

**VHF/ADF ADAPTER
MODEL 525
OPERATION MANUAL**

SITEX[®]

DOC NO. MODEL 525 2-99
93111244-03

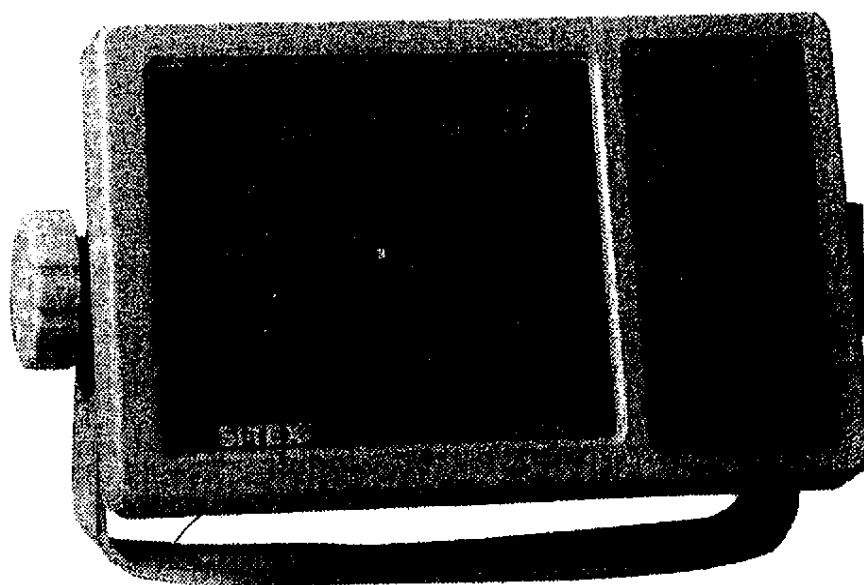
TABLE OF CONTENTS

Warning	1
Introduction	1
List of provided components	2
Installation	3
Display unit.....	3
DF antenna unit.....	4
Cabling	6
Outside	6
Inside hookup.....	7
Final connection	8
Operation	9
Application	9
Feature	9
Troubleshooting	10
Certificate of Limited Warranty	11
Exploded view of DF antenna unit	12
Parts list of DF antenna unit	13
Exploded view of display unit	14
Parts list of display unit	15
Outline and dimensions	
DF antenna unit.....	16
Display unit.....	17

Warning

This product is designed to serve as navigational and directional aid. It is intended to serve as, and should not be relied upon as, a sole or primary source of navigational or directional information. Because of the possibility of error in reporting directional information, inherent in the use of RDF's, the product should only be used in conjunction with, and by someone trained in the proper use of a compass.

Your use of this product constitutes your agreement to abide by the instructions and warnings contained herein.



Introduction

Congratulations on your purchase of the Model 525 VHF/ADF adapter. The Model 525 is a precise instrument designed to determine the bearing of a radio transmission in the 130-180 MHz band. The Model 525 has been designed to withstand the rigors of the marine environment and with proper care will give you years of faithful service.

This manual will try to walk you through the installation, operation, application of the Model 525 and includes a troubleshooting guide and list of specifications and items provided as standard issue with this unit.

In the unlikely event you are missing any item or encounter a problem installing this unit, help is just a telephone call away to the Customer Service Department of SI-TEX Marine Electronics at 727-576-5734. Please don't hesitate in contacting us.

Now lets get started.

List of provided components

- With each unit you should have received the following:
- Lets check it out.

Description	Part #	Weight/length	Quantity
DF antenna unit	LA-79	2.5 lb	1
Antenna element	B12MG70100	390 mm	8
Display unit	525 ADF	1.8 lb	1
Antenna coaxial cable	CW-828	33 ft	1
Antenna BM cable	CW-829	33 ft	1
Radio coaxial cable	CW-830	5 ft	1
Audio cable	CW-831	5 ft	1
DC power cable	CW-238	6 ft	1
Fuse	F-7161, 0.5 A	Spare	2
Tapping screw	TPT5 x 20U	(For display unit)	2
Hose clamp	SD-2038	(For DF antenna unit)	1
Self adhesive tape		2 ft	1
Bolt	B5 x 55U		1
Washer	2W5U		2
Washer	SW5U		1
Nut	N5U		1
Nut	UN5U		1
Adapter mount	B12MB81340		1

Everything there? If so, lets move on.

Installation

- The installation will be done in 3 parts. First the display unit, then the antenna unit and finally the cabling.

Display unit

- The display unit should be mounted in an area close to your VHF transceiver and convenient to the users field of vision.
- It is also necessary to find enough space that has a minimum of 3" behind the unit to allow for the quick and easy disconnecting of the associated cables in the event this unit is removed from the vessel after use.
- Once the location and proper viewing angle is chosen, use the mounting base as a template and mark the hole locations with a pencil for the tapping screws to hold the mounting bracket.
- Using a #20 drill bit, drill out these holes.
Always take care in making sure there is nothing under the drilling location.
- Secure the mounting bracket using the tapping screws supplied with the unit.
Mount the display unit in the bracket to insure you are happy with the location.

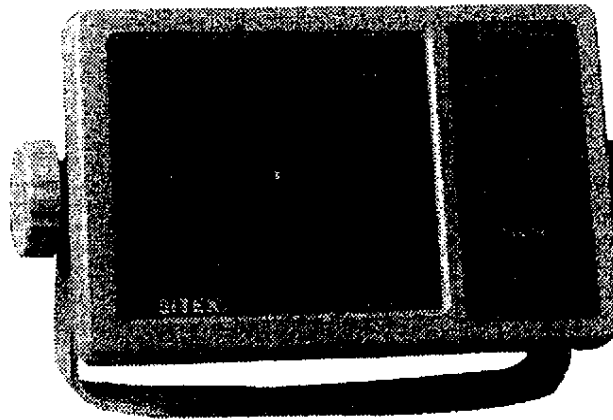


Fig. 1

525 ADF display unit

DF antenna unit

- The DF antenna unit should be mounted at the highest point of your vessel for the best performance.
- It is important to keep as much distance as possible between the DF antenna unit and any super-structure or other antennas. 10' is required for best performance.
- Prior to mounting the antenna it is necessary to assemble it and screw the 8 dipole elements into the DF antenna unit. Take care to secure the elements tightly but do not over tighten as this could damage the plastic housing.
- Once the mounting location and the DF antenna unit have been assembled, it is time to mount the antenna assembly to the vessel. On the underside of the DF antenna unit you will notice a 1.3" round opening. This opening is where the DF antenna unit is mounted on a extension mast (not included).
- Use threaded adapter (provided) if attaching to a threaded pole.
- Point the DF antenna unit so that the arrow on the top of the base points in the same direction as the bow of the boat. This insures all bearings will be accurately displayed referenced to your vessel.
- Once mounted, use the hose clamp (supplied) to securely fasten the DF antenna unit to the mount.
- Wrap self adhesive tape (supplied) around cable connections at the DF antenna unit to protect from water damage.

CAUTION

Each antenna element must be securely tightened by hands.

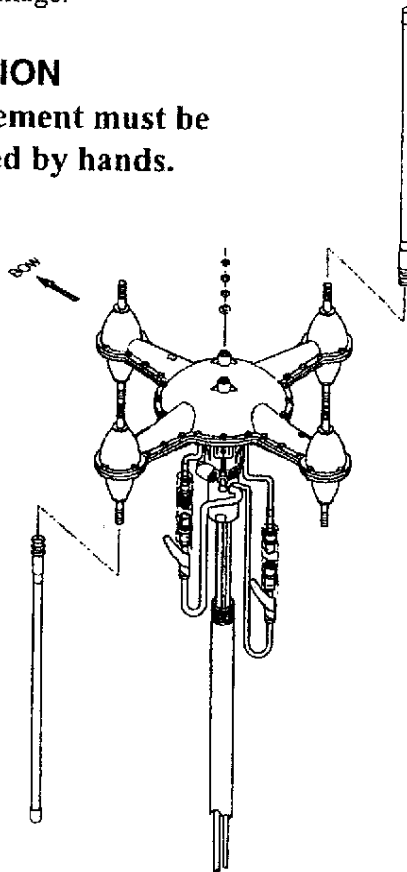
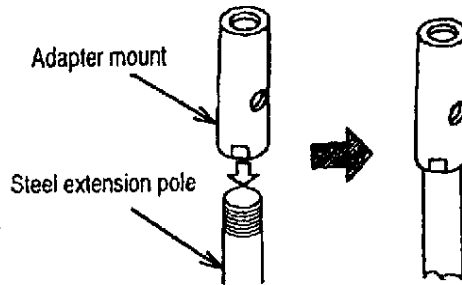


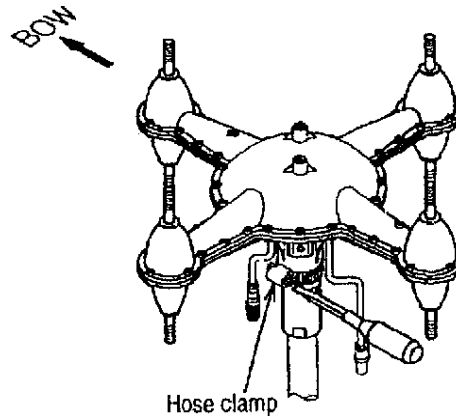
Fig. 2
Model 525 DF antenna unit

How to mount the DF antenna unit :

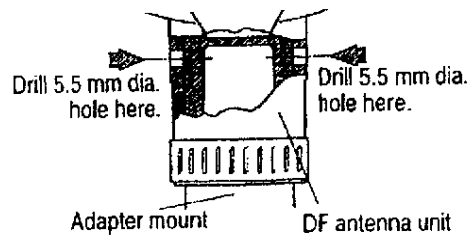
- 1) Screw the adapter mount (B12MB81340) into a steel extension pole with 1" x 14 thread.
- 2) Slide the DF antenna unit over the adapter mount.



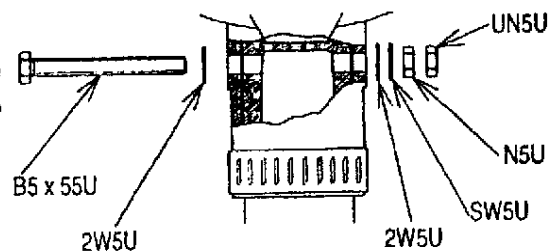
- 3) Orient the antenna toward ship's bow using an arrow mark on the body and fix the antenna by tightening the hose clamp attached.



- 4) Drill two 5.5 mm dia. holes on both sides of the adapter mount through the DF antenna unit fixing holes on the bracket located underneath the antenna body.



- 5) Mount the fixing bolts attached (B5 x 55U) through the adapter mount and secure it to fix the DF antenna unit.



Cabling

- Running the cables between the Display unit and the DF antenna unit will probably be the most time consuming task in this installation process. There are two cables to be run between these units and both are 33 ft long.

IMPORTANT NOTE:

Make sure the antenna BM cable (CW-829 identified by the 3 pin black and chrome plug on one end, see Fig. 3 and the 6 pin black plastic connector with the gray rubber cover) is pulled in the proper direction. The 3 pin black and chrome plug should be up top, at the DF antenna unit and the 6 pin black connector with the rubber cover is down at the display unit.

Outside

- Once these cables are run, you can connect them to the DF antenna unit wires hanging from outside the antenna case. It is impossible to connect these incorrectly at the DF antenna unit, as they use 2 different connectors on them.
- Connect the Antenna BM cable (identified by the 3 pin black and chrome plug) to the 3 pin connector from the DF antenna unit. Connect the antenna coaxial cable (identified by the BNC connector on either end) to the BNC connector from the DF antenna unit.
- Once these connections are made, the work outside is completed.

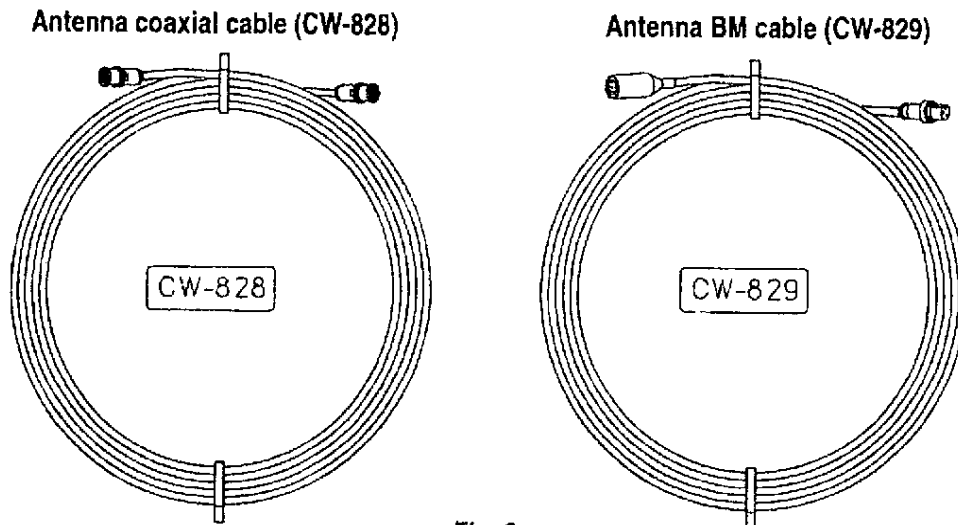


Fig. 3
MODEL 525 antenna cables

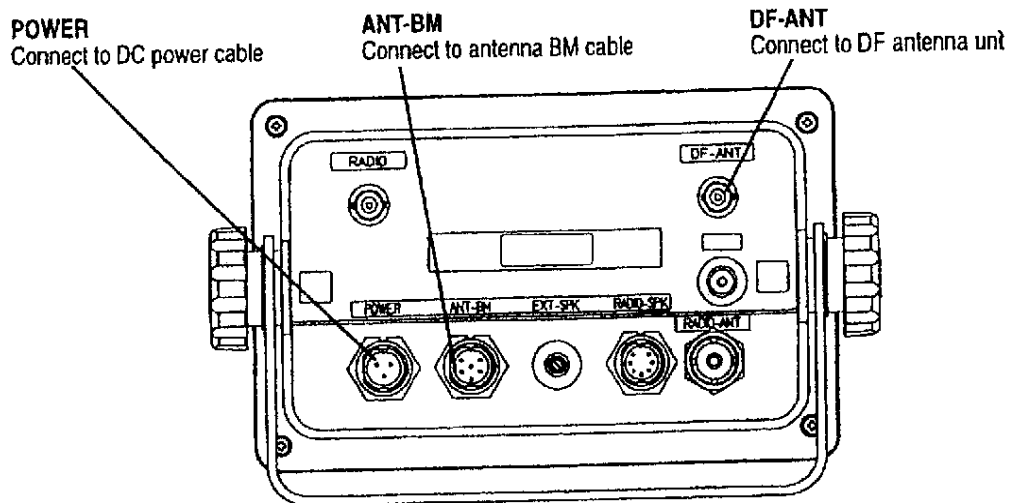


Fig. 4
525 ADF rear case

Inside hookup

Inside hookup requires connecting the following. (Refer to Fig. 4, above)

- The DC power cable from the 12 VDC source to the back of the display unit. This cable is made up of a black (-) and red (+) wire. Recheck to make sure proper polarity has been observed.
- The antenna BM cable. This is the 33 ft long cable run from the DF antenna unit to the display unit and has a 6 pin black plastic plug covered with a gray rubber cover. Attach it to the ANT-BM connector at the bottom rear of the 525 ADF display unit.
- The other 33' long antenna coaxial cable run from the DF antenna unit, gets connected to the BNC connector marked DF-ANT on the top right side rear of the display unit case.

Operation

Now for the easy part.

- Power the Model 525 and your VHF.
- Tune your VHF radio to a channel with voice traffic.
- When reception is made, a red LED lamp will light indicating the bearing to that transmission.
- Note during the transmission, a green LED lamp will light in the area marked "audio level ". This indicates an active transmission is being received.
- When this light goes out, you will note the red LED indicating the direction of the transmission will stay illuminated until a new transmission is received.

Note: Excessively high volume can adversely affect bearing accuracy.

Application

- In its most basic form, the Model 525 VHF/ADF adapter is used to determine the source and bearing of an incoming VHF transmission. For example, if a vessel was sending a "mayday " it would be possible to determine the bearing of that vessel by noting the bearing of the VHF transmissions.
- Unfortunately, it is not possible to determine the distance of this vessel without multiple bearings from known locations so the appropriate response would be to run this bearing as your heading until you came upon the vessel in distress.
- Properly using this unit it makes it easier to help locate friends, the aforementioned distressed vessel or even the "hot" fishing spots by monitoring the VHF transmissions received on your VHF radio.

Feature

- The Model 525 automatically indicates the direction of incoming signals and it adapts to most any VHF transceiver with an EXT. SPK output and has no adverse effect on the transceiver.
- When transmitting on your VHF, the antenna is automatically switched from the DF antenna unit to the VHF transmitting antenna.
- When the Model 525 is turned off, the antenna is automatically switched to the VHF antenna for both the transmit and receive modes with no effect on the audio signal received.

Final connection

The final connections are made between the display unit and your VHF transceiver.

- Disconnect the VHF radio antenna from the radio and reconnect it to the 525 ADF display unit at the connector marked RADIO-ANT on the bottom right rear.
- Connect the short radio coaxial cable from the antenna connector on the VHF to the BNC connector on the upper left rear of the display unit case marked RADIO.
- The last connection is made between the VHF EXT. SPEAKER using the short cable with the gray miniature plug to the rear 7 pin connector on the 525 ADF display unit marked RADIO SPK.

IMPORTANT NOTE: These short cable lengths cannot be changed.

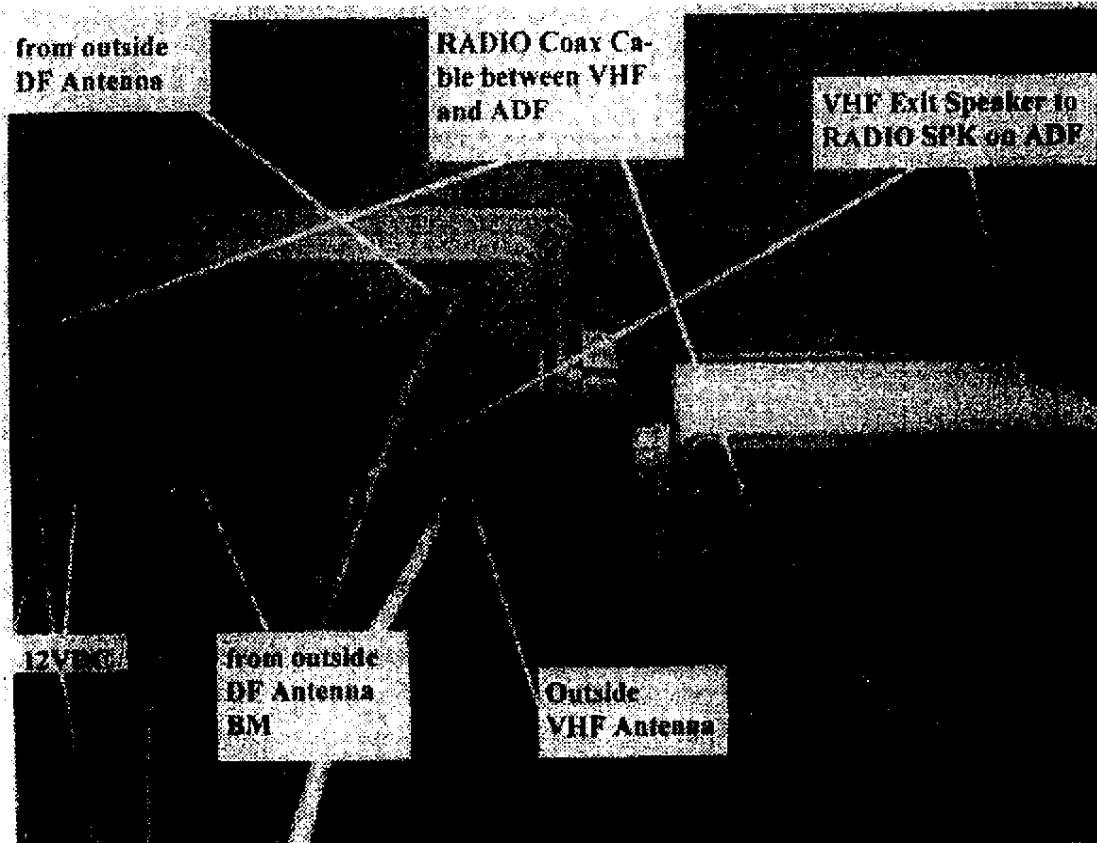


Fig. 5
Final hook-up and connections

If done properly you should have 6 connections at the rear of the 525 ADF display unit. Take time now to recheck these connections.

Operation

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Troubleshooting

- **The MODEL 525 does not power up.**

Check to make sure all breakers are in the ON position, the fuse is good and using a multimeter, confirm there is +12 VDC between pins 1 and 3 at the power plug.

- **Power is OK but no bearing is indicated on the 525 ADF display unit.**

Recheck cabling from antennas and between the 525 and the VHF transceiver. Make sure there is adequate power to your VHF.

- **My unit is displaying unsteady bearings.**

Unsteady bearings are usually a result of weak incoming signals.

- **The bearing indicated to the VHF signal is wrong.**

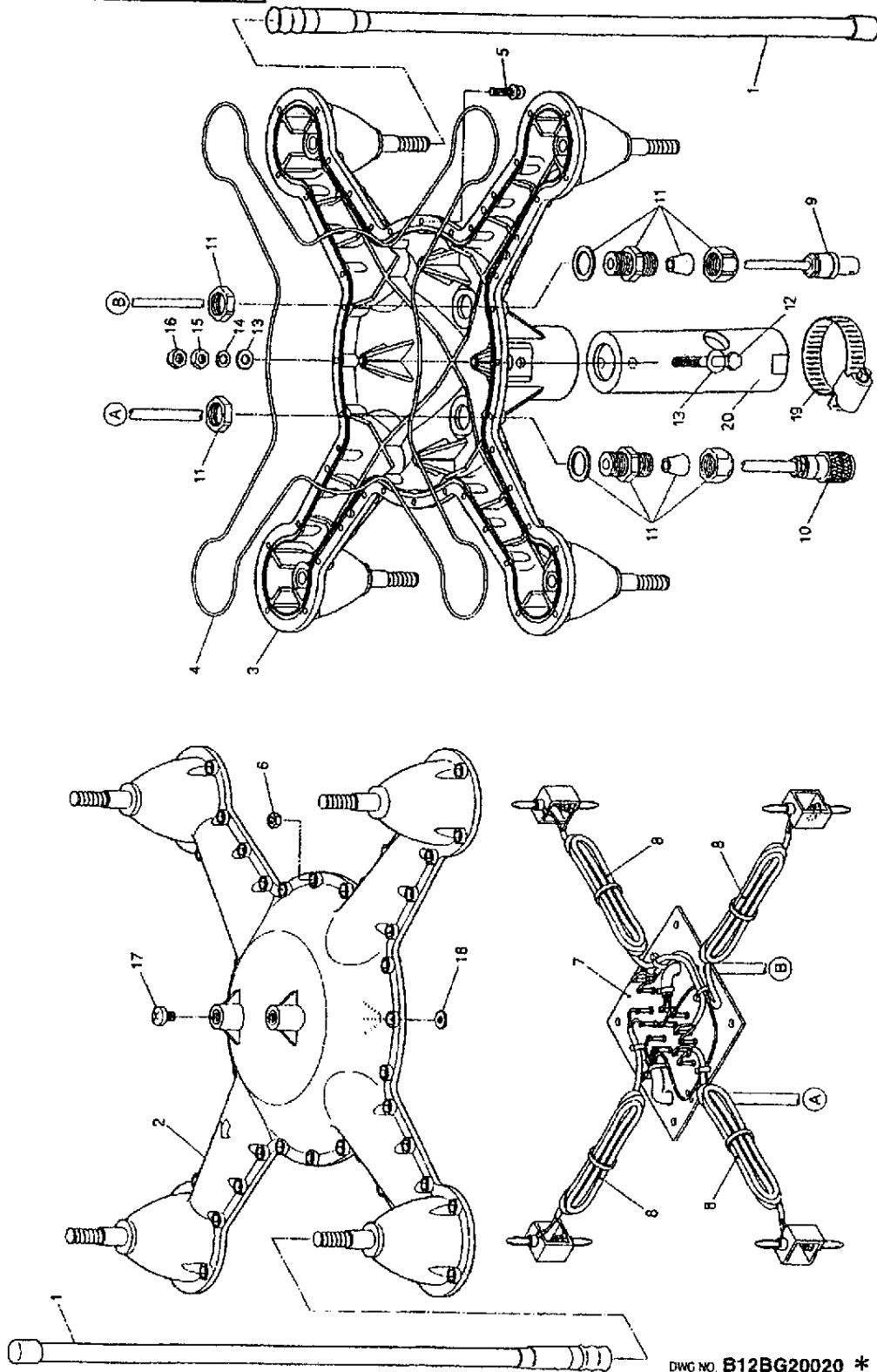
The incoming signal can be reflected and bounce off of large objects such as bridges, buildings and other large boats nearby. Recheck the bearing out on open water away from any of these large reflective objects.

- **The bearing to the target is 180 degrees off.**

In very rare instances and depending on the VHF receiver used, an error of 180 degrees is possible. In the event of this happening please contact SI-TEX Customer Service or your local SI-TEX servicing dealer for adjustment.

Exploded view of DF antenna unit

For Maintenance Only



DWG NO. B12BG20020 *

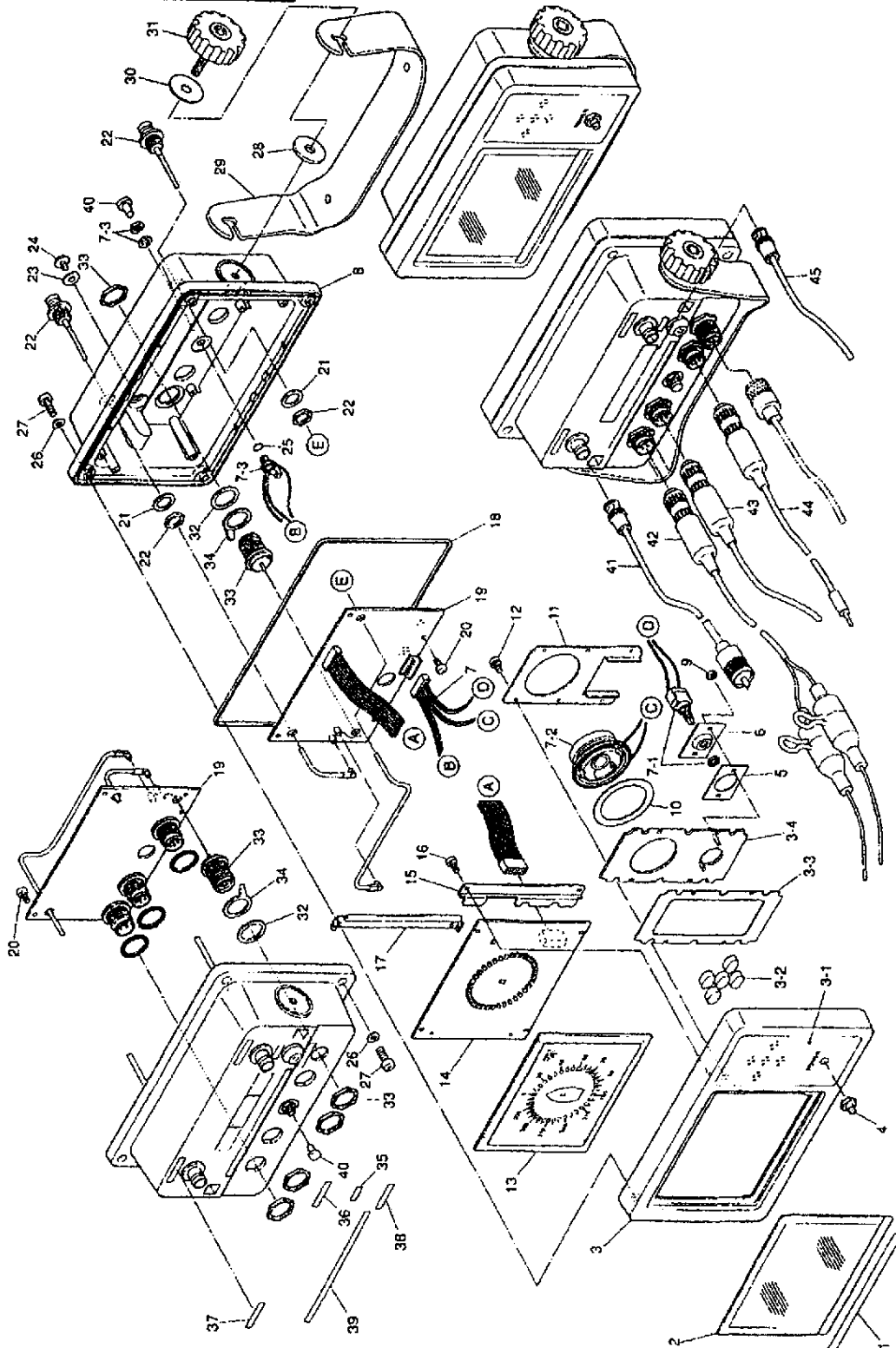
Parts list of DF antenna unit

Refer to Exploded view of DF antenna unit for LA-79 (drawing No. B12BG20020)

Symbol	Code	Name	Description	Specifications
1	85204650	Element	B12MG70100	
2	70390015	Top Cover	AN-597M4	
3	70390014	Top Cover	AN-596M4	
4	79047034	Tube	ø 2	
5	75152023	Screw	PSM3X12U	
6	76990005	Nut	AN-605 (N3)	
7	61750310	PCB ASSY	A15-03100	ANTENNA
8	65102428	CABLE ASSY	525-W002	
9	65102429	CABLE ASSY	525-W003	
10	65102427	CABLE ASSY	525-W001	
11	57295917	Connector	SCL-6B	
12	76233440	Bolt	B5X55U	
13	77191128	Washer	2W5U	
14	77191067	Washer	SW5U	
15	76091050	Nut	N5U	
16	76091065	Nut	UN5U	
17	75543420	Screw	TP5X8U	
18	82201245	Packing	538C-7112	
19	71421016	Cable Clamp	SD-2038	
20	82005784	Adapter	B12MB81340	

Exploded view of display unit

For Maintenance Only



DWG NO. B12BG20010 *

Parts list of display unit

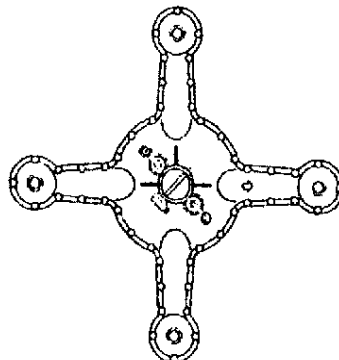
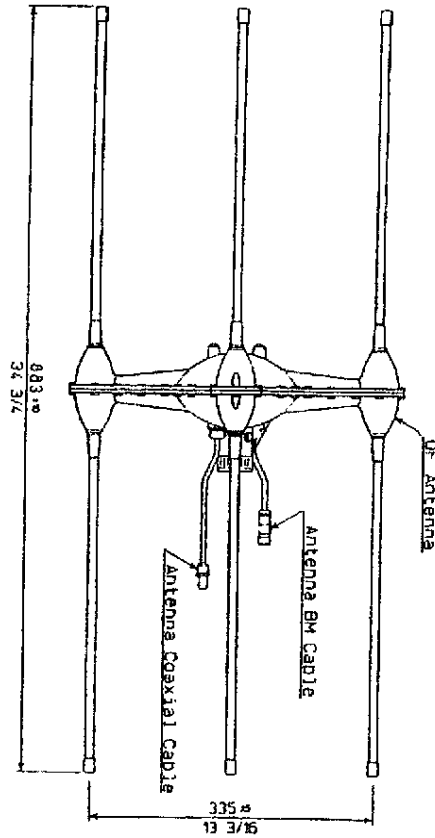
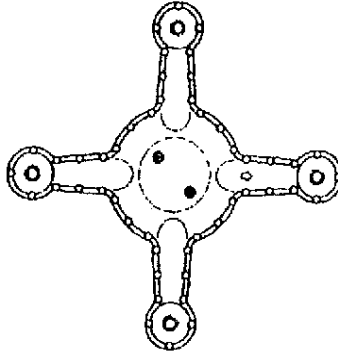
Refer to Exploded view of Display unit for LA-79 (drawing No. B12BG20010)

Symbol	Code	Name	Description	Specifications
1	81705164	Face Sheet	B12MB81030	
2	82404544	Filter	D46MB81010	
3	81508482	Panel	D34MP81011	
3.1	81705184	Face Sheet	B12MB81291	
3.2	82210074	Packing	B12MB81280	
3.3	81705174	Cement	B12MB81061	
3.4	80613244	Plate	B12MB81051	
4	57590284	Cap	AT-4042	
5	82210044	Packing	B12MB81320	
6	80613254	Plate	B12MB81310	
7	65102426	CABLE ASSY	B12ELA0010	
7.1	57530422	Switch	MB-2065W	
7.2	58710180	Speaker	683	
7.3	57225010	Socket	J-7 (With nut, washer)	
8	80308418	Case	B12MB81010	
9	76091038	Nut	N3B	
10	82210064	Packing	B12MB81261	
11	80613264	Plate	B12MB81250	
12	77010004	Screw	1411-H1-2506	
13	81511444	Panel	B12MB81270	
14	61749910	PCB ASSY	A14-99100	DISPLAY
15	82921484	Angle	B12MB81221	
16	75952020	Screw	3X8S	
17	82921494	Angle	B12MB81231	
18	82208574	Packing	D35MB21011	
19	61749810	PCB ASSY	A14-98100	RECEIVER
20	75952020	Screw	3X8S	
21	82301124	Washer	D35MB82050	
22	65102461	CABLE ASSY	D35ELA0010	
23	77191124	Washer	2W4PA	
24	75950026	Bolt	M4X8U	
25	70271082	O Ring	SO-010-20	
26	82301134	Washer	D35MB82060	
27	75252023	Screw	BD3X12B	
28	82208564	Packing	D34MB81090	
29	81903112	Base	D34MP91050	
30	82300984	Washer	DS106M29	
31	76806010	Knob Bolt	D34MB81070	
32	82210054	Packing	B12MB81130	
33	57298068	Connector	M-RM-L 102 (CR)	
34	77270060	Washer	N-7515	
35	82711314	Name Plate	B12MB81190	
36	82711294	Name Plate	B12MB81170	
37	82711284	Name Plate	B12MB81160	
38	82711304	Name Plate	B12MB81180	
39	82711274	Name Plate	B12MB81150	
40	70216035	Cap	G-40	
41	35288300	CABLE ASSY	CW-830	RADIO COAXIAL
42	35282380	CABLE ASSY	CW-238	POWER SUPPLY
43	35288290	CABLE ASSY	CW-829	ANTENNA BM
44	35288310	CABLE ASSY	CW-831	AUDIO
45	35288280	CABLE ASSY	CW-828	ANTENNA COAXIAL

Outline and dimensions

DF antenna unit

Unit: mm (inch)



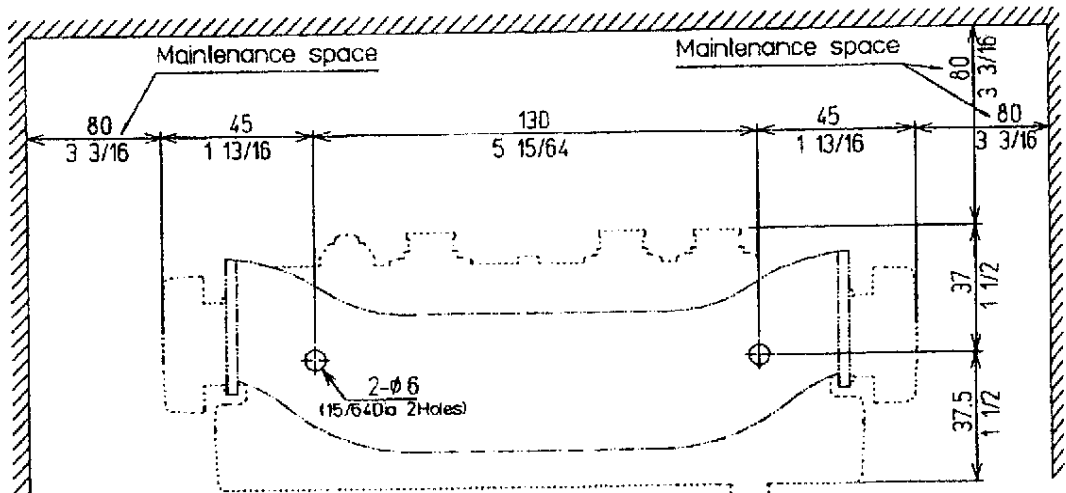
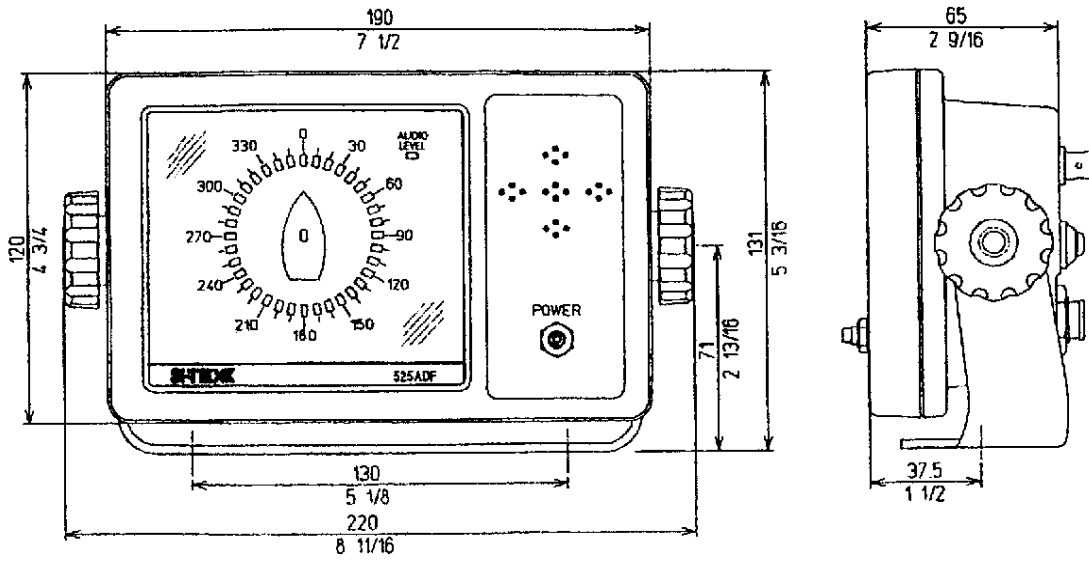
Weight: 1.1 kg (2.5 lb)

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MODEL 525 OPERATION MANUAL - 01

Display unit

Unit: mm (inch)



FRONT

Mounting dimensions

Weight: 0.80 kg (1.8 lb)

DWG NO B12BG10016 *

NOTES PAGE

NOTES PAGE

NOTES PAGE