






### 3. MAINTENANCE, TROUBLE SHOOTING

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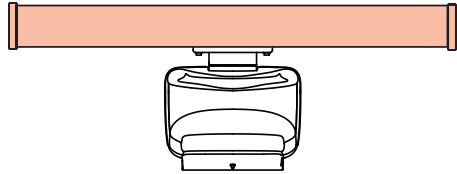


Periodic checks and maintenance are important for proper operation of any electronic system. This chapter contains maintenance and troubleshooting instructions to be followed to obtain optimum performance and the longest possible life of the equipment. Before attempting any maintenance or troubleshooting procedure, please review the safety information below and at the front of this manual. If you cannot restore normal operation after following the troubleshooting procedures, do not attempt to check inside any unit; there are no user serviceable parts inside. Contact your dealer to check the equipment.

 <b>WARNING</b>	
	<p><b>Do not open the equipment.</b></p> <p>Hazardous voltage which can cause electrical shock exists inside the equipment. Only qualified personnel should work inside the equipment.</p>
	<p><b>Turn off the antenna unit before servicing the unit. Post a warning sign near the switch indicating it should not be turned on while the antenna unit is being serviced.</b></p> <p>Prevent the potential risk of being struck by the rotating antenna.</p>
	<p><b>A transmitting radar antenna emits electromagnetic waves, which can be harmful, particularly the eyes.</b></p>
	<p><b>Wear a safety belt and hard hat when working on the antenna unit.</b></p> <p>Serious injury or death can result if someone falls from the radar antenna mast.</p>

<b>NOTICE</b>
<p><b>Do not apply paint, anti-corrosive sealant or contact spray to coating or plastic parts of the equipment.</b></p> <p>Those items contain organic solvents that can damage coating and plastic parts, especially plastic connectors.</p>

## 3.1 Maintenance

Regular maintenance is important for good performance. Check the points mentioned below every 3 to 6 months to keep the antenna unit in good working order.

Check point	Action	Remedy, remarks
Check points every 3 to 6 months		
Cable	Check that all cables are firmly connected and are not damaged.	<ul style="list-style-type: none"> <li>• Connect a cable if it has loosened.</li> <li>• Replace damaged cables.</li> </ul>
Exposed bolts and nuts	Check that bolts and nuts are not corroded and are securely fastened.	<ul style="list-style-type: none"> <li>• Replace corroded bolts.</li> <li>• Tighten loosened bolts.</li> <li>• Coat new bolts with adhesive.</li> </ul>
Adhesive on the bolts, nuts and cable clamps	Check that adhesive has not fallen off or cracked.	<ul style="list-style-type: none"> <li>• Deteriorated adhesive may cause water leakage into the unit or corrosion of the bolts, nuts and cable clamps.</li> <li>• If the adhesive is fallen off or cracked, apply adhesive to cover the spot.</li> <li>• If the adhesive is severely deteriorated, peel off the adhesive and apply the adhesive again on the spot.</li> </ul>
Radiator	Dust, dirt and salt deposits on the radiator cause signal attenuation, resulting in loss of sensitivity.	<ul style="list-style-type: none"> <li>• Wipe radiator with a freshwater-moistened cloth.</li> <li>• The radiator is made of AES (Acrylonitrile-Ethylene-Styrene) resin. Therefore, do not use gasoline, benzene and the like to clean the radiator.</li> <li>• If the radiator is iced, use a wooden or plastic headed hammer to remove the ice. DO NOT use a steel hammer.</li> </ul>
Ground connection	Check for tight connection and rust.	<ul style="list-style-type: none"> <li>• Fasten if loosened.</li> <li>• Remove rust if present.</li> </ul>
Check points every year		
	Check the scanner unit for rust, corrosion and chipped paint.	<ul style="list-style-type: none"> <li>• If the scanner unit has rusted or the paint has chipped, paint the affected area of the scanner unit.</li> <li>• Do not paint the antenna (see figure below). Paint on the antenna can cause loss of sensitivity and crack the antenna.</li> </ul>  <p>  : Do NOT paint.     : Painting area </p>

## 3.2 Troubleshooting


The table below provides simple troubleshooting procedures to restore normal operation. If you cannot restore normal operation, contact your dealer for advice.


Problem	Remedy
The multi function display cannot control the radar.	<ul style="list-style-type: none"> <li>• Check that all cables are tightly fastened.</li> <li>• Check if the radar source setting is correct.</li> <li>• Check if the fuse of the cable assembly has blown.</li> <li>• Check that the power supply is compatible with the voltage rating of the antenna unit.</li> </ul>
Marks and characters appear, but echoes do not appear.	<ul style="list-style-type: none"> <li>• Check that the antenna cable is tightly fastened.</li> <li>• Check the cables for damage.</li> </ul>
Picture is not updated or the picture freezes.	<ul style="list-style-type: none"> <li>• Check that all cables are tightly fastened.</li> <li>• Check the cables for damage.</li> <li>• If the picture has frozen, reboot the multi function display.</li> </ul>
You changed the range, but the radar picture does not change.	<ul style="list-style-type: none"> <li>• Try to change the range again.</li> <li>• Reboot the multi function display.</li> </ul>
Poor discrimination in range.	<ul style="list-style-type: none"> <li>• Adjust the sea control.</li> </ul>
Range rings are not displayed.	<ul style="list-style-type: none"> <li>• Check if the range rings is turned on in the menu.</li> </ul>
You set the radar in the transmit state. The "TX screen" appears momentarily, but the radar soon goes into stand-by.	<ul style="list-style-type: none"> <li>• The overload protection has activated. To restore normal operation, turn off all equipment in the network. Wait a few seconds then turn on all the equipment.</li> </ul>

## 3.3 Replacement of Fuse

The fuse protects the antenna unit from overcurrent and equipment fault. If you cannot turn on the power, check the fuse to see if it has blown. If the fuse has blown, find the reason before you replace the fuse. If the fuse blows again after the replacement, contact your dealer.

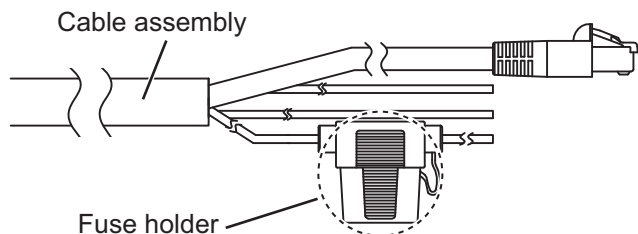
Name	Type	Code No.	Remarks
Fuse	FRU-60V-FU-10A	000-194-014-10	10 A fuse For 24 VDC Ship's Main
	FRU-60V-FU-15A	000-194-915-10	15 A fuse For 12 VDC Ship's Main


**WARNING**



**Use the proper fuse.**

Use of a wrong fuse can cause fire or damage the equipment.



### How to replace the fuse

Open the fuse holder cover and replace the fuse. Then close the cover.