOT mount the transducer in the path of the prop on single-drive boats. The transducer can cause cavitation that can degrade the boat's performance and damage the prop. On twin-drive boats, mount the transducer between the drives, if possible.

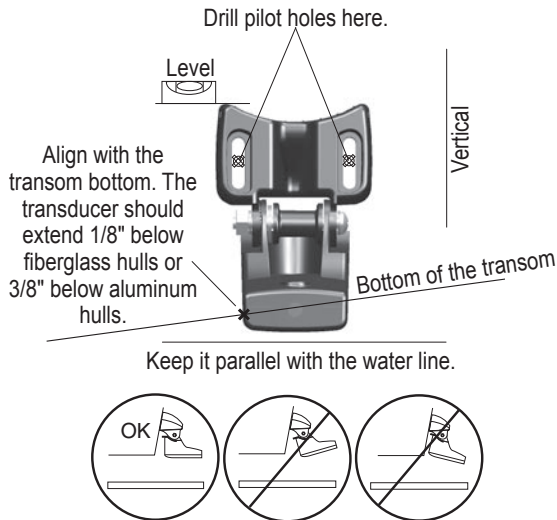


### To mount the transducer on a transom:

**Tool List** (not included)—drill, 3/8" wrench or socket, 5/32" and 1/8" drill bits, masking tape, #2 Phillips screwdriver, and marine sealant.

1. Position the transducer mount at the selected transom location. Make sure the transducer is parallel with the water line. Mark the center locations of each hole on the transducer mount. (See the figures on the next page.)
2. Using a 5/32" bit, drill the pilot holes approximately 1" (25 mm) deep at the marked locations. To avoid drilling the holes too deep, wrap a piece of tape around the bit at 1" from the point of the bit.
3. Apply marine sealant to the 5 x 30 mm screws. Attach the transducer assembly to the transom using the 5 x 30 mm screws. Adjust the transducer assembly to extend beyond the bottom of the transom approximately 1/8" (3 mm) on fiberglass hulls or 3/8" (10 mm) on aluminum hulls. Adjust the transducer assembly to be aligned parallel with the water.

4. Tighten the 10-32 locking nut until it touches the mounting bracket, and then tighten 1/4 turn more. (Do not overtighten.)
5. Place the first cable clamp on the transducer cable approximately one third of the distance between the transducer and the top of the transom. Mark the location. Using a 1/8" bit, drill a pilot hole approximately 3/8" (10 mm) deep.
6. Attach the cable clamp using a 4 x 12 mm screw. Coat the screw with marine sealant before installation. Repeat steps 5 and 6 using the other cable clamp.
7. Route the transducer cable, as needed, to the Fishfinder. DO NOT CUT THE CABLE. Avoid routing the cable with electrical wires or other sources of electrical interference.



## Installing the Fishfinder Unit

### Selecting a Fishfinder Location

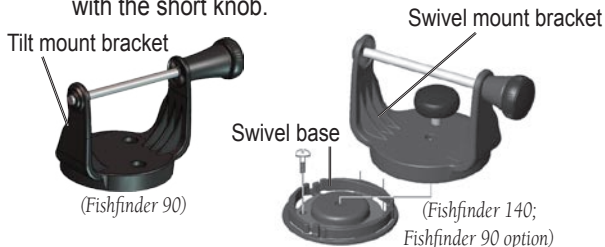
Select a Fishfinder installation location that allows you to view and operate it easily while operating the vessel. Select a mounting surface strong enough to support the weight of the Fishfinder and protect it from excessive vibration or shock. DO NOT mount the bracket in a location where the Fishfinder is exposed to extreme temperature conditions. When installing the mounting bracket, be sure to allow room to connect and rout the power cable.

### Mounting the Bracket Assembly

**Tool List (not included)**—drill, screwdriver (Phillips or standard), three #8 pan-head machine bolts with matching nuts and washers, and a 5/32" drill bit; or three #8 pan-head, self-tapping screws and a 1/16" drill bit.

### To mount the bracket assembly:

1. Using the tilt mount bracket (Fishfinder 90) or the swivel base (Fishfinder 140; Fishfinder 90 option) as a template, mark the location of the three holes that you use to secure the bracket to the mounting surface.
2. If securing the base with machine bolts, drill three 5/32" holes at the locations you marked; or, if securing the base using self-tapping screws, drill 1/16" starter holes at the locations you marked. Drill starter holes no deeper than half the screw length.
3. Secure the tilt mount bracket or swivel base with three bolts or screws. DO NOT OVERTIGHTEN.
4. If you are using the swivel mount, place the swivel mount bracket over the swivel base and secure it with the short knob.



## Installing the Unit on the Mount Bracket

### To install the Fishfinder on the mount bracket:

1. Align the slot on the back of the Fishfinder with the long mounting knob, and slide the Fishfinder into place. If necessary, adjust the long knob to spread the bracket arms apart. (Turn counter-clockwise to widen the bracket arms and clockwise to tighten.)
2. Adjust the Fishfinder angle, and tighten the long mounting knob until snug.
3. For the Fishfinder 140 (Fishfinder 90 option), rotate the swivel mount bracket by twisting it left or right. The bracket clicks as you turn it. Select a good viewing angle, and then tighten all knobs.



## Installing the Wiring Harness

The Fishfinder comes with a wiring harness that connects the Fishfinder to power and the transducer with one easy-to-remove connection. If it is necessary to extend the power wires, use 22 AWG wire. DO NOT cut the transducer cable, because this voids your warranty. If your boat has an electrical system, you might be able to wire the Fishfinder directly to an unused holder on your current fuse block. If you are using the boat's fuse block, remove the in-line fuse holder supplied with the Fishfinder. You can also wire the Fishfinder directly to the battery.




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**CAUTION:** *The Fishfinder input voltage is 10–18 volts DC. Do not exceed this voltage, because this can damage the Fishfinder and void the warranty.*

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### To install the wiring harness:

1. Determine the polarity of the power source using a test light or volt meter.
2. Install the red (+) wire on the positive fuse holder or battery terminal.

3. Install the black (-) wire on the negative fuse holder or battery terminal.
4. Install a 2 Amp fuse in the fuse holder (fuse block only).
5. Align the notches on the cable plug and on the back of the Fishfinder. Insert the cable into the connector and turn the lock ring counter-clockwise until it stops.

## Testing the Transom Mount Installation

Perform this test after you install the Fishfinder. Because you need water to carry the sonar signal, the Fishfinder does not function properly with the transducer out of the water. When you place your boat in the water, CHECK FOR LEAKS around the screw holes that are below the water line. DO NOT leave your boat in the water for an extended period of time without checking for leaks.

### To test the transom mount installation:

1. Begin testing the installation at a slow speed. If the sonar appears to be working properly gradually increase the boat's speed observing the sonar's operation. If the sonar signal suddenly is lost or the bottom return is severely degraded, note the speed at which this occurs.
2. Return the boat to the speed at which the signal was lost. Make moderate turns in both directions, and see if the signal improves.
3. If the signal strength improves while turning, adjust the transducer so that it extends another 1/8" below the transom of the boat. It might take several adjustments to eliminate the degradation.
4. If the signal does not improve, it might be necessary to move the transducer to a different location.

## OPERATING YOUR FISHFINDER



## Understanding Basic Functions

### To turn on the Fishfinder:

Press and release the **Power** key.

### To turn off the Fishfinder:

Press and hold the **Power** key.

### To change the backlight level:

Press the **Power** key repeatedly to cycle between off, low, and high.

To view or change settings for your fishfinder, you can use two menus: the Main menu and the Setup menu.

### To change a setting:

1. Press **MENU**. The Main menu appears.
2. Use the Arrow keys to move the selection arrow to an option, and press **ENTER**. The settings appear. If you select **Setup**, the Setup menu appears. See “Using the Setup Menu” on page 14.

3. To select a setting, use the Arrow keys to move the selection arrow, and press **ENTER**. (When you reach the end of a menu, the selection arrow wraps to the beginning.) Press and hold an Arrow key to rapidly advance the selection speed.
4. To close a setting or a menu, press **MENU**.

## Using the Main Menu

From the Main menu, you can change the Range, Gain, Scroll, Zoom, and View settings.

- To view the current menu settings, press **MENU**.



- To exit any window, press **MENU**.

- To quickly change a setting for the current option that appears in the upper-left corner of the screen (for example, the Range option in the above screen), press an **Arrow** key.

## Options and Settings

The following settings reset to the system defaults each time you turn on the Fishfinder.

**Range**—sets the maximum depth that you want the Fishfinder to display. **Auto** (default) automatically tracks the bottom, or you can set the range, **5–600 feet**.

**Gain**—controls the sensitivity of the Fishfinder’s sonar receiver. **Auto** (default) automatically sets the sonar sensitivity, or you can set the gain. To see more detail on the screen, increase the receiver sensitivity by selecting a higher gain. If there is too much detail or if the screen is cluttered, lower the sensitivity (lower the gain) to increase the clarity of the screen.

**Scroll**—sets the rate that the graph scrolls from right to left. If you are sitting still or the graph is moving too fast, slowing or pausing the graph can help. The settings are **Ultra, Fast** (default), **Medium, Slow**, and **Paused**.

**Zoom**—sets the zoom level for the screen. **Off** is the default.

**View**—when you select a **2X** or **4X** Zoom setting, you can select a specific area to view on the screen. You can also allow the Fishfinder to automatically select a zoomed viewing area based on the bottom.

## Using the Setup Menu

### To access the Setup menu:

1. Press **MENU**. The Main menu appears.
2. Use the Arrow keys to move the selection arrow to **Setup**, and press **ENTER**. The options appear.

## Options and Settings

Your changes to the following settings are used until you set the System Defaults option to **Yes**.

### Alarms

**Battery**—controls an alarm that sounds when the battery is reaching a critical state of discharge. The settings are **Off** (default) and **8.5–16.0** volts remaining.

**Shallow**—sets an alarm for the shallow water warning at a specific depth. The settings are **Off** (default) and **1.0–600 feet**.


**Deep**—sets an alarm for the deep water warning at a specific depth. The settings are **Off** (default) and **1.0–600 feet**.

**Fish**—turns on or off (default) an alarm that sounds when the Fishfinder detects what it determines to be a fish.


## Graphs


**Fish ID**—sets how the Fishfinder displays underwater targets and background information. If you select a fish symbol, the screen displays only the information related to that symbol (large, medium, and small sizes). When using wide beam, fish symbols that are to the sides of the boat appear hollow. Those that are directly below the boat appear as solid black fish symbols.

**OFF** (default)—the Fishfinder displays all of the available information about the underwater environment.

—suspended targets appear as symbols. No background information appears.

—the same as above with the target depth shown.

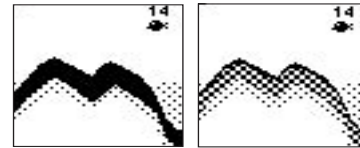
—suspended targets appear as symbols. Background information appears, making fish identification easier.

—the same as above with the target depth shown.

**Beam**—controls the angle of the transducer beam. **Wide** beam allows you to see more fish in shallow water, even off the sides of the boat. You can also choose **Narrow** (default) beam.

**Whiteline**—sets how the Fishfinder shows information about the bottom type.

**Off**—the bottom return appears as solid black.



**Whiteline Off**

**Whiteline On**

**On** (default)—the bottom return appears as a grayscale pattern and can help to determine bottom hardness. A hard bottom displays a thicker bottom layer. A soft bottom appears as a thinner bottom layer.

**Auto Gain**—controls the aggressiveness of the Auto Gain. The higher the setting, the greater the number of targets appear on the screen. The lower the setting, the less clutter on the screen. The settings are **High**, **Medium** (default), and **Low**.

## Numbers

**Size**—sets the appearance of depth, temperature, and battery numbers. The settings are **Small** and **Large** (default).

**Battery**—sets whether the current battery voltage appears on the screen. The settings are **Hide** (default) and **Show**

**Water Temperature**—sets whether the water temperature appears on the screen. This appears only if you have a temperature-capable transducer. The settings are **Hide** and **Auto** (default).

## Units

**Depth**—sets the measurements in **Feet** (default), **Meters**, or **Fathoms**.

**Temperature**—sets the water temperature units. The settings are **Fahrenheit** (default) and **Celsius**.

## System

**Simulator**—controls the simulator mode. The settings are **Off** and **On** (default). See page 3 for more information.

**Language**—sets your language choice.

**Beeper**—controls all Fishfinder sounds. The settings are **Off** and **On** (default).

**Contrast**—adjusts the contrast of the screen to compensate for light levels or viewing angles. Use the Arrow keys to increase or decrease the screen contrast.

**Defaults**—restores all default settings.

## APPENDIX

### Specifications

#### **Fishfinder 90**

**Size:** 4.7" W x 4.9" H x 2.43" D (11.9 x 12.4 x 6.1 cm)

**Weight:** 15.5 oz

**Display:** 2.0" W x 3.3" H (5.0 x 8.4 cm), 3.9" (9.9 cm) diagonal, 64 x 128 pixels, black-and-white FSTN display

**Usage:** 3.5 watts maximum, Nominal: 12 VDC @ 0.15 Amps

#### **Fishfinder 140**

**Size:** 6.1" W x 4.9" H x 2.6" D (15.5 x 12.5 x 6.6 cm)

**Weight:** 18.7 oz.

**Display:** 3.2" W x 3.1" H (8.1 x 7.9 cm), 4.7" (9.9 cm) diagonal, 128 x 240 pixels, 4-level gray scale FSTN display

**Usage:** 8 watts maximum, Nominal: 12 VDC @ 0.5 Amps

#### **Fishfinder 90 and Fishfinder 140**

**Case:** Fully Gasketed, high-impact plastic alloy Waterproof: IEC 529, level IPX-7 (submerged to 1 meter for 30 minutes)

**Temperature Range:** +5°F to 158°F (-15°C to 70°C)

*Fishfinder 90/140 Owner's Manual*

Internal memory backup to retain user settings

**Input:** 10 to 18 VDC with high voltage protection

**Sonar Power Output:** 100 watts (RMS), 800 watts (peak-to-peak)

**Frequency:** 80 kHz (wide) and 200 kHz (narrow)

**Depth:** 600 foot max depth. (Depth capacity is dependent on water salinity, bottom type, and other water conditions.)

Specifications are subject to change without notice.

### Optional Accessories

Purchase the following optional accessories on the Garmin Web site:

**Swivel mount for the Fishfinder 90**—allows your Fishfinder 90 to tilt and swivel on its mounting bracket.

**Portable case with battery pack and suction mount transducer**—makes your Fishfinder portable, so that it can go on any boat, with no installation (requires eight D-cell batteries, not included).

**Flush mounting kit**—mounts your fishfinder flush on the bulkhead or cabin wall. Simply press the side clips to release the Fishfinder so you can take it with you.

**Protective cover**—protects your product when you are not using it.

## Software License Agreement

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To obtain warranty service, contact your local Garmin authorized dealer or call Garmin Product Support for shipping instructions and an RMA tracking number. The unit should be securely packed with the tracking number clearly written on the outside of the package. The unit should then be sent, freight charges prepaid, to any Garmin warranty service station. A copy of the original sales receipt is required as the proof of purchase for warranty repairs.

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**Online Auction Purchases:** Products sold through online auctions are not eligible for rebates or other special offers from Garmin.

Online auction confirmations are not accepted for warranty verification. To obtain warranty service, an original or copy of the sales receipt from the original retailer is required. Garmin will not replace missing components from any package purchased through an online auction.

**International Purchases:** A separate warranty is provided by international distributors for units purchased outside the United States. This warranty is provided by the local in-country distributor and this distributor provides local service for your unit. Distributor warranties are only valid in the area of intended distribution. Units purchased in the United States or Canada must be returned to the Garmin service center in the United Kingdom, the United States, Canada, or Taiwan for service.

The Garmin Fishfinder has no user-serviceable parts. Should you ever encounter a problem with your unit, please take it to an authorized Garmin dealer for repairs.

The Fishfinder is fastened shut with screws. Any attempt to open the case to change or modify the unit in any way will void your warranty and may result in permanent damage to the equipment.

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