





























































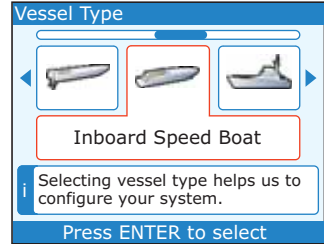


## Setting Vessel Type

**CAUTION:** Vessel Type setting also affects other parameters

If you change the Vessel Type, you must then ensure all other parameters are set as you require before using the boat, as some other parameters change when the Vessel Type changes.

1. At the **Advanced Options** menu, use < and > to select **Vessel Type**, then press ENTER to display the **Vessel Type** menu.
2. Use < and > to select the required Vessel Type, then press ENTER to save and exit the menu.
3. Use the *Leaving Advanced Options* procedure below, to return to the operational page.



## Leaving Advanced Options

To leave the **Advanced Options** menu:

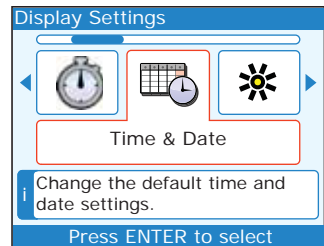
1. Press CANCEL to return to the **Main Menu**.
2. Press CANCEL to return to the operational page.

## Changing the time/date format

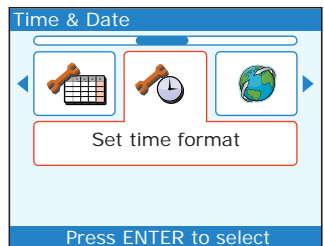
**Note:** *Date and time information is available only if the ST70 instrument is receiving GPS data.*

To change the format of either the time or date display:

1. Press MENU to display the **Main Menu** then use < or > to scroll to **Display Settings**.
2. Press ENTER to show the **Display Settings** menu.
3. Use < or > to scroll to the **Time & Date** option.
4. Press ENTER. A summary of the time and date information is then displayed.



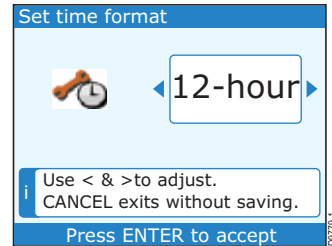
5. Press ENTER again, to display the **Time & Date** menu.
6. Follow the *Setting time format* or *Setting date format* procedure (below), as appropriate.



## Setting time format

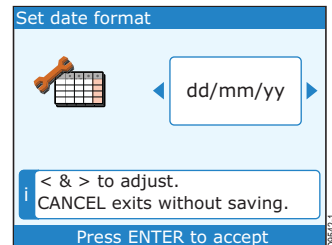
1. At the **Time & Date** menu, use < or > to scroll to the **Set time format** option.
2. Press ENTER to display the **Set time format** box, then use < or > to select either 12 hour or 24 hour format, as required.
3. Press ENTER to save the setting and return to the **Time & Date** summary page.
4. Use the *Leaving time/date setup* procedure below, to return to your operational page.

**Note:** If you want to set the correct local time, refer to the *ST70 Instrument Operation Guide*.



## Setting date format

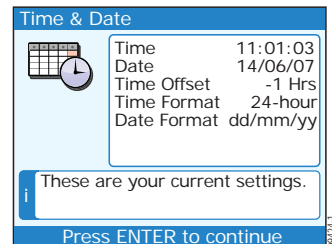
1. At the **Time & Date** menu, use < or > to scroll to the **Set date format** option.
2. Press ENTER to display the **Set date format** box, then use < or > to select either dd/mm/yy or mm/dd/yy format, as required.
3. Press ENTER to save the setting and display the **Time & Date** summary page.
4. Use the *Leaving time/date setup* procedure below, to return to your operational page.



## Leaving time/date setup

With the **Time & Date** summary page displayed:

1. Press CANCEL to return to the **Display Settings** menu.
2. Press CANCEL to return to the **Main Menu**.
3. Press CANCEL to return to your operational page.





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# Chapter 4: Maintenance & Troubleshooting

## 4.1 Maintenance

### Servicing and safety

Unless specific instructions are given to the contrary, Raymarine equipment should be serviced only by authorized Raymarine service technicians. They will ensure that service procedures and replacement parts used will not affect performance.

Some products generate high voltages, so never handle the cables/connectors when power is being supplied to the equipment.

When powered up, all electrical equipment produces electromagnetic fields. These can cause nearby electrical equipment to interact, with a possible adverse effect on operation. To minimize these effects and enable best possible performance from your Raymarine equipment, guidelines are given in the installation instructions.

Always report any EMC-related problem to your nearest Raymarine dealer. We use such information to improve our quality standards.

In some installations, it may not be possible to prevent the equipment from being affected by external influences. In general this will not damage the equipment but it can lead to spurious resetting action, or momentarily may result in faulty operation.

### Instrument Cleaning

Periodically clean your ST70 Instrument with a soft damp cloth.

Do NOT use chemical or abrasive materials to clean your instrument.

Do NOT wipe the instrument with a dry cloth as this could cause scratches.

### Cabling

Periodically examine all cables for chafing or other damage to the outer shield, and where necessary, replace and re-secure

## 4.2 Troubleshooting

In the unlikely event that you encounter problems using your ST70 instrument, use this section to resolve the situation.

### First considerations

If your ST70 is not performing as you think it should, be sure you are operating correctly as described in the ST70 Operating Guide, supplied with the instrument.

Then:

- Ensure that any data you think may be missing, is available on your boat. For example, if you do not have a wind transducer, then there will be no wind data or wind-related data.
- Take into account any changes that may have been made to the electrical system aboard your boat. Such changes could affect the performance of your ST70 instrument.
- Be aware that radio signals transmitted nearby (for example from another boat or shore station) could affect the performance of your ST70 instrument.

If you are satisfied that the problem is not due to any of the above, use the procedures in this section to isolate the cause of the problem.

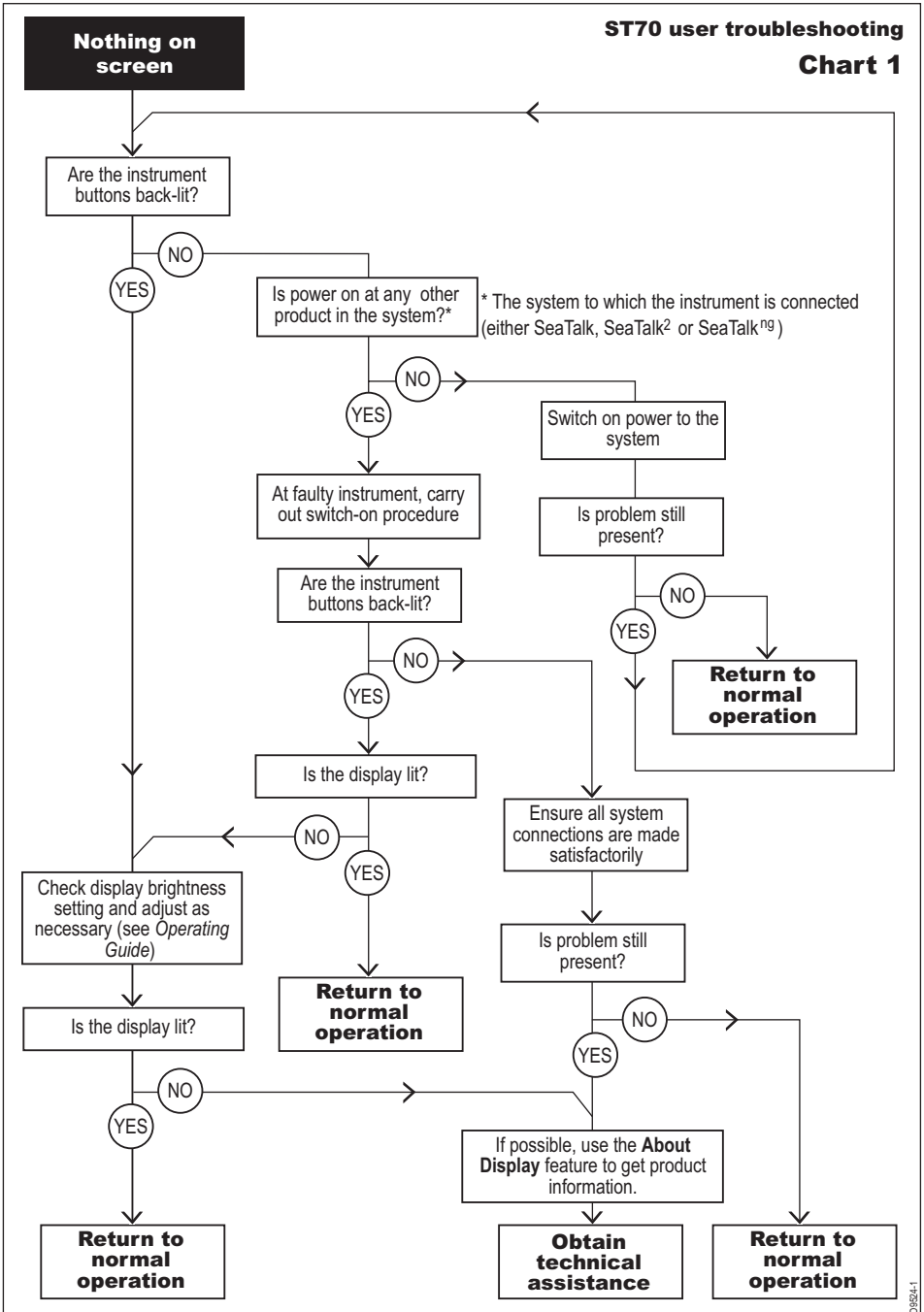
### Procedures

If it appears that an ST70 instrument is not operating satisfactorily, check the symptoms below to determine how to resolve the problem:

- Nothing on the instrument screen - refer to Chart 1.
- Data missing from the instrument screen - refer to Chart 2.
- Data on the instrument screen is garbled- refer to Chart 3.
- Specific data types are missing or incorrect:
  - Check the relevant Transducer and Pod, including the connections between them and to the system.
  - If speed readings are missing or obviously wrong, the speed transducer paddle wheel could be fouled and need cleaning.

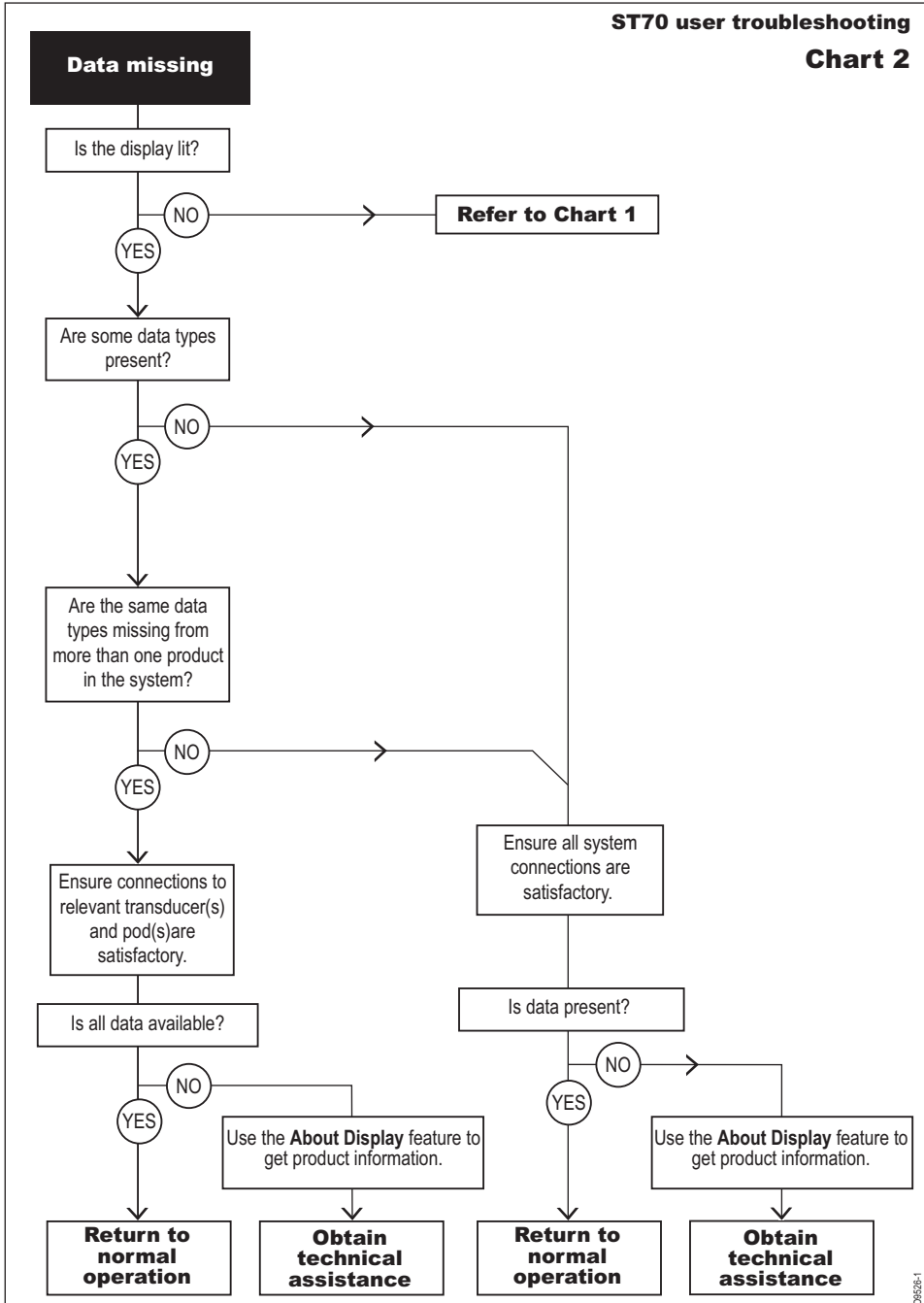
ST70 user troubleshooting

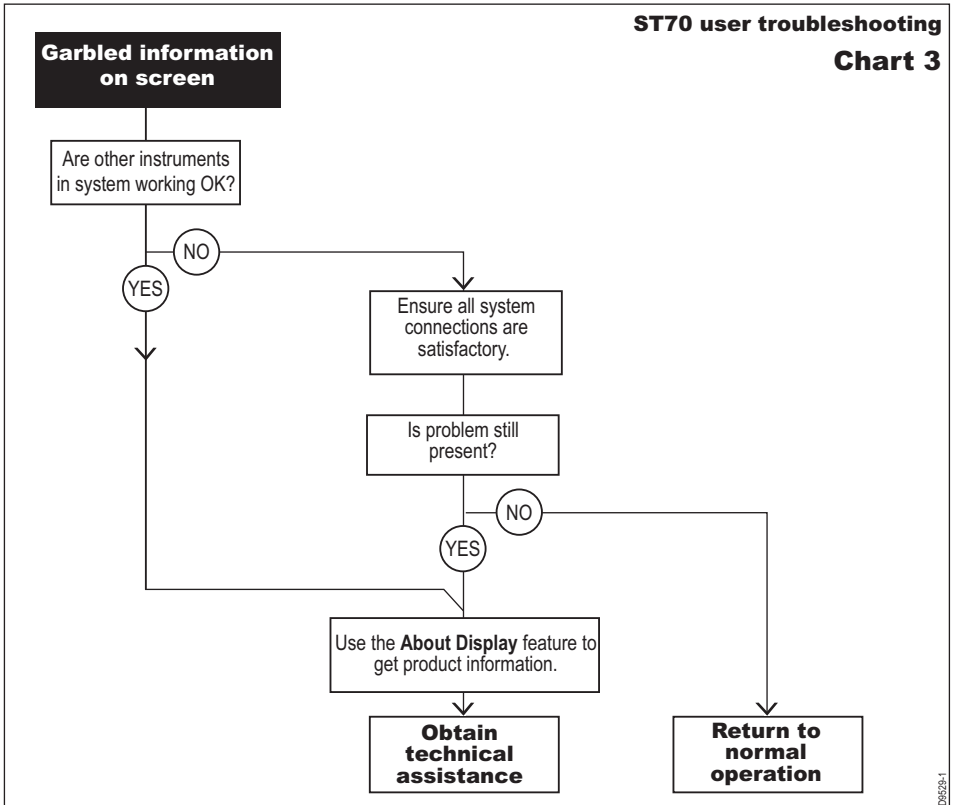
Chart 1



## ST70 user troubleshooting

## Chart 2





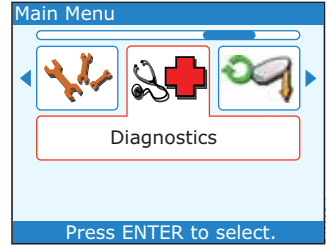
## Using About Display feature

The About Display function provides information about the instrument on which it is run. Before seeking technical assistance, please use the About Display function whenever possible to find out the relevant:

- Software Version Number
- Hardware Version Number
- Bootloader Version Number
- Temperature
- Voltage
- Peak voltage
- Current
- Peak current
- Total hours run

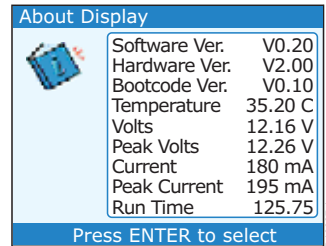
To run the About Display function:

1. With the instrument switched on, press MENU to display the Main Menu, then use < or > to select the **Diagnostics** option.
2. Press ENTER to display the **Diagnostics** menu.



3. With the **Diagnostics** menu displayed, use < or > to select the **About display** option, then press ENTER. Note that the:.

- **Temperature** should be in the range -30° C to +70° C
- **Volts** should be in the range 9 V to 16 V
- **Peak Volts** should be in the range 9 V to 16 V
- **Current** and **Peak Current** should be not greater than 220 mA



4. Make a note of any data you need then press ENTER:

- If you have seen all the available data the display shows the **Diagnostics** menu.
- If there is more data to be displayed, the next page of About Display data is displayed. Repeat step 4 until the display shows the **Diagnostics** menu.

## Technical support

Raymarine provides a comprehensive customer support service, on the world wide web and by telephone help line. Please use either of these facilities if you are unable to rectify a problem.

If you intend seeking technical assistance, please first use the About Display and About System functions whenever possible, and make a note of the information available there.

**Note:** *If it is not possible to use the About Display function on a faulty instrument, remember you may still be able to get system information by running About System at another instrument.*

## World wide web

Please visit the Customer Support area of our web site at:

**[www.raymarine.com](http://www.raymarine.com)**

As well as providing a comprehensive Frequently Asked Questions section and servicing information, the web site gives e-mail access to the Raymarine Technical Support Department and a details of the locations of Raymarine agents, worldwide.

## Telephone help line

If you do not have access to the world wide web, please call the Raymarine help line.

**In the USA**, call:

- +1 800 539 5539, extension 2444 or
- +1 603 881 5200 extension 2444

**In the UK, Europe the Middle East or the Far East**, call:

- +44 (0) 23 9271 4713 (voice)
- +44 (0) 23 9266 1228 (fax)

## Help us to help you

When requesting service, please have the following product information to hand:

- Equipment type.
- Model number.
- Serial number.
- Software version.
- Hardware version.

You can find out this information by running the About Display diagnostic feature.



# Specification

<b>Supply voltage:</b>	Nominal	12 V dc
	Maximum	16 V dc
	Minimum	9 V dc
	Absolute	maximum: 18 V dc
<b>Current:</b>	Nominal	dependent on screen brightness
	Maximum	Not more than 220 mA
<b>Dimensions (excluding studs)</b>	4.33 in W x 4.53 in H x 1.28 in D (110 mm x 115 mm x 32.5 mm)	
<b>Connections</b>	Two SeaTalk <sup>ng</sup>	
<b>Operating temperature</b>	-20° to +70°C	
<b>Illumination</b>	Sliding scale	
<b>Compliances</b>	RoHS EMC EN60945 Revision 4	
<b>Buzzer</b>	Monotone buzzer	



# Glossary

<b>Abbreviation</b>	<b>Description</b>
<b>AWA</b>	Apparent Wind Angle
<b>AWS</b>	Apparent Wind Speed
<b>COG</b>	Course Over Ground
<b>EMC</b>	Electromagnetic Compatibility
<b>GPS</b>	Global Positioning System
<b>HDOP</b>	Horizontal Dilution Of Position
<b>HMI</b>	Human Machine Interface (see MMI)
<b>MFD</b>	Multi-Function Display
<b>MMI</b>	Man Machine Interface (see HMI)
<b>MOB</b>	Man Overboard
<b>NGCC</b>	New Generation Course Computer
<b>SOG</b>	Speed Over Ground
<b>STW</b>	Speed Through Water
<b>TWA</b>	True Wind Angle
<b>TWS</b>	True Wind Speed
<b>VMG</b>	Velocity Made Good
<b>WEEE</b>	Waste Electrical and Electronic Equipment
<b>XTE</b>	Cross Track Error



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