

C O A S T A L N A V I G A T O R, I N C.

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Depth Sounder

Installation Instructions

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WARRANTY: Two full years warranty from date of purchase. Upon receipt of the instrument at our Seattle office, or at an authorized warranty repair station, Coastal Navigator, Inc. will repair and/or replace parts or subassemblies as necessary and return the instrument to purchaser, (transportation prepaid). If Coastal Navigator, Inc. determines that the defect, malfunction or failure of the instrument was the result of damage by unreasonable use or negligence, or by accident, faulty installation, salt water corrosion or over-voltage, this warranty will not apply. Requested repairs will then be charged for at Coastal Navigator's then current rate.

Repair service by other than Coastal Navigator, Inc. or one of its authorized warranty repair stations will render this warranty null and void.

Coastal Navigator Inc's. obligation under this warranty is limited to repairing or replacing any defective parts that, in our judgement, fail (s) during the course of normal use and service. Coastal Navigator, Inc. assumes no contingent liability of any nature, and makes no other representations or warranties except as expressed herein.

Coastal Navigator, Inc. reserves the right to make changes or improvements in its products from time to time, and is not obligated to effect such changes or improvements on equipment previously manufactured.

In order for this warranty to be effective, the following two conditions must be met:

1. The warranty registration card must be completed and returned to our office within thirty (30) days from date of purchase.
2. The defective instrument and/or accessory (s) must be returned freight prepaid to Coastal Navigator, Inc. or one of its authorized warranty repair stations (with a copy of the sales receipt or proof of purchase date).

DEPTH SOUNDER INSTALLATION

1. BRACKET MOUNT

MODELS: DS-210, DS-606, DS-606L, DS-606B, DS-1010B, DDS-99, DDS-300, DS-2040, DS-2040B, DDS-400

Location

Plan a convenient location allowing easy operation and maximum visibility from your helm or navigation station. The sounder may be mounted on the overhead, on a dash or beneath the dash. There should be minimum exposure to weather and spray. If this is not possible, use of canvas or vinyl cover (see COASTAL NAVIGATOR accessories) is recommended.

Flasher units should be mounted at least 18" from your compass but proximity is not important in the case of digitals. A location that will minimize glare is also recommended.

Installation

With bracket attached, place the sounder in the chosen location to check visibility, accessibility and cosmetic relationship with other equipment. Mark the bracket placement. Remove bracket from sounder, relocate where marked and drill holes for bracket bolts, power supply and transducer cable. A single hole will suffice for the latter two. Attach bolt or screw bracket to the mounting surface and reattach sounder. Your COASTAL NAVIGATOR is now ready for connection of power plug and transducer cable.

2. BULKHEAD MOUNT

MODELS: DDS-200, DDS-RW

Plan a convenient location allowing maximum visibility and easy operation from your helm or navigation station. The unit should be mounted in a vertical or sloped surface with thought given to potential glare and accessibility to the controls on the rear of the unit. Proximity to your compass is not important in the case of digitals.

Installation

Place sounder at chosen location and mark. Be certain there is enough depth behind the mounting surface for full insertion of the unit. For best results, use a hole saw attached to your electric drill. IMPORTANT: All models require a 4-3/4" hole. Place sounder in hole and check to be sure that the display is level, not tilted port or starboard. Lay a bead of bedding compound around the back of the protruding flange on the sounder and push sounder firmly in place. Use one of the recommended sealants on the enclosed card. DO NOT use silicone sealant or polysulfide rubber in this application as they will make possible future removal of the unit for service very difficult and may damage the fiberglass gel-coat.

For units mounted with restricted access to the rear controls, a flex shaft (see COASTAL NAVIGATOR accessories) should be installed to remote the knob to a convenient location. To install, remove knob from sounder (with allen wrench provided with flex shaft kit) and attach the flex shaft bushing through it. Attach spacing nuts to the bushing on either side of the bulkhead. Attach the control knob to the protruding end of the flex shaft.

For digital bulkhead models place the stainless steel ring clamp onto the rear of the sounder and push snug against inside of bulkhead. Tighten screw on ring clamp firmly, then tighten the 3 set screws mounted on the ring against the inside of the bulkhead.

Before final tightening, again check to be sure that the display is mounted level. Tighten screws pulling sounder up firmly against bulkhead. Trim away excess bedding compound. Your sounder is now ready for connection of power plug and transducer cable.

3. ELECTRICAL CONNECTION

The depth sounder package contains a separate battery side power plug with pigtail. Replacements or plugs for a second sounder installation are available from your dealer.

Your sounder is designed for operation with a 12 volt power source only. Never connect it to an electrical system other than a standard 12 volt system. NEVER USE A BATTERY CHARGER THAT EXCEEDS 15 VOLTS WHEN YOUR SOUNDER IS CONNECTED TO THE SYSTEM. Failure to comply will VOID your warranty.

For best performance and to minimize the possibility of electrical interference the power wires should be connected directly to the vessel's battery or battery switch. Power connections via the electrical fuse panel may result in interference to the sounder. NEVER CONNECT SOUNDER TO IGNITION KEY CIRCUIT FOR POWER SOURCE. Connection to a standard marine battery is recommended. A 12 volt battery must be in the electrical system. A battery acts as an electrical filter, improving the sounders operation. In the case of boats with gasoline engines, use of carbon trace wiring to coil and spark plugs is recommended.

Use red and black 14 or 16 guage wire to insure continuity of the circuit and proper power transmission. Connect the red wire to the positive (+) terminal and the black wire to the negative (-) terminal. Use of a 2 amp inline fuse (obtainable at most marine and hardware stores) connected at the positive battery terminal or switch is suggested for protection of the wiring to the sounder. If at all possible the sounder wiring should not be laid in with other wiring. Although your sounder is protected from reverse polarity, it is imperative that the polarity be connected correctly, red to positive (+), and black to negative (-). The unit will not operate with reverse polarity. After connecting the fuse to the power source (usually by means of a ring connector) use a crimp-on connector to make connections to the power lead and at the sounder pigtail. Run the negative lead back to the battery or battery switch again connecting by means of a ring connector.

You should now have power at your sounder and be able to turn it on and off.

4. TRANSDUCER INSTALLATION - General instructions

Your depth sounder includes a quality transducer with 20' of shielded coaxial cable. It is important to carefully plan its installation to insure optimum sounder performance. Transducers DO NOT work in air and if air is present under your transducer the sounder will not function. Care should be taken to mount the transducer away from turbulent water caused by under-water hardware, through hull fittings, propellers, struts and rudders, etc.

Some guidelines for locating transducers on various types of hulls follows. Take into account the fact that a protruding transducer may impede the loading and unloading of a trailerable boat.

DEEP VEE HULLS

- (1) GOOD LOCATION - 6" to 12" off the centerline, aft 1/3 of the hull. Location must be ahead of water intakes or thru hull fittings which may cause turbulence.
- (2) FAIR LOCATION - Same as (1) but aft 1/2 of the hull.
- (3) UNACCEPTABLE - Too far outboard, the lifting strakes will cause air bubbles which adversely effect soundings at speeds above 10 to 15 knots. Rolling or choppy seas may also lift transducer out of the water.
- (4) UNACCEPTABLE FOR INBOARDS - Location near shaft will be subject to turbulence from water intakes and propeller. Acoustic noise may also be present from the shaft and propellers.

Note: Although locating the transducer on a horizontal lifting stake is tempting, turbulence may cause extremely poor operation.

TRI-HULL, CATHEDRAL, OR AIRSLOT HULLS

- (1) BEST LOCATION - Close to or through the centerline of the center hull where the deepest water penetration occurs. Be sure installation does not affect trailerability or other lift-out situations.
- (2) POOR LOCATION - Any location other than (1) may work moderately well at low speeds, but will not work at higher speeds. The bow scoops air into tunnels under the hull to ride on. This leads to a smooth riding hull but provides very few transducer locations which work at higher speeds.

HIGH SPEED, MODERATE VEE PLANING HULLS

- (1) BEST LOCATION - Aft 1/4 of the hull to keep it in the water at high speeds. The deepest location in the hull not exceeding 14 degrees deadrise.
- (2) POOR LOCATION - Transom mounting the transducer may provide good operation at low speeds, but is unreliable at higher speeds unless transducer protrudes beyond bottom of hull.

DISPLACEMENT HULLS AND SAILBOATS

- (1) BEST LOCATION - A point between 1/3 to 2/3 of the hull length aft of the bow and near the centerline. Mount in an area with deadrise of no more than 14 degrees. To ensure that the transducer beam angle will not be affected by the keel, mount the transducer at least 2 feet from the keel (distance depends on the deadrise and the depth of the keel).
- (2) POOR LOCATION - The forward 1/3 of the hull is subjected to excessive turbulence and will only work at slower speeds in calm seas.
- (3) POOR LOCATION - Aft of the keel or near the rudder and or propeller. Turbulence from the keel and propeller along with acoustic noise make operation unreliable.

When routing the transducer cable to the sounder, DO NOT lay it close to other wiring, especially tachometer or ignition wires. Unwanted interference may result.

The 20' cable MUST NOT BE SHORTENED. If it is too long, coil the excess loosely in large coils in an out of the way of location and secure it with plastic wire ties. If additional cable length is needed, use only COASTAL NAVIGATOR cable which is available in 6' & 12' lengths. These cables are specially built to match the input circuit of your sounder. In the rare instance where more than a 12' cable is needed have your dealer contact the factory, as custom cables are available.

The transducer may be mounted inside the hull, through the hull or on the transom. The latter two are preferred as they result in greater capability of fish and or bottom location. An inside the hull mount can be successfully used in most fiberglass boats where there is no foam core or other air trapping fill. Depending on the quality of hull manufacture and thickness, there may be some loss of depth capability as the signal is absorbed (as in all sounders), however accuracy will not be affected. Inside the hull mounting CAN NOT be done on wood boats and should not be done on fiberglass boats if the hull is more than 1/2" thick.

CAUTION: Bronze transducers must not be installed directly onto a steel or aluminum hulled boat. Special precautions must be taken to avoid damage caused by electrolysis. Please contact COASTAL NAVIGATOR for instructions or request a Lexan transducer.

5. THRU-HULL INSTALLATION, Models WT-20 and flush mount CN-210

COASTAL NAVIGATOR recommends that you have a professional shipwright do your thru-hull installation. He has the tools and experience. This is the preferred installation for larger boats.

Location

Of primary importance is placement in a solid, clean water flow. Avoid placement directly astern of turbulence causing protrusions. If mounted alongside a keel, install it 15" to 20" from it to avoid false echos. DO NOT mount in slot of longitudinal strakes which may carry air the length of the hull.

Mount the transducer shaft in a position as near vertical as possible, placing the transducer face parallel to the water surface. If you are mounting a WT-20 place the pointed end of the transducer forward. If the chosen location is not a nearly horizontal surface, a fairing block must be used to mount the transducer. The flush mount CN-210 should be mounted as nearly vertical as possible without use of a fairing block.

Fairing Block

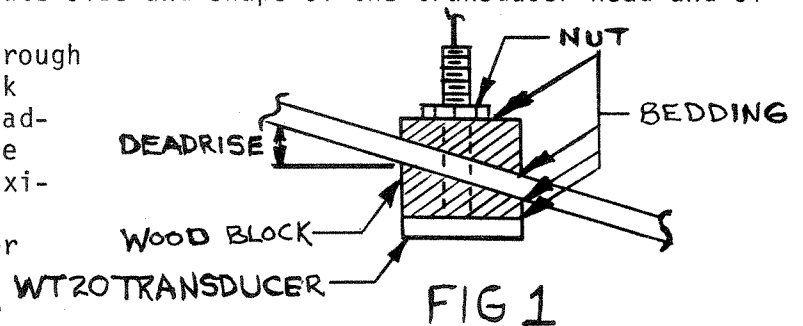
Cut a single hardwood block to the approximate size and shape of the transducer head and of sufficient thickness to allow for the hull deadrise. See fig. 1. Bore a 3/4" hole through the center of the block. Next cut the block diagonally at the same angle as the hull deadrise. The bottom half of the block (outside hull portion) should be sanded to the approximate shape of the transducer, (pointed end forward) and then mounted on the transducer shaft.

Be sure to apply bedding compound between the two. Bore a 3/4" vertical hole through the hull and pull the cable through it. Apply bedding compound to the face of the block next to the hull and press firmly in place with the transducer shaft penetrating the hull. Liberally apply bedding on the inside of the hull where the transducer shaft comes through, thread the cable through the upper block and place it over the transducer shaft. Again, place bedding around hole where shaft comes through the block. Cut a canvas or cloth washer and place over shaft and install transducer nut hand tight. DO NOT over tighten as the wood will swell when placed in the water and a cracked fairing block could result. Cover the outside fairing block with anti-fouling paint being careful not to paint the transducer bottom surface. Scrub the bottom of the transducer with Formula "409" all purpose cleaner or other mild detergent to insure a clean surface. Launch the boat and inspect for leaks. After about a week in the water, tighten the transducer nut with a wrench until snug.

Carefully route the cable to the sounder being careful not to pinch or cut it. Use plastic wire ties, not staples to secure it. We recommend the cable be routed up the opposite side of the hull from the main wiring harness. In any event, do not bunch it with tachometer or ignition wires if you wish top performance.

6. TRANSOM BRACKET MOUNT, models WT-20 and CN-110

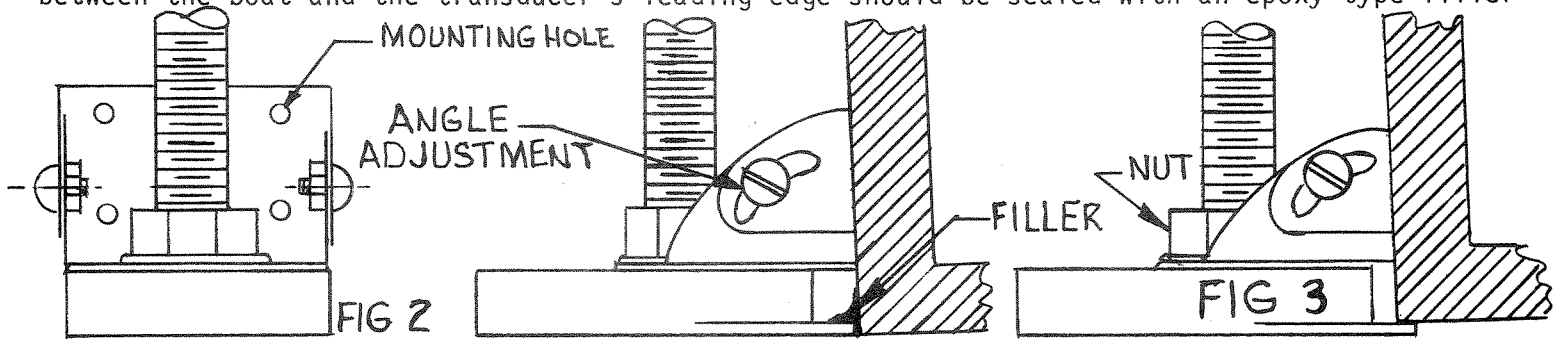
Transom bracket mounting using a COASTAL NAVIGATOR stainless steel bracket is the recommended method for small to medium size boats.



Prior to installation, operate the boat at various speeds and observe the water flow at the transom. Look for a location with smooth water and no bubbles. On most single engine boats, the best mounting spot is about one third of the way from keel to chine at the first lifting strake. On twin engine boats near the centerline is best.

WT-20 Bronze Transducer

Assemble the transducer with the transom bracket (see fig. 2) and position on stern. If at a horizontal spot such as on a strake or on the centerline, position the transducer with the square end against the transom, flush with the bottom of the boat or with the 1/8" lip positioned under the bottom for the best water contact (see fig. 3). The latter is best to avoid air bubbles. If a flush to the transom mount is used (see fig. 2) any open space between the boat and the transducer's leading edge should be sealed with an epoxy type filler



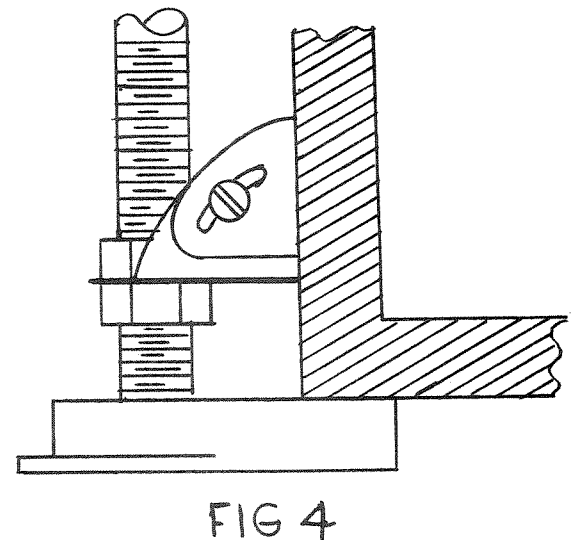
to prevent air being pulled down by the vacuum of passing water. Use of a second transducer nut will allow convenient vertical adjustment if necessary due to location of bracket mount (fig. 4).

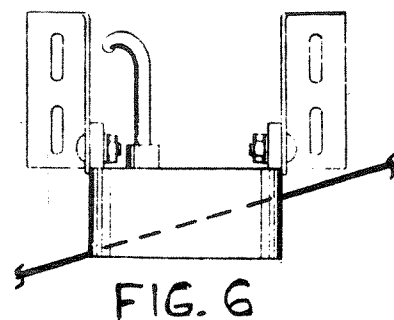
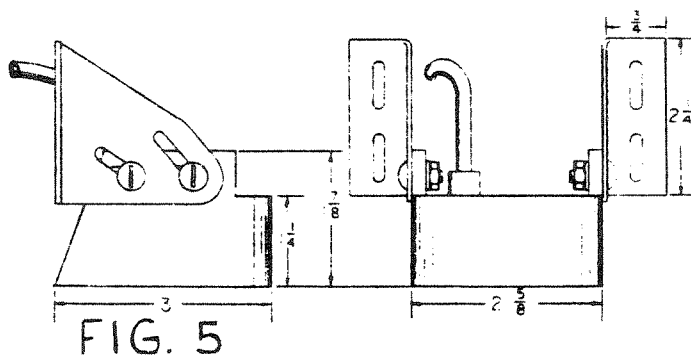
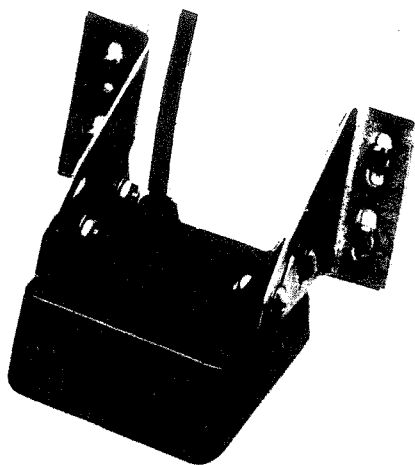
For optimum performance at high speeds, the face of the transducer may be tilted slightly downward and forward by widening the angle of the transom bracket.

If the ducer cannot be located on a horizontal area aft of a lifting strake, (eg. when a boat has trim tabs) or at the keel, and must be located on an angular surface, such as on deep vee hulls, then mount the transducer with the pointed end forward. Use two transducer nuts (one above and one below the bracket) to adjust the transducer and bring it up snugly against the bottom of the boat. (see fig. 4) This will allow placement of the transducer face parallel with the water surface.

CN-110 Lexan Transducer

Attach two stainless steel brackets to transducer using bolts provided. Tighten but not completely. Mount in area of clear water flow as described above. Be sure bottom of transducer is flush with bottom of boat and face of transducer is in as near as parallel position with the water surface as possible. Push leading edge of transducer firmly against transom and tighten bolts. (see fig. 5). If necessary run a bead of sealant between transducer and hull to prevent air being drawn down and across face of transducer by forward motion of boat. If hull is a deep vee type mount at deepest lifting strake or with edge of transducer towards side of hull mounted below hull bottom (see fig. 6)





Holding the transducer and bracket in the position required, mark its location. Mark and drill four mounting holes. Use four stainless steel screws or bolts to mount the bracket. Install the transducer. Drill a 7/16" hole well above the water line to route the transducer cable into the boat.

DO NOT cut the plug from the cable to enable you to drill a small hole. Proper installation of a new plug is a task for an expert. Use a quality bedding compound to fill the hole and cover with a chrome trim piece if desired.

Carefully route the cable to the sounder being careful not to pinch or cut it. Use plastic wire ties, not staples to secure it. We recommend the cable be routed up the opposite side of the vessel from the main wiring harness. In any event, do not bunch it with tachometer or ignition wire if you wish top performance.

REMEMBER trailering your boat coats the bottom of your transducer with road oil and dirt. To insure proper functioning of your COASTAL NAVIGATOR sounder, scrub the transducer face with Formula 409 or other mild detergent prior to every launching.

7. TRANSDUCER INSTALLATION, INSIDE HULL MOUNT WT-20, CN-110

Location inside the hull is of utmost importance. Only if located over an area of smooth water flow and with no air bubbles in the fiberglass will your sounder give its best performance.

Choose an area with as little deadrise as possible (flatest area). The location should be 10" or 15" from the keel to avoid air pockets often found in areas of overlapping glass or where stringers are located. On a fin keel vessel, locate the transducer aft of the keel but ahead of the propeller and off to one side of the centerline by 5" to 10".

Avoid areas where the fiberglass is heavily reinforced such as at the keel, choosing instead locations with normal hull thickness, usually 1/2" or less. A transducer WILL NOT SOUND THROUGH A WOOD HULL or if the fiberglass bottom has balsa, foam or other core material. After choosing a likely location, it is wise to test it first. Take your boat out into water as deep as you normally operate in and within the range of the sounder. Scrub the bottom of the transducer with Formula 409 or other mild detergent and place it in a plastic bag partly filled with water. Place the bag on the selected location with the transducer submerged with its face parallel with the waters surface. Turn on your sounder. You should get a clear echo reading from the bottom. Experiment with other locations if the first is not suitable.

When a suitable location has been found, sand the area lightly and clean with acetone. Be sure the exterior of the hull is relatively clean and does not have a heavy build up of metallic anti-fouling paint.

Lightly sand any anti-fouling paint off the transducer face if present. Place a quantity of Marine-Tex, fiberglass epoxy or non nutrient silicone sealant (manufactured by Dow Chemical or Product Research Chemical Corp.) on the cleaned location. Press the transducer down into the bedding being certain to leave NO AIR POCKETS. In the event the hull slopes a fair amount, use a temporary cardboard dam to hold the bedding. Remember, the transducer face should be as near parallel with the water surface as possible upon completion of the installation. DO NOT use material other than Marine-Tex or epoxy as they may not harden and will muffle the signal. If you do use silicone make it as thin as possible since silicone always remains pliable and will absorb some of the signal.

8. DUAL STATION SWITCH

Use

COASTAL NAVIGATOR'S Dual Station Switch allows you to operate any two depth sounders from the same transducer, one at a time. This is ideal for vessels with a flying bridge or where a digital sounder is used for navigation and a flasher or graph is used for fishing.

Installation

Upon completion of the transducer installation, choose the location of the dual station switch. The primary helm station is usually the best location. The transducer cable has to be attached directly to the dual station switch. NO EXTENSION MAY BE USED. After locating the switch, drill a 1/4" hole in the surface or bulkhead. Remove the control knob with an allen wrench and attach the switch beneath or behind the mounting surface with the control shaft extending through the hole. Reattach the knob to the shaft. Connect the transducer cable to the switch (female receptacle). Next run any two suitable extension cables one from each male terminal to the sounder mounting locations. NEVER use two extension cables connected together. Use only one continuous extension cable. Be sure it is a COASTAL NAVIGATOR cable. In the rare instance where more than a 12' extension cable is needed, contact the factory as custom cables are available.

9. MAINTENANCE

This instrument was designed to provide a maximum of trouble-free service with little or no maintenance. The transducer, however, should be scrubbed with a soft, bristle brush and soap and water, at least once each year. Any marine life (barnacles, grass etc.) which is allowed to grow on the transducer may impair the performance of the instrument.

Factory service is available by sending your instrument, prepaid, to our Service Department along with a detailed description of the complaint or fault observed. For warranty service please include a copy of your sales receipt or some other evidence of when the unit was purchased. Units requiring repair may be sent to the factory or a regional warranty station. Call Coastal Navigator or your dealer for the nearest one.