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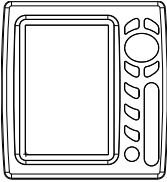
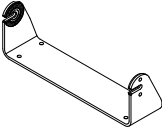
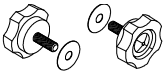
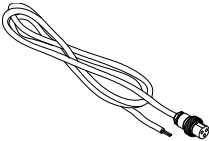
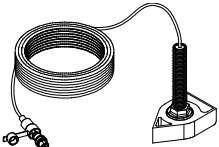
Installation

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Introduction

Equipment Supplied

		
AQUA Display unit	GPS ANT. (stand is option)	Fixable Band(option)
		
Protector	Mounting Bracket	Knobs
		
Power cable	Manual	TD(*selectable)

*The type of TDs is optional, Thru-Hull, In-Hull and Transom. And the output is optional, 600W, 1KW and 1.2KW.

FISHFINDER SPECIFICATION

◆ Display Mode

Normal (single/dual-frequency), Bottom-lock,
Bottom-zoom, A-scope

◆ Frequency

50 and 200 KHz (single or dual)

◆ Output Power

600W (HFF-600) / 1.2KW (HFF-1200)

◆ Range speed

600W : 2.5m ~ 600m(HFF-600)

1.2KW : 2.5m ~ 1,200m (HFF-1200)

◆ Image speed

Fixed 8 speeds (4/1, 2/1, 1/1, 1/2, 1/4, 1/8, 1/16, 1/32)
and stop

◆ Interference rejection: 3 levels

◆ Noise rejection: 4 levels

◆ Function

Gain (auto/manual),

Range (auto/manual),

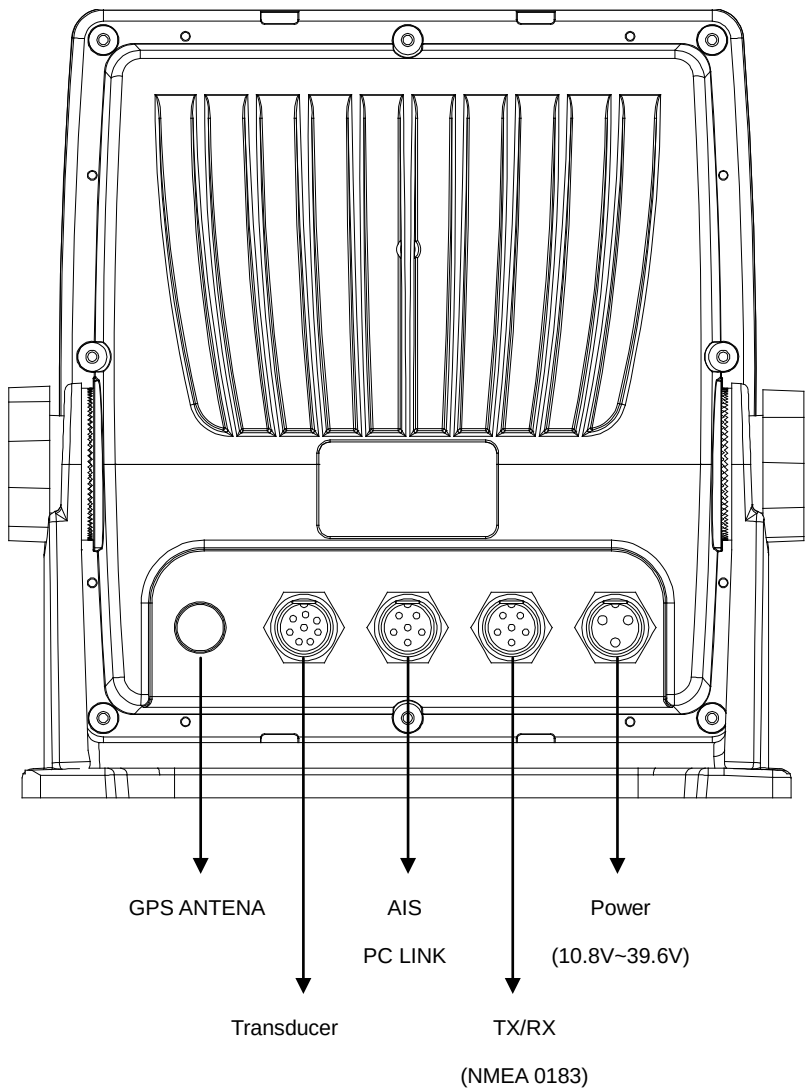
Depth with shift (auto/manual), water temperature

Pulse length selection, white/black line

◆ Power Output: 10.8 – 35V DC

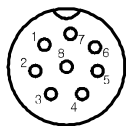
◆ Operating Temperature: -10°C to +50°C

Interconnecting diagram(Metal connector)



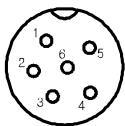
SPEC of the connectors (Metal connector)

TRANSDUCER



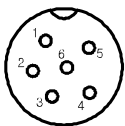
NO	NAME
1	NC
2	NC
3	TD1
4	GND
5	TD2
6	TEMP_SIG
7	TEMP_CN2
8	GND

AIS



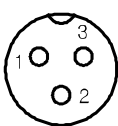
NO	NAME
1	GND
2	TX +
3	TX -
4	RX +
5	RX -
6	NC

TX/RX



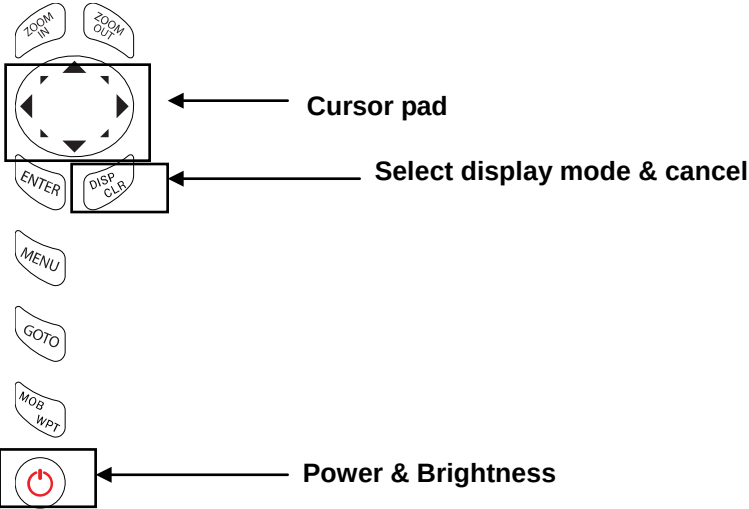
NO	NAME
1	GND
2	TX +
3	TX -
4	RX +
5	RX -
6	NC

DC POWER



NO	NAME
1	DC + IN
2	DC - IN
3	NC

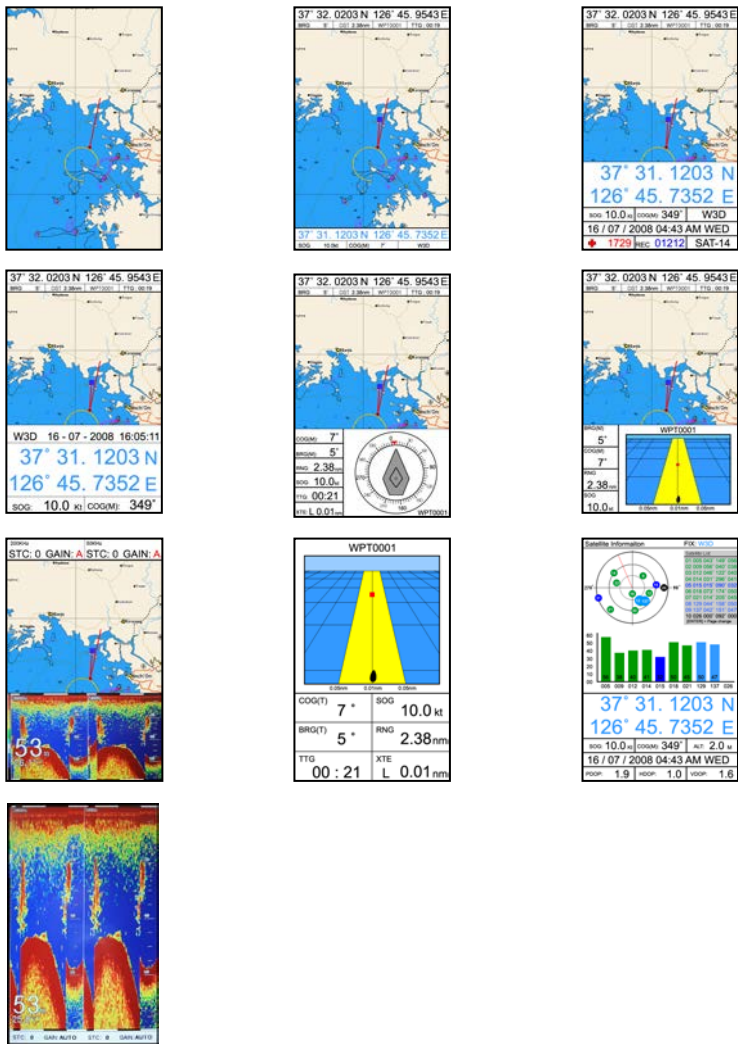
Keyboard



[ZOOM-IN/OUT]	CHANGES THE RANGE OF THE DEPTH IN FISHFINDER.
[MENU]	Menu opens menu to select options
[DISP]	Selects function to display on HY Display, Plotter Display, LAT/LOT Display, Highway Display, Steering Display, Nav data Display. (* When the menu or the cursor appears, it's used fro ESC.
[ENTER]	Completes pending selection or operation
[Power/Brightness]	BRT: Brightness adjust the brightness in day mode or night. PWR: Turns On/Off
[CURSOR PAD]	Use to move the cursor, select menu items, scroll list, select options, change settings in plotter and Fishfinder. [▲][▼]: Depth setting [◀][▶]: STC/Gain setting (*To make the cursor deleted, press [MAIN SCREEN].)

Page Select

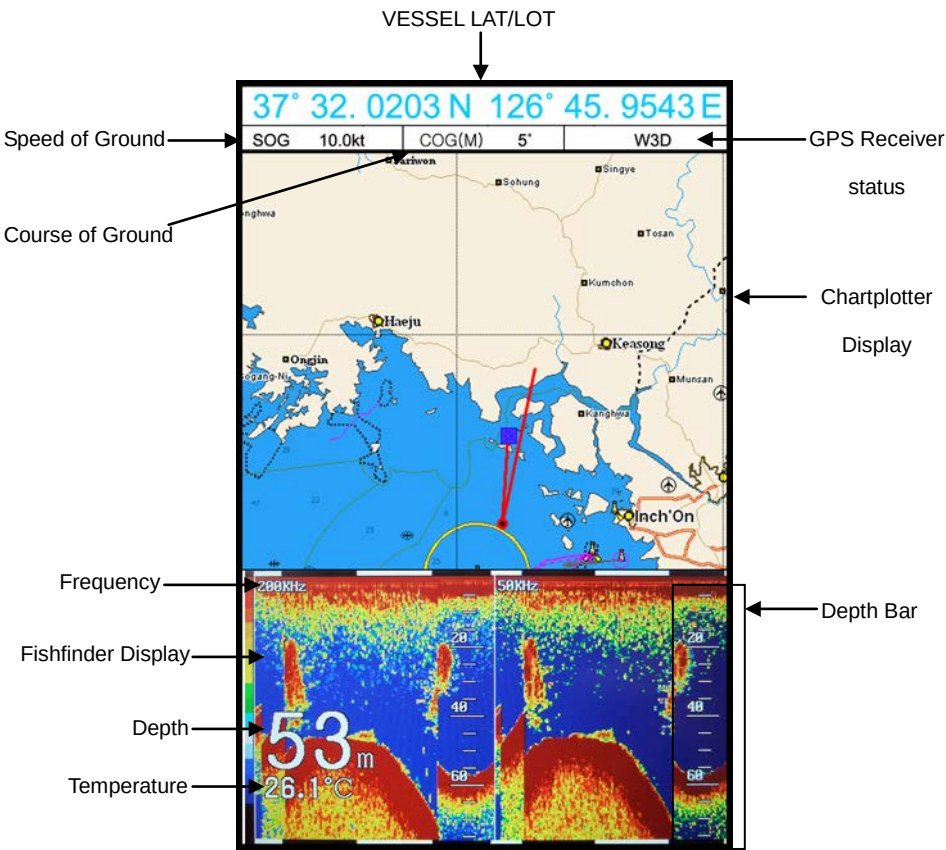
Pressing the key, [DISP], you will see the following pages. Move the red box with the arrow key and press the key, "ENTER". The chosen page will be active. Please, kindly note that the FF page will be available when the display is connected with a black box FF.



1. Chartplotter/Fishfinder mode

This is dual images, chartplotter and Fishfinder.

i) This image is for chartplotter. (The keypad is operating for chartplotter functions)



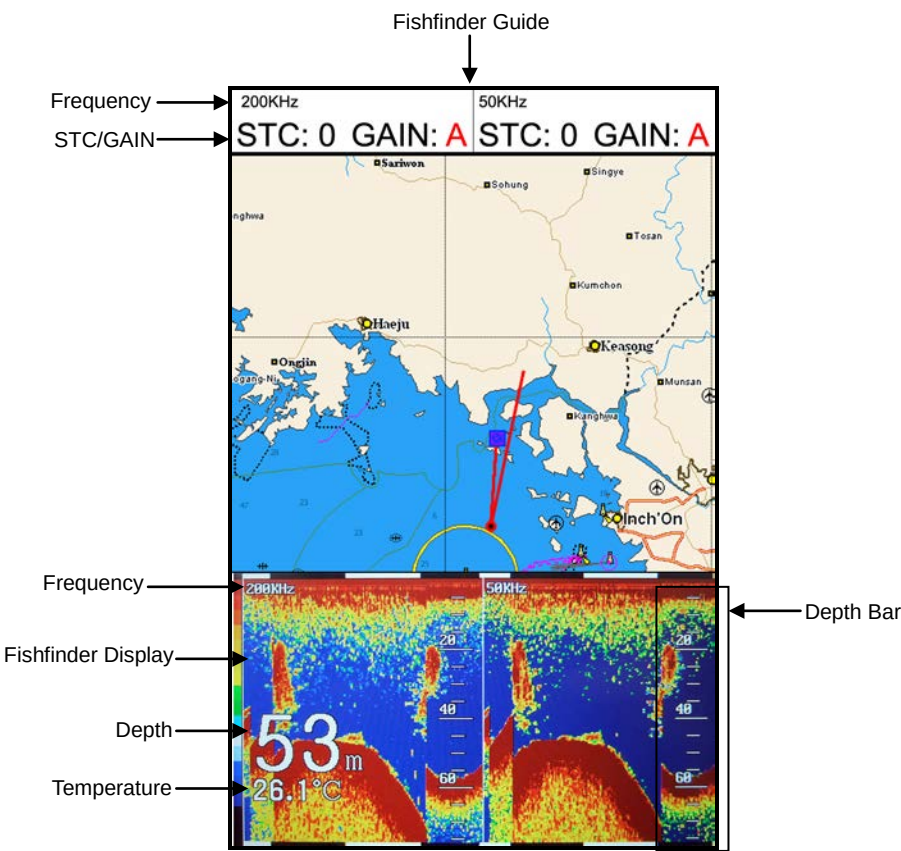
※ Please, refer the
※ chartplotter manual about manual about chartplotter functions .
chartplotter functions .

1. Chartplotter/Fishfinder mode

This is dual images, chartplotter and Fishfinder.

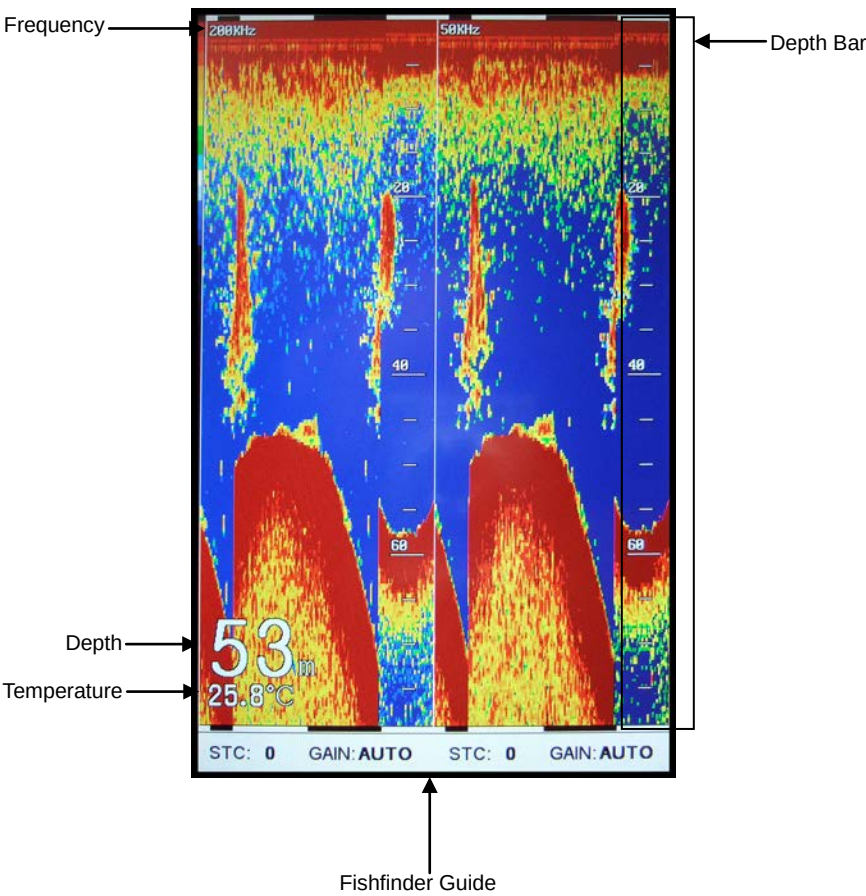
ii) This is for Fishfinder(The keypad is operating for Fishfinder functions)

※If you want to convert the keypad for Fishfinder, press the [DISP] for 2 sec. If you return to chartplotter, press the [DISP] again.



2. Full Fishfinder mode

This is the full image of Fishfinder. Please, kindly note the chartplotter information is unavailable on this image.



Operation

Fishfinder

It is available to control and confirm information in fishfinder.

► [MENU]->[0.Fishfinder]

Fishfinder 1/2

1. Manual/Auto Range

Auto range selects the best condition for measuring the depth automatically in the environment of the sea. On manual, the user can set the range manually.

2. A-Scope

A-Scope shows the research under the water by a scope to see the environment under the water.

3. Image Speed

Select the speed of fishfinder image from 4X until 1/32X.

4. Shift

A user selects this function to see more detailed bottom of the sea. When you turn up the shift, the range of fishfinder shall go up from the shift range.

5. White Line

It is necessary to research a detailed fish on the bottom or a seaweed under the sea. The color of the bottom changes into white or black to see the bottom easier than red.

6. Auto Gain

AQUA selects the best condition of gain for measuring automatically in the environment of the sea.

7. Auto Gain Adjustment (200KHz)

When the auto gain sets, you adjust the auto gain up and down.

8. Auto Gain Adjustment (50KHz)

When the auto gain sets, you adjust the auto gain up and down.

Operation

Fishfinder

It is available to control and confirm information in Fishfinder.

► [MENU]->[0.Fishfinder]

Fishfinder 1/2

9. Interference Rejection

When there are other boats around you on sailing, your fishfinder could be disturbed to work. The step of the function is from off to level 2. The bigger number, the more rejection.

0. Noise Rejection

Your Fishfinder could be disturbed by the engine noise. This function can reject the noise from the engine or other machinery instruments.

Operation

Fishfinder

It is available to control and confirm information in fishfinder.

► [MENU]->[0.Fishfinder]->[MENU]

Fishfinder 2/2

1. Color Level

This function adjusts the colors. Make it upper level, the color becomes darker.

2. Color Rejection

There are 16 color levels for fishfinder. The color bar is on the left of the Fishfinder. If the level is higher, the color of the bar is deleted one by one.

3. Screen Color

Select the back ground color of the Fishfinder for your convenience.

4. Pulse

Select the pulse of the output from the transducer. Levels are from 0.5X until 1.5X, which depends upon the depth. 0.5X is proper to research precise a fish school but it is not suitable to measure a deep depth. 1.5X is opposite from 0.5X.

5. Output Power

Select the output from the installed transducer. Levels are from off to 3. It should be careful about the depth. If you set high level in a shallow depth, the Fishfinder screen turns to red. You see nothing expect red on the screen.

6. Bottom Zoom Range

Select the range of the bottom zoom or lock. (refer Fishfinder main modes) It is necessary to modify the bottom.

7. Fishfinder Modes

Fishfinder modes are selectable for single frequency or dual and some functions, for example bottom zoom or lock.(Please, refer the Fishfinder modes)

Operation

Fishfinder

It is available to control and confirm information in Fishfinder.

► [MENU]->[0.Fishfinder]->[MENU]

Fishfinder 2/2

8. Depth Display

The menu selects Depth displayed ON/OFF.

9. Temp Display

The menu selects Temperature displayed ON/OFF.

Operation

Fishfinder Modes

Fishfinder modes are selectable for single frequency or dual and some functions, for example bottom zoom or lock.

1.Normal (200KHz or 50KHz)

Bottom Zoom magnifies the Fishfinder display from the sea bottom toward the surface for a short distance. The sea bottom contour is displayed and additional contour lines are added at intervals above the sea bottom to aid in determining distances of echoes near the bottom. Use the Fishfinder Menu to set the magnified Bottom Range from 2.5 to 20m (10 to 60ft.). Default setting is 10m (40ft.). If the depth Range is set manually, the setting must place the sea bottom echo in the lower portion of the screen for Bottom Zoom to be effective.

2. Bottom Zoom (200KHz or 50KHz)

Bottom Zoom magnifies the Fishfinder display from the sea bottom toward the surface for a short distance. The sea bottom contour is displayed and additional contour lines are added at intervals above the sea bottom to aid in determining distances of echoes near the bottom. Use the Fishfinder Menu to set the magnified Bottom Range from 2.5 to 20m (10 to 60ft.). Default setting is 10m (40ft.). If the depth Range is set manually, the setting must place the sea bottom echo in the lower portion of the screen for Bottom Zoom to be effective.

Operation

Fishfinder Modes

Fishfinder modes are selectable for single frequency or dual and some functions, for example bottom zoom or lock.

3. Bottom Lock (200KHz or 50KHz)

Bottom Lock divides the Fishfinder main screen image for the selected Fishfinder into two sections. The left hand section displays a Normal Mode image. The right hand section of the screen displays the Fishfinder image relative to the sea bottom. The sea bottom appears as a straight line with the Fishfinder image magnified for a short distance toward the surface. A scale appears on the right for estimating distances of echoes near the bottom. Use the Fishfinder Manu to set the magnified Bottom range from 2.5 to 20m (10 to 60ft.). Default setting is 10m (40ft.). If the depth Range is set manually, the setting must place the sea bottom echo in the lower portion of the screen for Bottom Lock to be effective.

Fishfinder modes are selectable for single frequency or dual and some functions, for example bottom zoom or lock.

4. Normal (200KHz/50KHz)

The high frequency (200KHz) displays on the left and the low frequency (50KHz) Normal displays on the right, which increase the accuracy of a fish school and your decision to catch fishes.

5. Bottom Zoom (200KHz/50KHz)

The high frequency (200KHz) displays on the left and the low frequency (50KHz) Bottom Zoom displays on the right, which increase the accuracy of a fish school and your decision to catch fishes.

Installation

Display unit brings expandable display technology to your bridge or navigation station. A careful installation will assure maximum benefit from Display unit integrated features.

Display Unit Location

Select a location for your Display unit that provides easy viewing from all likely operator's positions. The display unit is designed to be mounted on either a console or from an overhead surface. The Display unit is also designed for flush mounting using six threaded holes on the rear panel. Locate the display in an area with protection from the elements and avoid direct sunlight on the viewing window. Also, consider access to the rear panel of the unit for connecting power and cables to the various remote sensors. The mounting surface must be flat and solid to support the unit and prevent vibration. There should be access to the inside of the surface to permit through bolt fastening for the mounting bracket.

Display Unit Installation

Temporarily install the mounting bracket on the Genesis display unit and place the unit at the selected location.



The Display unit is unstable when the mounting bracket is not secured. Hold the unit in place at all times.

Check the suitability of the location and make any adjustments. When all is satisfactory, use the holes in the mounting bracket as a guide and mark the holes locations on the mounting surface.

Installation

Drill a 1/4 in. diameter hole at each marked location. Mount the Display unit bracket using bolts through the mounting surface. Place large flat washers on the opposite side of the mounting surface from the bracket and then install lock washers and nuts. Tighten securely.

Install the display unit into the mounting bracket. Check alignment and operation of the pivots and security of the mounting. Make any adjustments necessary to prevent binding and assure even meshing of the pivot locking washers. It is advised to remove the display unit and store it in a safe place to prevent damage during the rest of the installation process.

Power Connection

Power is supplied to the Fishfinder Unit through a connector on the rear panel of the display unit.

Route the power cable from the Fishfinder Unit location to the ship's power distribution panel.

Connect the black wire to a battery negative (-) terminal of the power panel.

Connect the white wire to a fused battery positive (+) terminal of the power panel (12 to 24 Vdc nominal). If a fused terminal is not available, install an in-line fuse holder.

Sensor Connection

There are many sensors and transducers available which may be used to expand the capabilities of the Fishfinder Unit. Connectors for these accessories are provided on the rear panel of the Fishfinder Unit. For most sensors, only data and control connections are routed to the Fishfinder Unit.

Installation

An input designation means, in put to Fishfinder unit and an output designation means, output from AQUA. Sensors will have similar designations, but from the sensors point of view. Therefore, a sensor output will connect to an AQUA input and a sensor input will connect to an Fishfinder unit output.

Transducer Installation

If you have chosen a Sonar option for your Genesis a transducer must be installed on your vessel unless an exiting compatible transducer is installed. The installation of sonar transducers require some planning and skill to achieve the best result. It is strongly advised hat you read the installation instructions completely before starting. The two basic types of transducers are transom mount and through-hull mount. There are variations within each type to provide for options such as temperature sensors, speed sensors and for different beam angels and sonar frequencies. Several different transducers may be used with the AQUA. Refer to the optional Equipment list for the variations available.

CAUTION

Mounting a sonar transducer for your AQUA Sonar requires drilling holes into the hull of your boat which could affect its water integrity. Therefore, installation should be attempted only by qualified individuals. If you have any doubt about your ability to complete the process successfully, we recommend you obtain the services of a HAIYANG dealer or marine service center with knowledge and experience in transducer installation .

Since your AQUA Sonar performance depends upon how well the transducer is installed, please carefully observe the following mounting procedures.

For proper performance, the transducer's mounting location must be chosen carefully. The transducer must be mounted in a location that is free from turbulence and air bubbles created by movement of the boat through water. Air bubbles greatly reduce the efficiency of the transducer. It is also strongly recommended, for transom mounted transducers, the transducer be mounted in an area with the least

amount of disturbed water passing under the transom. To determine the best mounting location, operate the boat at several different speeds and observe the water as it passes under the transom.

Installation

Turbulence caused by the trim tabs, motor mounting, the keel, and lifting strakes.

Transom Mounting

Transducers designed for transom mounting give good performance when installed on most boat types, however, the transom transducer style should not be used on boats with inboard engines.

For boats with poor water flow under the transom or on in-boards, consider selecting a through-hull transducer. HAIYANG offers many styles of transducers.

Determine the transducer mounting place by referring to the steps mentioned above. For best result, the transducer face should be level. Also, the transducer face should be mounted from flush to 1/4 inch below the under surface of the hull. The trailing edge of the housing should be about 1/8 inch below the leading edge. The adjustable stainless steel bracket is designed to allow fine tuning of the transducer position once the installation is completed.

Route the transducer cable as far as possible away from the boat's power cables, engine controls and other electrical cables. Do not route transducer cables near your VHF radio power or antenna cables.

Assemble the transducer using the brackets and hardware supplied. Actual fastening to the hull of your boat depends upon the hull construction and hull material. If additional items must be used, be sure to obtain marine stainless steel hardware. Also, be sure to use marine waterproof sealant on all through hull fastenings. Do not use silicone RTV, since it does not have long life underwater.

Transom Transducer Maintenance

If your boat is kept in the water, sea growth can quickly accumulate on the face of the transducer. In just two weeks in some locations, your Sonar performance could be affected. It is recommended that at least the face of the transducer be coated with special transducer antifouling paint. Alternatively, the entire transducer can be painted and is easier to keep clean. **Do not use regular antifouling paint.** All copper base antifouling paints are unsatisfactory and will prevent normal operation. If fouling does occur, use a stiff brush or putty knife to remove growth. Be careful not to gouge the face of the

Installation

Transducer. Occasional wet sanding of the transducer face is permissible with #220 grit or finer wet or dry paper.

Do not use solvents to clean your transducer. The high impact polycarbonate housing is very durable but solvents will destroy it. Keep acetone, MEK, lacquer thinner and most other thinner/solvents away from your transducer.

Through-hull Transducers

Through-hull transducers are recommended for in-boards and other vessels with disturbed water flow under the transom. HAIYANG offers several models of bronze through-hull transducers. To enjoy the full capability of your Sonar, select a dual frequency model with temperature sensor. Sturdy bronze construction assures a secure installation and provides a strong base for fairing blocks, if needed, to compensate for hull shape.

The transducer should be installed in a location free of bubbles and away from disturbed water flow. Smooth water flow around the transducer and along its surface is very important for consistent operation.

Areas in the center third of water line length at cruising speed are usually satisfactory.

Locations forward of the engine and in a flat area near the center line of the boat are preferred. Do not install the transducer behind water intakes, other through-hull fittings or irregularities in the hull.

Dead-rise

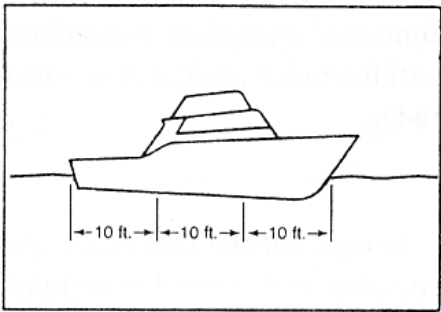
On hulls with dead-rise of 5 or less, the transducer may be mounted directly through the hull. Where dead-rise is greater than 5, fairing blocks must be used to orient the face of the transducer parallel with the water surface.

In this case, no fairing block is necessary. To prevent leakage, any gaps between the stem threads and holes drilled in the hull should be completely filled with waterproof marine sealant. Tighten the stem nuts securely but do not over tighten. In this situation, install fairing blocks both inside and outside the hull. Install the transducer with the face aiming straight down. To prevent leakage, any

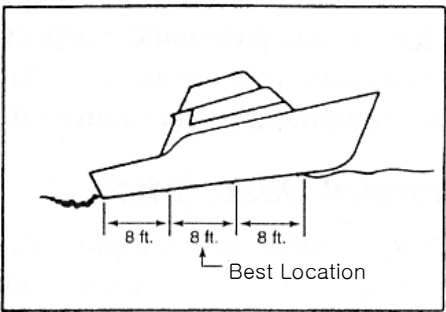
gaps between the stem threads and holes drilled in the hull should be completely filled with waterproof marine

Installation

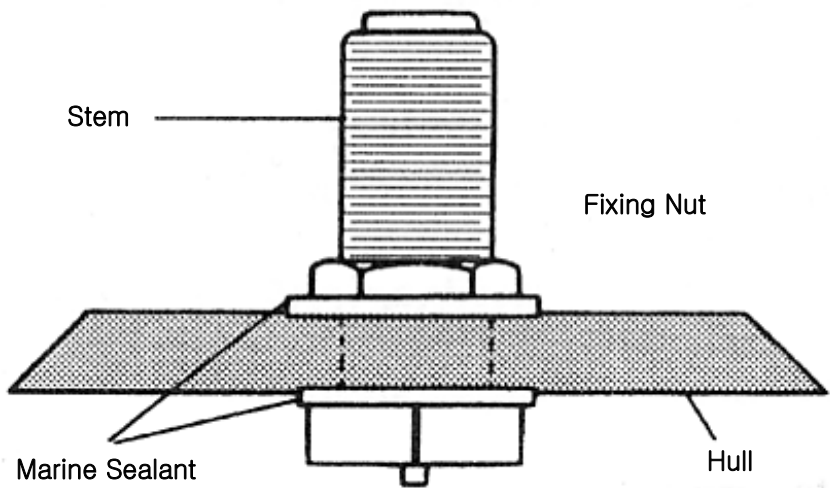
sealant. Tighten the stem nuts securely but do not over tighten.



Water Line Drifting



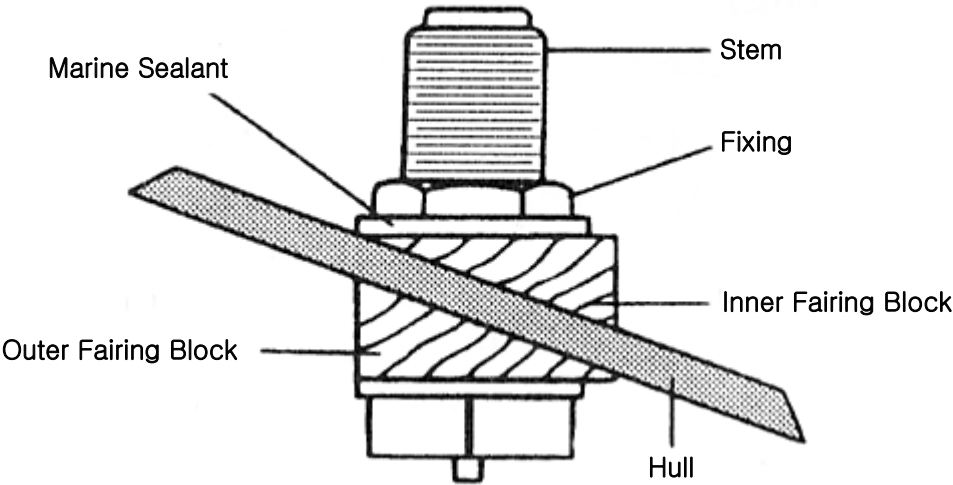
Water Line Cruising



Installation

Through-hull Transducer Maintenance

If your boat is kept in the water, performance of your AQUA Sonar will be adversely affected by accumulations of sea growth on the face of the transducer. To prevent sea growth effects, the face of the transducer may be coated with antifouling paint specially formulated for transducers. Do not use regular antifouling paint on the face of the transducer. The bronze housing may be coated with any antifouling paint. If fairing blocks are used, especially if made of wood, complete sealing prior to painting is important.





To HGP-660F TRANSDUCER

HAIYANG