

VIDEO SOUNDER

AVS-7

OPERATION MANUAL

SITEX ®

DOC. NO. AVS-7 09-89

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Important Notice

Before attempting to install and operate your unit, it is recommended that you read through the operation manual.

After reading the operation manual, if you still do not understand about the operations and installations of your unit, we recommend you contact your dealer or SI-TEX Marine Electronics.

Please note:

1. This unit is splashproof, not waterproof. You are strongly advised to keep your unit away from excessive exposure to spray and rain. Water damage is not covered under warranty.
2. Make sure that the power connection is made with the correct polarity (black is negative and red is positive) and the power source is between 11 and 16VDC. Damage caused by reversed polarity or over-voltage is not covered under warranty.
3. The maximum performance of your unit is greatly determined by the proper installation of the transducer. Please give this your utmost consideration.

Introduction

Your video sounder consists of the display unit, transducer or a triducer (which is a combination transducer, temperature sensor, and speed sensor in one unit).

An electronic signal is generated in the transmitter section of the display unit.

When coupled to the transducer, this signal is converted to an ultrasonic signal and transmitted toward the bottom.

The signal travels through the water until it strikes an object or the bottom.

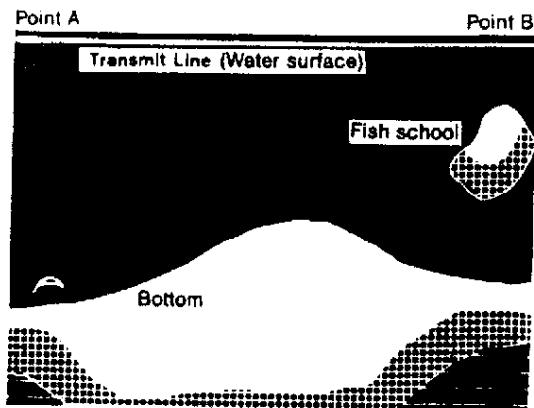
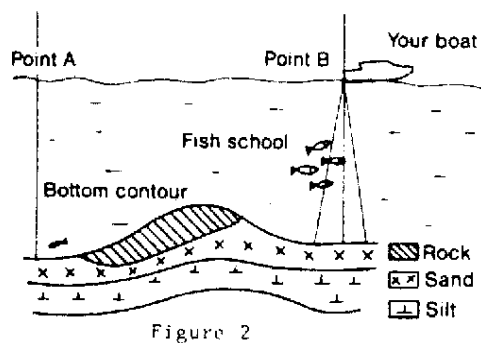
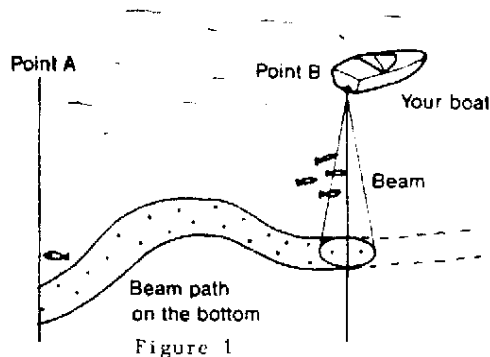
When it strikes an object or the bottom, it is reflected back, hits the transducer surface, is reconverted to an electronic signal in the transducer, received/amplified in the receiver section, processed in the main logic section, and displayed on 6" CRT screen.

When your boat travels from the point A to the point B as shown in Figure 1, the beam of the transducer installed on your boat shows a cross-sectional view in the water.

Figure 2 indicates a cut away view of the actual beam. The bottom contour is geographically determined and will remain unchanged even if your boat speed changes. Your video sounder is designed to accurately display fish, bottom contour, and underwater structure on a 6" CRT screen.

Per Figures 1 and 2, the bottom which is being passed over currently appears at the right of the screen. The display moves to the left side as new readings in the sequence appear.

While your boat travels from the point A to the point B, your video sounder makes the image history on the screen as shown in Figure 3.



Features

Images are displayed in four levels of amber according to the strength of the returned echo so you can easily determine the density and size of the target.

100 watts RMS (800 watts peak to peak) output power is provided for precise fish detection and greater depth capability.

The AVS-7 has an AUTO RANGE feature that automatically sets the machine to the proper range for the depth of the water.

An electronic scale display enables you to determine depth of fish and the bottom.

The proper sounding rates and pulse lengths are automatically specified according to the range selected.

Boat speed selectable in knots or MPH.

Power requirement 11-16 VDC, 10 watts power consumption.

Simple one key operation.

Quick zoom for detailed inspection of fish or structure.

Triducer Installation and Maintenance

Caution: Mounting your triducer, whether transom mounted or thru-hull, requires drilling holes into or through your hull or transom which can affect its water integrity and, therefore, should be attempted only by competent persons. If you are in doubt as to your competence to attempt this installation, we recommend taking your boat to a marine dealer and/or marina that has people qualified and experienced in transducer installations.

1. Speed sensor - Installation and Maintenance

If your system is equipped with a speed sensor assembly, detach the speed sensor before proceeding to install the depth triducer housing. Once the depth housing has been secured in place, reattach the speed sensor and make sure shear pins and tabs are engaged.

If the speed impeller (paddle wheel) becomes fouled, remove the 4 screws that secure it to the transducer housing. Clear the obstruction and inspect the shaft and bearings for excessive wear. Replace if worn. Reinstall parts and attach to housing. Spin paddle wheel making sure that it spins freely.

If the triducer with impeller assembly is kept in salt water, the speed assembly should be protected with anti-fouling paint. To allow proper fitting of the snap together assembly, do not paint mating surfaces. All other exposed surfaces can be coated.

The speed sensor shear pins are designed to fracture upon impact. Be sure to remove speed sensor before beaching or when boat is hauled by fork lift. Hauling and beaching are the main cause of impeller carrier breakage. For speed sensors without a cable, a spare impeller carrier is inexpensive and should be kept on hand as a replacement spare. On all speed sensors, bearings wear out in two to three years of normal use.

2. Cleaning of triducer

The triducer housing material is polycarbonate which has high strength and impact resistance. Do not use strong solvents of any type to clean the triducer. Strong solvents, such as acetone, can quickly weaken and fracture the plastic housing. Do not use thread seizing compound since some contain ketone solvents. This compound is unnecessary, since the triducer has been provided with nylon insert "aircraft" type nuts which secure the triducer in place in any high vibration environment. Exposure to gasoline also degrades the housing.

3. Saltwater Maintenance

Antifouling paint - If the vessel is kept in saltwater, sea growth on the triducer face can accumulate rapidly and seriously reduce performance in a matter of weeks. It is recommended that at least the acoustic face of the triducer be coated with an antifouling paint. Alternatively, the entire triducer can be painted and then generally is easier to keep clean. Most copper base paints are satisfactory, although triducer paints are available. If fouling does occur, use a stiff brush or putty knife to remove growth. Wet sanding of fouled surfaces is permissible with #220 or finer grade wet or dry paper.

Transom Mount Transducer and Triducer Mounting Procedure

Your video sounder is provided with a transom mount as the standard transducer. The triducer option offers accurate depth, speed and temperature readings.

Since your video sounder's performance depends on how well the transducer or triducer has been installed, please carefully read through the following mounting procedures:

1. For proper performance, the transducer's mounting location must be chosen carefully. The transducer should be mounted in a location that is free of white water; that is, free of turbulence and air bubbles created by movement of the boat as it travels through water. Air bubbles greatly reduce the efficiency of the transducer. To determine the best mounting location, operate the boat at several different speeds and observe the water as it passes under the transom. Study the turbulence created by the hull structure, the keel, and the lifting strakes. Keep the transducer and its cable as far as possible from the boat's power cables, tachometer, and other electrical cables.
2. This transducer or triducer has been designed to give you excellent readings by being installed on the transom of almost all boat types, however, the transom triducer should not be mounted on boats with in-board engines or trim tabs. In these instances, the thru-hull triducer should be used.

Caution: You should not use any other make of transducers with your video sounder.

3. Dimensions, see figures 4 and 5.
4. Standard triducer and mounting hardware.

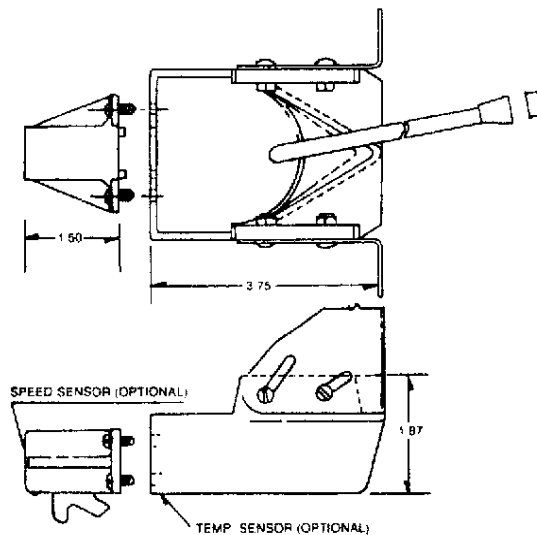


Figure 4

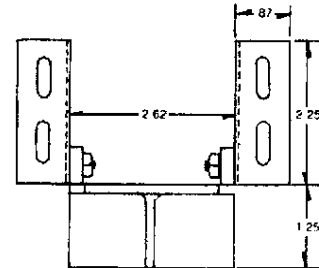


Figure 5

- Determine the triducer mounting place by referring to the above-mentioned procedures 1 and 2. The recommended place is indicated as follows:

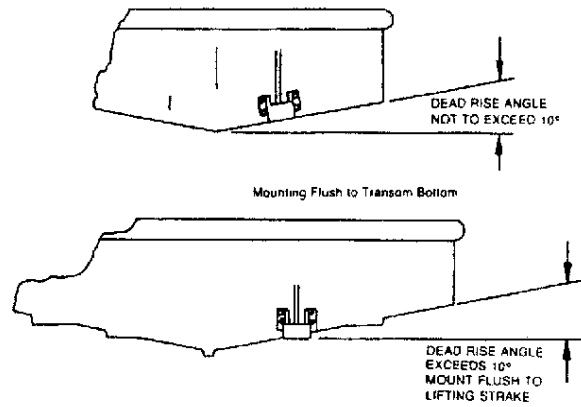


Figure 6

- Tentatively fix two bracket plates to the triducer using 4 sets of No. 10-32 screws, nuts, and washers as shown in the figure below:

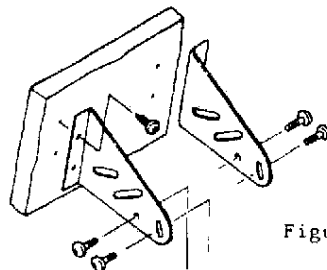


Figure 7

- Place the triducer along the transom and determine the exact bracket mounting position by referring to Figure 8:

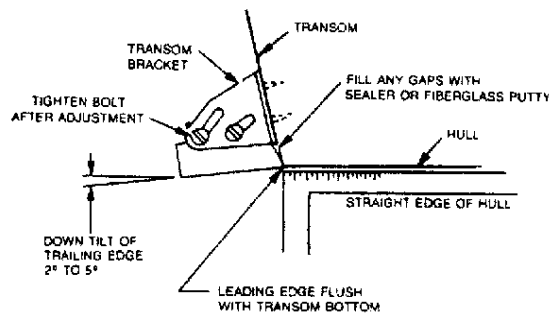


Figure 8

Triducer Mounting Procedure

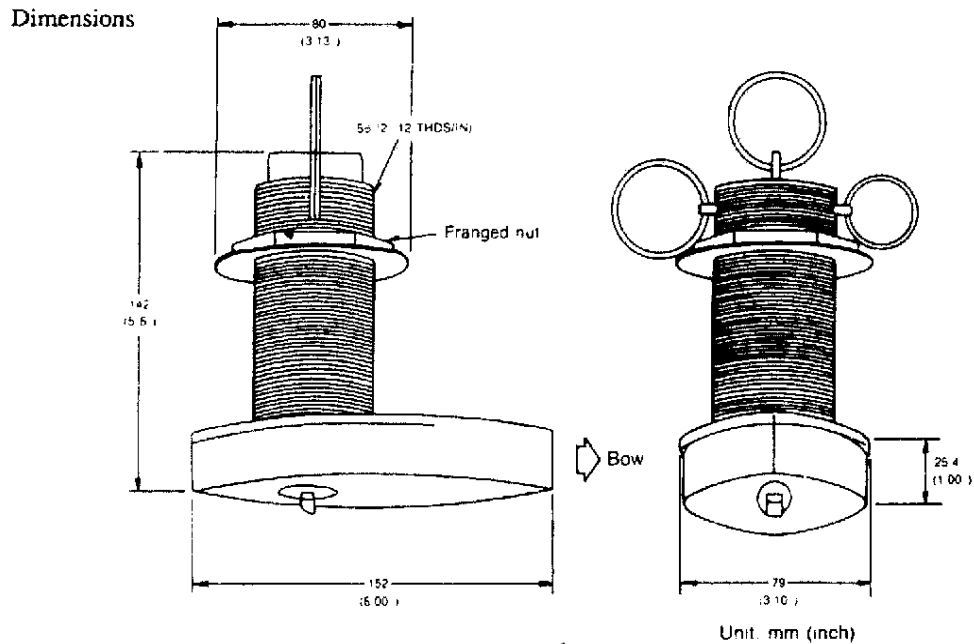


Figure 9

2. Installation

To prevent the transducer surface from being affected by bubbles or water spiral, install the thru-hull triducer after reading the following:

- (A) The triducer should be installed at a place where no bubbles and no water spiral are generated around it.
- (B) The triducer should be installed as far from the engine as possible, but not too close to the bow. Normally the triducer should be installed in the middle 1/3 of the hull, at speed as shown (Figure 10).
- (C) In case of flat bottom hull, the triducer can be installed in the constant water flow and parallel with the water surface --this is an ideal installation because the triducer surface, being in the constant water flow, generates few bubbles or water spirals and the triducer surface can emit the ultrasonic wave perpendicularly in the water for better receiving echoes from targets beneath your boat.

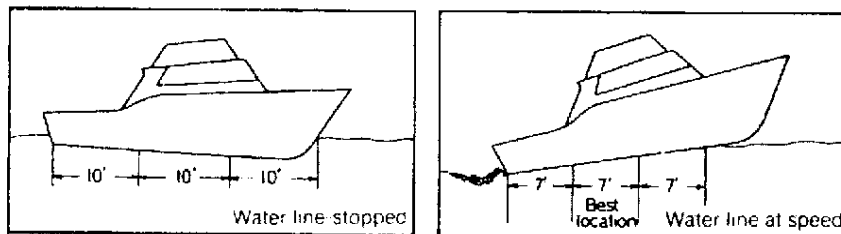


Figure 10

3. In case of the bottom hull with a deadrise, the following two cases should be considered.
- (A) In case of a deadrise of less than 5 degrees, you can install the triducer stem perpendicularly to the bottom hull as shown in Figure 11.
 - (B) In case of deadrise of 5 degrees and more, you should mount an inner fairing block between inside hull and fixing nut, and an outer fairing block between outside hull and the triducer so as to maintain the triducer surface in parallel to the water surface as shown in Figure 12.

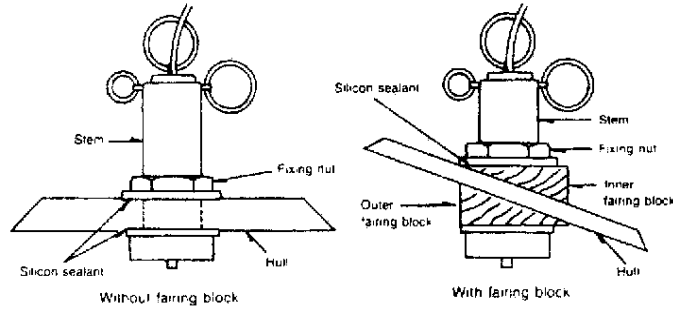


Figure 11

Figure 12

4. Installation procedure

Without fairing block:

- (A) Referring to previously mentioned items, select an appropriate installation place on your boat.
- (B) Remove the fixing nut from the stem and cable.
- (C) Make a 2" hole at the selection installation location. (Verify stem diameter prior to drilling hole.)
- (D) Pass the triducer cable and triducer stem from outside to inside of hull through the hole. To prevent water leakage through a gap between the hole and the thread on the stem, apply FRP or silicon sealant onto the stem.
- (E) Carefully attach and secure the fixing nut to the stem.
DO NOT OVERTIGHTEN

With fairing block:

- (A) Referring to previously mentioned items, select an appropriate installation place on your boat.
- (B) Remove the fixing nut from the stem and cable

- (C) You can fabricate a fairing block out of hard wood or FRP.
- (D) Cut the fairing block to the hull deadrise angle. (If you are fabricating your own block, you first have to drill a 2" hole in the block.)

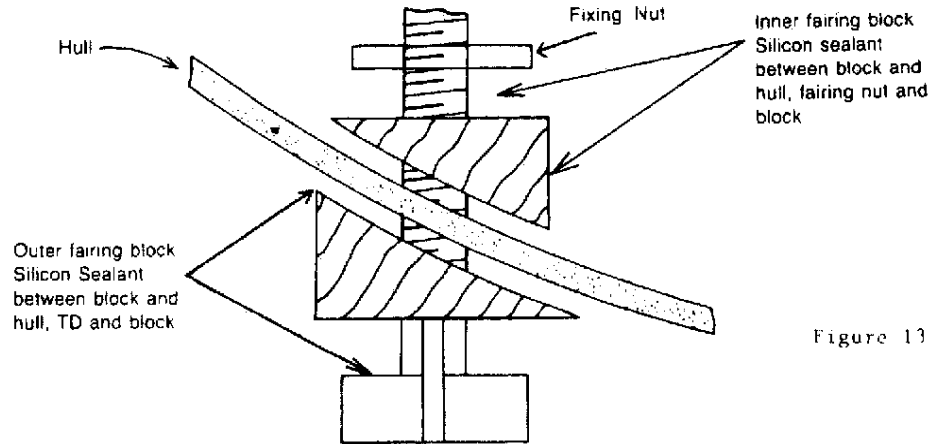


Figure 13

Taking note the notch indicates the bottom side and bow direction.

- (E) Place the lower portion of the fairing block against the bottom of the hull at the selected mounting location.
Mark the hull for stem location through the hole in the block
- (F) Cut the hole to the transducer stem size.
- (G) Apply silicon sealant to both sides of the lower portion of the fairing block, triducer stem and bottom side of the upper portion of the fairing block. (Be sure notch on the fairing block is aligned with notch hole on the triducer and that the notch faces the bow.)
- (H) Pass the cable and stem up through the lower portion of the fairing block, the hole in the hull and upper portion of the fairing block.
- (I) Loosely tighten the fixing nut to the stem.
- (J) Carefully align lower fairing block, the triducer and upper fairing block. Tighten the fixing nut to the stem.
DO NOT OVERTIGHTEN especially if wooden block used.

5. Regarding the water plug:

The water plug is the same size as the speed sensor insert as shown in Figure 14. When the speed sensor needs to be cleaned or checked, insert the water plug into the housing as soon as you pull out the stopper pin and remove the speed sensor. This will prevent water seepage into your boat. It is recommended that you keep the water plug with this speed sensor. (Using a wire supplied in the pouch, tie the pull-up rings of the water plug and the inner speed sensor together.)

NOTE: Due to different manufacturers, dimensions, features, and physical design, differences may be noted from these instructions. Contact your dealer or SI-TEX Marine Electronics to answer your questions.

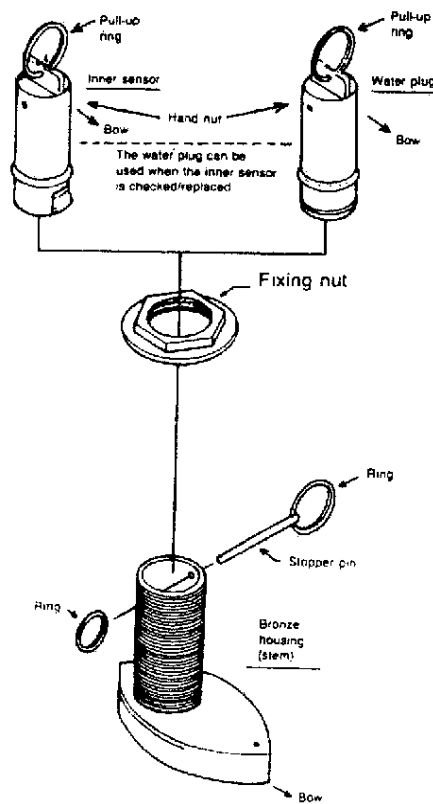


Figure 14

Video Sounder Mounting Procedure

DIMENSIONS/WEIGHT

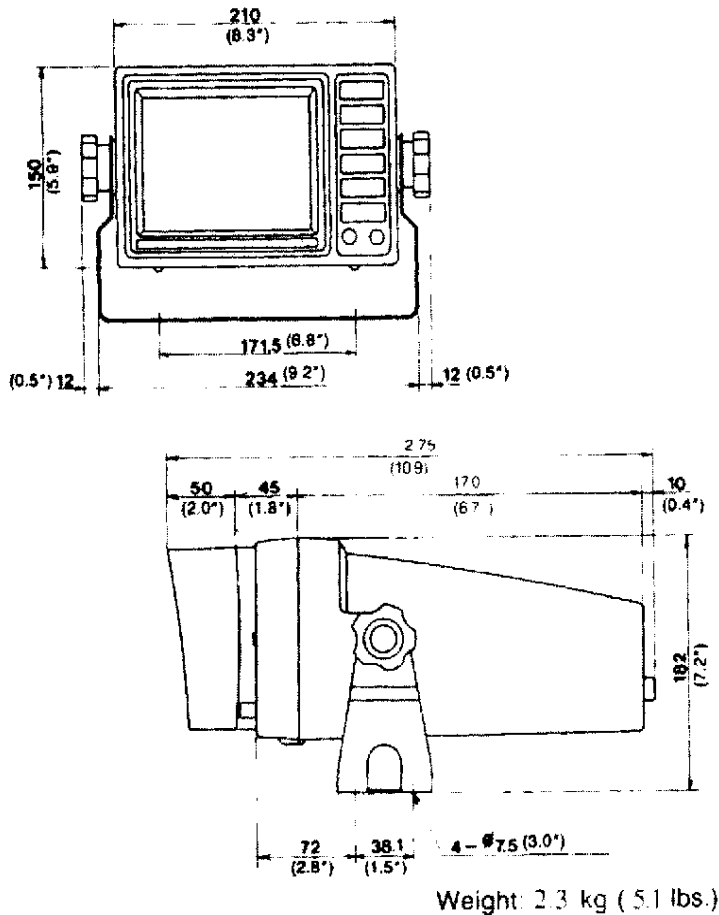


Figure 15

INSTALLING THE TRUNNION

The video sounder should be installed on a flat, solid surface for maximum stability.

You can mount the trunnion on a swivel mount which has the same mounting holes as your trunnion.

You can also mount your trunnion overhead.

Position the trunnion, mark and drill four 1/4" holes. Secure it using four self-threading screws provided.

Make sure that the trunnion slots face forward.

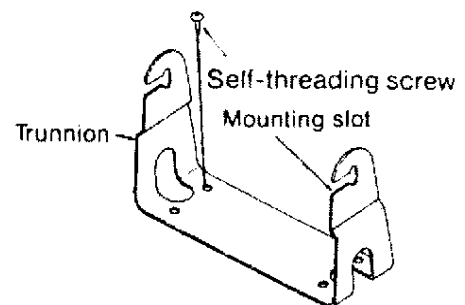


Figure 16

Mounting the Video Sounder

Place the video sounder in the trunnion and secure it to the trunnion using two trunnion knobs as shown in Figure 17.

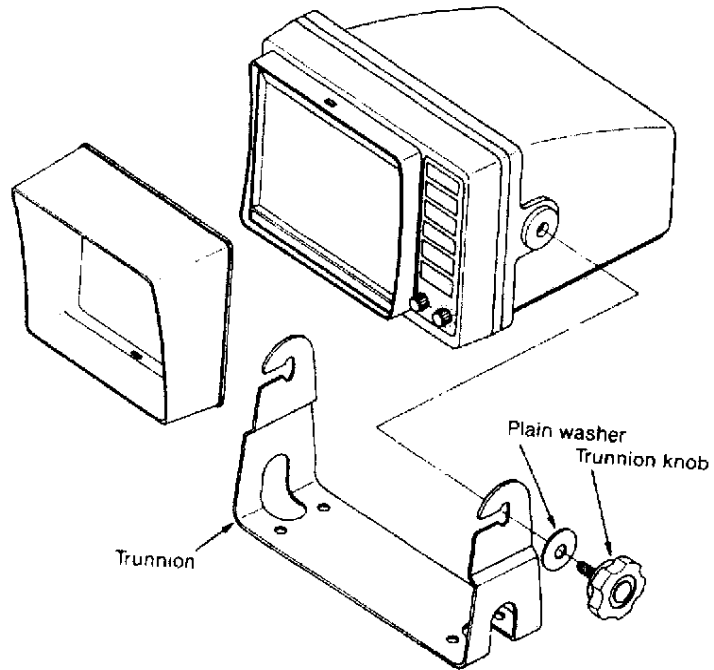


Figure 17

For overhead mounting, carefully holding your video sounder, secure it to the trunnion.

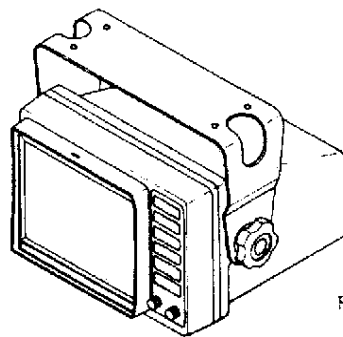
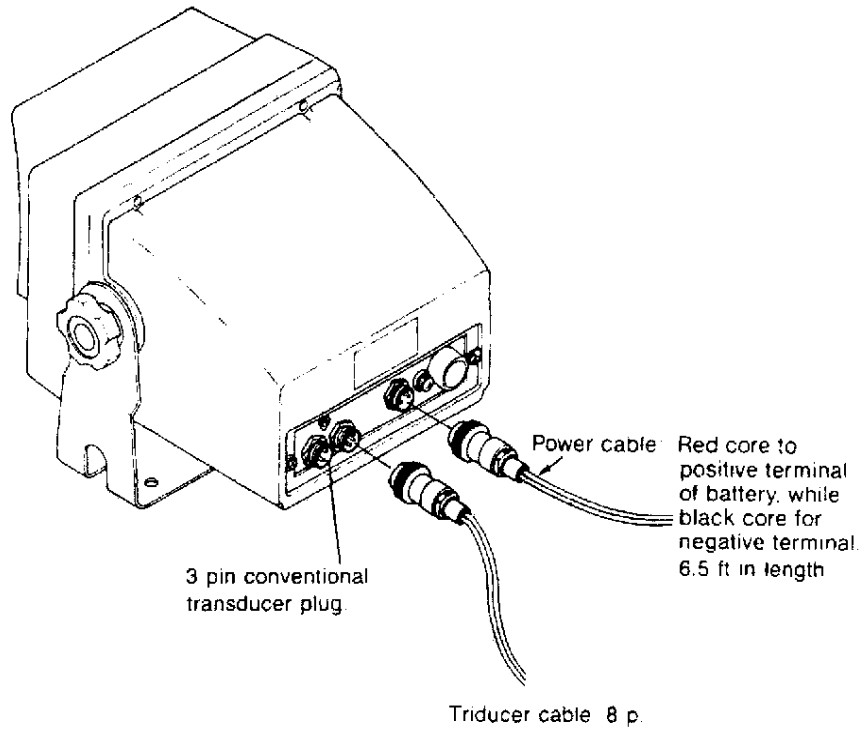


Figure 18

Installing Cables



Note: Power requirement 11-16 VDC, 10 W. Do not use a fuse with a higher rate. This could cause permanent damage to the unit.

Connector Connection Methods

Two connectors are mounted on the rear panel in addition to the power connector. The functions and pin arrangement are as specified below.

- J1 (STD-TD) Standard transducer
 (Note) Transducer without boat speed/temperature sensors



- ① Transducer
- ② Shield
- ③ Transducer

- J2 (TRI-TD) Triducer with boat speed sensor and a temperature sensor.



- ① Boat speed signal (Pulse) Green
- ② Boat speed (+B) Red
- ③ Transducer Blue
- ④ Transducer Shield
- ⑤ Transducer Black
- ⑥ Temperature sensor (thermistor) Brown
- ⑦ Temperature sensor (thermistor) White
- ⑧ Boat speed (GND) Bare Wire

Please be careful with the insulation of transducer pins ③, ⑤ from other pins as high voltage is applied to these pins.

- J4 Power Input (11-16 VDC)



- ① (+) Red Wire
- ② (-) Black Wire

Use the attached power cable with a fuse. Be careful with + and - polarities. If a thin wire is used as an extension cable, it may cause the performance of this unit to deteriorate and also produce other problems. Use a cable of Stranded wire 16 AWG or larger.

How to Change Measurement Specifications

Specifications Change

A part of specifications are changeable by internal DIP switches using the tip of a sharp pencil or similar tool after opening the rubber cover of SW701 on the bottom of the **SOUNDER**.

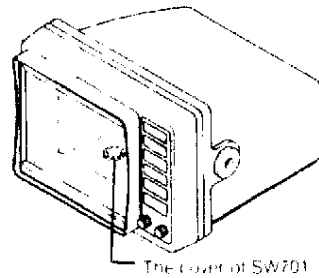


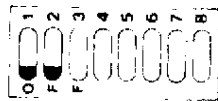
Figure 20

Setting procedure:

- (1) Turn off the power.
- (2) Remove the cover of SW701
- (3) Set dip switches according to the setting instructions below.
- (4) Fit the cover.
- (5) Turn on the power.

Measuring Unit Selection

Feet



When DIP switches (1), (2) are turned off as shown, the measuring unit is set to feet and indicated as FT at the lower left part of the screen.

Meter



When DIP switch (1) is turned on and (2) is turned off as shown, the measuring unit is set to meters and indicated as M at the lower left part of the screen.

Fathom

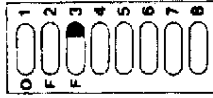


When DIP switch (1) is turned off and (2) is turned on as shown, the measuring unit is set to fathoms and indicated as FM at the lower left part of the screen.

After changes are made, be sure to reinstall the rubber cover to protect the internal components of the AVS-7 from water corrosion.

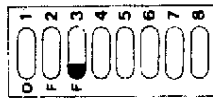
Water Temperature Unit °C/°F Selection

°C



When DIP switch (3) is turned on as shown, the water temperature unit is set to °C (centigrade)

°F

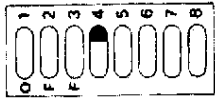


When DIP switch (3) is turned off, the water temperature is set to °F (fahrenheit)

Various Digital Displays

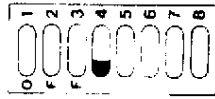
You can select the information to be shown using DIP switch (4).

- a. If you wish to show speed, temperature, and depth digitally, set DIP (4) as shown below (unit comes from the factory set up this way).



When DIP switch (4) is turned on as shown, the boat speed and water temperature are indicated by the boat speed and temperature sensors.

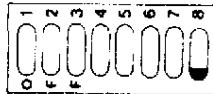
- b. If you do not care to show speed, temp, and depth digitally, set up as shown below.



When DIP switch (4) is turned off as shown, the boat speed and water temperature indication are not displayed.

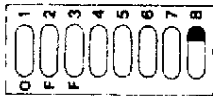
Boat Speed Units Selection

KT



When DIP switch (8) is turned off as shown, the boat speed unit is set to KT (knots or nautical miles per hour).

MPH



When DIP switch (8) is turned on as shown, the boat speed is set to MPH.

Note: DIP switches 4, 5, 6, and 7 are normally not changed from factory settings.

Operational Explanation

The SI-TEX AVS-7 video sounder has a microcomputer which has been designed specifically for simple operation utilizing just 6 keys.

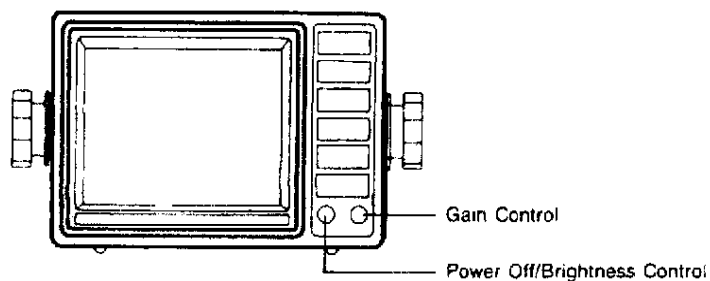


Figure 21

Control Descriptions

Power Off/Brightness Control

Turn knob clockwise to "click" to turn unit on. Continue to turn knob clockwise to increase brightness.

Gain Control

Gain control for setting the bottom to highest level image on the screen.



Normal Range

This key is used for changing your depth range.



Zoom Range

This key is used for selecting the depth of the area to be expanded.



Zoom Position

This key is used for selecting the area to be expanded.



Image Speed

This key is used for setting the speed of the information across the screen.



Upper Alarm

This key is used for activating the upper alarm and setting its depth.



Lower Alarm

This key is used for activating the lower alarm and setting its depth.

How to Operate

Prior to operating your video sounder, it is suggested that you familiarize yourself with each key.

RANGE Selection

What we call the RANGE means the normal range scale from 0 to 40, 80, 160, 320 or 640 ft.

NORMAL RANGE



Example

The bars individually indicate the normal RANGE's of 0 to 40, 0 to 80, 0 to 160, 0 to 320, and 0 to 640 (as shown in Figure 23).

To increase or decrease the depth range of the screen, press either the ▲ or ▼ arrow on the NORMAL RANGE key. When a new depth range is selected, it will appear in the center of the screen for 2 to 3 seconds before disappearing. By pressing the ▲ arrow when in the 0 to 40 range or the ▼ arrow when in the 0 to 640 range, the unit will switch to AUTO RANGE as indicated by the AR at the bottom left corner of the screen, just above the digital depth indication. To leave AUTO RANGE, simply press either the ▲ or ▼ arrow on the NORMAL RANGE key.

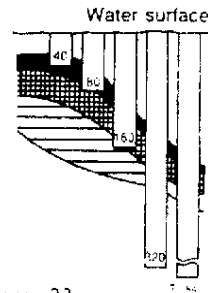


Figure 23

AUTO RANGE: RANGE is automatically selected so that the bottom is always displayed in the area between 35% from the top and 90% on the screen. The proper range is selected from 40, 80, 160, 320, and 640 ft

AUTO RANGE is selected by depressing the RANGE key until "AR" is shown on the display.

ZOOM RANGE



To enter the zoom mode, simply press either the ▼ or ▲ arrow on the ZOOM RANGE key. The screen will momentarily stay in the full range mode, but show you by a yellow cursor on the right side of the screen what portion of the total range you are zooming to; either 1/4, 1/2, or 3/4 of the total range. An indication will also appear in the center of the screen saying ZOOM R and the number of feet of zoom to be expanded on the screen. After about 2-3 seconds, the screen will switch to the ZOOM mode. To increase or decrease the zoom range, simply press the appropriate ▲ or ▼ arrow.

To leave the zoom mode, press the NORMAL RANGE key (either arrow) and you will return to full screen viewing.



ZOOM POSITION

After selecting the desired zoom range, you can select whichever 1/4, 1/2, or 3/4 you want using the ZOOM POSITION key. The ▲ or ▼ arrow on the ZOOM POSITION key will move your selected zoom range up or down in increments of 1/8 of the total range. For example, in 0-40 range, suppose you have selected a zoom range of 1/4 or 10 feet. By using the zoom position key, you can select 0-10, 5-15, 10-20, 15-25, 20-30, 25-35, or 30-40 feet for your zoom area. An indication will also appear in the center of the screen saying ZOOM POSITION and the upper level of the zoom area.



IMAGE SPEED

Your unit is equipped with 5 fixed image speeds plus STOP. The IMAGE SPEED key has two arrows on it, one long (◄), one short (◄). Press the ◄ for a faster image speed, the ◄ arrow for a slower speed. An indication will also appear in the center of the screen saying I.SP and a fraction or the word STOP. The fractions will be 1/1, 1/2, 1/4, 1/8, 1/16. The fraction is the number of pulses printed versus the number of pulses transmitted by the transducer. For example, 1/8 indicates that the unit will print one pulse for every 8 transducer transmissions.



UPPER ALARM

The upper alarm is a shallow water alarm that is activated when the bottom crosses above your preset depth. To set the upper alarm, press either the ▲ or ▼ arrow on the UPPER ALARM key until the desired depth is reached. An indication will appear in the middle of the screen saying U.ALM and the depth of the alarm setting. After a few seconds, this indication will disappear. A bar will also appear from the top on the right side of the screen. The bottom of this bar indicates the alarm depth.

When the bottom crosses above the bar, the alarm will sound and continue to sound until either the bottom drops below the bar again or until the alarm is raised above the bottom. To turn the alarm off, press the ▲ arrow until the indication says U.ALM and the word OFF.

Note: Alarm will not function if bottom image is not displayed in highest level.



LOWER ALARM

The lower alarm is a deep water alarm which is activated when the bottom crosses below your preset depth. To set the lower alarm, press either the ▲ or ▼ arrow on the LOWER ALARM key until the desired depth is reached. An indication will appear in the middle of the screen saying L.ALM and the depth of the alarm setting. After a few seconds this indication will disappear. A bar will also appear from the bottom on the right side of the screen. The top of this bar indicates the alarm depth.

When the bottom crosses below the bar, the alarm will sound and continue to sound until either the bottom rises above the bar again or until the alarm is lowered below the bottom. To turn the alarm off, press the ▼ arrow until the indication says L.ALM. and the word OFF.

- Note:
1. Alarm will not function if bottom image is not displayed in highest level.
 2. The bottom must be on the screen to activate the alarm.

How to Interpret the Display

Your video sounder is factory set to the setting below when first powered up. You may observe strange patterns for the first couple of seconds after power-up due to self check functions.

Initial Settings:

RANGE: 0 to 80 feet
IMAGE SPEED: Fastest Fixed Speed
Bottom Depth: Subject to bottom detection
Others: Subject to signals from Triducer

Image Example of NORMAL RANGE

Figure 23

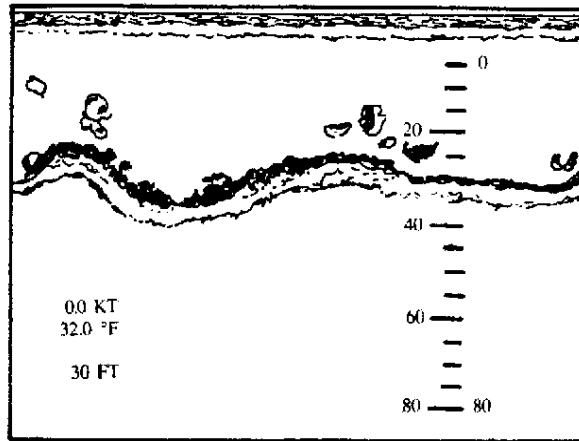
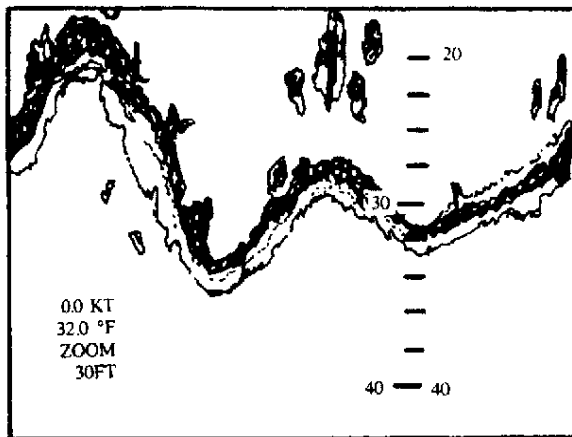


Image Example of ZOOM RANGE

This indicates the image example when the normal RANGE being indicated in the above figure changed to the ZOOM function expanding the second quarter of the NORMAL RANGE.

Figure 24

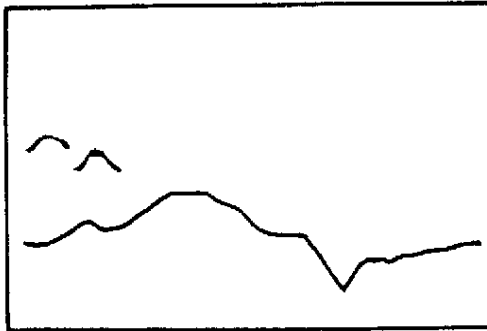


How "BRIGHT" works

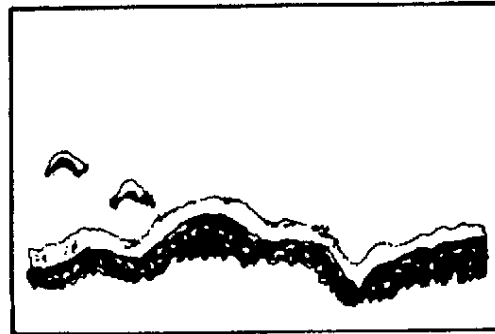
The control has two roles, namely, turning on/off your equipment and adjusting the brightness on the screen.
Should you need more or less brightness for your image reading on the day-light viewing screen, turn it clockwise.

How "GAIN" works

By turning this control, you can adjust the sensitivity of the receiver.
Normally set this to the center position.
When you select a RANGE of more than 160 feet, turn it clockwise to increase the gain, so that you can show clear readings for small faint images.
When you have a RANGE setting of less than 160 feet, turn it counterclockwise to decrease gain and noise.



Low Gain



High Gain

Figure 25

CAUTION

Troubleshooting

1. Make sure that your video sounder, triducer, and power cable are correctly installed as instructed.
2. After setting "GAIN" to center position, turn your video sounder on. Now adjust brightness control to obtain desired brightness of the image. For key functions, your video sounder will automatically give you the predetermined initial setting as instructed.
3. If nothing happens after turning the unit on, check power cable connection, power cable, fuse, and power source.
4. If you cannot see your desired images on the screen with the initial setting, first set the RANGE to a deeper one and readjust the GAIN.
5. If the DATA indicating functions relative to the triducer, such as boat speed, and water temperature indications, looks incorrect, check TEMP and SPEED sensors of the triducer as well as connection between the unit and triducer.
6. If you have different problems from the items described above, we suggest that you contact your dealer or your nearest SI-TEX service center indicating the trouble symptom/status.
7. Notwithstanding all of the great features of a video sounder, one weakness is they are hard to see in some bright daylight situations on an open boat. Your AVS-7 comes standard with a plastic sun hood and visor extension to help combat this problem.
8. Before sending your unit in for service, call our Customer Service Department. We may be able to solve your unit's problem by phone which would save you an unnecessary repair charge.
9. If you send your unit in for service, please include a description of the problem you are having with your unit. This will enable the technician to find the problem quicker and expedite the repair of your unit. Also include your unit's transducer if you are able to do so.

Specifications

Display	6-inch amber screen												
Presentation	4 shades												
Resolution	256 x 256 dots												
Output	100 watts RMS (800 watts peak to peak)												
Frequency	120kHz or 50kHz												
Beam Angle	15°×15° (120KHz) or 50°×50° (50KHz)												
Range	40, 80, 160, 320, 640 feet 10, 20, 40, 80, 160, 320 meter 10, 20, 40, 80, 160 fathom												
Auto Range	Automatically switches basic range to keep bottom displayed within the range from 35% to 90% of the screen.												
Zoom Function	1/4, 1/2, 3/4 of Range Selection												
Noise Rejection	Internal												
Image Speed	Fixed speed: 5 speeds plus STOP												
Alarm	Upper and lower limits alarm												
Digital Readout	Bottom depth, boat speed (KT/MPH), water temperature, measuring unit, range in use, zoom range in use, screen top depth, screen bottom depth, upper and lower alarm limits.												
Pulse Repetition Rate (times/min)	<table border="1" style="display: inline-table;"> <tr> <td>Range</td> <td>40</td> <td>80</td> <td>160</td> <td>320</td> <td>640</td> </tr> <tr> <td>PPR</td> <td>1061</td> <td>827</td> <td>571</td> <td>350</td> <td>200</td> </tr> </table>	Range	40	80	160	320	640	PPR	1061	827	571	350	200
Range	40	80	160	320	640								
PPR	1061	827	571	350	200								
Marker	Upper and lower alarm marks												
Power Requirement	11 to 16 VDC less than 10 watts												

Specifications subject to change without notice.

Standard Equipment List

No.	Articles	Remarks	Weight/Length	Qty.
1	Display unit	With trunnion, knobs	5.lbs (2.3kg)	1
2	Sun hood			1
3	Visor extention			1
4	Transducer	With cable and connector		1 set
5	Power Cable	with connector	6.5feet (2m)	1
6	Spare Fuses	2A (glass fuse, F7142, attached to power cable)		3
7	Installation Materials	Tapping screws (T6 x 25u) for mounting the color display unit.		4
8	Clear plastic cover			1
9	Operation manual			1

CERTIFICATE OF LIMITED WARRANTY

Providing you present a valid proof of purchase, SI-TEX Marine Electronics Inc. warrants all parts of each new product against defect in material and workmanship under normal use and will repair or exchange any parts proven to be defective at no charge for a period of two years for parts and one year for labor from the date of purchase, except as provided below under Limited Warranty Exceptions.

Defects will be corrected during normal working hours by an authorized SI-TEX Marine Electronics Inc. dealer, service center, or at the SI-TEX office in St. Petersburg, Florida. There will be no charge for labor for a period of one year from the date of purchase, except as provided below under Limited Warranty Exceptions.

This Warranty and Proof of Purchase must be made available to the authorized SI-TEX Marine Electronics Inc. service location or dealer at the time of service.

LIMITED WARRANTY EXCEPTIONS

SI-TEX Marine Electronics Inc. will not be responsible for equipment which has been subjected to water or lightning damage, accident, abuse, or misuse nor any equipment on which the serial number label has been removed, altered or mutilated.

SI-TEX Marine Electronics Inc. assumes no responsibility for damage incurred during installation.

This Limited Warranty is effective only with respect to the original purchaser.

Any cost associated with transducer replacement, other than the cost of the transducer itself, is specifically excluded from this Limited Warranty.

Travel cost incurred will not be accepted for SI-TEX Marine Electronics Inc. products.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF.

SPECIFIC EXCLUSIONS

Charges for overtime, stand-by, holiday, and per diem are specifically excluded from the Limited Warranty.

Chart paper, stylus, stylus belt, lamps, and fuses are consumable items and are not covered by this Limited Warranty.

Installation workmanship or materials except as provided directly by SI-TEX Marine Electronics Inc. are not covered by this Limited Warranty.

SI-TEX Marine Electronics Inc. equipment or parts thereof which have been repaired or altered except by an authorized SI-TEX Marine Electronics Inc. dealer or service center are not warranted in any respect.

Transducer, software update, battery, microphone, magnetron, and microwave components and water damage on water resistant VHF radio are items excluded from the two-year warranty and are covered by warranty for a period of one year for both parts and labor.

SI-TEX Marine Electronics Inc. will not, at any time, assume any costs or labor charges for checkout or external line fuse replacement or problems not found to be at fault in equipment itself.

THERE ARE NO WARRANTIES OR GUARANTEES EXPRESSED OR IMPLIED WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. SI-TEX MARINE ELECTRONICS INC. HAS NO OTHER LIABILITY TO PURCHASE FOR DIRECT OR CONSEQUENTIAL DAMAGE OR ANY THEORY INCLUDING ABSOLUTE LIABILITY, TORT, OR CONTRACT. THIS LIMITED WARRANTY CANNOT BE ALTERED OR MODIFIED IN ANY WAY AND SHALL BE INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF FLORIDA. THIS WARRANTY IS LIMITED TO THE CONTINENTAL U.S.A., ALASKA, HAWAII, AND CANADA.

HOW TO OBTAIN SERVICE UNDER THIS WARRANTY

To provide better flexibility, SI-TEX Marine Electronics Inc. gives you the option of obtaining service under this warranty by either:

a) Contacting an authorized SI-TEX Marine Electronics Inc. service station (The closest service station may be found by contacting your dealer of purchase.)

or

b) Shipping your equipment prepaid via UPS or truck with insurance prepaid to SI-TEX Marine Electronics Inc. at the address provided below.

SI-TEX Marine Electronics Inc. will, whenever possible, make all repairs covered by Limited Warranty within two weeks of receiving the equipment in Florida and return same to you, freight prepaid.

c) You must present a copy of your Purchase Sales Slip at the time you request warranty service.

Shipping/Mailing Address:

SI-TEX Marine Electronics Inc.
11001 Roosevelt Blvd., Suite 800
St. Petersburg, FL 33716
727-576-5734

SI-TEX Marine Electronics Inc. offers a complete line of quality marine electronics including fishfinders, electronic charting systems, radars, autopilots, GPS/WAAS/Loran receivers, SSB receivers, direction finders, VHF radios, VHF marine & TV antennas, and integrated systems.

For more information, contact your SI-TEX dealer or the main office, located in St. Petersburg, Florida.

NOTES PAGE

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SI-TEX MARINE ELECTRONICS INC.

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