



## echo™ Installation Instructions

### WARNING

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

### CAUTION

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

Follow these instructions to properly install all of the components provided with your echo 100/150/200/300c/500c/550c.

### Contact Garmin

Contact Garmin Product Support if you have any questions while using your echo. In the USA, go to [www.garmin.com/support](http://www.garmin.com/support), or contact Garmin USA by phone at (913) 397.8200 or (800) 800.1020.

In the UK, contact Garmin (Europe) Ltd. by phone at 0808 2380000.

In Europe, go to [www.garmin.com/support](http://www.garmin.com/support) and click [Contact Support](#) for in-country support information, or contact Garmin (Europe) Ltd. by phone at +44 (0) 870.8501241.

### Tools Needed

- Drill and drill bits
- 3/8 in. wrench or socket
- Masking tape
- Number 2 Phillips screwdriver
- Marine sealant
- Hardware for the swivel mount (bolts or screws) ([page 3](#))

### Installation Preparation

Before permanently installing any part of your echo, plan the installation by determining the location of the various components. Verify that the cables are long enough to connect the components to each other and to power.

### About the Transducer

The transducer is the component of your echo that transmits sound waves through the water and receives them to relay the information to your echo device. With the supplied hardware, you can install the included transducer on the transom of your boat ([page 1](#)) or on your trolling motor ([page 3](#)).

If you already have an existing Garmin 6-pin dual-beam transducer on your boat, you can use it with your echo device by installing an adapter cable (sold separately).

### About the echo Mount

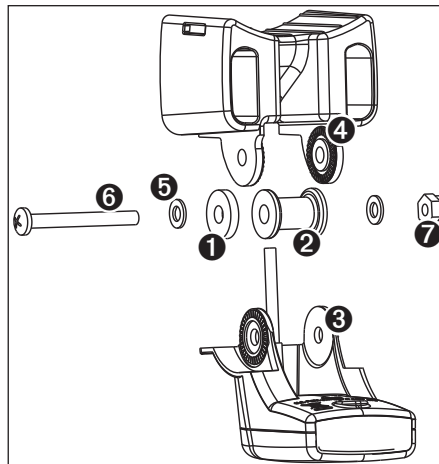
The echo device can be mounted using the included swivel-mount bracket ([page 3](#)), or it can be mounted flush with the dashboard using the appropriate flush-mount kit (sold separately).

When planning a mounting location, choose a location that you can see as you operate your vessel, provides easy access to the keys on the echo, and is the appropriate distance from a compass ([page 6](#)).

### Assembling the Transducer

1. Insert the rubber washer **1** and the plastic spacer **2** into the transducer **3** at the same time.

Do not add any lubrication to the rubber washer.



2. Pull the cable back and slide the transducer into the mounting bracket **4**.
3. Place a 5 mm flat washer **5** on the 10-32 x 1.75 in. screw **6** and insert the screw through the mounting bracket, transducer, spacer, and rubber washer.
4. Place a 5 mm flat washer on the exposed end of the 10-32 x 1.75 in. screw, and fasten it with the 10-32 lock nut **7**.

Do not tighten the 10-32 lock nut. You will adjust the transducer and tighten the nut after you install the transducer on the boat.

### Installing the Transducer on a Transom

#### Selecting a Transom-mount Location

Select a transom-mount location while considering these guidelines for optimal performance.

- Mount the transducer as close to the center of the boat as possible.
- 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.

- 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.

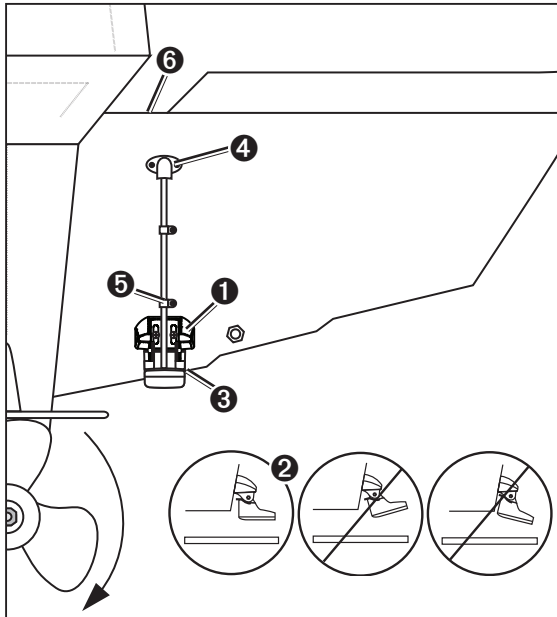
- On twin-drive boats, mount the transducer between the drives, if possible.
- Do not mount the transducer in a location where it might be jarred when launching, hauling, or storing.

## Installing the Transom-Mount Hardware

### NOTICE

Do not cut the transducer cable. Cutting the transducer cable will void your warranty.

1. Position the transducer mount **1** at the selected mounting location on the transom (page 1).



2. Align the transducer parallel with the water line **2**, and mark the center location of each hole on the transducer mount.
3. Using a  $\frac{5}{32}$  in. (4 mm) bit, drill the pilot holes approximately 1 in. (25 mm) deep at the marked locations, while taking the following precautions.
  - 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 to act as a guide.
  - If you are installing the bracket on fiberglass, place a piece of tape over the pilot-hole location to reduce cracking of the gel-coat.
4. Apply marine sealant to the included 30 mm M5 screws, and loosely attach the transducer assembly to the transom.
5. Adjust the transducer assembly so that it extends beyond the bottom of the transom **3** approximately  $\frac{1}{8}$  in. (3 mm) on fiberglass hulls or  $\frac{3}{8}$  in. (10 mm) on aluminum hulls
6. Make sure that the transducer is aligned parallel with the water line.
7. Tighten the 10-32 locking nut until it touches the mounting bracket and then tighten  $\frac{1}{4}$  turn more (do not overtighten).

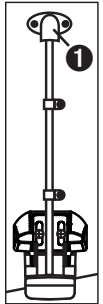
8. If you would like to route the cable through the transom, choose a pass-through location well above the waterline **4** and mark it.
9. Use a  $\frac{5}{8}$  in. (16 mm) drill bit to drill a pass-through hole completely through the transom.
10. Place a cable clamp on the transducer cable **5**, approximately one third of the distance between the transducer and the top of the transom or the pass-through hole.
11. Mark the pilot-hole location for the cable clamp, and, using a  $\frac{1}{8}$  in. (3.2 mm) bit, drill a pilot hole approximately  $\frac{3}{8}$  in. (10 mm) deep.
12. Apply marine sealant to the included 12 mm M4 screw, and attach the cable clamp to the transom.
13. Repeat steps 10–12 using the other cable clamp.
14. Route the transducer cable to the echo device.
  - If you are routing the cable using a pass-through hole, feed it through the hole you drilled in step 8, and install the cable-entry cover **4** (page 2).
  - If you are not routing the cable using a pass-through hole, route the cable up and over the top of the transom **6**.

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

### Installing the Cable-Entry Cover

If you routed the cable through the transom after you installed the transducer, install the cable entry cover to keep water from entering your boat.

1. Place the cable-entry cover **1** over the hole and the cable, with the opening pointing downward, and mark the location of the two pilot holes.
2. Remove the cable-entry cover, and, using a  $\frac{1}{8}$  in. (3.2 mm) bit, drill the pilot holes approximately  $\frac{3}{8}$  in. (10 mm) deep.
3. Fill the pass-through hole with marine sealant so that it covers the cable completely, and that there is excess sealant around the hole and the cable.
4. Place the cable-entry cover **1** over the hole and the cable, with the opening pointing downward.
5. Apply marine sealant to the included 12 mm M4 screws, and attach the cable-entry cover to the transom.
6. Wipe away any excess marine sealant.



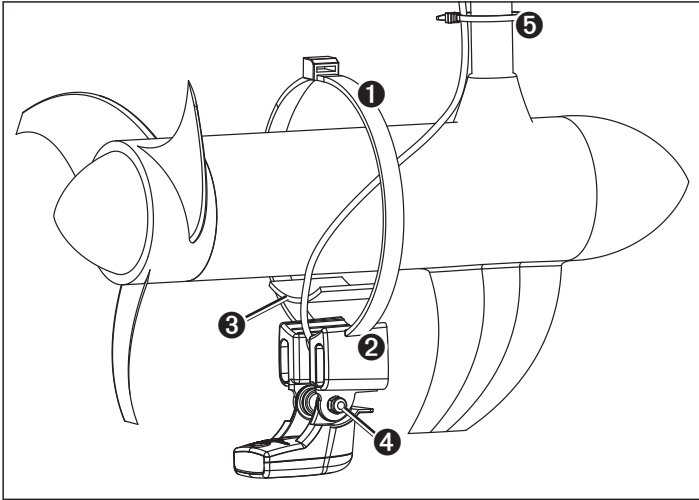
## Installing the Transducer on a Trolling Motor

### NOTICE

Do not cut the transducer cable. Cutting the transducer cable will void your warranty.

1. Feed the 20 in. (50 cm) cable tie ① through the slot on the transducer mount ②, with the ridges of the cable tie facing up, until equal lengths extend on both sides of the mount.

For use in cold water or in areas with heavy timber or debris, use a metal 4–5 in. worm gear clamp (not included) instead of the cable tie.



2. Position the mount gasket ③ on the curved top of the transducer mount.
3. Place the transducer mount against the body of the trolling motor with the front of the transducer pointed away from the propeller.
4. Secure the 20 in. (50 cm) cable tie around the body of the trolling motor, but do not fully tighten the cable tie.
5. Properly align the gasket between the transducer mount and the body of the trolling motor, and tighten the cable tie.

If necessary, trim the excess cable tie.

6. Position the transducer so that it will be parallel with the bottom when in use, tighten the 10-32 locking nut ④ until it touches the mounting bracket, and tighten 1/4 turn more (do not overtighten).
7. Use the supplied 5 1/2 in. (14 cm) cable ties ⑤ to secure the transducer cable to the motor shaft.

If necessary, fill the forward-facing portion (except the cable tie pocket) of the transducer mount with sealant to avoid accumulation of debris.

8. Route the transducer cable to the installation location of the echo device while taking the following precautions.
  - Avoid routing the cable close to electrical wires or other sources of electrical interference.
  - Make sure that the cable will not become pinched when the trolling motor is deployed and recovered.

## Installing the Swivel Mount

1. Select a mounting location (page 3).
2. Prepare the swivel-mount base (page 3).
3. Fasten the mount with the cables installed in the mount (page 4), or without the cables installed in the mount (page 4).

### Selecting a Swivel-Mount Location

Select a location to install the swivel mount, while considering these guidelines.

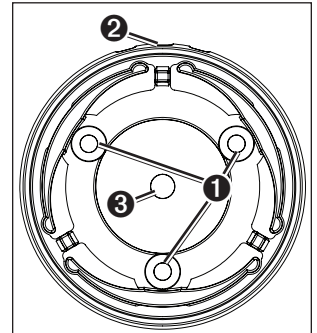
- The location provides a clear view of the screen and access to the keys on the echo.
- The location is sturdy enough to support the device and the mount.
- You can route the cables either from under the swivel mount, or from behind the device.
- The location is the appropriate distance from a compass (page 6).

### Preparing the Swivel-Mount Base Installation

#### NOTICE

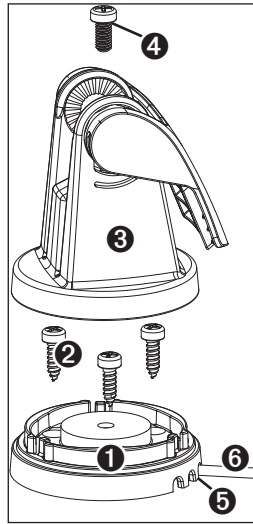
Use pan-head screws or bolts when securing the swivel-mount base. Screws or bolts with countersunk heads will damage the base.

1. After you have chosen the location to install the swivel mount (page 3), determine whether you will attach the mount to the surface using screws or bolts, and choose the appropriate fastening hardware:
  - To attach the base with screws, use self-tapping, pan-head wood screws, either size #8 or a diameter of 5/32 in. (4 mm), with an appropriate drill bit for the pilot hole.
  - To attach the base with bolts, use pan-head bolts, either size #8 or a diameter of 5/32 in. (4 mm), with the appropriate washers and nuts. Use a drill bit of the same diameter as the bolt.
2. Separate the swivel base from the mount.
3. If you plan to route the cables from under the mounting surface, orient the swivel base so that the pass-through holes ① face the desired direction.
4. Using the swivel base as a template, mark the pilot hole locations ②.
5. If you plan to route the cables from under the mounting surface, mark the location in the center ③.
6. Using the appropriate drill bit for the hardware, drill the three pilot holes.
7. If you plan to run the power and transducer cables from under the mounting surface, use a 5/8 in. (16 mm) drill bit to drill a hole through the mounting surface at the location you marked in step 5.



## Fastening the Swivel Mount with the Cables Installed in the Mount

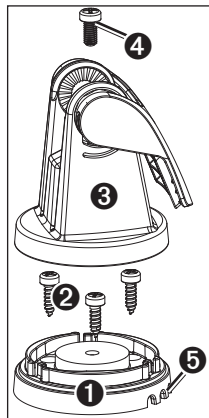
1. Feed the cables ⑥ through the 5/8 in. (16 mm) center hole you drilled when preparing the swivel-mount base.
2. Place the swivel-mount base ① on the mounting surface, route the cables through the cable pass-through holes ⑤, and loosely fasten the swivel-mount base using the appropriate screws or bolts ②.
3. Place the swivel mount ③ on the swivel-mount base, but do not fasten it.
4. Place the echo device or cradle into the swivel mount (page 4).
5. Pull out enough slack from the power and transducer cables so that the mount can fully swivel to the desired positions when the cables are connected.
6. Remove the echo device or cradle, and the swivel mount, from the swivel-mount base.
7. Apply marine sealant to the 5/8 in. (16 mm) center hole and to the cable pass-through holes.
8. Securely fasten the swivel-mount base, using the appropriate screws or bolts.
9. Place the swivel mount on the swivel-mount base, and fasten it using the included 10 mm M6×1 Phillips screw ④.



## Fastening the Swivel Mount without the Cables Installed in the Mount

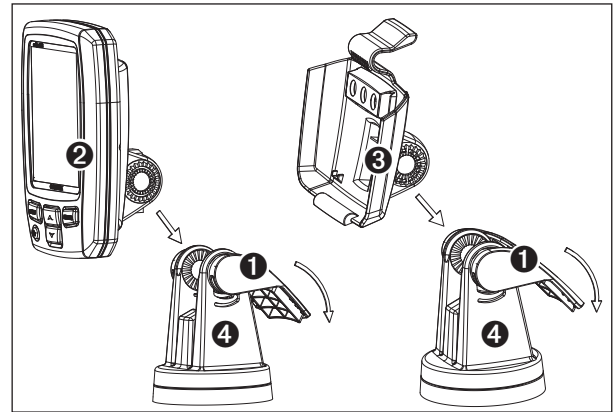
Complete this task only if you do not need to run the cables through the mounting surface and the mount.

1. Place the swivel-mount base ① on the mounting surface, and fasten it using the appropriate screws or bolts ②.
2. Place the swivel mount ③ on the swivel-mount base, and fasten it using the included 10 mm M6×1 Phillips screw ④.
3. Seal the cable pass-through holes ⑤ with marine sealant.



## Installing the echo Device in the Swivel Mount

1. With the locking arm ① in the upward position, place the echo 100/150/300c device ② or the echo 200/500c/550c cradle ③ into the swivel mount ④.



2. Tilt the mount for the desired viewing angle and press down on the locking arm.

## Installing the Cables and Connectors

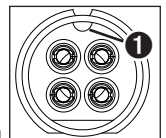
### Wiring to Power

1. Route the power cable from the swivel mount to the boat battery or fuse block.
  - If necessary, extend the wires using 20 AWG or larger wire.
  - If you connect the power cable to the fuse block, first remove the inline fuse holder on the red wire.
2. Connect the red wire to the positive terminal on the battery or fuse block, and connect the black wire to the negative terminal.

### Connecting the Cables to an echo 100/150/300c

On an echo 100/150/300c device, the connectors on the cables are keyed to fit only in the correct ports on the device.

1. Compare the divot ① on the cable connector to the keying on the device ports to identify the correct port.
2. Push the cable connector into the correct port until the connector is fully seated.
3. Repeat steps 1 and 2 until all of the cables are connected to the device.



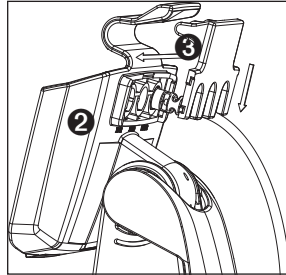
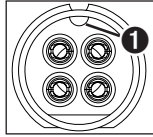
## Connecting the Cables to an echo 200/500c/550c

On an echo 200/500c/550c device, the connectors on the cables are keyed to fit only in the correct ports on the cradle. The connected cables are then held in place by a locking bracket.

No cables connect directly to an echo 200/500c/550c device.

- 1 Compare the divot **1** on the cable connector to the keying on the cradle ports to identify the correct port.
- 2 Push the cable connector into the correct port until it rests firmly in the port.
- 3 Repeat steps 1 and 2 until all of the cables are connected to the cradle **2**.
- 4 Place the locking bracket **3** over the cables and slide it down to lock them in place on the cradle.

You will hear an audible click when the locking bracket is correctly installed.

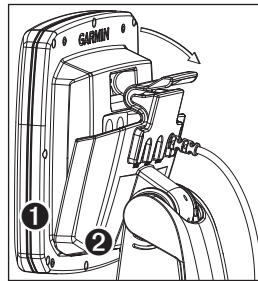


## Placing an echo 200/500c/550c in the Cradle

After you have connected the cables to the cradle, you can quickly place the echo device in the cradle without plugging in any cables.

- 1 Place the base of the echo **1** in the bottom of the cradle **2**.
- 2 Tilt the echo toward the cradle until it fastens in place.

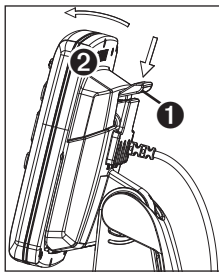
You will hear an audible click when the device is secured in the cradle.



## Removing an echo 200/500c/550c From the Cradle

After you have connected the cables to the cradle, you can quickly remove the echo from the cradle without unplugging any cables.

- 1 Press the release lever **1** on the cradle until the echo device **2** is released.
- 2 Tilt the echo device forward and lift it out of the cradle.



## Testing the Installation

### NOTICE

Do not leave your boat in the water for an extended period of time without checking for leaks.

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

## Testing the Transom Mount Transducer Installation

### NOTICE

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 risk of striking underwater objects.

Test the transom mount transducer installation in open water free of obstacles. Pay attention to your surroundings as you test the transducer.

- 1 With the boat in the water, turn on the echo device.
- 2 Drive the boat at a slow speed. If the echo device appears to be working properly, gradually increase speed while observing the echo device. If the sonar signal is suddenly lost or the bottom return is severely degraded, note the speed at which this occurs.
- 3 Return the boat to the speed at which the signal was lost, and make moderate turns in both directions while observing the echo device.
- 4 If the signal strength improves while turning, adjust the transducer so that it extends another  $\frac{1}{8}$  in. (3 mm) below the transom of the boat.
- 5 Repeat steps 2–4 until the degradation is eliminated.
- 6 If the signal does not improve, move the transducer to a different location on the transom.

## Specifications

Specification	Device	Measurement
Size	echo 100/150/300c	W × H × D: 4.1 × 5.8 × 2.8 in. (104 × 147 × 71 mm)
	echo 200/500c/550c	W × H × D: 6 × 5.9 × 1.8 in. (152 × 150 × 46 mm)
Weight (without bail mount)	echo 100/150/300c	9.5 oz. (270 g)
	echo 200	14.7 oz. (416 g)
	echo 500c	18.5 oz. (524 g)
	echo 550c	18.8 oz. (533 g)
Weight (with bail mount)	echo 100/150/300c	14.5 oz. (410 g)
	echo 200	19.6 oz. (556 g)
	echo 500c	23.4 oz. (664 g)
	echo 550c	23.7 oz. (673 g)
Display	echo 100/150	W × H: 2.4 × 3.2 in. (60.5 mm × 81.5 mm) [diagonal: 4 in. (102 mm)], 256 × 160 pixels, 8-level gray
	echo 200	W × H: 2.9 × 4 in. (74 × 101.6 mm), [diagonal: 5 in. (127 mm)] 480 × 320 pixels, 16-level grayscale, HVGA
	echo 300c	W × H: 2.1 × 2.8 in. (53.3 × 71.1 mm) [diagonal: 3.5 in (88.9 mm)]
	echo 500c	W × H: 2.9 × 4 in. (74 × 101.6 mm), [diagonal: 5 in. (127 mm)] 320 × 234 pixels, 256 colors, QVGA
	echo 550c	W × H: 2.9 × 4 in. (74 × 101.6 mm), [diagonal: 5 in. (127 mm)] 640 × 480 pixels, 256 colors, VGA
Case	echo 100/150/200/300c/500c/550c	Fully gasketed, high-impact plastic, waterproof to IEC 60529 IPX-7

Specification	Device	Measurement
Temperature Range	echo 100/150/200/	From 5°F to 158°F (from -15°C to 70°C)
	echo 300c/500c/550c	From 5°F to 131°F (from -15°C to 55°C)
Compass Safe Distance	echo 100/150/200	10 in. (250 mm)
	echo 300c	13.8 in. (350 mm)
	echo 500c/550c	15.75 in. (400 mm)
Frequency	echo 100	200 kHz
	echo 150/200/300c/500c/550c	77 kHz or 200 kHz
Power Source Voltage Range	echo 100/150	10–20 Vdc
	echo 200/300c/500c/550c	10–28 Vdc
Fuse	echo 100/150/200/300c/500c/550c	AGC/3AG - 3.0 A
Rated Current	echo 100/150/200/300c/500c/550c	1 A
Transmit Power (RMS/peak to peak)	echo 100	100 W/800 W
	echo 150	200 W/1,600 W
	echo 200/300c	300 W/2,400 W
	echo 500c/550c	500 W/4,000 W
Freshwater Depth*	echo 100	600 ft. (183 m)
	echo 150	1,300 ft. (396 m)
	echo 200/300c	1,500 ft. (457 m)
	echo 500c/550c	1,900 ft. (579 m)
Saltwater Depth*	echo 100	300 ft. (91 m)
	echo 150	500 ft. (152 m)
	echo 200/300c	600 ft. (183 m)
	echo 500c/550c	700 ft. (213 m)

\*Depth capacity is dependent on water salinity, bottom type, and other water conditions

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