

COLOR VIDEO SOUNDER

CVS - 210

OPERATION MANUAL

SITEX[®]

DOC NO.CVS-210 08-95

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1. IMPORTANT NOTICE

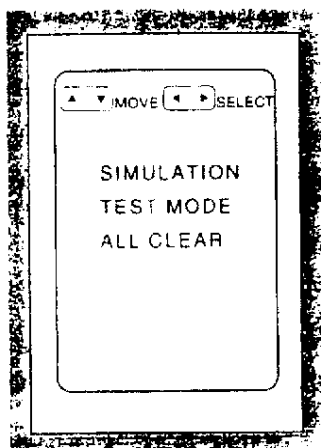
Congratulations on your purchase of the SI-TEX CVS-210, 10" Color Video Sounder.

IT IS RECOMMENDED THAT YOU READ THROUGH THE OPERATION MANUAL PRIOR TO INSTALLING AND OPERATING THE UNIT.

After reading the operation manual, if you still do not understand about the operation and installation of your unit, we recommend you contact your dealer or SI-TEX Marine Electronics Customer Service Department at 727-576-5734.

SIMULATOR

This unit contains a built-in simulator for practice, that you can access as below.

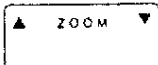


- 1) To get this display  + 

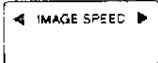
Press and hold the **MENU** key and touch the **ON** key.

Do not release the **MENU** key until the display comes up.

- 2) To select the simulator

Press ▲ or ▼ of  key.

The selected item is indicated in yellow.

- 3) Press ◀ or ▶ of  key.

Reading this manual and practicing in the simulator mode will enhance your skill operating this unit

Other items are used in the following situations.

TEST MODE

Please refer to 9. ADJUSTMENT OF SCREEN.

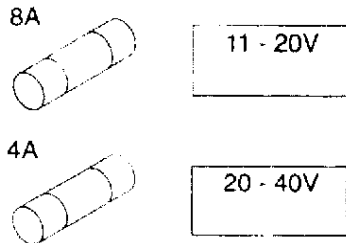
ALL CLEAR

All contents will return to the initial conditions

WARNINGS!

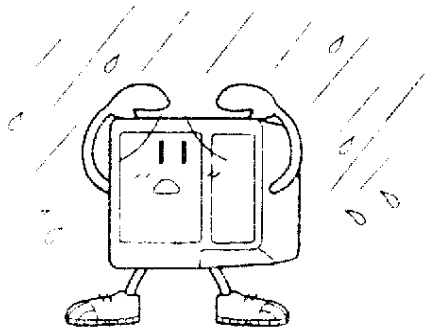
A. Be sure to observe proper polarity when connecting the power cable to the battery. Black with white line wire is positive and solid black wire is negative.

B. 8A and 4A fuses are provided for different power supply voltage. 8A should be used for power of 11 - 20V. 4A for power of 20V - 40V.

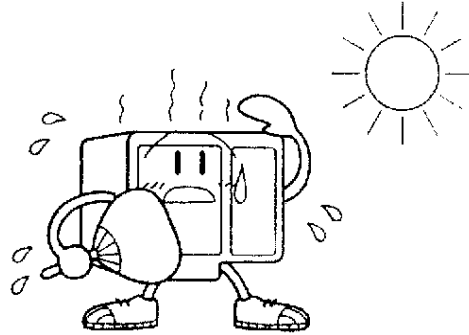


8A fuse is installed on the unit at the factory.

C. The CVS-210 is not waterproof. When installing the unit, take this into consideration. Protect the unit from the elements whenever you can.



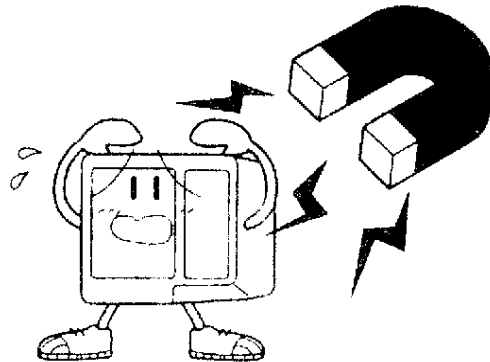
D. Long periods of direct sunlight on the display should be avoided, as the unit can be damaged.



E. We recommend you install the CVS-210 as far as possible from any antennas (Loran, VHF, etc.). This will help prevent noise interference.

F. Use of a transducer other than the one supplied by SI-TEX can degrade the performance of this unit.

G. Do not install the unit near magnetic material as it will cause color distortions.



2. TRANSDUCER INSTALLATION AND MAINTENANCE

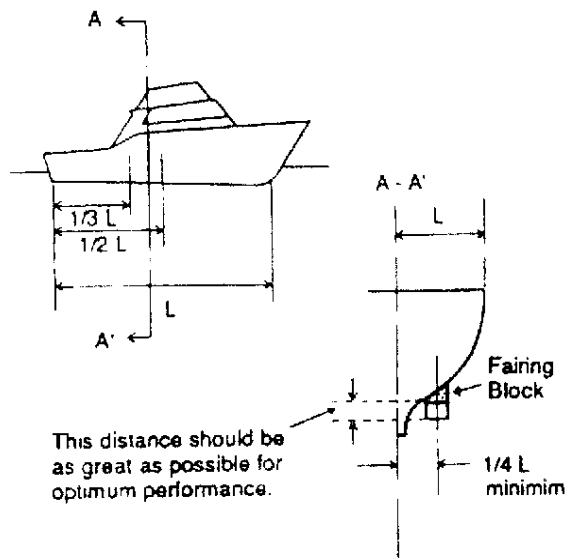
CAUTION

Mounting your transducer requires drilling holes into your boat hull, which can affect its water integrity and, therefore, should be attempted only by qualified personnel. If you are in doubt as to your ability to attempt this installation, we recommend you take your boat to a marine dealer and/or service center that has people qualified and experienced in transducer installations.

Saltwater Maintenance

Antifouling paint - If the vessel is kept in saltwater, sea growth can quickly accumulate on the transducer face and greatly reduce this unit's performance in a matter of weeks. It is recommended that at least the acoustic face of the transducer be coated with a special transducer antifouling paint. Alternatively, the entire transducer can be painted, and is easier to keep clean. All copper base paints are unsatisfactory and will not allow this unit to detect bottom or fish. If fouling does occur, use a stiff brush or putty knife to remove growth. Wet sanding of the transducer surfaces is O.K. with a #220 or finer grade wet or dry paper.

The standard transducers of CVS-210 provided by SI-TEX are through hull type.



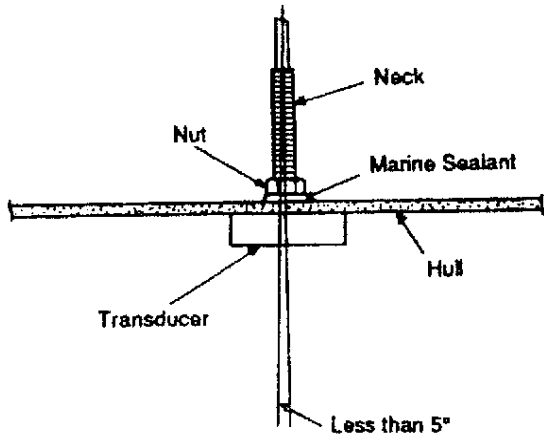
The proper installation location varies depending on the boat type and the usual running speed.

However, in general, choose a place between $1/3$ and $1/2$ of the boat's length from the stem.

The echo sounder is designed to display the data by receiving the ultrasonic signals that were transmitted to the bottom vertically and reflected.

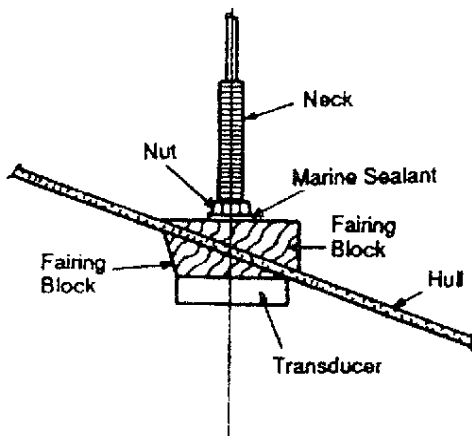
Therefore, install the transducer so that its acoustic face is parallel to the water surface. For this alignment, some boat hulls may require fairing blocks

DEAD RISE ANGLE LESS THAN 5°



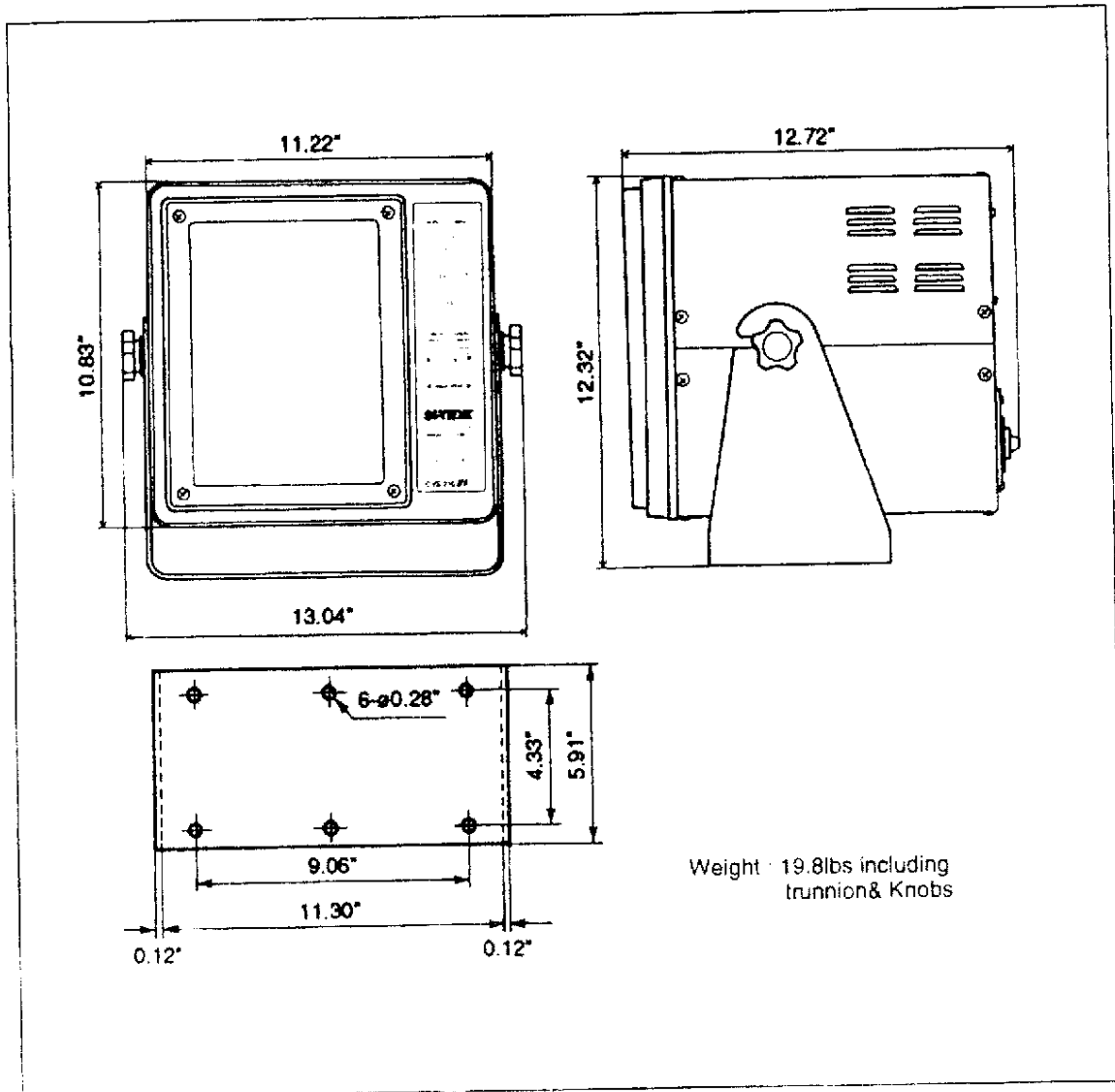
In this case, no fairing blocks are necessary. To prevent water intrusion, any gaps between the stem threads and the holes should be filled with marine sealant.

DEAD RISE ANGLE MORE THAN 5°

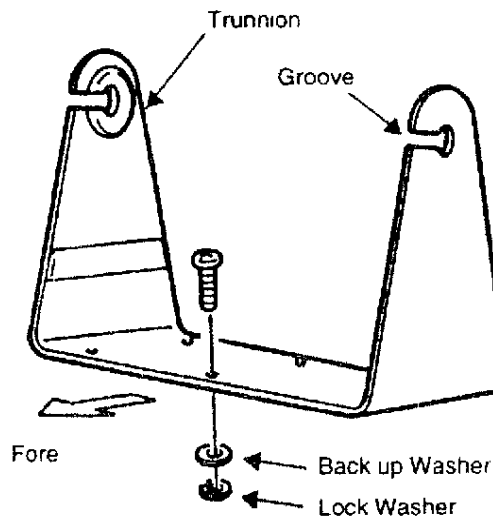


Apply fairing blocks inside and outside of the hull, and install the transducer with its face parallel to the water surface. To prevent water intrusion, any gap between the stem threads and the block should be filled with marine sealant.

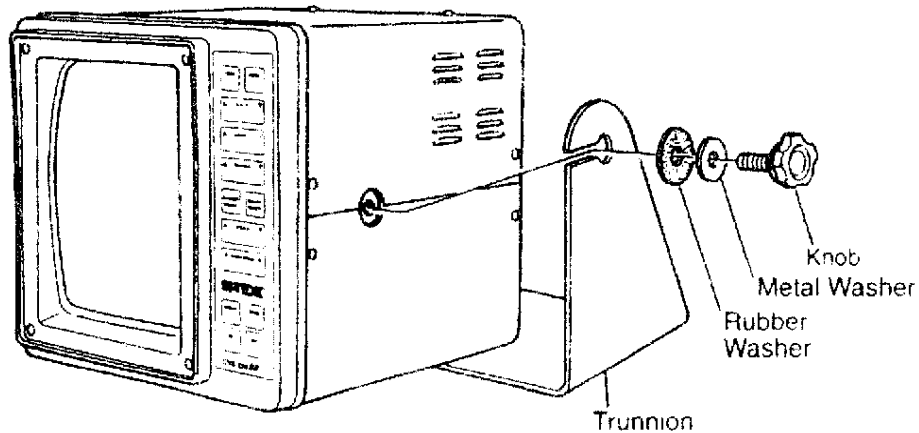
3. CVS-210 MOUNTING PROCEDURE



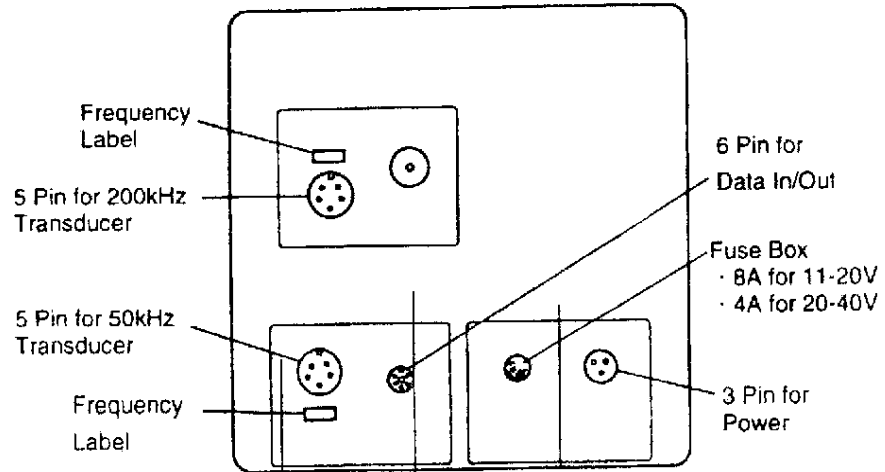
- 1) The CVS-210 should be installed on a flat, solid surface for maximum stability.
As interference among other marine electronics equipment on board is a serious problem, consider this when selecting your location and before you decide on a permanent mounting place.
- 2) Position the trunnion mount, mark and drill six 1/4" holes.
Secure it using stainless steel screws or through bolts with backup washer and lock washers.
Mount the trunnion with the slots facing forward.



- 3) Place the display unit in its mount and secure it to the trunnion using trunnion knobs and washers as shown.



4. CONNECTOR CONNECTIONS

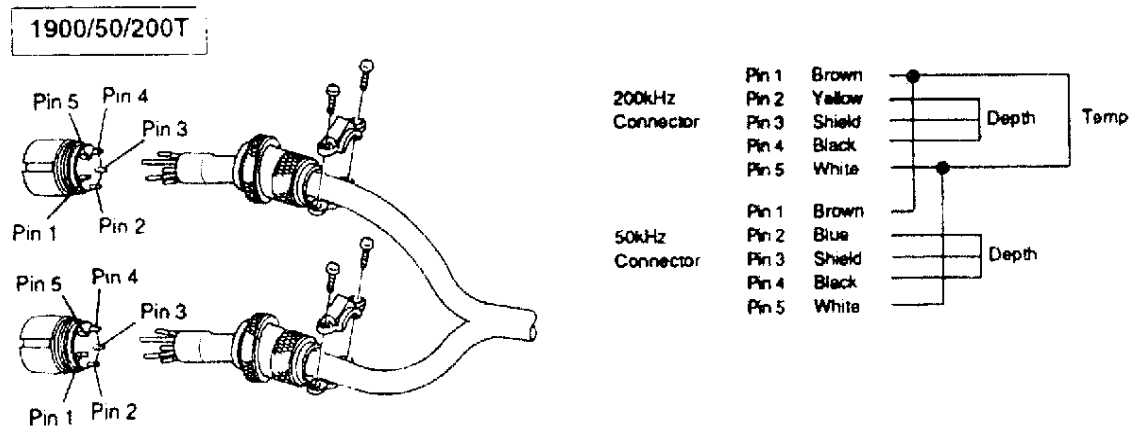


1) Transducer

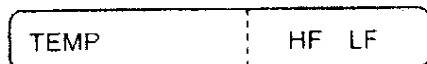
The CVS-210 is a dual frequency unit of 50kHz and 200kHz, for which two 5 pin sockets are provided.

The recommended transducers available from SI-TEX are as below:

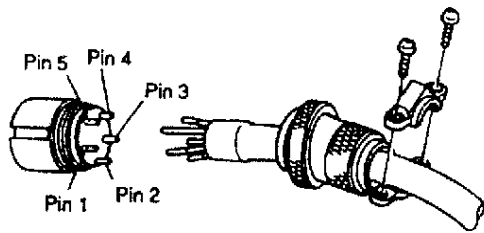
1900/50/200T (Bronze Thru-Hull w/ Temp Only)	Dual Frequency Single Transducer
1900T & 705/200T (Bronze Thru-Hull w/ Temp Only)	Two Separate Transducers 1900T=50kHz, 705/200T 200kHz



As the temperature sensor is provided to the 200kHz side, please set for HF for its selection in Menu 2.



1900T & 705/200T



Pin1	Lt. Green	
Pin2	Black	
Pin3	Shield	
Pin4	White	
Pin5	Red	

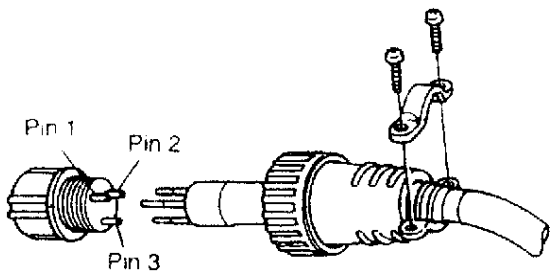
.. As the both transducers have temperature sensors please decide which transducer's sensor to use in Menu 2.



2) Data Input/Output NMEA0183

1	Shield	
2	Signal	
3	Return	
4	Signal	
5	Return	
6	+ 12V	

3) Power



Pin1	White	+	(Positive)
Pin2	Black	-	(Negative)
Pin3	Shield		

4) Fuse

We supply two kinds of fuse. One is 8A and the other is 4A. Please use them properly depending on the power supply voltage.

Power Voltage	Fuse to Use
11 - 20V	8 amp.
20 - 40V	4 amp.

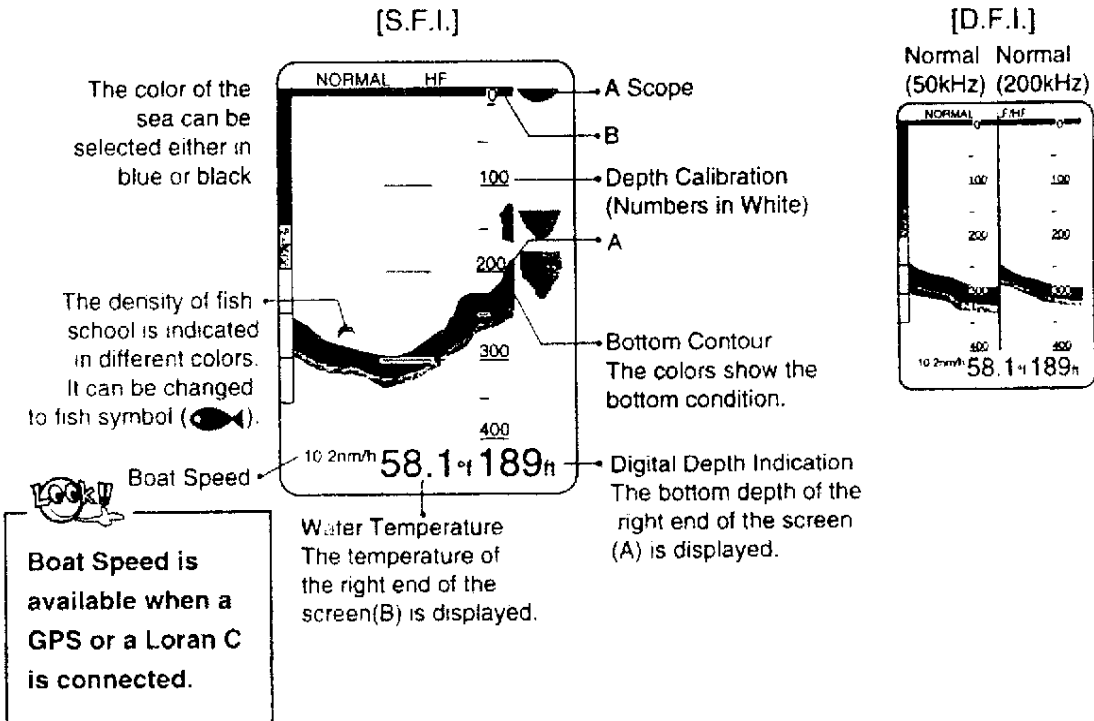
When you get the product, 8A fuse is installed. If you use the power supply of 20 - 40V, please change it to 4A fuse, which is included in the accessory box.

5. DISPLAYS AND OPERATION KEYS

5-1. SOUNDER DISPLAY

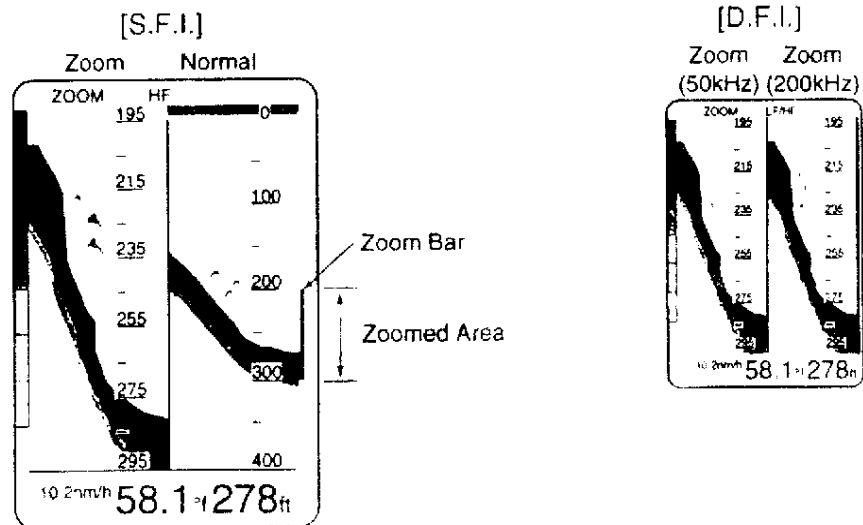
S.F.I. = Single Frequency Image
 D.F.I. = Dual Frequency Image

Normal Display

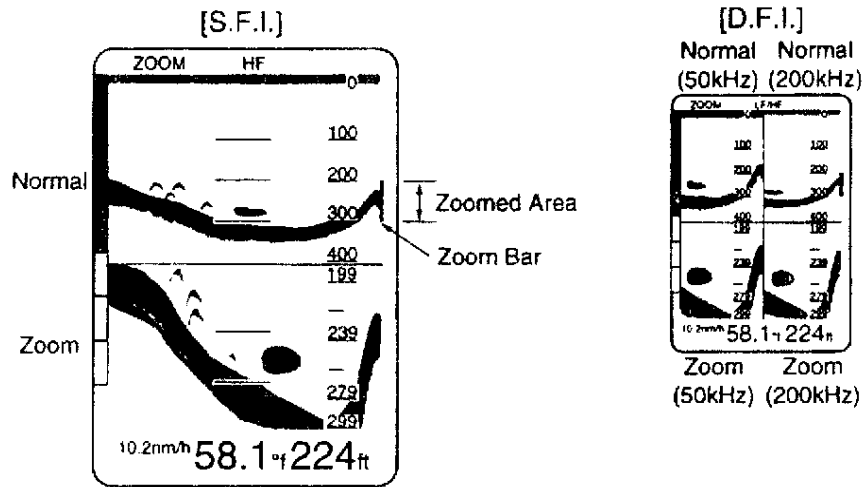


Normal + Zoom Display

Vertical display split



Horizontal display split



Normal + Bottom Lock Display

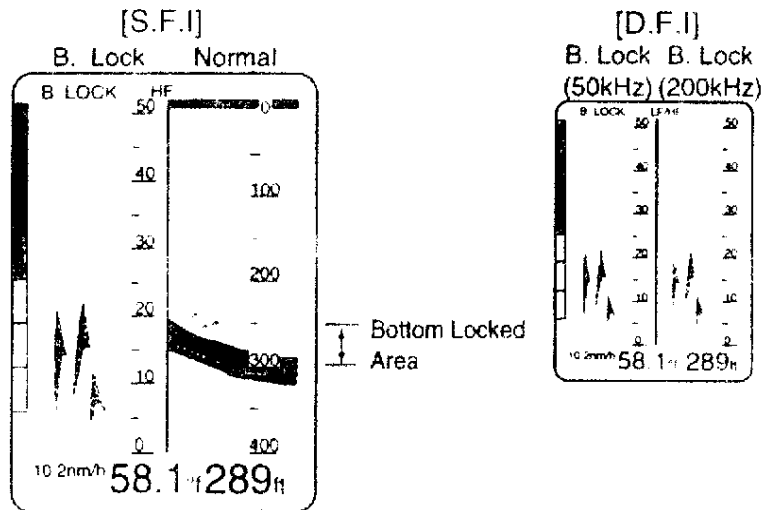
LOCK

Selection of Bottom Lock or Bottom Zoom

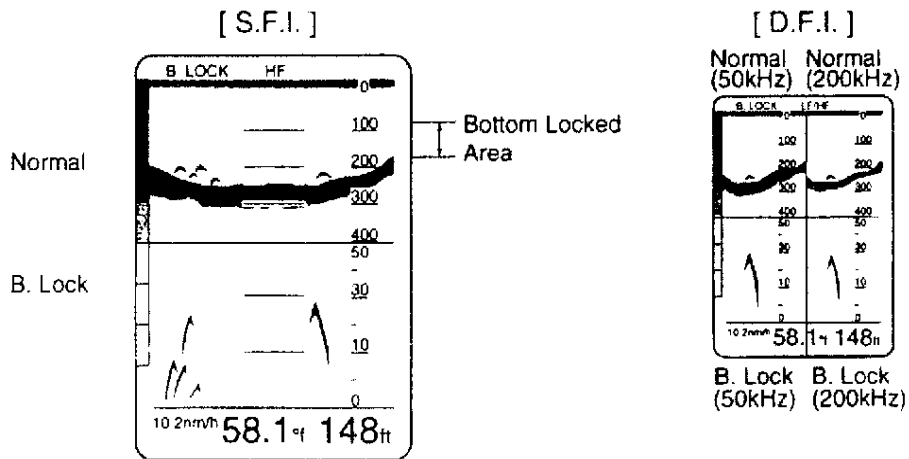
It is done in Menu 2.

BOTTOM ZOOM LOCK

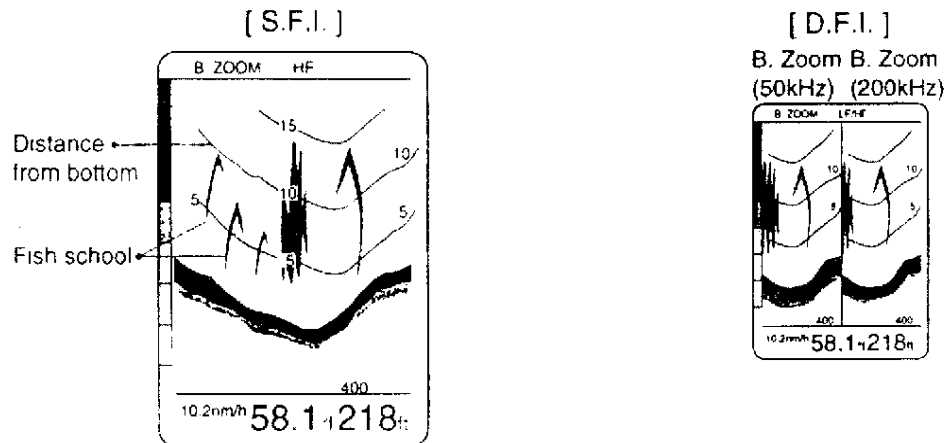
Vertical display split



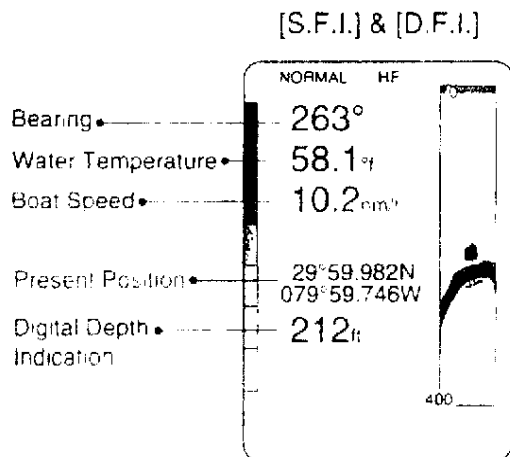
Horizontal display split



Bottom Zoom Display



Big Number Display



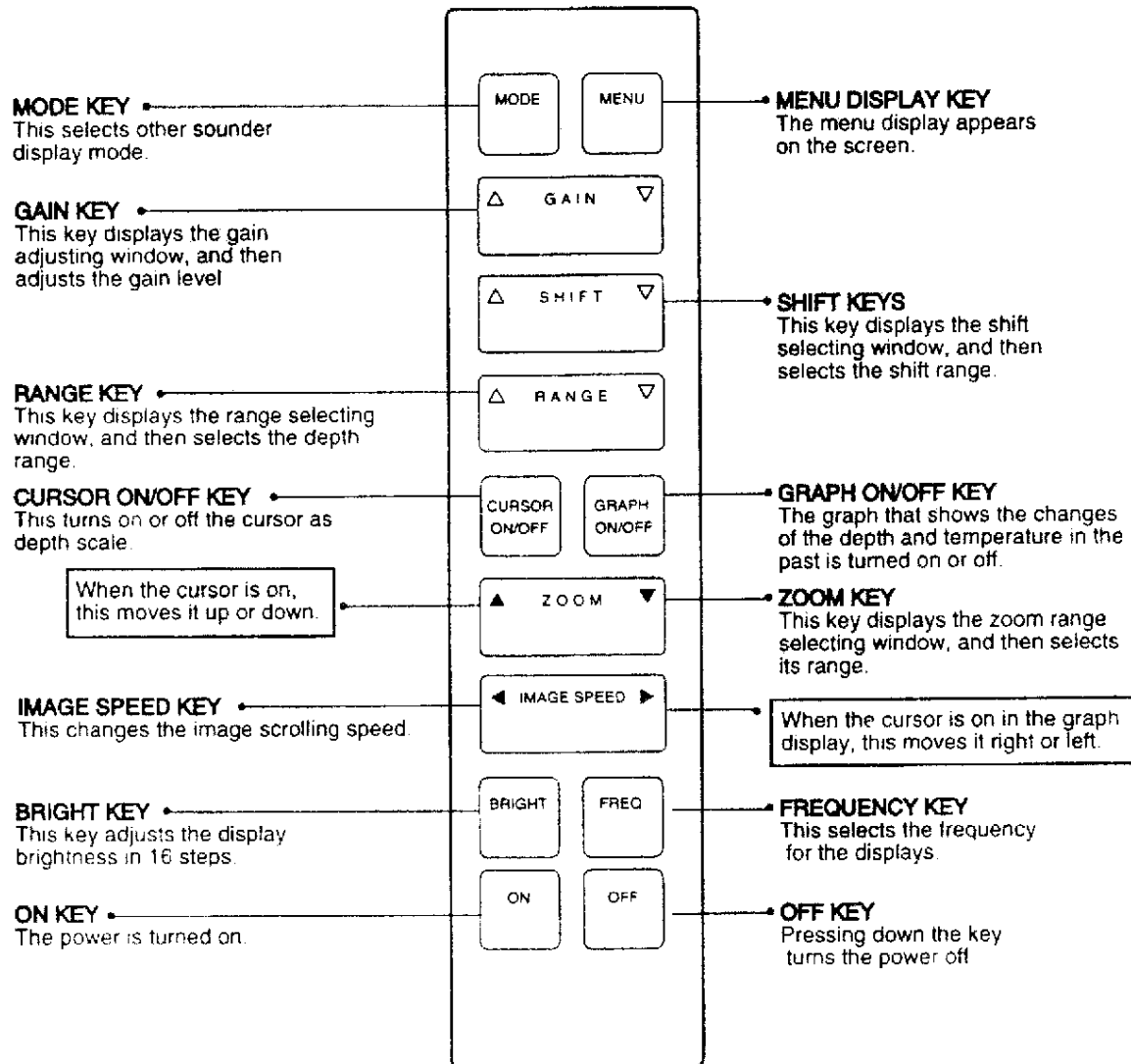
5-2 MENU DISPLAY

1		△ ▽	MOVE	◀ ▶	SELECT
GAIN	MAN.	AT			
RANGE	MAN.	AT			
DYNAM. RNG	A	B	C	D	
A. CLUTTER					
C. ECHO	OFF	1	2		
S.T.C. HF	OFF	1	2	3	
S.T.C. LF	OFF	1	2	3	
PULSE	S	M	L		
POWER	L	M	H		

2		△ ▽	MOVE	◀ ▶	SELECT
SCALE	OFF	ON			
F. SYMBOL	OFF	ON			
A-SCOPE	OFF	ON			
ZOOM DISP					
BOTTOM	ZOOM	LOCK			
SPEED AVE.	001	sec			
SPEED ADJ.	100				
TEMP.	HF	LF			

3		△ ▽	MOVE	◀ ▶	SELECT
B.GROUND	BL	BK			
ALARM TONE	A	B	C	D	
KEEL ALARM	OFF	ON			
	0	ft			
FISH ALARM	OFF	ON			
DIST UNIT	nm	sm	km		
DEPTH UNIT	ft	m	fm		
	l. fm	HR			
TEMP UNIT	°f	°c			

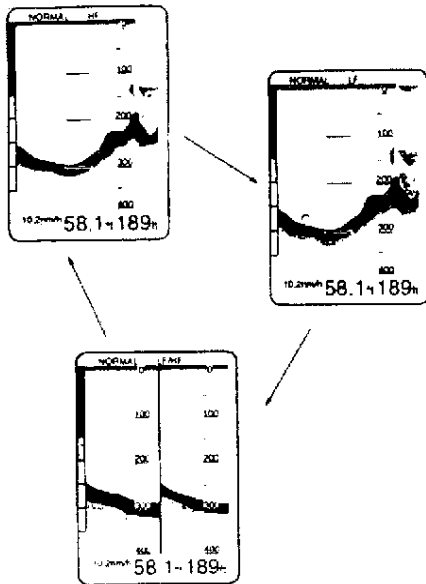
5-3. KEYBOARD



6. OPERATION


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6-1. SELECTION OF FREQUENCY MODE

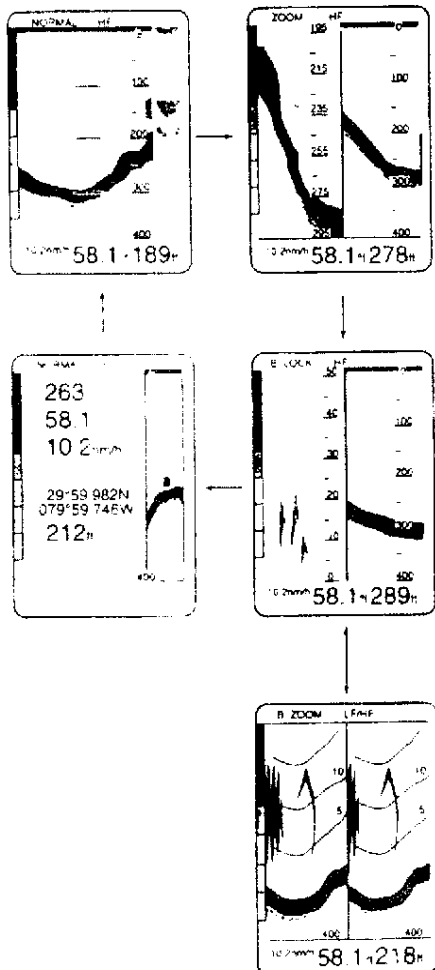



The CVS-210 is a dual frequency sounder of 200kHz (High Frequency) and 50kHz (Low Frequency).

You can display the images of one of two frequencies independently, or both images at the same time.

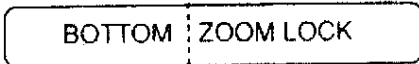
Pressing the  key selects them in rotation.

6-2. SELECTION OF OTHER SOUNDER DISPLAYS



Pressing the  key selects one of four displays in rotation.

This selection is done in the Menu 2.



6-3. ADJUSTMENT OF GAIN

The gain should be adjusted so that the bottom is displayed in red.
 The gain level changes depending on bottom depth, nature of soil, kinds of fish and way of transducer mount. Referring to the following drawings, please adjust it.



Poor

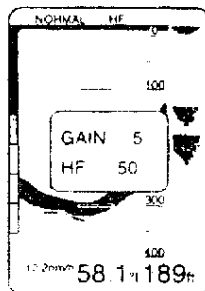
Good

High

NOTE:


The gain is set to Manual at the factory. Please adjust it to the proper level, or change to Auto mode in Menu 1.

[1] MANUAL GAIN ADJUSTMENT (While in Manual Gain Mode)

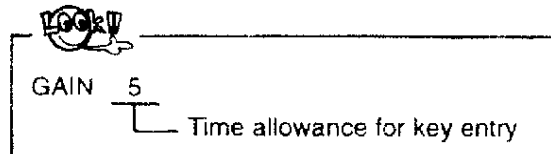


1) When you press the  key, you will get this window.

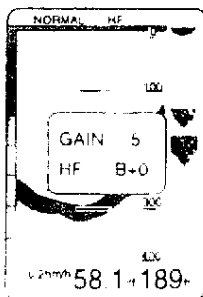
The frequency here indicates the one you selected in 6-1.

If you selected LF + HF, pressing the  key shows LF and HF alternately.

2) " Δ " side increases the gain level and " ∇ " side decreases it between 0 and 50.



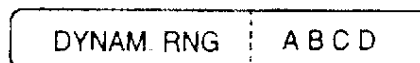
[2] AUTO GAIN ADJUSTMENT (While in Auto Gain Mode)



1) When you press the  key, you will get this window.

The frequency here indicates the one you selected in 6-1.

"B" shows the dynamic range level. (It is selected in Menu 1. Please refer to it.)



2) Pressing the key selects the offset value between + 5 and -5



Offset Value

This is for the fine adjustment of auto gain, which may be necessary to compensate for the change of gain due to the way and place of transducer mount, and the nature of bottom soil.

6-4. CHANGE OF DEPTH RANGE AND RANGE SHIFT

[1] DEPTH RANGE

You can select auto or manual range mode in Menu 1. It is set to manual at the factory.

Manual Range · As the depth range is fixed, you can see the change of the bottom contour at a glance.

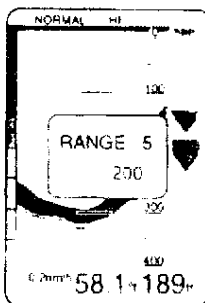
Auto Range · Depending on the bottom depths, the depth range is selected automatically. This keeps displaying the bottom image on the screen without any manual intervention.

NOTE:

The following conditions may fluctuate the digital depth indication or select an improper depth range.

- Boat is running too fast.
- Gain is low.
- Depth is very shallow so that the transducer and the bottom are extremely close each other.

MANUAL RANGE SELECTION (While in Manual Range Mode)



- 1) When you press the  key, you will get this window.
- 2) Pressing the key selects a shallower or a deeper depth range.



Maximum Depth Range

The maximum depth range is 3,000 feet.

Available ranges

10, 20, 30, 40, 50, 60, 80, 100, 120, 140, 160, 200, 240, 300, 400
500, 600, 800, 1000, 1500, 2000, 3000

[2] RANGE SHIFT

Range shift function can be set for both auto depth range mode and manual depth range mode.

RANGE SHIFT IN MANUAL RANGE MODE

<div style="border: 1px solid black; padding: 2px; display: inline-block;">RANGE 5 200</div>	<p>1) Select a depth range to use with the RANGE key.</p>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">SHIFT 5 100</div>	<p>2) Select a shift range with the SHIFT key.</p>
--	---	--	--

- Selected depth range - 200 feet
- Selected shift range - 100 feet

The CVS-210 operates in 100-300 foot depth range as it is shifted by 100 feet.

RANGE SHIFT IN AUTO RANGE MODE

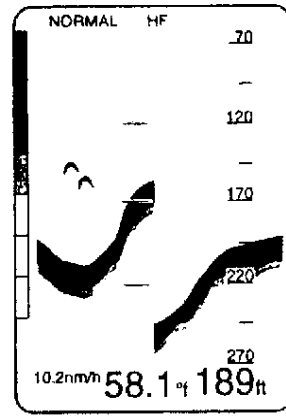
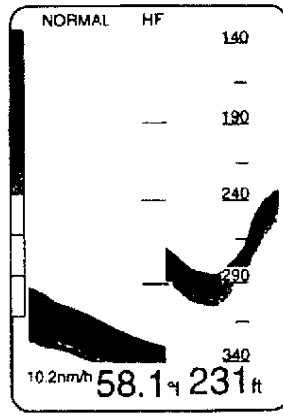
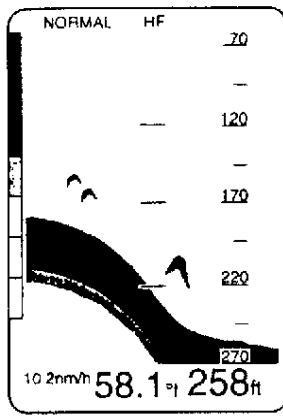
<div style="border: 1px solid black; padding: 2px; display: inline-block;">RANGE 5 200</div>	<p>1) Select a depth range to use with the RANGE key.</p>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">SHIFT 5 100</div>	<p>2) Turn the shift function on by selecting any number other than "OFF" with the SHIFT key.</p>
--	---	--	---

- Selected depth range - 200 feet
- Shift function on - "OFF" → "10"

The CVS-210 selects the best upper and lower limits with 200 feet range width.



When the bottom goes out of the screen, the new range is automatically selected to keep it on the screen.

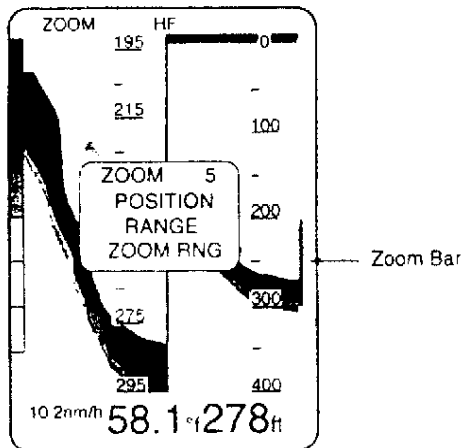


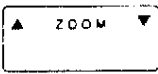
· The range width(200 feet) is unchanged.

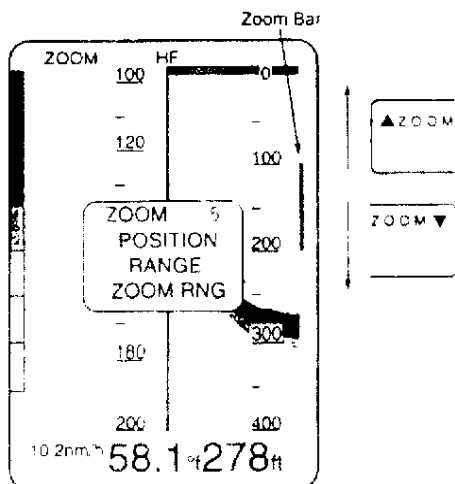
6-5. CHANGE OF ZOOM RANGE

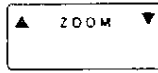
When you select zoom mode, the zoomed image of a certain area is displayed together with the normal image on the screen.


The area can be selected anywhere within the normal range. When you change the zoom range, you have to display the zoom mode.

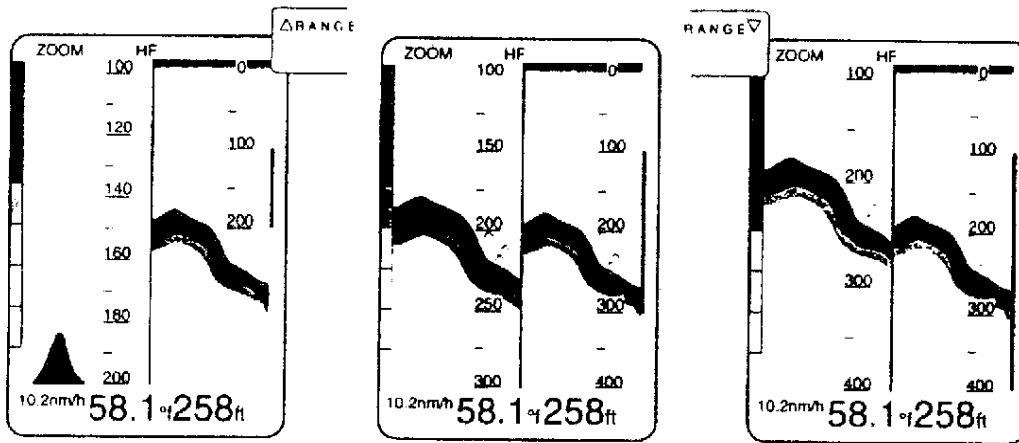


- 1)  key for displaying the window as indicated on the left.

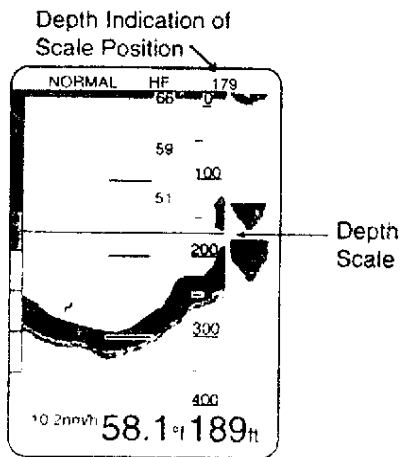


- 2)  key again for selection of the zoom range position. (The bar moves up and down.)

- 3)  key for changing the zoomed area. (The length of the zoom bar changes.)



6-6. DEPTH SCALE



You can see the exact depth of a point, fish school, etc., using this scale.

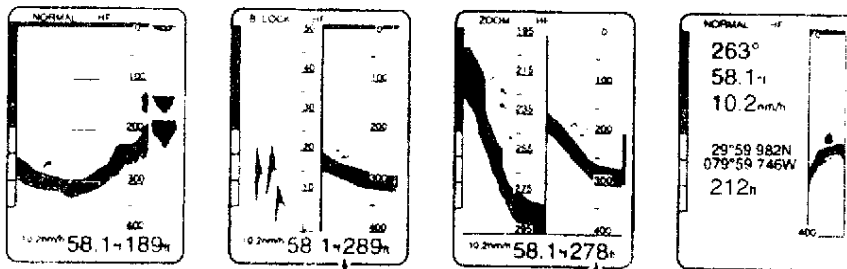
Press **CURSOR ON/OFF** key. The depth scale is displayed.

- 1) **ZOOM** for moving the depth scale up and down



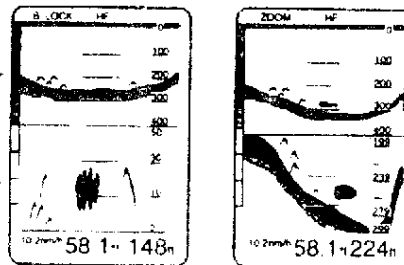
Displays where the depth scale is available.

[S.F.I]

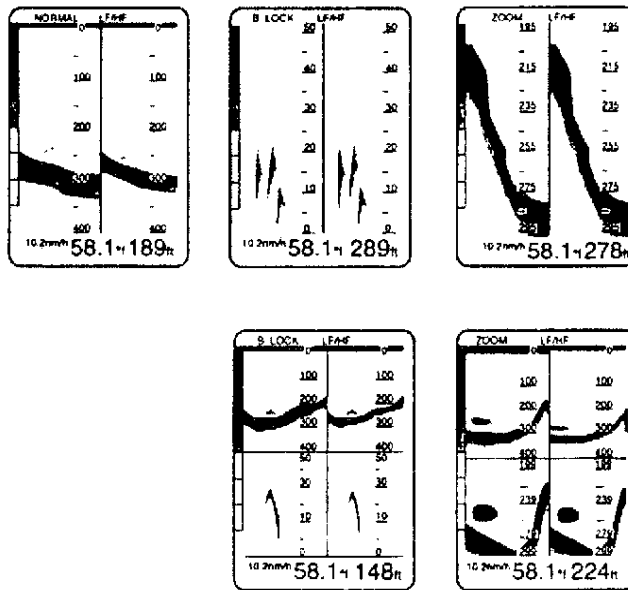


Depth scale is active for normal displays

Depth scale is active for both displays



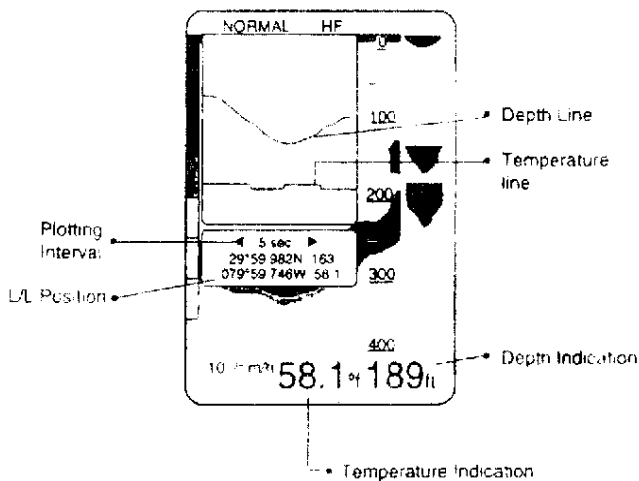
Depth scale is not available for Bottom Zoom display





∴ Depth scale is not available for Bottom Zoom displays

6-7. GRAPH MODE

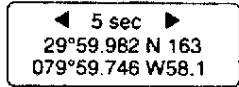
The graph mode shows the past history of the depths and water temperatures. It is effective to relocate a bottom.



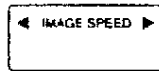
Pressing the  key turns the graph display on as indicated. Pressing it again turns it off.

 To get L/L position, you have to connect a GPS to the CVS-210.

1) Plotting Interval



The interval to plot the depth and temperature on this graph can be changed by pressing the

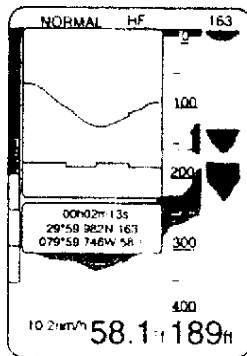



key. It is initially set to 5 sec.



Available Intervals
 1, 2, 3, 5, 8, 10, 20, 30, 40, 50 sec.,
 1, 2, 3, 5, 8, 10 min.

2) Verifying the past point




Pressing the  key turns the cursors on the sonar screen(=depth scale) and on the graph screen.

Depth Scale
 Please refer to 6-6.

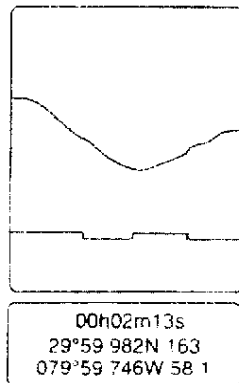
The scale on the graph screen can be moved to the right or left with the  key.



Plotting Interval changes to Time.

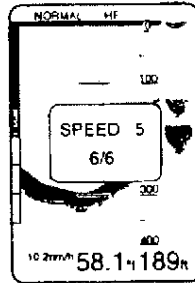


The diagram shows a button with '5 sec' and coordinates '28°59.982N 163 079°59.746W 58.1' on the left, an arrow pointing to a box on the right containing '00h02m13s' and the same coordinates.



- 1) L/L : This indicates the cursor position. You can see the position in the past.
- 2) Time: This indicates how far it is from the present position to the cursor position in time.
- 3) Numbers: The upper number indicates the depth of the cursor position.
 The lower number indicates the water temperature of that position.

6-8. IMAGE SCROLLING SPEED



pressing the  key displays this window.

Pressing the key again adjusts the image scrolling speed.



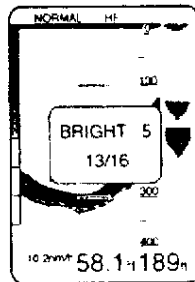
Image Scrolling Speed

STP -1/6 -2/6 -3/6 -4/6 -5/6 -6/6 -SPD

SPD

The image speed varies according to the boat speed.

6-9. SCREEN BRIGHTNESS

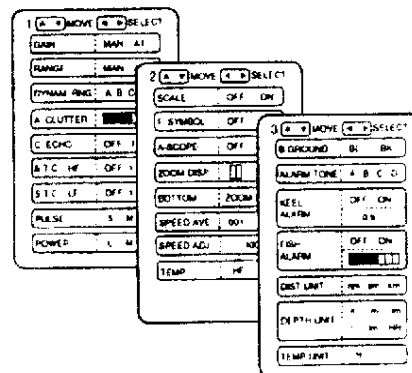
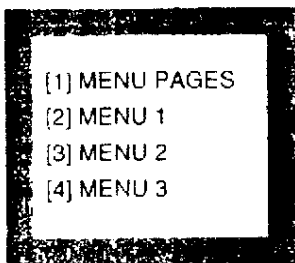


Pressing the  key displays this window.

Pressing the key again adjusts the screen brightness in 16 steps.

6-10. MENU FUNCTIONS

[1] MENU PAGES



Pressing the  key selects one of them.

[2] MENU1

1	▲	MOVE	◀	▶	SELECT
GAIN		MAN. AT			
RANGE		MAN. AT			
DYNAM. RNG		A B C D			
A CLUTTER		■■■■			
C. ECHO		OFF 1 2			
STC HF		OFF 1 2 3			
STC LF		OFF 1 2 3			
PULSE		S M L			
POWER		L M H			

GAIN MODE SELECTION

GAIN	MAN. AT
------	---------

Auto gain mode is on.
Manual gain mode is on.



Please refer to 6-3.
ADJUSTMENT OF GAIN.

RANGE MODE SELECTION

RANGE	MAN. AT
-------	---------

Auto range mode is on.
Manual range mode is on.



Please refer to 6-4. **CHANGE OF DEPTH RANGE AND RANGE SHIFT.**

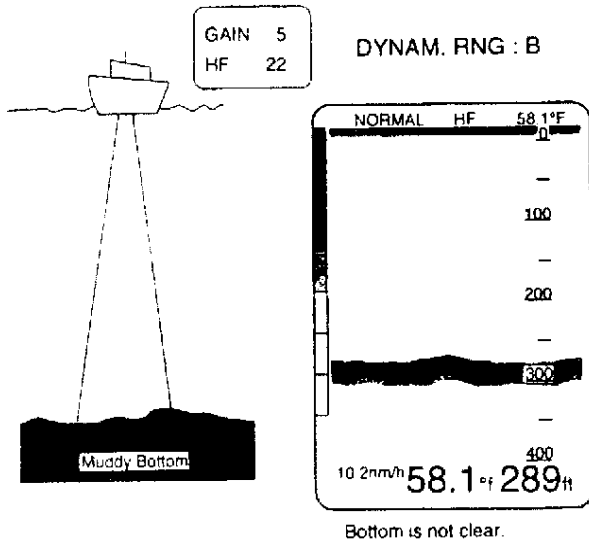
DYNAMIC RANGE

DYNAM. RNG	A B C D
------------	---------

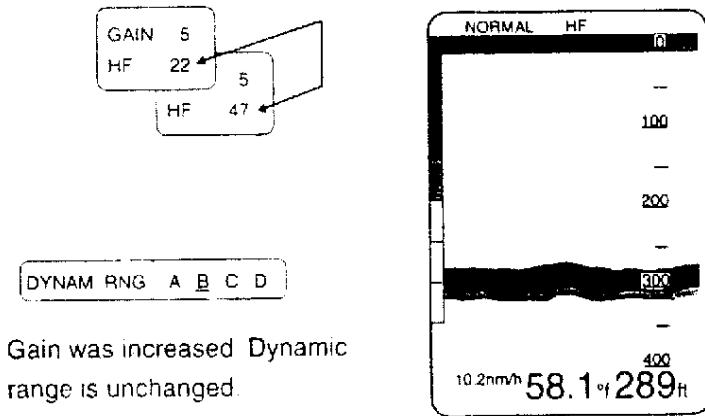
Select a level according to the bottom condition



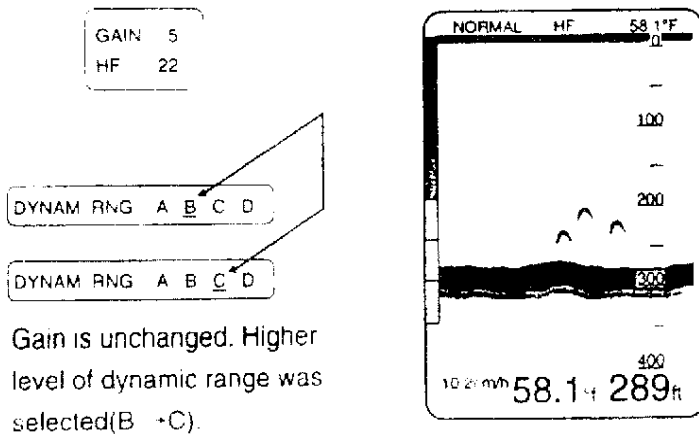
It is initially set to "B".



When the bottom of the sea is soft like mud, the gain is usually increased to get the clear bottom image. However, it also causes noise on the screen. This function is provided to show the bottom clearly without the clutter on the screen.



Bottom became clearer but the unwanted noise also appeared and it is difficult to see the screen.

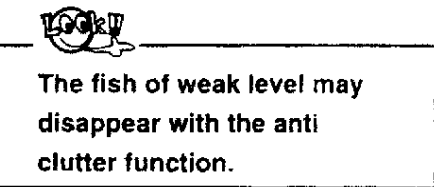
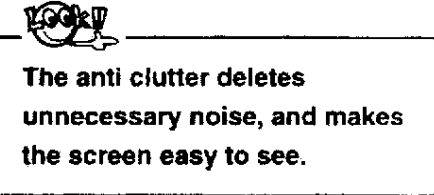
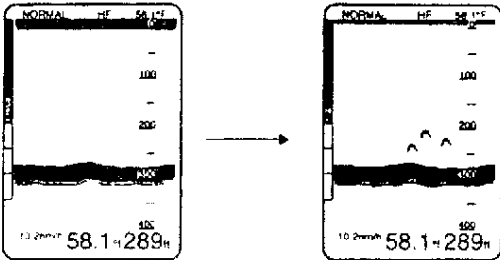
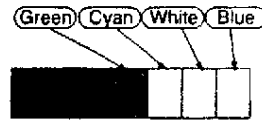
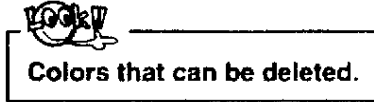


Bottom became clearer. No unwanted noise is displayed

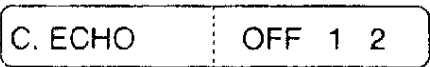
ANTI CLUTTER



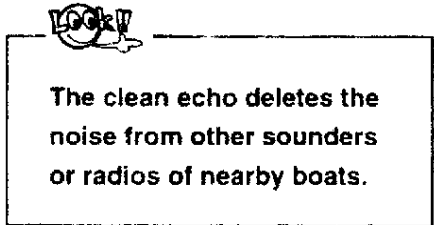
The colors you want to delete can be selected.



CLEAN ECHO



When there are lots of noise, use this level.
 When there are some noise, use this level.
 Clean echo function does not work.



S.T.C.

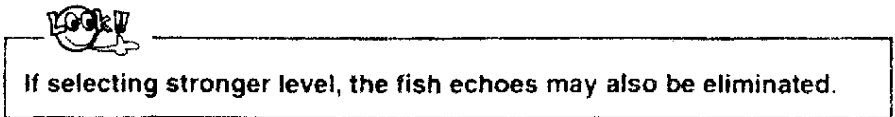
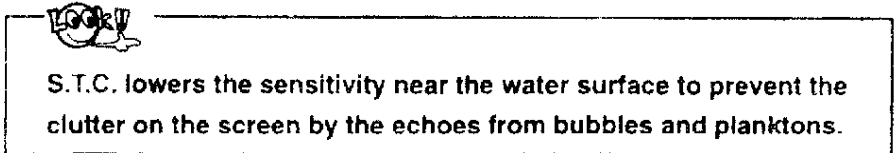


For HF = high frequency (200kHz)



For LF = low frequency (50kHz)

The higher the number, the stronger the level.
 S.T.C. function does not work.



PULSE LENGTH SELECTION

PULSE S M L

They indicate short, medium or long pulses.

Pulse Length	Long	←	Medium	→	Short
Depth Resolution	Good	←		→	Bad
Fish Detection	Bad	←		→	Good
Purpose	Searching deep sea				Discriminating fish distribution



Please do not use S for deep sea. Fish or bottom may be lost.

POWER SELECTION

POWER L M H

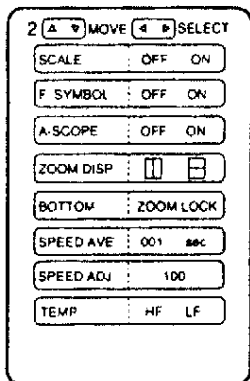
They indicate low, middle or high powers.



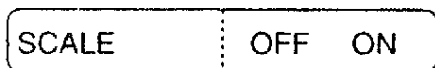
Lowering power is effective to avoid the interference from other sounder with the same frequency.

Low power for the deep depths may lose the fish and the bottom.

(3) MENU 2

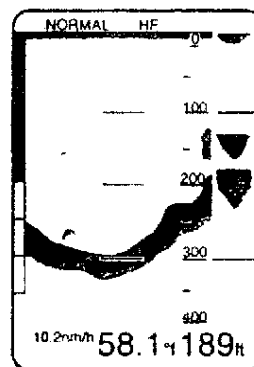


SCALE LINES



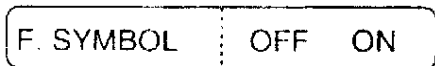
Scale lines are not displayed.

Scale lines are displayed on the screen.



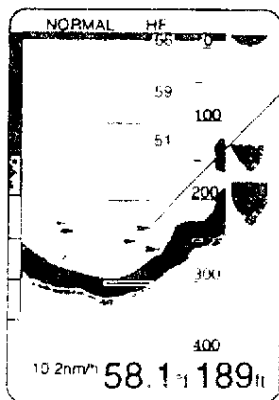
Scale lines

F. SYMBOLS



Fish are indicated with fish symbols.



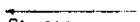



Fish symbol function does not work



Fish Symbols



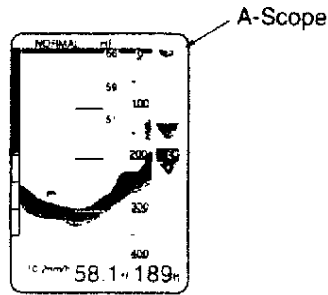
- Fish symbols are displayed only in the normal mode.
- The noises caused by running or the bubbles may be displayed with fish symbols.

Colors	(Red)  (Blue) 
Echo Strength	Stronger  Weaker 
Symbol Size	Larger  Smaller 

A-SCOPE



→ A-Scope is turned on.
→ A-Scope is turned off.

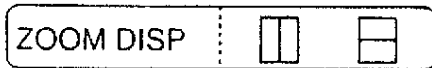


A-Scope indicates the strength of returned echo directly under your boat with the width and color of the bar.



The wider the bar, the stronger the echo, and the widest bar is shown in red.

ZOOM DISPLAY SELECTION

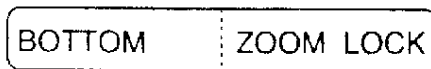


→ The sounder display is split into two horizontally.
→ The sounder display is split into two vertically.



- Split displays
Normal + Zoom & Normal
+ Bottom Lock
- Please refer to 5-1. SOUNDER DISPLAY.

BOTTOM DISPLAY MODE SELECTION



→ Bottom lock mode is selected.
• Bottom zoom mode is selected.



Please refer to 5-1. SOUNDER DISPLAY.

SPEED AVERAGE

SPEED AVE. 001 sec

• The speed data for the selected time span are averaged.



Range for averaging

1 sec. to 100 sec.



When you pull a net with other boat, averaging the speed to avoid the frequent change of speed indication is useful.

SPEED ADJUSTMENT

SPEED ADJ. 100

• The indicated speed can be adjusted to the correct speed.



Range for adjustment

50% to 150%

FREQUENCY TO SUPPLY TEMPERATURE DATA

TEMP. HF LF

• When you use temperature sensor, you have to indicate the frequency here from which it's data is supplied

(4) MENU 3

3	MOVE	SELECT
B GROUND	BL	BK
ALARM TONE	A	B C D
KEEL ALARM	OFF	ON
		0 ft
FISH ALARM	OFF	ON
		■■■■
DIST UNIT	nm	sm km
DEPTH UNIT	ft	m fm
	l	tm HR
TEMP UNIT	°f	°c

BACKGROUND COLOR SELECTION

B. GROUND	BL	BK
-----------	----	----

- Background (sea) is displayed in black.
- Background (sea) is displayed in blue

ALARM TONE

ALARM TONE	A	B C D
------------	---	-------

- One of four tones can be selected

KEEL ALARM

KEEL ALARM	OFF	ON
		1 ft

Keel alarm function does not work.

When the boat enters into the shallower depth area than the set range, the alarm sounds.

The range when the alarm starts to sound is set.

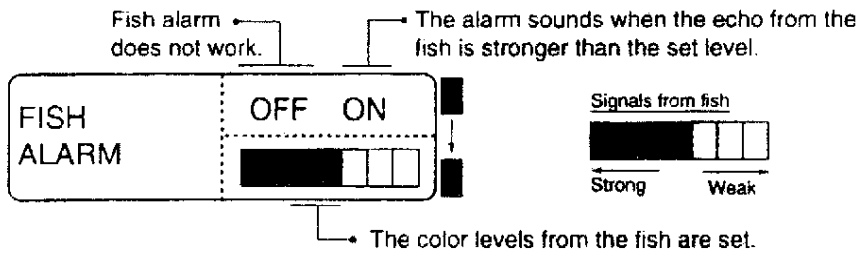


Keel alarm ranges
1 to 100 feet in one foot increments.

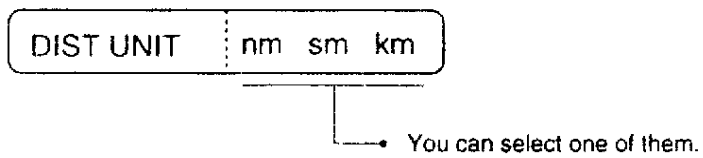


When the digital depth indication is unstable (in case of very shallow waters), this alarm may not function properly.

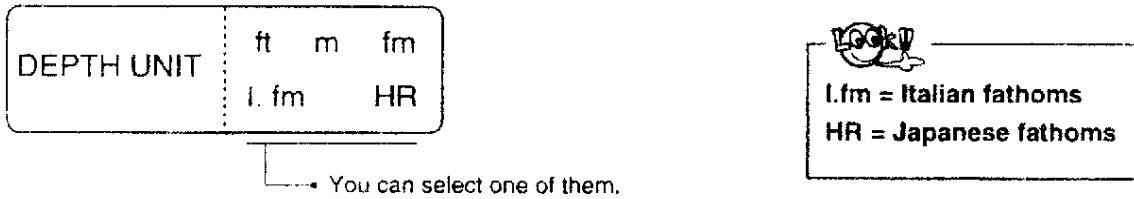
FISH ALARM



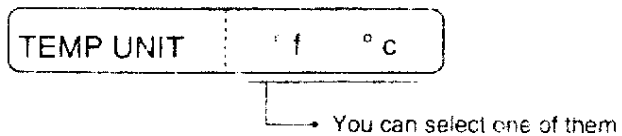
DISTANCE UNIT



DEPTH UNIT



TEMPERATURE UNIT



7. SPECIFICATIONS

CRT	10"Color
TEMPERATURE RANGE	0-50° C
POWER REQUIREMENT	11-40V DC (Approx. 48 watts)
FREQUENCY	200kHz/50kHz
OUTPUT POWER	H - 1000 Watts RMS M - 100 Watts RMS L - 10 Watts RMS
PULSE LENGTH	L - 0.06 - 2.5 msec M - 0.04 - 2.5 msec S - 0.02 - 1.1 msec
DEPTH RANGES	0-10, 20, 30, 40, 50, 60, 80, 100, 120, 140, 160, 200, 240, 300, 400, 500, 600, 800, 1000, 1500, 2000, 3000 ft 0-5, 10, 20, 30, 40, 50, 60, 80, 100, 120, 140, 160, 200, 240, 300, 400, 500, 600, 800 m/fm
ZOOM RANGES	1/5, 2/5 & 3/5 for depth ranges 50 ft/m/fm or less 1/4, 2/4 & 3/4 for depth ranges 60 ft/m/fm or more
BOTTOM ZOOM(or LOCK) RANGES	Auto selection depending on depth ranges
DATA	7 Colors (Red, Orange, Yellow, Green, Cyan,White, Blue)
BACKGROUND	Blue or Black
BRIGHTNESS	Adjustable in 16 levels
DISPLAY MODE	<u>Dual Frequency Mode:</u> Normal + Normal, Zoom + Zoom, Bottom Lock + Bottom Lock (Bottom Zoom +Bottom Zoom), Big Number <u>Single Frequency Mode:</u> Normal, Normal + Zoom, Normal + Bottom Lock (Bottom Zoom), Big Number
A-SCOPE IMAGE	Selectable
ALARM	Keel Alarm - 100 ft/m/fm in one unit increments Fish Alarm - 7 levels
IMAGE SPEED	7 plus freeze including speed proportional to boat speed
OTHER FUNCTIONS	Temperature/Depth Graph, Range Shift, Clean Echo, Anti Clutter, S.T.C.
SERIAL DATA	NMEA0183
INPUT/OUTPUT	<u>Input</u> xxGGA(GPS fix data) xxGLL(Lat/Long) xxVTG(Track made good & ground speed)

xxRMC(GPS/Transit data)

xxHDM(Heading)

Output

SDDBT(Depth)

SDMTW(Temp)

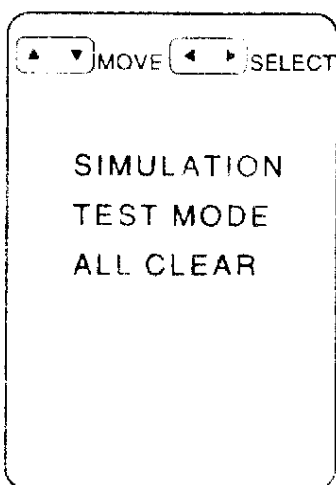
* Specifications subject to change without notice.

8. STANDARD EQUIPMENT


CVS-210 Control/Display Unit	1	18.7lbs
Trunnion	1	
Knobs	2	
Metal and Rubber Washers	2	
Transducer	1	
Transducer Plug	2	5 pin
Data Interfacing Plug	1	6 pin
Power Cable	1	
Fuse	1	8A (for Power Source 11-20V)
	2	4A (for Power Source 20-40V)
Sun Hood	1	
Operation Manual	1	

9. ADJUSTMENT OF SCREEN

The display position can be adjusted up and down, or to right and left.

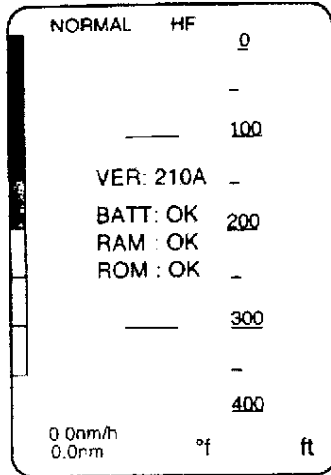


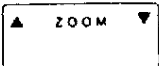
1) For this adjustment, get the display as shown

First, press and hold the  key and touch

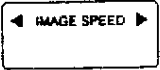
the  key.

[TEST MODE]

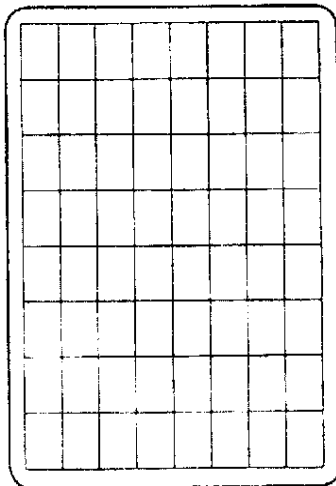


2) Press the  key to change

"TEST MODE" in yellow. Then, press the

 key and get the TEST

MODE display.

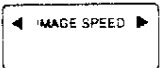


3) Press the  key, and get the

cross hatched pattern on the screen.

4) Adjust the position of cross hatched

pattern with the  and

 keys.

10. TROUBLESHOOTING

When the CVS-210 does not operate properly, please read this section carefully.

If you are unable to correct the problem by performing these procedures, contact your authorized SI-TEX dealer.

PROBLEMS	COUNTERMEASURES
No power.	<p>Verify that the power connector is securely inserted, and check the fuse.</p> <p>If the polarity is reversed by mistake, the fuse will be blown. In this case, try to reverse the polarity and replace the fuse.</p>
Power is on, but the sea bottom is not displayed.	<p>Verify that the transducer connector is securely inserted or that the transducer cable is not broken. Enable auto gain and auto range.</p>
Screen display is weak, loss of sensitivity.	<p>Check the connection of the transducer. Make sure the transducer is properly mounted and pointed correctly.</p> <p>Verify that no marine creatures stick on the transducer face. They are susceptible to accumulate on it. Take care not to damage the transducer face when you scrape them off.</p> <p>Disable anti clutter or clean echo</p>
Excessive noise is present on display	<p>Check for interference from other boats. Also, check if the other equipment is operating properly.</p> <p>Verify that the unit is not affected by the engine noise, and make sure that it is not picking up noise due to its proximity to noise source</p>

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.

SI-TEX MARINE ELECTRONICS INC.

**11001 ROOSEVELT BLVD. SUITE 800
ST. PETERSBURG, FL 33716**

PHONE: 727-576-5734

FAX: 727-576-5547