

HUMMINBIRD[®] INSTALLATION GUIDE

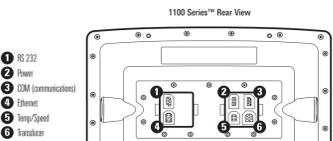
INSTALLATION OVERVIEW

Inside the boat there is often a channel or conduit used for other wiring, this can be used to route cables. Be sure to route the cable as far as practical from the antenna cable of VHF radios or tachometer cables to reduce the possibility of interference. The transducer cable should not be cut, and care should be used not to damage the cable insulation.

Basic installation tasks that you may perform include the following:

- Install the control head (choose gimbal or in-dash mounting)
- Install the transducer (choose the installation method that matches your transducer)
- Install the optional-purchase accessories. See the guides included with each accessory.
- Test the complete installation

NOTE: To purchase accessories or any additional equipment for your control head configuration, go to [humminbird.com](#) or contact our Customer Resource Center at 1-800-633-1468



- RS 232
- Power
- DIM (communication)
- Ethernet
- Temp/Speed Transducer

NOTE: Accessories connected to the RS 232 connector require a separate power source.

NOTE: Due to the wide variety of hulls, only general instructions are presented in this installation guide. Each boat hull represents a unique set of requirements that should be evaluated prior to installation. It is important to read the instructions completely and understand the mounting guidelines before beginning installation.

SUPPLIES: In addition to the hardware supplied with your transducer, you will need a powered hand drill and various drill bits, various hand tools, including a ruler or straightedge, a level, a 12" plumb line (weighted string or measurement line), marker or pencil, safety glasses and dust mask, and marine-grade silicone sealant.

NOTE: When drilling holes in fiberglass hulls, it is best to start with a smaller bit and use progressively larger drill bits to reduce the chance of chipping or flaking the outer coating.

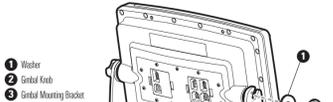
NOTE: Your transducer might not look exactly like the illustrations in this guide, but it will mount in the same way. We encourage you to read this guide completely so that you may understand the installation requirements.

CONTROL HEAD INSTALLATION

You have two choices for mounting your 1100 Series™ control head, **Gimbal mounting**, where you use a surface on the boat, such as the dash, to mount the control head so that it can be tilted up or down, or **In-dash mounting**.

Gimbal Mounting the Control Head

If you are gimbal mounting the Humminbird® 1100 Series™, you can pre-assemble the unit in order to plan the best mounting location.



- Washer
- Initial Knob
- Initial Mounting Bracket

Supplies: In addition to the hardware supplied with your control head, you will need a powered hand drill and various drill bits, various hand tools, including a Phillips head screwdriver, a socket wrench and a flat head screwdriver, a marker or pencil, safety glasses and dust mask, and marine-grade silicone sealant.

- Place the control head into the gimbal bracket. Make sure that the straight side of the gimbal arm is against the back side of the control head.
- Place a 1" (25 mm) diameter black washer on the gimbal knob and then thread the knob and washer into the housing. Tighten the gimbal knob to secure the control head to the mount. Repeat step 2 for the other side.

You can now place the control head in various locations to decide which is best for mounting. Rotating the mounting bracket to the top of the control head will allow for overhead mounting. The chosen mounting area should allow for sufficient room so the control head can pivot through the full tilt range and allow for easy removal and installation.

NOTE: You can drill the cable pass hole underneath the gimbal bracket, allowing you to thread the cables through the hole in the center of the mount; however, if you cannot drill the hole directly under the mounting bracket, then you will need to drill the cable pass hole behind the bracket, and will need to mount the hole cover there instead.

NOTE: When drilling holes in fiberglass hulls, it is best to start with a smaller bit and use progressively larger drill bits to reduce the chance of chipping or flaking the outer coating. Fill all holes with marine grade silicone sealant.

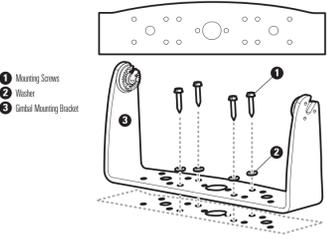
NOTE: You must have underside access to the mounting location to pass the cables through the surface. Also, make sure that the mounting surface is adequately supported to protect the control head from excessive wave shock and vibration and provide visibility while in operation.

- Go to the installation instructions applicable to your transducer and accessories. Make the required installations and then run the cables to your control head mounting location. Do not cut any cabling (except the power cable). If your cables are too short, extensions are available from your local dealer or online from [humminbird.com](#)

- After the mounting location has been determined, loosen the gimbal knobs and remove the control head from the gimbal bracket.

NOTE: Alternate hole patterns are available on the gimbal (WEEE) bracket, and may be used to assist with routing the cables on the boat. You may choose to use one of these alternate hole patterns.

- Place the gimbal bracket in the chosen position on the mounting surface and mark the four mounting screw locations using a pencil or center punch.



- Mounting Screws
- Washer
- Gimbal Mounting Bracket

- Set the gimbal bracket aside and drill the four mounting screw holes using a 5/32" (4.0 mm) drill bit.
- If the cables must pass through a hole directly beneath the mounting bracket, mark and drill an additional 1" (25 mm) hole centered between the four mounting holes. Route the cables through the 1" hole. Place the gimbal over the mounting surface hole, then use it to mark the position of the two mounting screws, closest to the center large hole. Remove the gimbal and drill the two mounting holes using a 9/64" (3.5 mm) bit. Do not install the hole cover at this time.

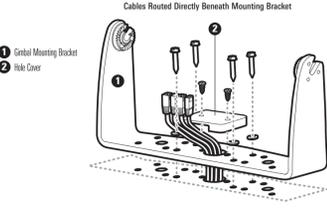
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- If the cables cannot be routed directly beneath the mounting bracket, mark and drill a 1" (25 mm) hole that will allow you to run the cables close to the bracket. Pass the cables through the 1" (25 mm) hole, routing the cables through the grommet and passing the grommet into place. Place the hole cover over the mounting surface hole, then use it to mark the position of the two mounting screws. Remove the hole cover, drill the two mounting holes using a 9/64" (3.5 mm) bit, fill them with marine-grade silicone sealant, then replace the hole cover and insert the #8 Phillips countersunk wood screws. **Hand-tighten only.**

- Place the mounting bracket on the mounting surface aligned with the drilled holes and fill the mounting holes with marine grade silicone sealant. Insert the four #10 Slotted-Hex wood screws into the mounting holes. **Hand-tighten only.**

- If the cable pass through hole is beneath the mounting bracket, you will need to install the hole cover after you have routed all cables. Place the hole cover over the mounting bracket cable pass through hole and align with holes drilled in step 7a. Insert the #8 Phillips countersunk wood screws. **Hand-tighten only.**

NOTE: Be sure that the cables pass through the slots on the hole cover and that there is enough cable slack to allow for the control head to pivot through its full tilt range. Extra cable slack will also help when connecting or disconnecting the cables.



- Gimbal Mounting Bracket
- Washer
- Initial Knob

NOTE: If a cable is too short for your application, extension cables are available. For assistance, contact the Customer Resource Center at [humminbird.com](#) or call 1-800-633-1468 for more information.



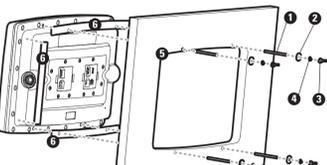
- Thread the cables through the opening in the back of the cable collector cover.
- Proceed to **Installing the Cable Collector Insert.**

In-Dash Mounting the Control Head

If you are in-dash mounting the control head, start by placing the components on the surfaces where you intend to install them before installation. Make sure that the surfaces you have chosen provide adequate protection from wave shock and that all cables can reach the control head.

- Parts and tools specific to In-dash mounting are:
- Threaded rods and hardware
 - In-dash mounting foam pads
 - In-dash mounting template
 - Reciprocating saw for cutting dash material
 - Masking tape to hold mounting template in place

- Locate a suitable, flat area of the dash to mount the control head. The control head requires a depth of at least 4 inches (102 mm).
- Tap the paper In-Dash Mounting template to the desired in-dash mounting location.
- At a location inside the dotted line on the template, drill a hole large enough to insert blade of reciprocating saw. In addition, drill the 4 mounting hole locations using a 3/16" drill bit. Carefully begin cutting toward the dotted line, then follow the dotted line under the template. Remove the template when finished.
- Insert and tighten the four threaded rods into the four threaded inserts located on the back side of the control head. Peel off the adhesive-backed foam pads and place them on the back of the control head; make sure you notice the difference between the longer top/bottom and shorter side pads.



- Threaded Rod
- Washer
- Lock Nut
- Wing Nut

- Place the gimbal bracket in the chosen position on the mounting surface and mark the four mounting screw locations using a pencil or center punch.

TRANSOM MOUNTING POSITION

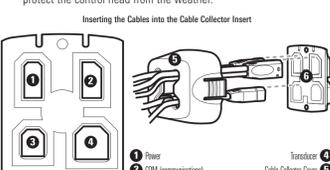
- Go to the installation instructions applicable to your transducer and accessories. Make the required installations and then run the cables to your control head mounting location. Do not cut any cabling (except the power cable). If your cables are too short, extensions are available from your local dealer or online from [humminbird.com](#)

- Thread the cables through the opening in the back of the cable collector cover.

Installing the Cable Collector Insert

NOTE: You may wish to dress the cabling with nylon wire ties in order to hold the cables together and create a cleaner assembly.

NOTE: It is very important that the cable collector is used and secured in place in the In-Dash installation.



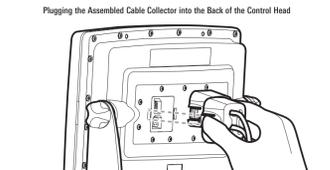
- Transducer
- Cable Collector Cover
- Cable Collector Insert

- Line up the cable collector insert and cover, with the keying feature, then slide the cover into place on the insert.



- Cable Collector Insert
- Screws
- Cable Collector Cover

- Attach the cable collector insert to the cable collector cover using the (2) #6 Phillips screws provided.
- Plug the assembled cable collector into the back of the control head, pushing gently but steadily until you feel the connector snap into place. Cable connectors and cable sockets are keyed to prevent reverse installation, so be careful not to force the connectors into the wrong sockets.

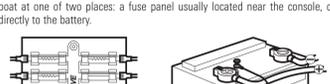


- Gimbal Mounting Bracket
- Washer
- Initial Knob

- Gimbal Mount:** Place the control head back onto the mounting bracket. Adjust the control head to the desired viewing angle and secure by tightening the gimbal knobs.

Connecting the Control Head Power Cable to the Boat

A 6' (2 m) long power cable is included to supply power to the control head. You may shorten or lengthen the cable using 18 gauge multi-stranded copper wire. **CAUTION!** Some boats have 24 or 36 Volt electric systems, but the control head MUST be connected to a 12 VDC power supply.



The control head power cable can be connected to the electrical system of the boat at one of two places: a fuse panel usually located near the console, or directly to the battery.

- NOTE:** If your propeller moves clockwise (in forward), mount the transducer on the starboard side, and align the bottom right corner of the mounting bracket with the bottom of the boat. If your propeller moves counter-clockwise (in forward), as you're facing the stern of the boat from behind, mount the transducer on the port side, and align the bottom left corner of the mounting bracket with the bottom of the boat.

- Continue to hold the bracket on the transom of the boat, and use a pencil or marker to mark where to drill the two mounting holes. Mark the drill holes near the top of each slot, making sure that your mark is centered in the slot (Figure 20).

- Make sure that the drill bit is perpendicular to the actual surface of the transom, NOT parallel to the ground, before you drill. Using a 5/32" bit, drill the two holes only to a depth of approximately 1".

NOTE: Your unit will detect when your battery voltage is too low or too high, and will display either "Input Voltage Low" or "Input Voltage High" messages if these limits are exceeded. If you turn the Low Battery Alarm on using the Alarms Main Menu, your unit will use your settings. If you do not turn the Low Battery Alarm on, the unit will use these limits: 7.5 to 7.9 VDC for the low end, and 21 to 21.2 VDC for the high end.

NOTE: In order to minimize the potential for interference with other marine electronics, a separate power source (such as a second battery) may be necessary.

TRANSUCER INSTALLATION OVERVIEW

Proceed to the installation section that matches your transducer type. Your choices are as follows:

- Transom Mount
- Inside the Hull Mount
- Trolling Motor Transducer Installation

NOTE: Due to the wide variety of hulls, only general instructions are presented in this installation guide. Each boat hull represents a unique set of requirements that should be evaluated prior to installation. It is important to read the instructions completely and understand the mounting guidelines before beginning installation.

TRANSOM TRANSDUCER INSTALLATION

1. Locating the Transducer Mounting Position

Turbulence: You must first determine the best location on the transom to install the transducer. It is very important to locate the transducer in an area that is relatively free of turbulent water. Consider the following to find the best location with the least amount of turbulence:

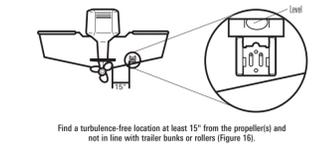
- As the boat moves through the water, turbulence is generated by the weight of the boat and the thrust of the propeller(s) - either clockwise or counter-clockwise. This turbulent water is normally confined to areas immediately aft of ribs, strakes or rows of rivets on the bottom of the boat, and in the immediate area of the propeller(s). Clockwise propellers create more turbulence on the port side. On onboard or inboard/outboard boats, it is best to locate the transducer at least 15" to the side of the propeller(s) (Figure 16).

- The best way to locate turbulence-free water is to view the transom while the boat is moving. This method is recommended if maximum high-speed operation is a high priority. If this is not possible, select a location on the transom where the hull forward of this location is smooth, flat, and free of protrusions or ribs (Figure 14).

- On boats with stepped hulls, it may be possible to mount the transducer on the step. Do not mount the transducer on the transom behind a step to avoid blocking the transducer out of the water at higher speeds; the transducer must remain in the water for the control head to maintain the sonar signal (Figure 15).

- If the transom is behind the propeller(s), it may be impossible to find an area clear from turbulence, and a different mounting technique or transducer type should be considered, such as an Inside the Hull Transducer.
- If you plan to trailer your boat, do not mount the transducer too close to trailer bunks or rollers to avoid moving or damaging the transducer during loading and unloading of the boat.

- If high speed operation is critical, you may want to consider using an In-Hull transducer instead of this Transom Mount transducer.



NOTE: The hydrodynamic shape of your transducer allows it to point straight down without deaerise adjustment (Figure 17).

NOTE: If you require a high-speed application (above 65 mph) and cannot find a transom mount location that will work for your boat hull, a different mounting technique or transducer type should be considered. Contact our Customer Resource Center at 1-800-633-1468 or visit our Web site at [humminbird.com](#).

2. Preparing the Mounting Location

In this procedure, you will determine the mounting location and drill two mounting holes, using the transducer mounting bracket as a guide.

- Make sure that the boat is level on the trailer, both from port to starboard and from bow to stern, by placing your level on the deck of the boat, first in one direction, then in the other.
- Hold the mounting bracket against the transom of the boat in the location you have selected (Figure 18). Align the bracket horizontally, using the level; make sure that the lower corner of the bracket does not protrude past the bottom of the hull, and there is at least 1/4" clearance between the bottom of the bracket and the bottom of the transom for fiberglass boats, and 1/8" clearance for aluminum boats (Figure 19).

NOTE: If you have a flat-bottomed aluminum boat, some additional adjustment may be needed to accommodate the ribs on the bottom of the boat. If the gap may need to be a little smaller than 1/8". This will help you to avoid excessive turbulence at high speeds.

NOTE: If your propeller moves clockwise (in forward), as you're facing the stern of the boat from behind, mount the transducer on the starboard side, and align the bottom right corner of the mounting bracket with the bottom of the boat. If your propeller moves counter-clockwise (in forward), as you're facing the stern of the boat from behind, mount the transducer on the port side, and align the bottom left corner of the mounting bracket with the bottom of the boat.

- Using the Mounting Bracket to Mark the Initial Drill Holes
 - a. If a fuse terminal is available, use crimp-on type electrical connectors (not included) that match the terminal on the fuse panel. Attach the black wire to ground (-), and the red wire to positive (+) 12 VDC power. Install a 3 Amp fuse (not included) for protection of the unit. Humminbird® is not responsible for over-voltage or over-current failures.

or...

- If you need to wire the control head directly to a battery, obtain and install an inline fuse holder and a 3 Amp fuse (not included) for the protection of the unit. Humminbird® is not responsible for over-voltage or over-current failures.

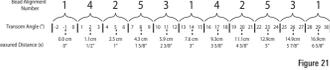
NOTE: On fiberglass hulls, it is best to use progressively larger drill bits to reduce the chance of chipping or flaking the outer coating.

3. Assembling the Transducer and Initial Mounting

In this procedure, you will assemble the transducer using the hardware provided, then mount it and make adjustments to its position without locking it in place.

NOTE: You will initially assemble the transducer and the pivot arm by matching the two ratchets to a numbered position on the transducer knuckle. Further adjustments may be necessary.

- If you already know your transom angle, refer to the chart below for the initial position to use to set the ratchets (Figure 21). If your transom is angled at 14 degrees (a common transom angle for many boats) use position 1 for the ratchets. In either case, go to step 2. If you do not know your transom angle, go to step 1b.



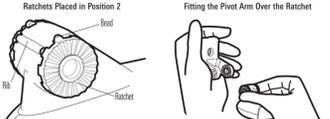
- If you do not know your transom angle, measure it using a plumb line (weighted nylon string or measurement line) exactly 12 inches long. Hold the top of the plumb line against the top of the transom with your finger, and wait until the line hangs straight down (Figure 22). Using a ruler, measure the distance from the bottom of the plumb line to the back of the transom, then use the chart (Figure 21).

NOTE: It is important to take your measurement in the location shown in Figure 22, from exactly 12 inches down from the top of the transom.

- Place the two ratchets, one on either side of the transducer knuckle, so that the beads on each ratchet line up with the desired position number on the knuckle (Figure 23a). If you are setting the ratchets at position 1, the beads on each ratchet will line up with the rib on the transducer knuckle to form one continuous line with the assembly (Figure 23b).

NOTE: The ratchets are keyed. Make sure that the square teeth on each ratchet face the square teeth on the transducer knuckle, and the triangular teeth face outward.

- Hold the ratchets on the transducer knuckle with one hand and fit the pivot arm over them until it snaps into place with the other hand. Refer to the illustration (Figure 23d).



- Put the pivot bolt through the assembly to hold it in position and loosely install the nut, but do NOT tighten the nut at this time (Figure 24).

CAUTION! Do not use a high speed driver on this combination of fasteners. Hand-tighten only.

- Insert the pivot arm assembly into the mounting bracket (Figure 25). Do NOT snap the assembly closed, as you will need to access the mounting bracket in the next step.

NOTE: If there is excess cable that needs to be gathered at one location (as shown in the illustration), dress the cable routed from both directions so that a single loop is left extending from the storage location. Doubling the cable up from the point, form the cable into a coil. Storing excess cable using this method can reduce electronic interference (Figure 32).

NOTE: If the pivot assembly is snapped closed over the mounting bracket, use a flat head screwdriver or similar tool to gently pry the assembly away from the mounting bracket (Figure 26).

- Adjust the mounting bracket transducer assembly with the drilled holes in the transom. With a 5/16" socket driver, mount the assembly to the transom using the two #10 - 1" long screws provided (Figure 27).

- Snap the pivot arm down into place.

- Adjust the initial angle of the transducer from back to front by rotating the transducer until the side seam on the transducer is almost parallel with the bottom of the boat, one click at a time in either direction (Figure 28).

NOTE: Make sure that the mounting screws are snug, but do not fully tighten the mounting screws at this time to allow the transducer assembly to slide for adjustment purposes.

NOTE: Make sure that the mounting screws are snug, but do not fully tighten the mounting screws at this time to allow the transducer assembly to slide for adjustment purposes.

NOTE: Down Imaging™ provides the maximum detail at slower boat speeds, however high-speed performance is available in the Down Imaging™ and traditional sonar views.

If you are still not getting good high speed readings, you may need to disassemble the transducer mounting assembly and re-position the ratchets (Figures 23a - 23d).

If you do change the transducer position, re-trace the position of the mounting bracket before proceeding.

NOTE: It is often necessary to make several incremental transducer adjustments before optimum high speed performance is achieved. Due to the wide variety of boat hulls, however, it is not always possible to obtain high speed depth readings.

- Once you have reached a consistently good sonar signal at the desired speeds, you are ready to lock down the transducer settings. Force the pivot to the Up position to gain access to the mounting screws, then re-align the mounting bracket against the transom of the boat to match the traced silhouette. Check the bracket position with the level again to make sure it is still level, then mark the third mounting hole using a pencil or marker. Unscrew and remove the mounting screws and the transducer assembly and set aside.

Drill the third mounting hole, using a 5/32" drill bit. Use a marine-grade silicone sealant to fill all three drilled mounting holes, especially if the holes penetrated the transom wall.

NOTE: On fiberglass hulls, it is best to use progressively larger drill bits to reduce the chance of chipping or flaking the outer coating.

- Re-position the transducer assembly against the transom of the boat, then hand-install all three screws. Make sure that the transducer location and the pivot angle have not changed, then fully tighten all three mounting screws (Figure 33). Snap the pivot back down. If you have performed the preceding procedures correctly, the transducer should be level and at the right height for optimal operation.

NOTE: You will drill the third mounting hole and finalize the installation after you route the cable and test and finish the installation in the following procedures.

4. Routing the Cable

The transducer cable has a low profile contour, which will be routed to the point where the control head is mounted. There are several ways to route the transducer cable to the area where the control head is installed. The most common procedure routes the cable through the transom into the boat.

- Unplug the other end of the transducer cable from the control head. Make sure that the cable is long enough to accommodate the planned route by running the cable over the transom.

NOTE: Your boat may have a pre-existing wiring channel or conduit that you can use for the transducer cable.

CAUTION! Do not cut or shorten the transducer cable, and try not to damage the cable insulation. Route the cable as far as possible from any VHF radio antenna cables or tachometer cables to reduce the possibility of interference. If the cable is too short, extension cables are available to extend the transducer cable up to a total of 50'. For assistance, contact the Customer Resource Center at [humminbird.com](#) or call 1-800-633-1468 for more information.

CAUTION! Do NOT mount the cables where the connectors could be submerged in water or flooded. If cables are installed in a splash-prone area, it may be helpful to apply dielectric grease to the inside of the connectors to prevent corrosion. Dielectric grease can be purchased separately from a general hardware or automotive store.

NOTE: The transducer can pivot up to 90 degrees in the bracket. Allow enough slack in the cable for this movement. It is important to route the cable to the side of the transducer so the transducer will not damage the cable during movement.

- If you are routing the cable over the transom of the boat, secure the cable by attaching the cable clamp to the transom, drilling 9/64" diameter holes for the #8 5/8" wood screws, then skip directly to procedure 5, **Connecting the Cable**.

- If you will be routing the cable through a hole in the transom, drill a 5/8" diameter hole above the waterline. Route the cable through this hole, then fill the hole with marine-grade silicone sealant and proceed to the next step immediately (Figure 31).

- Place the escutcheon plate over the cable hole and use it as a guide to mark the two escutcheon plate mounting holes. Remove the plate, drill two 9/64" diameter x 5/8" deep holes, and then fill both holes with marine-grade silicone sealant. Place the escutcheon plate over the cable hole and attach with two #8 x 5/8" wood screws.

- Route and secure the cable by attaching the cable clamp to the transom; drill one 9/64" diameter x 5/8" deep hole, then fill hole with marine-grade silicone sealant, then attach the cable clamp using a #8 x 5/8" screw.

NOTE: If there is excess cable that needs to be gathered at one location (as shown in the illustration), dress the cable routed from both directions so that a single loop is left extending from the storage location. Doubling the cable up from the point, form the cable into a coil. Storing excess cable using this method can reduce electronic interference (Figure 32).

5. Connecting the Cable

Insert the transducer cable into the appropriate slot on the cable connector holder on the rear of the control head. The slots are keyed to prevent reversed installation, so be careful not to force the connector into the holder.

- Plug the other end of the transducer cable back into the control head connection holder.

6. Test and Finish the Installation

Once you have installed both the control head and the transom transducer, and have routed all the cables, you must perform a final test before locking the transducer in place. Testing should be performed with the boat in the water.

- Press POWER once to turn on the control head. If the unit does not

