



## GPSMAP 400/500 Series Installation Instructions

Your GPSMAP 400/500 series chartplotter must be properly installed according to the following instructions. You need the appropriate fasteners, tools, and mounts listed in each section. **If you experience difficulty installing the chartplotter, seek the assistance of a professional installer, or contact Garmin Product Support.**

Before installing your GPSMAP 400 or 500 series chartplotter, confirm that the package contains the items listed on the box. If any parts are missing, contact your Garmin dealer immediately.

**WARNING:** See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.



**WARNING:** Always wear safety goggles, ear protection, and a dust mask when drilling, cutting, or sanding.



**NOTICE:** When drilling or cutting, always check the opposite side of the drilling or cutting surface.

### To install and use your chartplotter:

1. Select a mounting location ([page 2](#)).
2. Mount the chartplotter ([page 2](#)).
3. Install the transducer, if applicable ([page 3](#)).
4. Install the wiring harness ([page 6](#)).
5. Connect the chartplotter to a NMEA 2000 network (optional, if applicable) ([page 8](#)).
6. Connect the cables to the chartplotter ([page 9](#)).
7. Test the installation ([page 9](#)).

### Chartplotter Functionality Matrix


The chartplotters in the GPSMAP 400/500 series have different functionality based on model number. Use this matrix to determine the feature set and installation requirements of your chartplotter.

Chartplotter	NMEA 2000	NMEA 0183	Garmin CANet	Sonar
GPSMAP 420/430/430x/440/440x/450	No	Yes	Yes	"s" version only
GPSMAP 520/525/530/535/540/545/550/555	No	Yes	Yes	"s" version only
GPSMAP 421/441/451	Yes	Yes	No	"s" version only
GPSMAP 431/531	No	Yes	No	"s" version only
GPSMAP 521/526/536/541/546/551/556	Yes	Yes	No	"s" version only

## Selecting a Mounting Location

Consider the following when selecting a location to mount your chartplotter:

- The location provides optimal viewing as you operate your boat.
- The location allows for easy access to the keypad on the chartplotter.
- The location is strong enough to support the weight of the chartplotter and protect it from excessive vibration or shock.
- Refer to the compass-safe distance table on [page 10](#) to avoid interference with your magnetic compass.
- The location allows room for the routing and connection of the cables. There should be at least a 3 in. (8 cm) clearance behind the case.

 **NOTICE:** Do not mount the chartplotter in an area that is exposed to extreme temperature or conditions. The temperature range for the chartplotter is from 5°F to 131°F (from -15°C to 55°C). Extended exposure to temperatures exceeding this range (in storage or operating conditions) may cause failure of the LCD screen. This type of failure and related consequences are not covered by the manufacturer's limited warranty.

## Mounting the Chartplotter

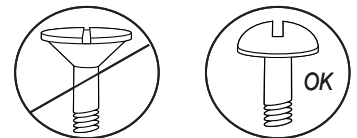
There are two mounting options for the chartplotter:


- **Surface Mount**—mount the chartplotter onto a bracket (included) that attaches to the console or overhead. The compact waterproof chartplotter housing is suitable for mounting in exposed locations or at the navigation station.
- **Flush Mount**—use an optional flush mount kit to mount the chartplotter into a flat panel. For more information on the optional flush mount kit, visit [www.garmin.com](http://www.garmin.com) or contact your local Garmin dealer.

### Surface-Mounting the Chartplotter

Use the included bracket to surface-mount the chartplotter. You will need the following tools and fasteners:

- Drill
- Phillips or flat screwdriver
- Three #8 (4 mm) pan-head machine bolts with matching nuts and washers and a  $\frac{5}{32}$  in. (5 mm) drill bit, or three #8 pan-head self-tapping screws and a  $\frac{1}{16}$  in. (1.5 mm) drill bit for drilling starter holes.



 **NOTICE:** Use pan-head machine bolts or self-tapping screws to secure the swivel base. If you use screws with countersunk heads, you may damage the mounting bracket.

#### To mount the bracket assembly:

1. Using the swivel base as a template, mark the location of the three holes that secure the bracket to the mounting surface.
2. Drill the mounting holes.
  - If you secure the base with machine bolts, drill three  $\frac{5}{32}$  in. (5 mm) holes at the locations you marked.
  - If you secure the base with self-tapping screws, drill three  $\frac{1}{16}$  in. (1.5 mm) starter holes at the locations you marked. Do not make the starter holes deeper than half the screw length.
3. Secure the swivel base with three bolts or screws. Do not overtighten the screws or bolts; you may damage the swivel base.
4. Place the swivel mount bracket over the swivel base and secure it with the short knob.



#### To install the chartplotter on the mounting bracket:

1. Align the slot on the back of the chartplotter with the long mounting knob, and slide the chartplotter into place. If necessary, adjust the knob to spread the bracket arms apart. (Turn the knob counter-clockwise to widen the bracket arms and clockwise to tighten.)
2. Adjust the chartplotter angle, and tighten the long mounting knob until the chartplotter is snug.
3. 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 both knobs.



## Installing a Transducer

Consult the chartplotter feature matrix on [page 1](#) to determine if your chartplotter is capable of using sonar. The following transducer installation procedures are only applicable to sonar-capable chartplotters.

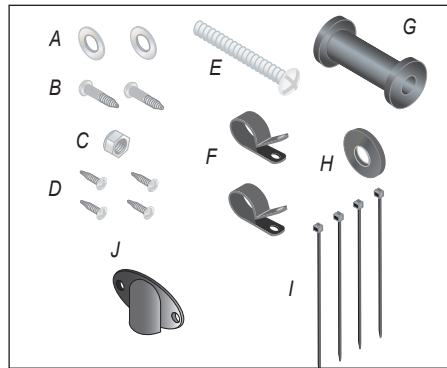
**NOTE:** The following procedures contain installation instructions for the transducer included with the “s” model GPSMAP 400/500 series chartplotters. If you choose to use a different transducer, installation instructions are provided in the transducer kits. Some transducers might have to be installed by a professional marine installer.

Proper transducer installation is key to getting the best performance from your sonar-capable chartplotter. Be sure you have the following components in the transducer package, as well as the following tools:

### Transducer Package

- Transom-mount transducer (not pictured)

- A – 5 mm flat washers (2)
- B – 5 × 30 mm screws (2)
- C – 10-32 lock nut (1)
- D – 4 × 12 mm screw (4)
- E – 10-32 × 1.75 in. screw (1)
- F – 1/4 in. cable clamps (2)
- G – Plastic spacer (1)
- H – 1/4 in. rubber washer (1)
- I – Cable tie, 5.6 in. (4)
- J – Cable entry cover (1)



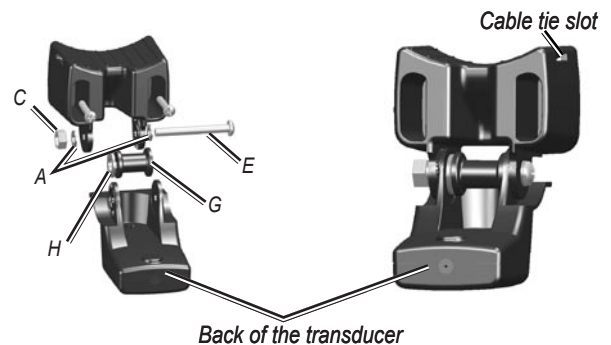
### Tools Needed

- Drill and drill bits
- 3/8 in. (9.5 mm) wrench or socket
- Masking tape
- Number 2 Phillips screwdriver
- Marine sealant

**NOTICE:** Do not cut the transducer lead or any part of the transducer cable. Cutting the transducer cable voids your warranty. The cable cannot be spliced and connected to any existing (Garmin or non-Garmin) transducer cables. If the transducer lead is too short, extension cables are available from your Garmin dealer.

### Assembling the Transducer

1. Insert the rubber washer (H) and the plastic spacer (G) into the transducer at the same time. DO NOT lubricate the rubber washer.
2. Route the power/data cable toward the back of the transducer. Slide the transducer into the transducer mount.
3. Place a 5 mm flat washer (A) on the 10-32 × 1.75 in. screw (E), and insert the screw through the transducer mount, the spacer, and the rubber washer.
4. Place the remaining 5 mm flat washer (A) on the exposed end of the 10-32 × 1.75 in. screw. Install the 10-32 locknut (C) finger tight. Retighten the transducer after installation on the boat.



### Mounting the Transducer on a Transom

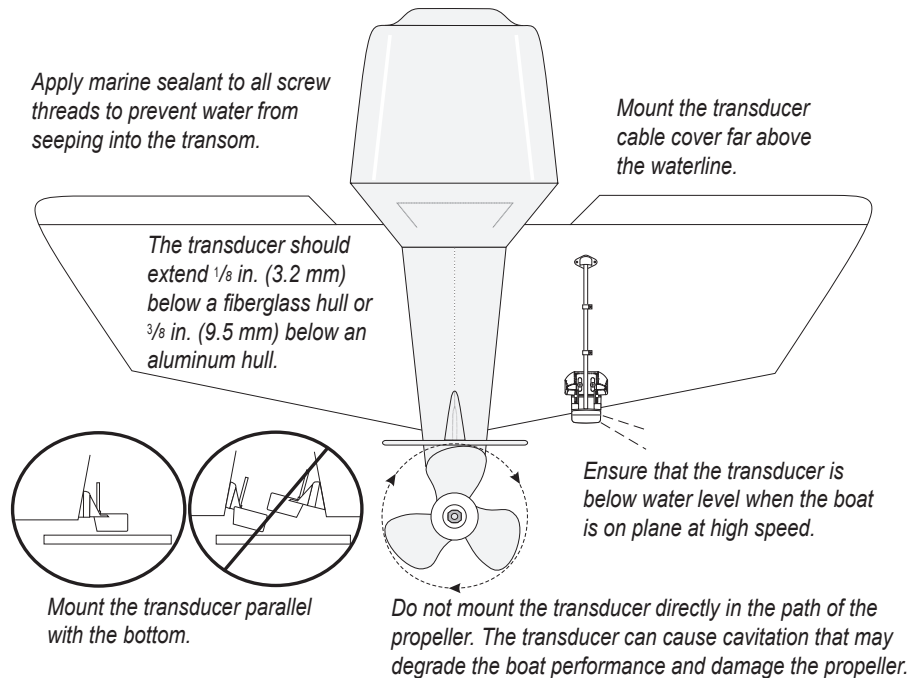
When selecting a transom-mount location, consider the following for optimal performance:

- For your sonar to operate properly, the transducer must be located in calm water.
- Mount the transducer as close to the center of the boat as possible.
- Do not mount the transducer in locations where it might be jarred when launching, hauling, or storing.
- Do not mount the transducer in the path of the propeller on single-drive boats. The transducer can cause cavitation that can degrade the performance of the boat and damage the propeller. On twin-drive boats, mount the transducer between the drives, if possible.

**NOTE:** Do not mount the transducer behind strakes, struts, fittings, water intake or discharge ports, or anything that creates air bubbles or causes the water to become turbulent. The transducer must be in clean (non-turbulent) water for optimal performance.

### To mount the transducer on a transom:

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.




2. Drill  $\frac{5}{32}$  in. (4 mm) pilot holes approximately 1 in. (25 mm) deep at the marked locations. To avoid drilling the holes too deep, wrap a piece of tape around the bit at 1 in. (25 mm) from the point of the bit.
3. Apply marine sealant to the 5 × 30 mm screws (B). Attach the transducer assembly to the transom using the 5 × 30 mm screws. Adjust the transducer assembly to extend beyond the bottom of the transom approximately  $\frac{1}{8}$  in. (3.2 mm) on fiberglass hulls or  $\frac{3}{8}$  in. (9.5 mm) on aluminum hulls. Adjust the transducer assembly to be aligned parallel with the bottom.
4. Tighten the 10-32 locking nut until it touches the mounting bracket, and then tighten  $\frac{1}{4}$  turn more. (Do not overtighten.)
5. Place the first cable clamp (F) on the transducer cable, approximately one third of the distance between the transducer and the top of the transom.
6. Mark the location. Drill a  $\frac{1}{8}$  in. (3.2 mm) pilot hole approximately  $\frac{3}{8}$  in. (9.5 mm) deep.
7. Attach the cable clamp using one of the 4 × 12 mm screws (D). Coat the screw with marine sealant before installation. Repeat steps 5 and 6 using the other cable clamp.
8. Route the transducer cable to the GPSMAP 400/500 series chartplotter.

 **NOTICE:** Avoid routing the cable close to electrical wires or other sources of electrical interference.

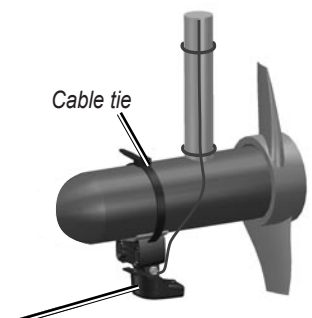
9. Test the transducer installation after you complete the GPSMAP 400/500 series chartplotter installation. See [page 9](#).

### Mounting a Transducer on a Trolling Motor

1. With the ridges of the band facing up, slide the large cable tie through the slot on the transducer mount until equal lengths extend on both sides of the mount.

 **NOTICE:** For cold water and heavy timber or debris areas, a metal 4-5 in. (100-125 mm) worm gear clamp is recommended instead of the plastic cable tie.

2. Position the mount gasket on the curved top of the transducer mount.
3. With the front of the transducer pointed away from the trolling motor propeller, place the transducer assembly against the motor body of the trolling motor.
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, making sure the gasket is aligned properly. Pull the cable tie end until tight. Trim off the excess if necessary. Tighten the locking nut until it touches the mounting bracket, and then tighten  $\frac{1}{4}$  turn more. (Do not overtighten.)



Front of the transducer

- Route the transducer cable to the GPSMAP 400/500 series chartplotter using 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.

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**NOTICE:** Leave some slack in the cable to avoid damage while using the trolling motor.

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**NOTICE:** Avoid routing the cable close to electrical wires or other sources of electrical interference.

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## Shoot-Thru-Hull Installation

To avoid drilling a hole to mount a thru-hull transducer, a transom-mount transducer can be secured with epoxy inside a boat (shoot-thru-hull installation). This type of installation can provide better noise reduction and allow you to use a higher gain setting. For a transducer to be mounted inside the hull (shoot-thru, not thru-hull), the boat must be fiberglass with no core. Contact your boat manufacturer if you are unsure. Professional installation might be necessary.

Some transducers are specifically designed to be mounted inside a fiberglass hull. The standard plastic transom-mount transducer can also be mounted using this method. If using a temperature-sensing transducer, the temperature displayed reflects the hull temperature.

**NOTE:** A solid fiberglass hull can be no more than  $\frac{5}{8}$  in. (9.53 mm) thick when using a 500 W transducer, and no more than 1 in. (25.4 mm) thick when using a 1 kW transducer. 1 kW transducers are only compatible with either the GPSMAP 525/535/545/555/526/536/546/556 or with non “s” models compatible with a GSD 22.

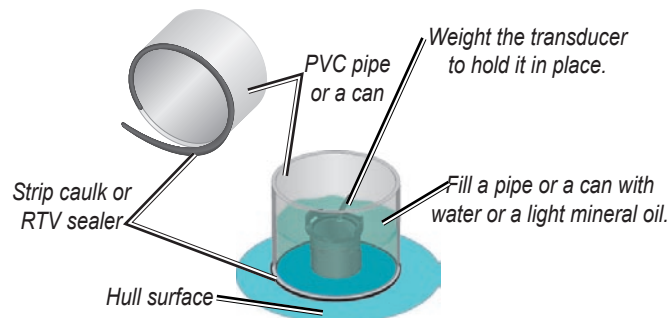
When installing a transducer, consider the following:

- The hull must be composed of solid fiberglass without air bubbles, laminates, fillers, or dead air space.
- The location must be in an area of clean (non-turbulent) water at all speeds.
- The location must not be over any strakes or behind any obstruction on the hull that would create turbulence.

**NOTE:** Many modern hulls have a dedicated pocket for shoot-thru-hull transducer installation. If you are unsure whether your hull is equipped with a pre-located pocket, contact your hull manufacturer.

### To test the location:

- Fabricate a test device from a section of PVC pipe or a can, as shown in the following illustration.
- Temporarily seal the test device to the hull with caulking or RTV sealer, and fill the test device with water or light mineral oil.
- Place the transducer in the water, pointed directly at the bottom, weighted down. Set the device for optimum performance. If the sonar performance is significantly degraded, another location must be tested.



**Testing the Location**

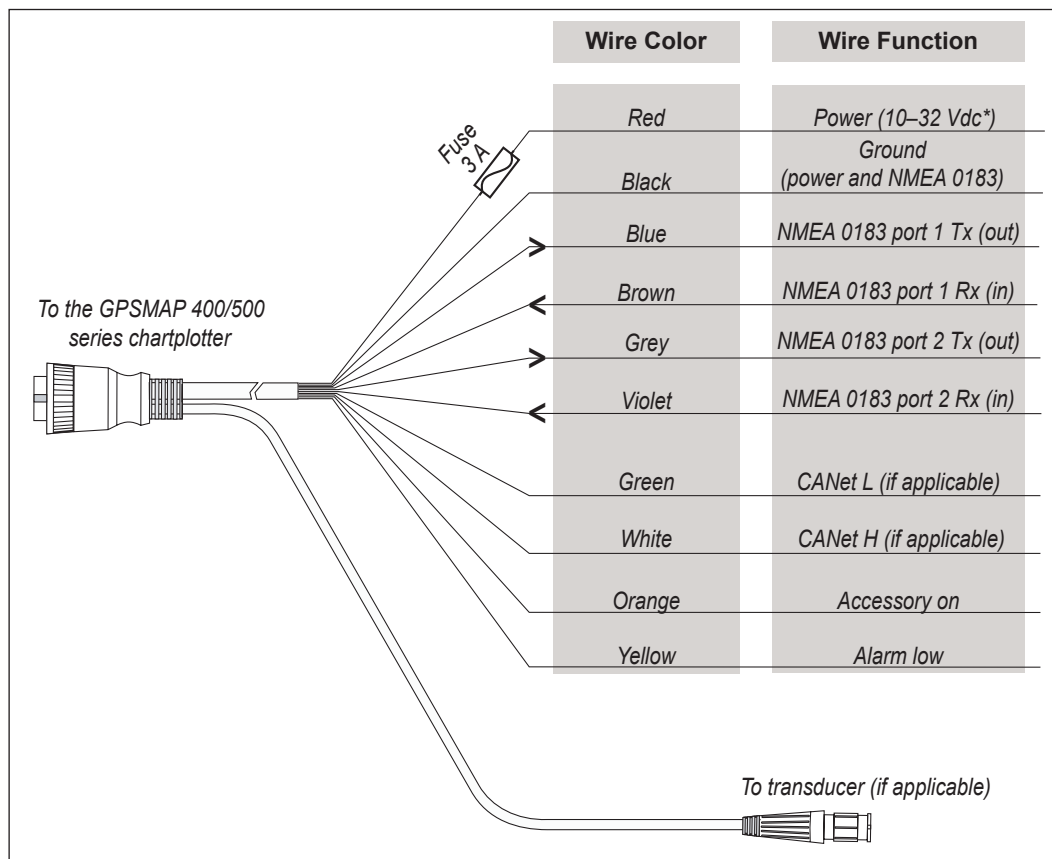
### To permanently install the transducer:

- Lightly sand the surface of the hull and the face of the transducer with 400-grit wet or dry sandpaper.
- Build a dam using strip caulk about  $\frac{1}{4}$  in. (6 mm) tall. Pour about  $\frac{1}{8}$  in. (3 mm) of two-part, slow-cure epoxy into the dam.
- Place the transducer in the epoxy, turning the transducer to work out any air bubbles.
- Weight the transducer in place, and allow it to cure for 24 hours.

## Installing the Wiring Harness

The chartplotter comes with a wiring harness that connects the chartplotter to power and to optional NMEA 0183 and Garmin CANet devices. If applicable, the wiring harness also connects the chartplotter to a transducer.

The wiring harness does not connect to a NMEA 2000 network. For instructions on connecting to a NMEA 2000 network with compatible devices, see [page 8](#).



**GPSMAP 400/500 Series Wiring Harness**

### Notes:

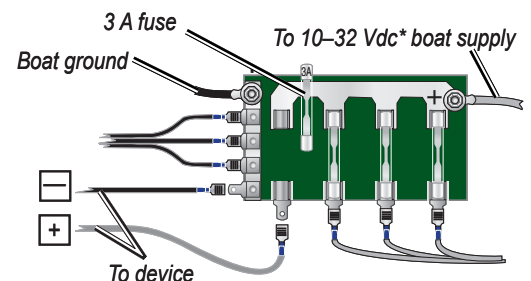
- Use an AGC/ 3AG - 3 Amp replacement fuse.
- If it is necessary to extend the power and ground wires, use 22 AWG wire.
- You can wire the harness directly to the battery, or if your boat has an electrical system, you might be able to wire the harness to an unused holder on the fuse block. If you use the boat fuse block, remove the in-line fuse holder on the power wire of the harness.
- Do not cut the transducer cable, because this voids your warranty.

**NOTICE:** The maximum input voltage is 32 Vdc\*. Do not exceed this voltage because this can damage the chartplotter and void the warranty.

**NOTE:** During a typical installation, use only the red and black wires. The other wires do not have to be connected for normal operation of the chartplotter. For information on connecting to a NMEA 0183- or Garmin CANet-compatible device, see [page 8](#).

### Connecting the Wiring Harness to Power

1. Use a test light or voltmeter to determine the polarity of the voltage source.
2. Connect the red (+ or positive) wire to the positive voltage terminal. (If you use the fuse block on the boat, route the positive connection through the fuse, as shown on the diagram.)
3. Connect the black (- or ground) wire to the negative voltage terminal.
4. Install or check the 3 A fuse (in the in-line fuse holder, or on the fuse block of the boat).

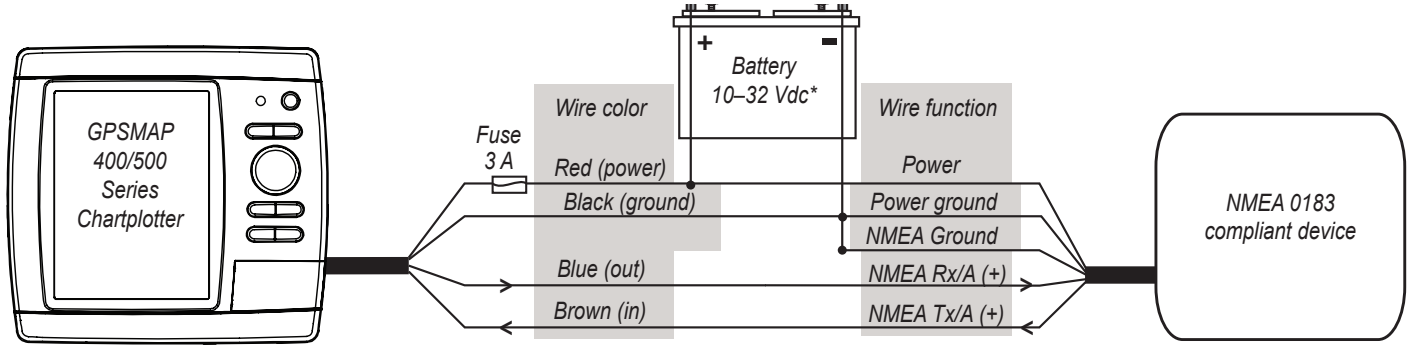


**Fuse Block Example**

\* Certain GPSMAP 400/500 series chartplotters can be connected to higher-voltage power sources. Refer to the Power section of the System Specifications on [page 10](#) for more information.

## Connecting the Wiring Harness to a NMEA 0183 Device

You can connect the GPSMAP device to other NMEA compatible equipment, such as a DSC or AIS device. Refer to the wiring diagram for connecting the chartplotter to NMEA 0183-compatible devices.



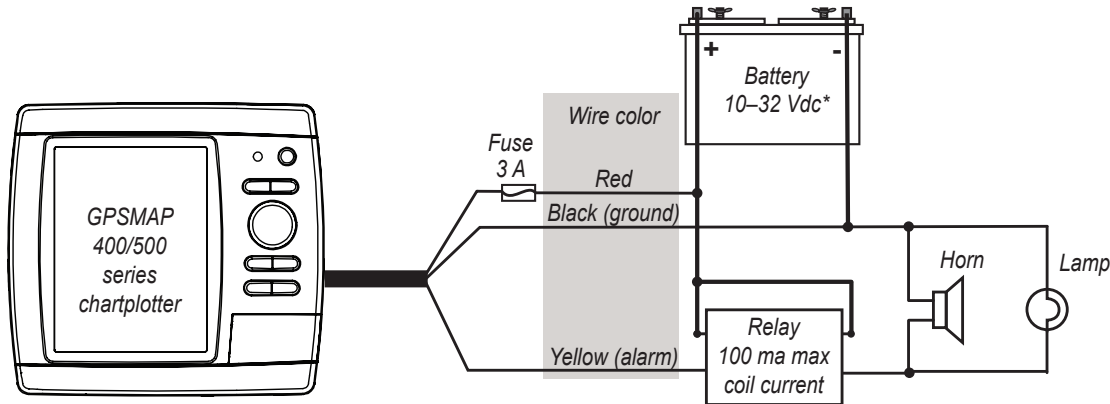
**Wiring a GPSMAP 400/500 Series Chartplotter to a Standard NMEA 0183 Device**

### To connect the wiring harness to a NMEA 0183 device:

1. For Garmin devices, the ground (black) wires serve as NMEA 0183 ground and must be attached together or on the same terminal as the NMEA 0183 ground on your NMEA 0183 device. Refer to the wiring diagram of your NMEA 0183 device for wire identification.
2. Connect the blue (NMEA 0183 port 1 out) wire from the GPSMAP 400/500 wiring harness to the NMEA 0183 in (or Rx/A +) wire on the wiring harness of the NMEA 0183 device, and the brown (NMEA 0183 port 1 in) wire to the NMEA out (or Tx/A +) wire on the wiring harness of the NMEA 0183 device.
3. Repeat step 2 using the grey and violet wires for an additional NMEA 0183 device.
4. Set the serial port(s) on the chartplotter to use NMEA 0183 data (standard or high speed). See the *GPSMAP 400/500 Series Owner's Manual* for more information.

## Connecting the Wiring Harness to an Optional Horn, Lamp, or Both

The GPSMAP 400/500 series chartplotter can be used with a lamp, a horn, or both, to sound or flash an alert when the chartplotter displays a message. The alarm does not need to be wired for the GPSMAP 400/500 chartplotter to function. The alarm circuit switches to a low-voltage state when the alarm sounds. The maximum current is 100 mA, and a relay is needed to limit the current from the chartplotter to 100 mA. To select between visual and audible alerts, install a switch.



**Wiring a GPSMAP 400/500 Series Chartplotter to a Horn, a Lamp, or Both**

\* Certain GPSMAP 400/500 series chartplotters can be connected to higher-voltage power sources. Refer to the Power section of the System Specifications on [page 10](#) for more information.

## Connecting the Wiring Harness to a Garmin CANet Device

If your GPSMAP 400/500 series chartplotter is Garmin CANet-compatible, it can receive sonar information from a CANet-compatible Garmin Sounder or Fishfinder device. See the chartplotter functionality matrix on [page 1](#) to determine whether your chartplotter is CANet compatible.

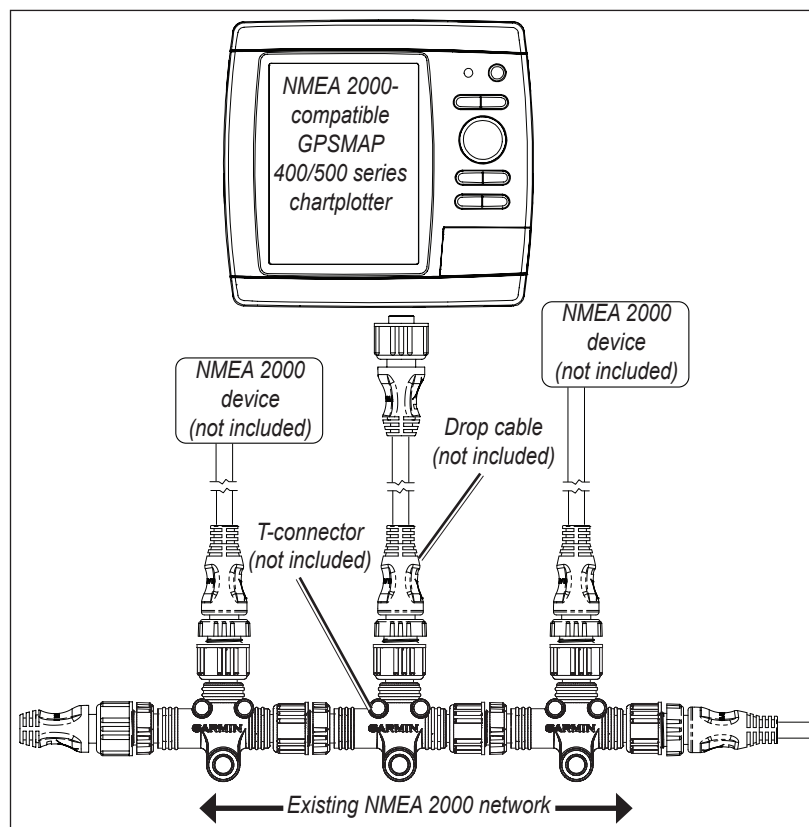
Using the CANet optimizes the performance of CANet-compatible devices, allowing sonar information from a sounder or fishfinder to be shared with up to two CANet compatible Garmin chartplotters. A standard NMEA 0183 connection only allows depth, temperature, and speed information to be sent to a single chartplotter, whereas a CANet connection provides full sonar readings, including Ultrascroll™, so you can view and control the same information on your compatible chartplotter(s) as you can on your compatible Garmin sounder or fishfinder.

**NOTE:** To use the Garmin CANet with your device, you must purchase an optional CANet Kit. Contact your Garmin dealer, or visit [www.garmin.com](http://www.garmin.com).

## Connecting the Chartplotter to a NMEA 2000 Network

If your GPSMAP 400/500 series chartplotter is NMEA 2000-compatible, you can connect it to an existing NMEA 2000 network on your boat to share information with other connected NMEA 2000-compatible devices. If you do not have an existing NMEA 2000 network on your boat, you will need to build one. See [www.garmin.com](http://www.garmin.com) for more information.

**NOTE:** NMEA 2000-compatible GPSMAP 400/500 series chartplotters are not packaged with NMEA 2000 connectors or cables. You will need a NMEA 2000 T-connector and drop cable to connect it to an existing NMEA 2000 network. NMEA 2000 components are available from your local Garmin dealer or marine dealer.



**Connecting a NMEA 2000-compatible GPSMAP 400/500 Series Chartplotter to an Existing NMEA 2000 Network**

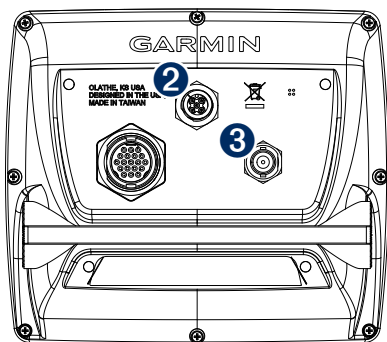
### To connect a NMEA 2000-compatible GPSMAP 400/500 series chartplotter to your existing NMEA 2000 network:

1. Determine an appropriate location to connect the chartplotter to your existing NMEA 2000 network.
2. Disconnect one side of a NMEA 2000 T-connector from the backbone nearest to the location where you want to connect the chartplotter.  
If you need to extend the NMEA 2000 backbone, connect an appropriate NMEA 2000 backbone extension cable (not included) to the side of the T-connector you disconnected.
3. Add a T-connector (not included) to the NMEA 2000 backbone.
4. Route a NMEA 2000 drop cable from the chartplotter to the top of the T-connector you added to your NMEA 2000 network.  
You can use a drop cable up to 20 ft. (6 m). If more cable is needed, add an extension to your NMEA 2000 backbone, based on the NMEA 2000 guidelines.

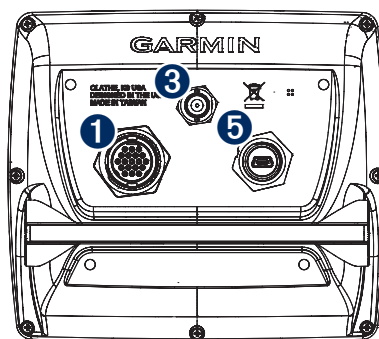


## Connecting Cables to the Chartplotter

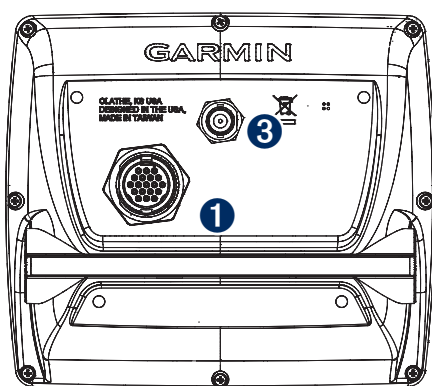
Use the diagrams below to help identify the connectors on the back of your GPSMAP 400/500 series chartplotter. Every possible chartplotter configuration is not represented in the diagrams, but every possible connector type is listed for identification purposes. Every connector on the back of the chartplotter may not be used for all installations.



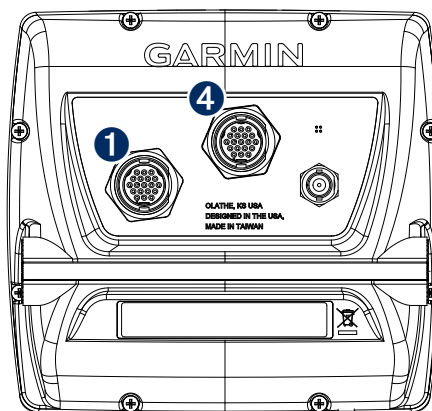
GPSMAP 421, 441, and 451



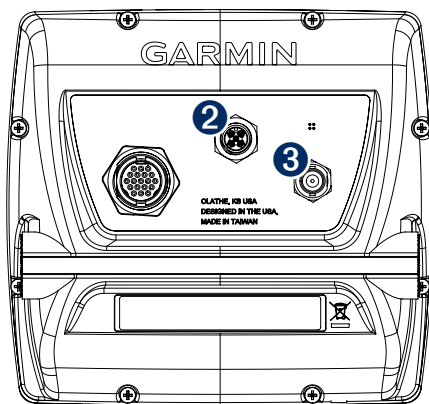
GPSMAP 430x and 440x



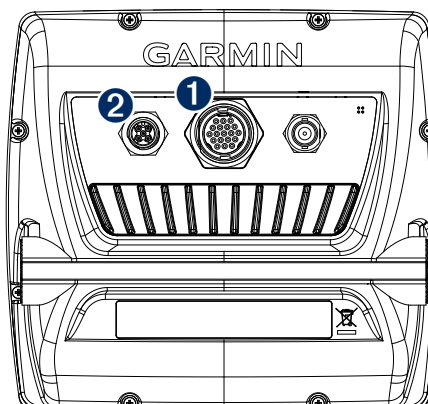
GPSMAP 420, 430, 431, 440, and 450



GPSMAP 530, 535, 540, and 545



GPSMAP 521, 541, 551



GPSMAP 526, 536, 546, and 556

- 1 Wiring harness
- 2 NMEA 2000
- 3 External GPS antenna (sold separately)
- 4 Compatible XM antenna with audio adapter (sold separately)
- 5 Compatible XM antenna (sold separately)

## Testing the Installation

To turn on your chartplotter for the first time, press and hold the **POWER** key until the chartplotter beeps and turns on. Using the **ROCKER** and the **SELECT** keys, follow the screens to configure your chartplotter.


## Testing the Optional Transducer Installation

Because water is necessary to carry the sonar signal from the sounder, the transducer must be in the water to work properly. You cannot get a depth or distance reading when the transducer is out of the water.

When you place your boat in the water, check for leaks around any screw holes that were added 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 transducer installation:

1. Begin testing the installation at a slow speed. If the sonar appears to be working properly, gradually increase the speed of the boat while observing the operation of the sonar. 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 to see if the signal improves.
3. If the signal strength improves while turning, adjust the transducer so that it extends another 1/8 in. below the transom of the boat. It might take several adjustments to eliminate the degradation.
4. If the signal does not improve, you might have to move the transducer to a different location.

 **CAUTION:** When adjusting the depth of the transducer, make the adjustments in small increments. Placing the transducer too deep can adversely affect the performance of the boat and put the transducer at greater risk of striking underwater objects.

## Specifications

### Physical Specifications

**Size:** **400 Series:** W × H × D: 5.7 × 5.0 × 3.0 in.  
(14.5 × 12.7 × 7.6 cm)

**500 Series:** W × H × D: 5.9 × 6.4 × 2.9 in.  
(15.0 × 16.3 × 7.4 cm)

**Weight:** **400 Series:** 1.30 lb. (560 g)  
**500 Series:** 1.75 lb. (800 g)

**Display:** **GPSMAP 420/421/430/431/440/441/450/451 (s):** 4.0 in. diagonal (10.6 cm), QVGA display with adjustable brightness, 320 × 240 pixels.

**GPSMAP 520/521/530/531/540/541/550/551 (s):** 5.0 in. diagonal (12.7 cm), QVGA display with adjustable brightness, 320 × 234 pixels.

**GPSMAP 525/526/535/536/545/546/555/556 (s):** 5.0 in. diagonal (12.7 cm), Full VGA display with adjustable brightness, 640 × 480 pixels, capable of 4,096 colors.

**Case:** Fully gasketed, high-impact plastic alloy, waterproof to IEC 529 IPX7 standards.

**Temp. Range:** From 5°F to 131°F (from -15°C to 55°C)

### Compass-Safe Distances:

Model Number	Compass-Safe Distance
GPSMAP 526/536/546/556	20 in. (50 cm)
GPSMAP 421/431/441/451	26 in. (65 cm)
GPSMAP 521/531/541/551	30 in. (75 cm)
GPSMAP 420/430/440/450 GPSMAP 520/530/540/550/525/535/545/555	38 in. (95 cm)

### Performance

#### Receiver:

GPSMAP 420/430/440/450 (s)  
GPSMAP 520/530/540/550/525/535/545/555 (s):  
Differential-ready 12 parallel channel WAAS-capable receiver  
GPSMAP 421/431/441/451 (s)  
GPSMAP 521/531/541/551 (s):  
High-sensitivity 14 parallel channel WAAS-capable receiver.  
GPSMAP 526/536/546/556 (s):  
High-sensitivity 12 parallel channel WAAS-capable receiver.

**Acquisition Times:** (Average acquisition times for a stationary receiver with a clear view of the sky.)

GPSMAP 420/430/440/450 (s)

GPSMAP 520/530/540/550/525/535/545/555 (s):

Warm\*: Approximately 15 seconds

Cold\*\*: Approximately 45 seconds

GPSMAP 421/431/441/451 (s)

GPSMAP 521/526/531/536/541/546/551/556 (s):

Warm\*: Approximately 1 second

Cold\*\*: Approximately 38 seconds

\***Warm:** your unit is at or near the last location where you recently acquired satellites.

\*\***Cold:** your unit has moved by more than about 500 mi. (800 km) since it was turned off.

**Update Rate:** 1/second, continuous

#### GPS Accuracy:

**Position:** <49 ft. (15 m), 95% typical

**Velocity:** 0.164 ft./sec 0.05 m/sec steady state

#### WAAS Accuracy:

**Position:** <10 ft. (3 m), 95% typical

**Velocity:** 0.05 m/sec steady state

**Dynamics:** 6 g

#### Power

**Power Source:** 10–32 Vdc

GPSMAP 421/431/441/451 (s)

GPSMAP 521/531/541/551/526/536/546/556 (s)

**Power Source:** 10–35 Vdc

GPSMAP 420/430/440/450 (s)

GPSMAP 520/530/540/550/525/535/545/555 (s)

**Usage:** 15 W max at 13.8 Vdc

**Fuse:** AGC/3AG - 3.0 A

## Sonar

Power: 1 kW Transducer, 1,000 W (RMS),

8,000 W (peak to peak); (1 kW transducers are supported by the GPSMAP 525s/526s/535s/536s/545s/546s/555s/556s units only.)

Dual Frequency, 500 W (RMS), 4,000 W (peak to peak);

Dual Beam, 400 W (RMS), 3,200 W (peak to peak)

Frequency: 50/200 kHz (dual frequency and 1 kW), 80/200 kHz (dual beam)

Depth: 2,500 ft. (762 m) (1 kW), 1,500 ft (457 m) (dual frequency), 900 ft (274 m) (dual beam) - Depth capacity is dependent on water salinity, bottom type, and other water conditions.

## Communication

### NMEA 2000 PGN Information (Only Applicable to NMEA 2000-Compatible Chartplotters):

Receive		Transmit	
059392	ISO Acknowledgment	059392	ISO Acknowledgment
059904	ISO Request	059904	ISO Request
060928	ISO Address Claim	060928	ISO Address Claim
126208	NMEA - Command/Request/Acknowledge Group Function	126208	NMEA - Command/Request/Acknowledge Group Function
126464	Transmit/Receive PGN List Group Function	126464	Transmit/Receive PGN List Group Function
126996	Product Information	126996	Product Information
127250	Vessel Heading	127250	Water Depth
127488	Engine Parameters - Rapid Update	128259	Speed - Water Referenced
127489	Engine Parameters - Dynamic	128267	Water Depth
127505	Fluid Level	129025	Position, Rapid Update
128259	Speed - Water Referenced	129026	COG/SOG Rapid Update
128267	Water Depth	129029	GNSS - Position Data
129038	AIS Class A Position Report	129283	Cross Track Error
129039	AIS Class B Position Report	129284	Navigation Data
129040	AIS Class B Extended Position Report	129285	Navigation - Route/WP information
129794	AIS Class A Static and Voyage Related Data	129539	GNSS DOPs
129799	Radio Frequency/Mode/Power	129540	GNSS Sats in View
129808	DSC Call Information	130306	Wind Data
130306	Wind Data		
130310	Environmental Parameters		
130311	Environmental Parameters (Obsolete)		
130312	Temperature		
130313	Humidity		
130314	Actual Pressure		



Compatible GPSMAP 400/500 series chartplotters are NMEA 2000 certified.

### NMEA 0183, Version 3.01 Sentences: SDBBT, SDDPT, SDMTW, SDVHW, SDWPL

You can purchase complete information about National Marine Electronics Association (NMEA) format and sentences from:

NMEA

Seven Riggs Avenue

Severna Park, MD 21146 USA

[www.nmea.org](http://www.nmea.org)

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