

**TECHNICAL BULLETIN**

Subject	NAVIGATION SYSTEM DIAGNOSTICS	Model	S-TYPE
		Year	1999.25 MY
		VIN	L00600 ON

**ISSUE:**

This Technical Bulletin provides information to Dealers about the Diagnostics which are available to them concerning the Navigation System fitted to S-TYPE vehicles either as a standard feature or as an option. Within the Navigation System there is a Diagnostic Procedure to which a Technician may gain access.

The Bulletin contains the following information:

Access to the Diagnostic Menu  
Troubleshooting Flowcharts

Diagnosis Codes  
'Adjust Position' Procedure

The Adjust Position Procedure provides a method of rapid re-orientation of the system should a vehicle have been unable to 'see' satellites for some time, during which the vehicle has been transported a considerable distance - a situation which may arise during the delivery cycle, or where a customer's vehicle is on board a car ferry for a considerable period of time.

**The following information is for Dealers only, and should not be disclosed to customers or members of the public.**

**ACCESS TO THE DIAGNOSTIC MENU:**

1.	Turn the ignition to position I or II.
2.	If the Navigation System has not yet started, press any of the touch buttons.
3.	The Caution screen will follow the Jaguar logo.
4.	With the Caution screen still displayed, depress the touch buttons RAPIDLY in the following order: F3, F4, F3, F4, F3, F4, ENTER, ENTER, ENTER.
5.	The screen will then show the Diagnosis Menu.
	The menus now available are:
a.	<b>System Inspection</b>
b.	<b>Display &amp; SW</b>
c.	<b>Diag. Memory Menu</b>
d.	<b>NAV Diag. Menu</b>
e.	<b>Connections Info</b>
f.	<b>Adjust position</b>

The following is a summary of the features of each of the above menus.

<b>a.</b>	<b>System Inspection</b>	Shows any abnormality of the system at the moment of testing. If the components and signals are correct, then <b>OK</b> will appear adjacent to the items tested. Should a fault exist, then a <b>Fault Code</b> will be displayed.  Where system components are not fitted (eg. TV-TUNER is only available for the Japanese Market - not fitted for all other Markets) an Error code will be displayed adjacent to the name of the component concerned.
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<b>b.</b>	<b>Display &amp; SW</b>	Allows testing of the Display and Switch functions. There are 8 possible selections:
<b>1.</b>	<b>Diag</b>	Will display OK, or error code if faulty. (Press 'MAP' to return to Display & SW menu).
<b>2.</b>	<b>SW</b>	Allows testing of the push button and cursor control switches.
<b>3.</b>	<b>TV</b>	For the Japanese Market ONLY; checks connection. (Press 'MAP' to return to Display & SW menu).
<b>4.</b>	<b>VER</b>	Displays the version of the software on which the system is running. Also available is the MAP version and the type of TV fitted. (Press 'MAP' to return to Display & SW menu).
<b>5.</b>	<b>COLOR BAR</b>	A check will indicate whether the R (Red), G (Green) and B (Blue) signals are correct. (When in this screen, press F1 or F4 to check the color bar 'Pixels'). (Press 'MAP' to return to Display & SW menu).
<b>6.</b>	<b>CON BRI</b>	Adjustments of Contrast and Brightness may be checked. (Press 'MAP' to return to Display & SW menu).
<b>7.</b>	<b>RAM CLEAR</b>	Clears the back-up RAM ie Diagnosis, Brightness and Contrast. (Press 'MAP' to return to Display & SW menu).
<b>8.</b>	<b>END</b>	Will return to the Display & SW menu.

<b>c.</b>	<b>Diag. Memory</b>	Allows access to the error history screens - faults which were intermittent. Where a system fault has been logged, the error code together with the date and time of the occurrence are displayed. There are 5 possible selections:
<b>1.</b>	<b>NAV</b>	Navigation Control Module faults.
<b>2.</b>	<b>DISPLAY</b>	Display/Control Panel faults.
<b>3.</b>	<b>GPS</b>	Global Position System faults.
<b>4.</b>	<b>CD-ROM</b>	Faults with the CD or Driver
<b>5.</b>	<b>VICS</b>	Japanese Market ONLY

<b>d.</b>	<b>NAV Diagnosis Menu</b>	Allows monitoring of the system signals in real time (built-in datalogger). There are 5 screens available:
<b>1.</b>	<b>Program</b>	Displays the current version of the Map area - eg, UK, Japan, Germany, etc.  This is also the menu to be accessed when upgrading or changing the system software version (NOT Map Version).
<b>2.</b>	<b>GPS Information</b>	Will show information regarding the number of satellite signals being captured at that moment; the latitude and longitude at which the satellites are positioned; aerial status.
<b>3.</b>	<b>RGB Signal</b>	Shows a color bar so that the RGB signals may be checked
<b>4.</b>	<b>Vehicle Signal</b>	In this screen the vehicle's road speed is displayed; the gyro voltage (determines rotation/turns) may also be monitored. Also shows direction of travel - if vehicle is in reverse gear, screen will show '1'.
<b>5.</b>	<b>VICS Diag</b>	Japanese Market ONLY

<b>e.</b>	<b>Connections Information</b>	This screen indicates which Options are deemed to be available. The availability of an option <b>is</b> determined on the initial communication attempt to the components; if a failure in communication to a component occurs the words 'Not Available' will be displayed adjacent to the component.
	<b>TV &amp; VICS</b>	Japanese Market ONLY.
	<b>VEMS</b>	North American Market ONLY. Is hard-wired to the Navigation System, hence Open Circuit to the VEMS would indicate 'Not Available'.
	<b>Traffic Info</b>	UK & German Market ONLY. If Nav CM does not connect with "Traffic Master", then 'Not Available' is displayed.

<b>f.</b>	<b>Adjust Position</b>	Allows the system to re-calibrate to a new position following the vehicle being transported over a long distance.
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	<b>To Exit:</b>	To Exit the Diagnostic screens, turn the ignition 'Off'. When the ignition is next turned 'On' the Navigation System will revert to normal customer use condition.
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On the following 3 pages there are illustrations of the Diagnosis Menu screens which may be accessed.

Note that although the normal user display may be selected in several languages, the majority of the Diagnostic Menu screens are displayed in English ONLY.

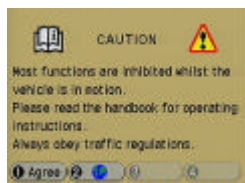
Certain TV and VICS Diagnostic screens, applicable to the Japanese Market only, are in Japanese, not English.

## DIAGNOSIS

## Initial Screen

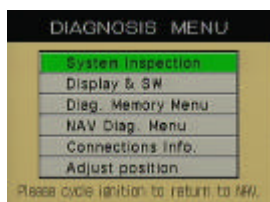


## Caution



F3→F4  
→F3→F4  
→F3→F4  
→ENTER  
→ENTER  
→ENTER

## Diagnosis Menu



## System Inspection



Performs a system inspection and displays the results

## Display Inspection Menu



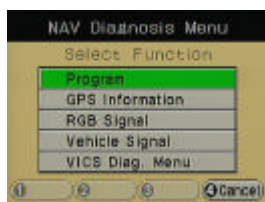
Inspects TV picture quality and switches

## Diagnosis Memory Menu



Displays data in each diagnosis memory

## NAV Diagnosis Menu



Displays status of each navigation unit

## Connections Information



Displays the availability of options

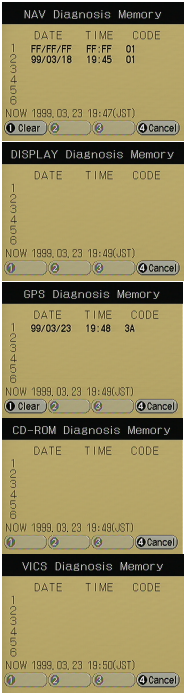
## Adjust Position



Adjusts (calibrates) the current geographical location.

MENU

DETAILS ON  
PAGE 6



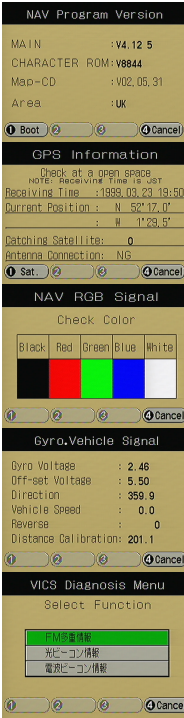
Displays data in the Navigation System

Displays data in the Display Diagnosis Memory

Displays data in the GPS Diagnosis Memory

Displays data in the CD-ROM diagnosis memory

Displays data in the VICS diagnosis memory (Japan ONLY)



Displays the version of the navigation program

Displays the GPS and satellite status

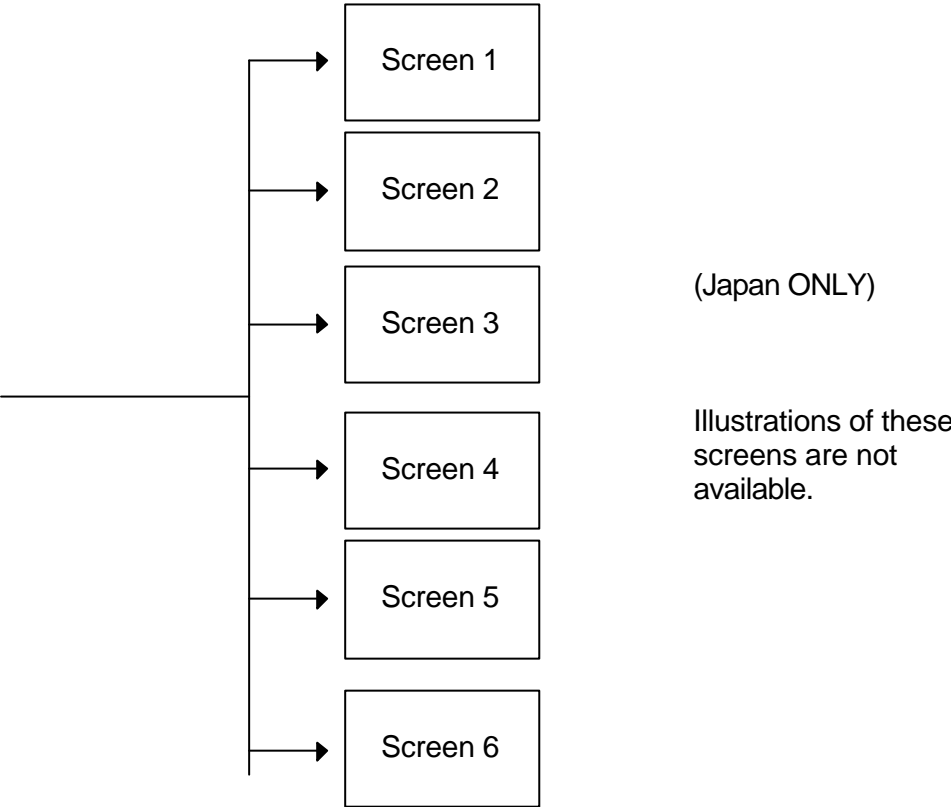
Inspects the RGB signals in the navigation unit

Displays the gyro sensor and vehicle signals

Displays the VICS receiving status (Japan ONLY)

FROM PAGE 4

Display Inspection Menu - Detail



DIAGNOSIS CODES

The diagnosis codes listed on the following tables can be displayed on the System Inspection screen and/or on the Diagnosis Memory screen. (The "System Inspection" and "Diagnosis Memory" columns in the table below show their availability on respective screens). The table also shows the status of the FAIL LED (to the left of the information key) associated with the output of each diagnosis code.

## 1. Display ECU

Diagnosis Code	Diagnosed Item	Message	Corrective Action	System Inspection	Diagnosis Memory	Fail LED
50	No connection between the Navigation CM and Display/ Control Panel	The attempt to make an initial communication failed	<ul style="list-style-type: none"> <li>• Check the connector</li> <li>• Check the wiring harness</li> <li>• Check the Navigation CM</li> </ul>	O	-	OFF
51	Communication error	Error in communication between the Display/Control		O	-	ON
52	(Navigation CM)	panel and Navigation CM		O	-	ON
61	ROM abnormality	Error detected by check sum test	Check the Display/Control Panel	O	-	OFF
62	RAM abnormality	A part of the RAM cannot be accessed to read or write		O	-	OFF
71	Back light abnormality (1)	The back light bulb has failed (no current)		O	O	ON
74	Back light abnormality (2)	Overcurrent to back light (abnormality in back light power supply)		O	O	ON
76	Abnormally high temperature	Abnormally high temperature within the Display/Control panel		O	O	ON
77	Backup memory abnormality	Abnormality in the backup memory		-	O	OFF
78	Abnormality in the "i" switch	The contact of the "i" button remains continuously closed for 30 seconds or longer.		O	O	ON
84	+B disconnection	Abnormality in the +B power supply	<ul style="list-style-type: none"> <li>• Check the wiring harness</li> <li>• Check the Display/ Control Panel</li> </ul>	O	O	OFF
C1	Synchronisation signal abnormality (Navigation CM)	Abnormality in the Navigation CM synchronisation signal	<ul style="list-style-type: none"> <li>• Check the wiring harness</li> <li>• Check the Navigation CM</li> </ul>	O	O	ON

## 2. Navigation CM

Diagnosis Code	Diagnosed Item	Message	Corrective Action	System Inspection	Diagnosis Memory	Fail LED
00	ROM abnormality	Error detected by check sum test	Check the Navigation CM	O	-	OFF
01	Backup memory abnormality	The check-sum before IG-OFF and the check-sum before IG-OFF are different	Check the Navigation CM (except after booting)	-	O	
03	Vehicle speed pulse abnormality	Abnormality in the vehicle speed signal (0 km/h)	<ul style="list-style-type: none"> <li>• Check the connector</li> <li>• Check the wiring harness</li> <li>• Check the Navigation CM</li> </ul>	-	O	OFF
25	SCP communication error	The attempt to make a communication from the vehicle has failed (no signal received)	<ul style="list-style-type: none"> <li>• Check the connector</li> <li>• Check the wiring harness</li> <li>• Check the Navigation CM</li> </ul>	O	O	OFF
26	No response from VEMS	Commands supporting the VEMS drivers cannot be executed	<ul style="list-style-type: none"> <li>• Check the VEMS</li> <li>• Check the wiring harness</li> </ul>	-	O	ON
27	Communication error	Error in communication between the Navigation CM and TrafficMaster	<ul style="list-style-type: none"> <li>• Check the wiring harness</li> <li>• Check TrafficMaster *</li> </ul>	O	O	OFF
28		Error in communication between the Navigation CM and Display/ Control Panel	<ul style="list-style-type: none"> <li>• Check the connector</li> <li>• Check the wiring harness</li> </ul>	-	O	ON
29		The attempt to make an initial communication failed	<ul style="list-style-type: none"> <li>• Check the Display/ Control Panel</li> </ul>	-	O	OFF
30	Gyro abnormality	Abnormality in the gyro	Check the Navigation CM (Gyro system)	-	O	OFF
31	GPS receiver abnormality	Abnormality in the GPS receiver	Check the Navigation CM (GPS receiver)	O	O	OFF
3A	GPS antenna contact dis-connected or short-circuited	GPS antenna contact open or short-circuited	<ul style="list-style-type: none"> <li>• Check the connection of the GPS antenna</li> <li>• Check the GPS antenna</li> </ul>	O	O	OFF
A1	Abnormal temperature in the CD pickup	Abnormally high temperature in the CD player	Check the Navigation CM (CD player)	-	O	ON



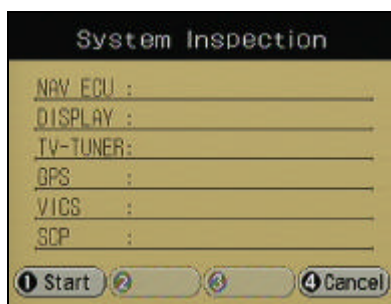
## 2. Navigation CM (Continued)

Diagnosis Code	Diagnosed Item	Message	Corrective Action	System Inspection	Diagnosis Memory	Fail LED
A2	No disk	No map CD is inserted into the player	Insert a map CD	-	O	OFF
A3	Wrong disk	A wrong CD has been inserted into the player	Replace a map CD	-	O	OFF
A4	CD read error	Data cannot be read from the map CD	<ul style="list-style-type: none"> <li>• Replace the map CD</li> <li>• Check the Navigation CM (CD player)</li> </ul>	-	O	OFF

\* TrafficMaster feature will apply in UK and Germany ONLY.

### Note 1: On the System Inspection screen

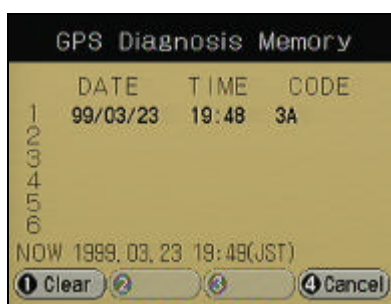
Diagnosis codes marked 'O' in the table above may be displayed



← Diagnosis codes and output date/time

### Note 2: On the Diagnosis Memory menu

Diagnosis codes marked 'O' in the table above may be displayed



← Diagnosis codes and output date/time

### Note 3: Fail LED

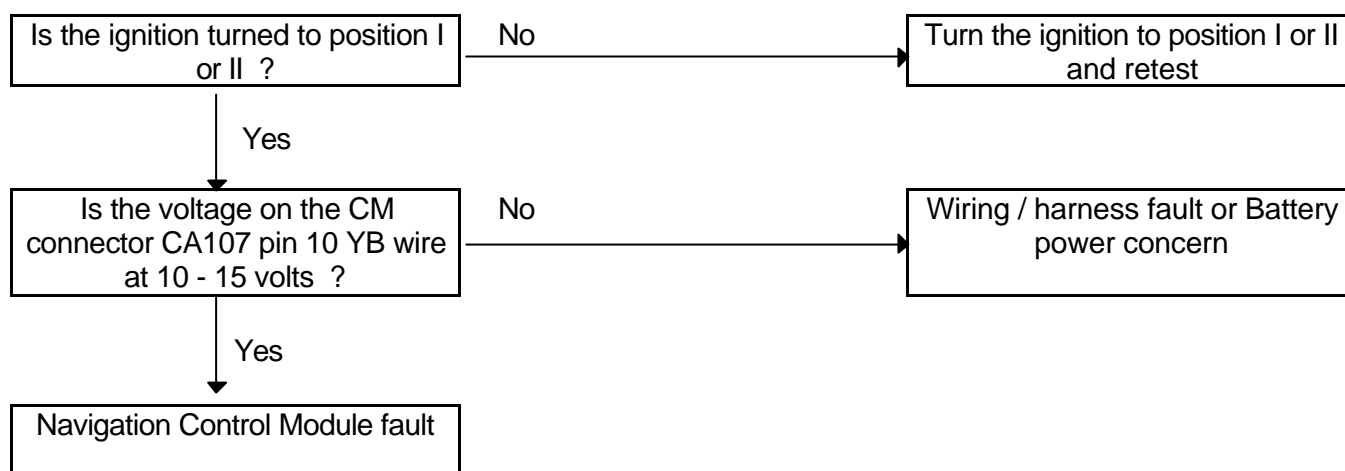
Lights up when an abnormality is detected

## TROUBLESHOOTING FLOWCHARTS

Prior to following the flowcharts ensure that normal diagnostics have been carried out using PDU.

### CHART 1

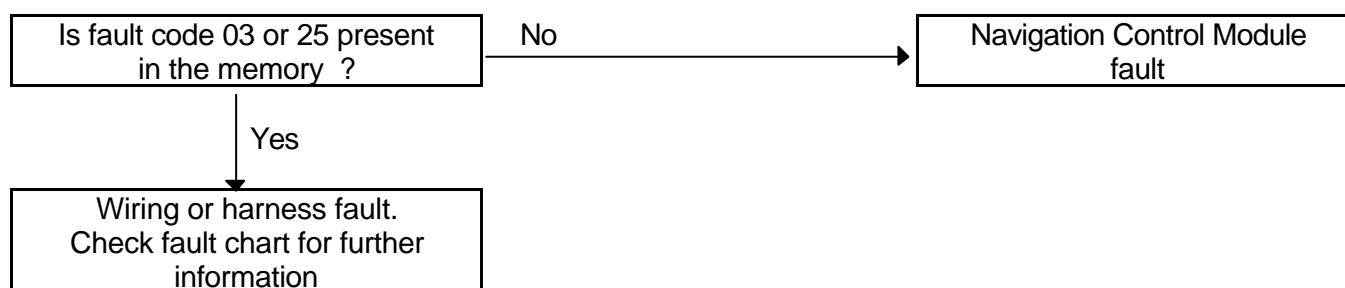
#### UNABLE TO INSERT OR EJECT THE MAP CD



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### CHART 2

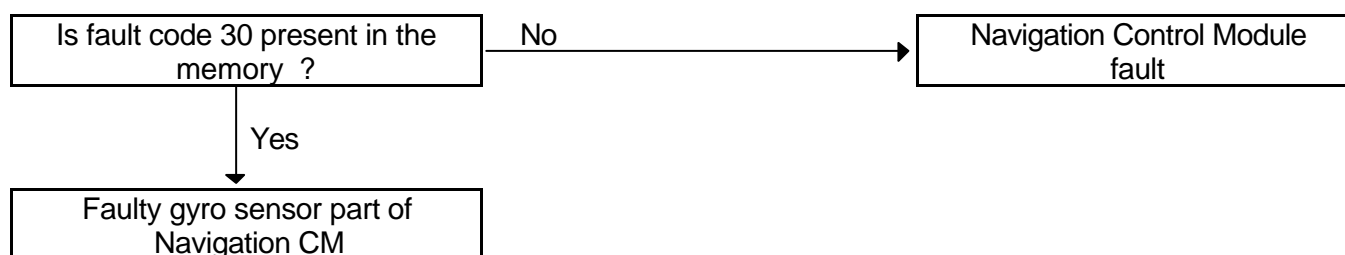
#### CURRENT POSITION MARKER DOES NOT MOVE

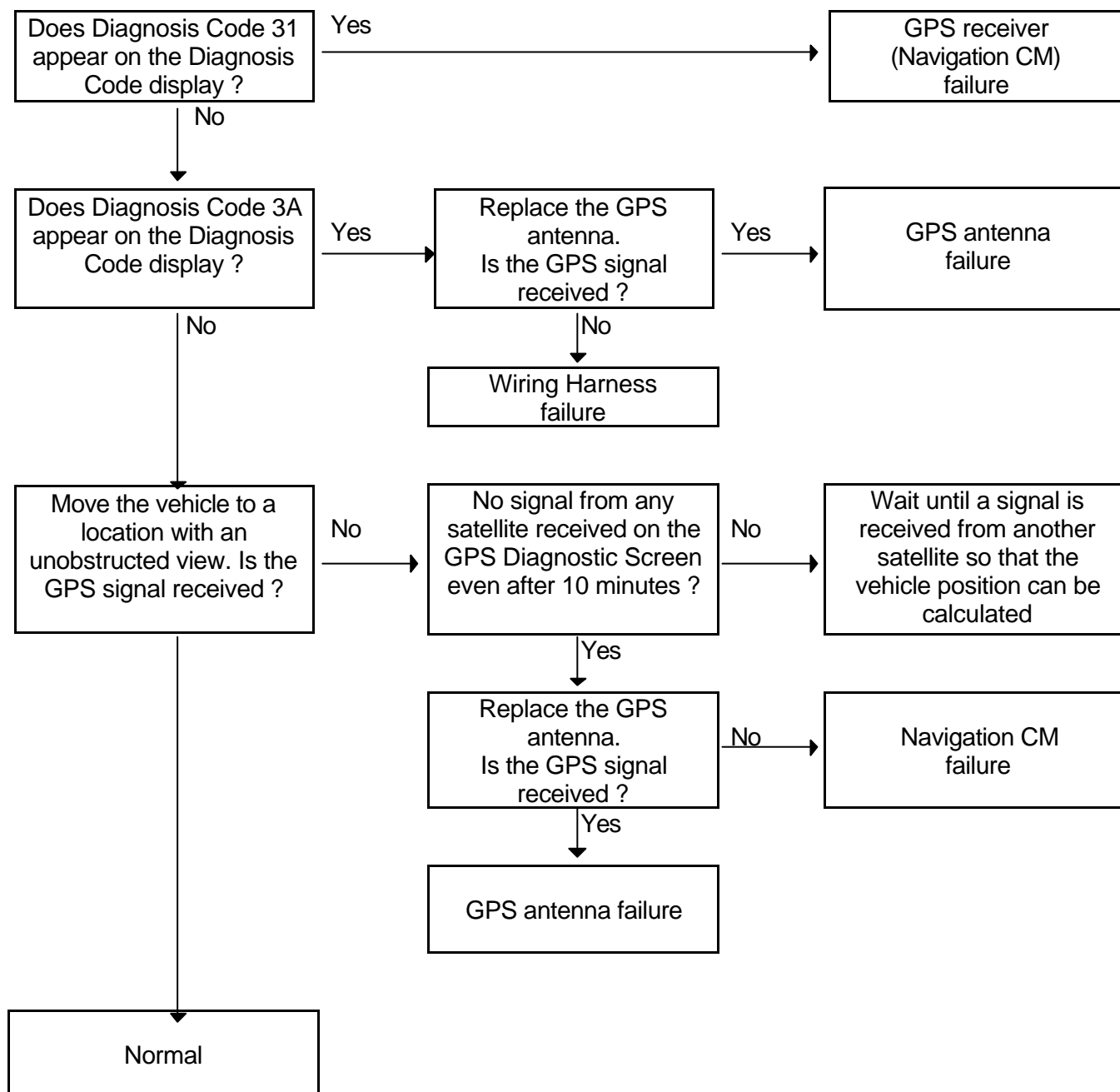


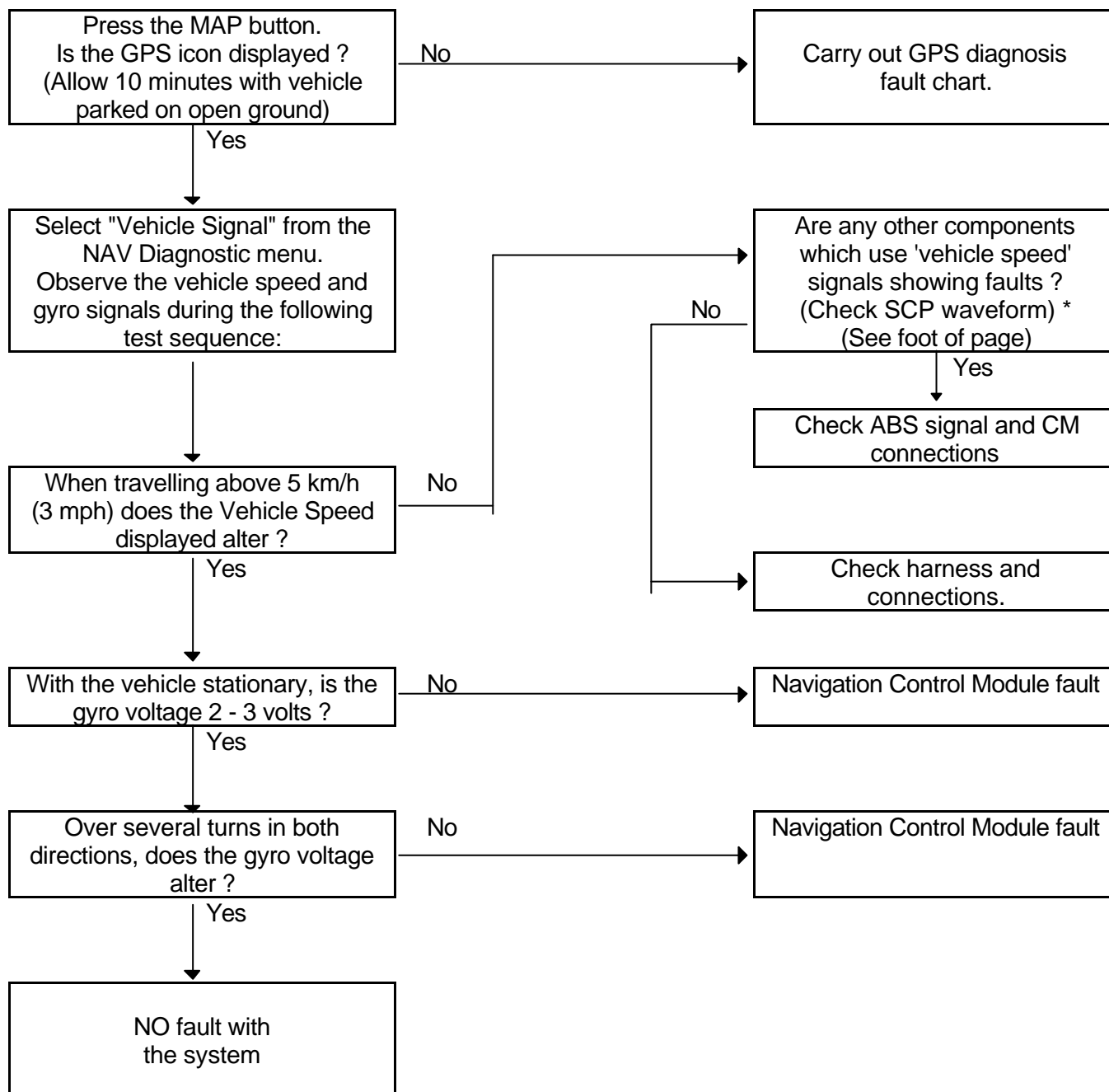
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### CHART 3

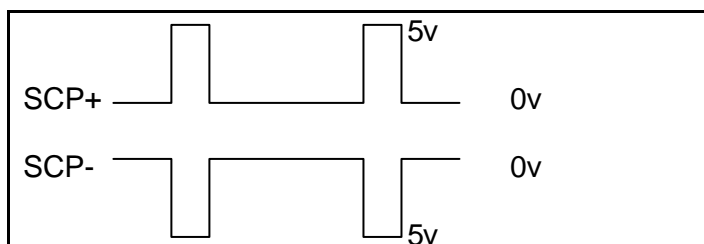
#### RH / LH TURNS NOT RECOGNISED

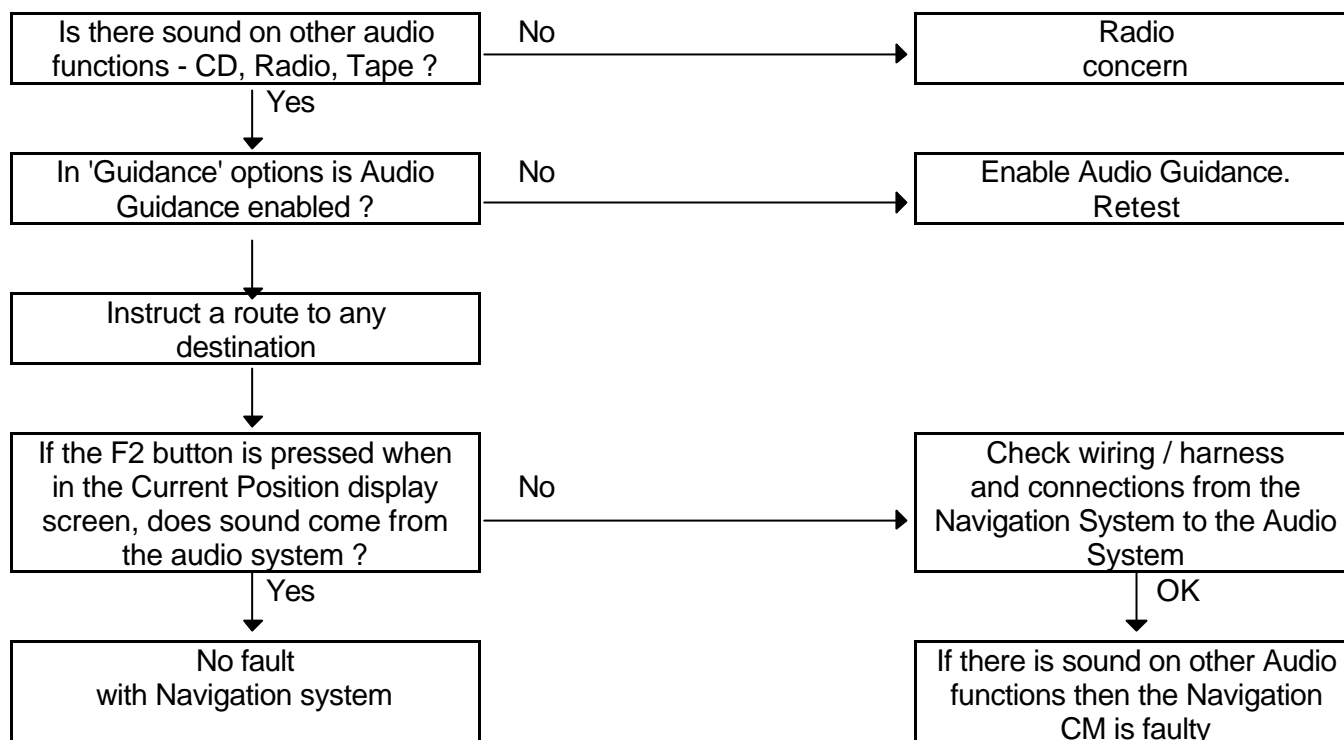
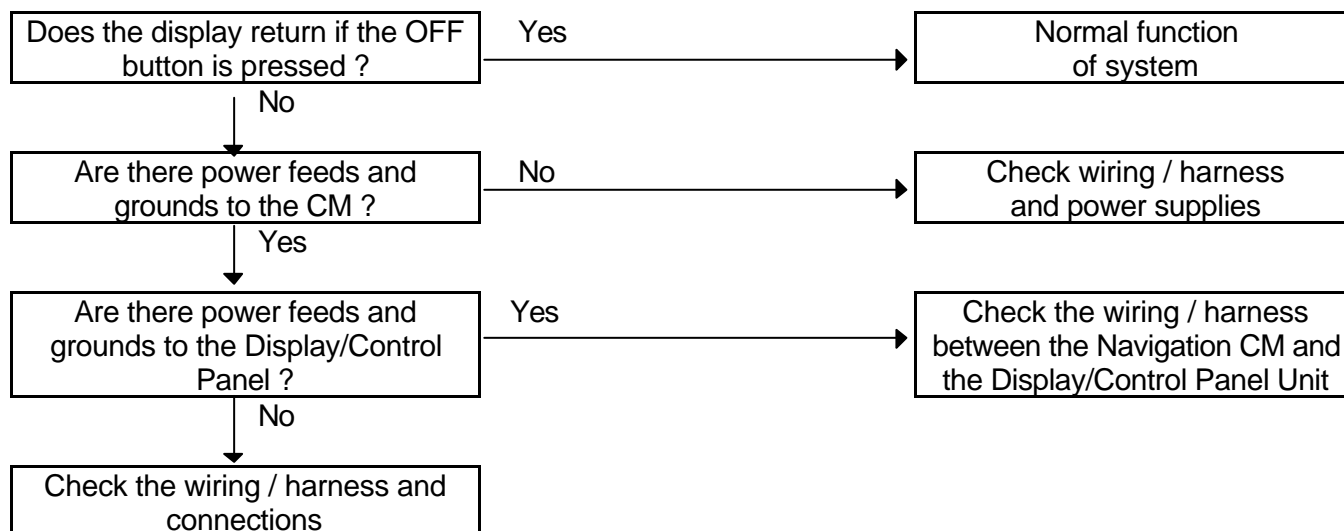


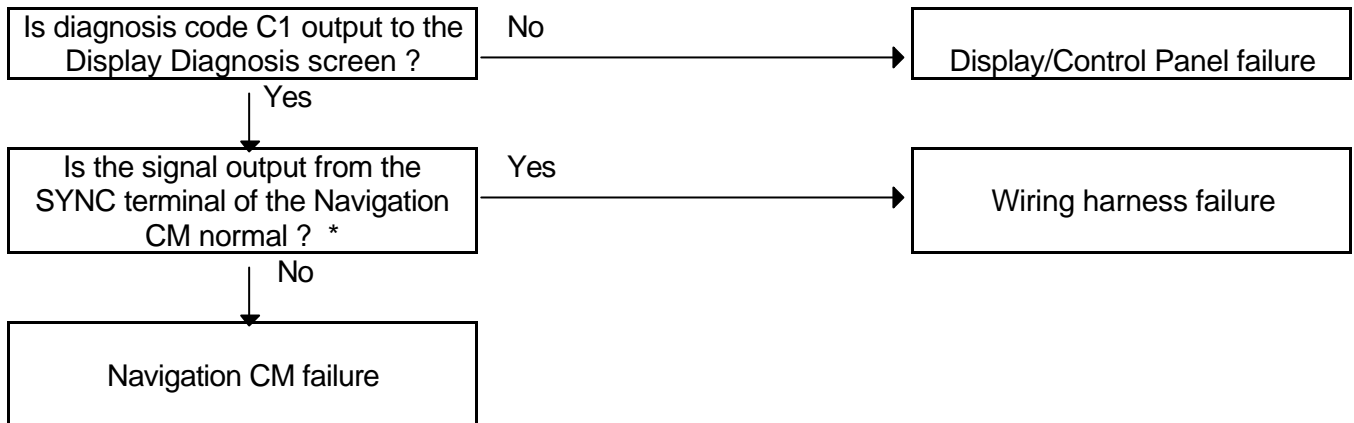
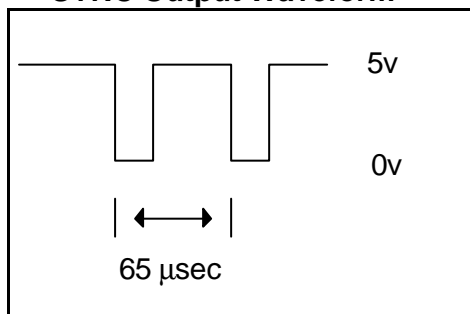
**CHART 4****GPS SIGNAL CANNOT  
BE RECEIVED**

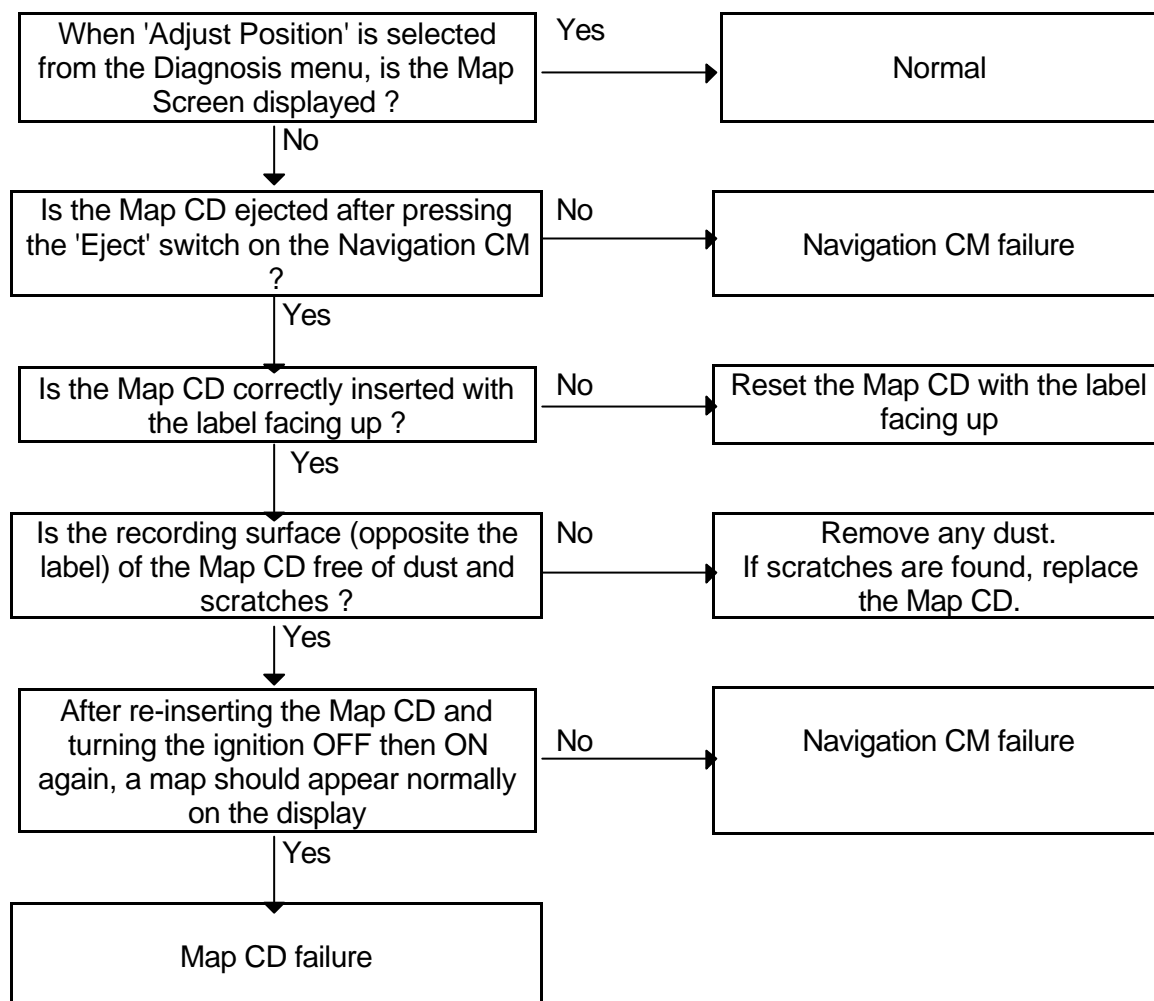
**CHART 5****"CURRENT POSITION"  
CURSOR DOES NOT  
TRAVEL ON THE ROAD****SCP Line Inspection \***

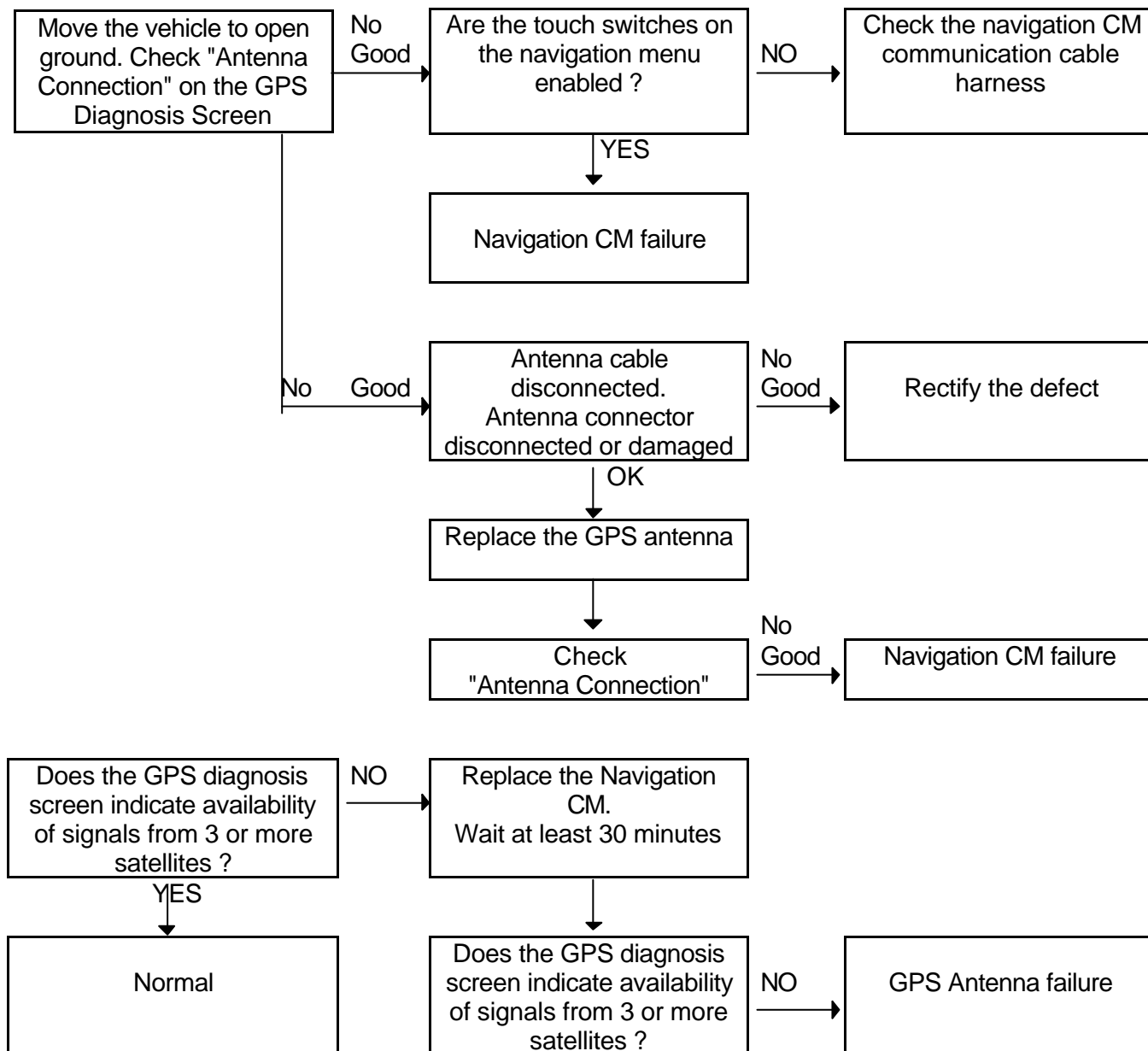
Where an oscilloscope is available, check whether the waveforms illustrated are present or not.



**CHART 6****AUDIO  
INSTRUCTION MISSING****CHART 7****NO DISPLAY / DARK DISPLAY**

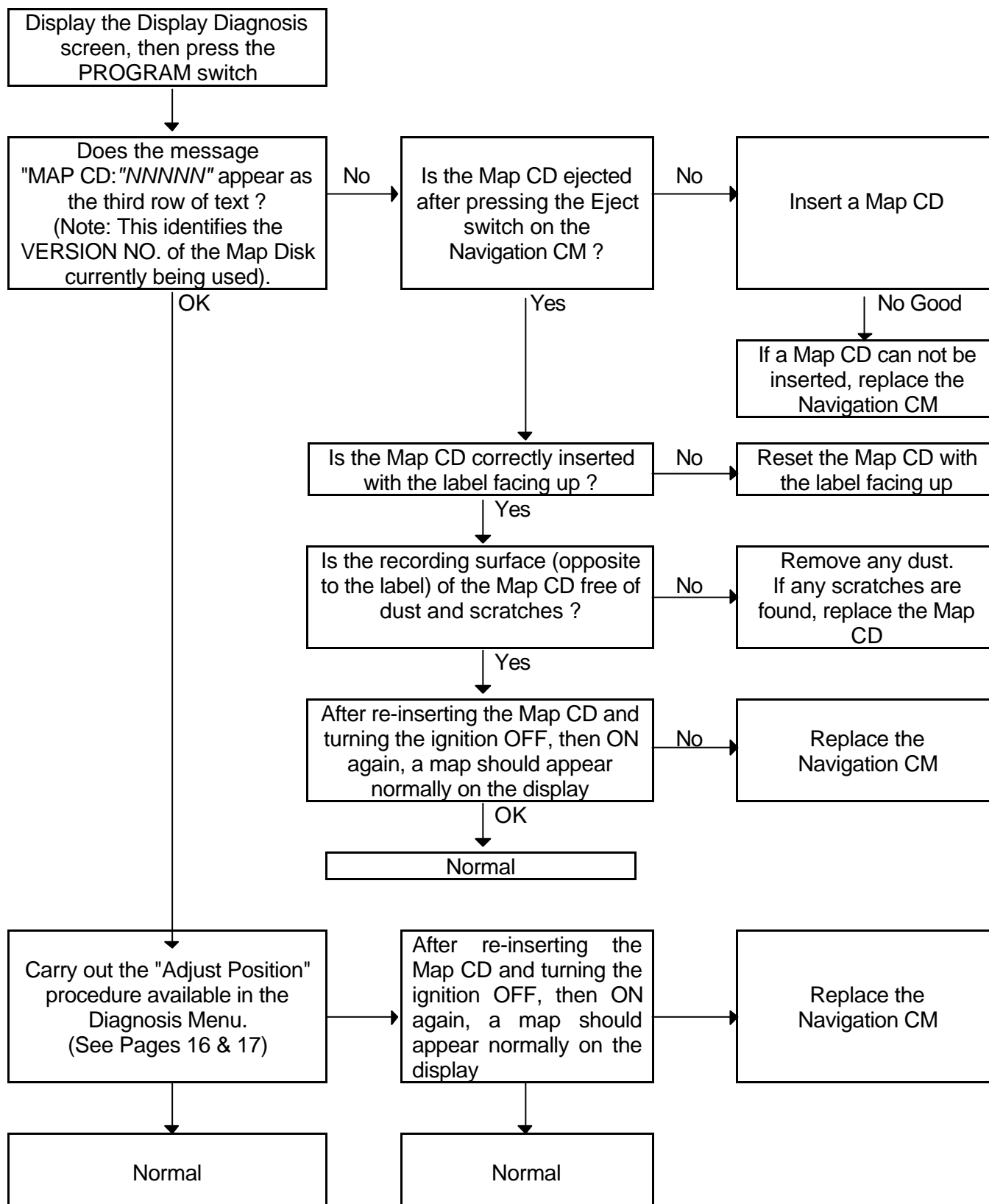
**CHART 8****IMAGES APPEAR DISTURBED****\* SYNC Output Waveform**

**CHART 9****ONLY THE MAP DISPLAY  
IS UNAVAILABLE?**

**CHART 10****GPS DOES NOT DISPLAY THE  
CURRENT POSITION MARKER**



### Procedure to be followed after identification of Navigation CM failure:



## DISPLAY - STRANGE COLORS or UNSTEADY DISPLAY

Should the screen display strange colors, or the display is unsteady, a fault with the R, G, B or SYNCHRO signals is to be suspected. There are no tests which can be carried out on the hardware. If, after checking the harness for short circuits and continuity, the fault has not been rectified, call Dealer Technical Support for further assistance.

## 'ADJUST POSITION' PROCEDURE

The Navigation System may be 'confused' as to the geographic location of the vehicle following long-distance transportation, such as inside a car ferry or ship's hold. The system will normally recognise its location after a few minutes of operation, with the appropriate map disk in use, if driven on open roads. If driven rapidly from a ship into an enclosed building, the system may be unable to 'see' three satellites for sufficient time to enable it to determine the current location. In such situations, the following procedures provide a means of providing the system with specific details of the current location of the vehicle.

<b><u>ADJUST POSITION FROM DIAGNOSIS MENU</u></b>	<b><u>ADJUST POSITION FROM MAIN MENU (DEALER POINT OF INTEREST)</u></b>
<ul style="list-style-type: none"> <li>• Ignition ON</li> <li>• Slide open the CD-ROM cover</li> <li>• Insert the appropriate Map Disk</li> <li>• Close the CD-ROM cover</li> <li>• From the CAUTION screen, input the access code sequence (Refer to Page 1 - Access to the Diagnostic Menu - Step 4)</li> <li>• Select ADJUST POSITION</li> <li>• Press F1</li> <li>• Switch ignition OFF</li> <li>• Switch ignition ON</li> <li>• At the CAUTION screen, select F1</li> <li>• Select F1, MAIN MENU</li> <li>• Select SET UP</li> <li>• Select CALIBRATION</li> </ul>	<ul style="list-style-type: none"> <li>• Ignition ON</li> <li>• Slide open the CD-ROM cover</li> <li>• Insert the appropriate Map Disk</li> <li>• Close the CD-ROM cover</li> <li>• At the CAUTION screen, select F1</li> <li>• Select F1, MAIN MENU</li> <li>• Select F1, Enter DESTINATION</li> <li>• Select a Point of Interest / Town Center</li> <li>• Select F2, CLASS</li> <li>• Select JAGUAR DEALER</li> <li>• Select F1, LIST</li> <li>• Select DEALERSHIP and press &lt;ENTER&gt;</li> <li>• Press MAP</li> <li>• Select F1, MAIN MENU</li> <li>• Select SET UP</li> <li>• Select CALIBRATION</li> <li>• Select F1, RELOCATE</li> </ul>

**RELOCATION FROM MAIN MENU  
(NO DEALER POINT OF INTEREST)**

- Ignition ON
- Slide open the CD-ROM cover
- Insert the appropriate Map Disk
- Close the CD-ROM cover
- At the CAUTION screen, select F1
- Select F1, MAIN MENU
- Select F1, Enter DESTINATION
- Select F2, ADDRESS
- Enter Address of present location and press <ENTER>
- Select HOUSE NUMBER of present location and press <ENTER>
- Select TOWN of present location and press <ENTER>
- Press MAP
- Select F1, MAIN MENU
- Select SET UP
- Select CALIBRATION
- Select F1, RELOCATE

**FAULT REPORTING:**

Where it is necessary to contact Dealer Technical Support, make a photocopy of the attached Navigation Fault Report Sheet and fill in or tick the boxes with all appropriate details prior to making contact. Dealer Technical Support may request you to send the completed form by FAX.

**WARRANTY INFORMATION:**

This Technical Bulletin is issued For Information Only.

**NAVIGATION FAULT REPORT SHEET**

Dealer Code	<input type="text"/>	Dealer Name	<input type="text"/>
DTS Call Ref No.	<input type="text"/>	Pre-call Worksheet	<input type="text"/>
Contact Name	<input type="text"/>	Customer's Name	<input type="text"/>
V.I.N.	<input type="text"/>	Odometer Reading	<input type="text"/>
Fault Description & owner's comments	<input style="height: 40px;" type="text"/>		

Fault Codes:-	1 <input type="text"/>	2 <input type="text"/>	3 <input type="text"/>	4 <input type="text"/>	5 <input type="text"/>	6 <input type="text"/>
Others	<input style="height: 20px;" type="text"/>					

Fault Found:	1 <input type="text"/>	Antenna	2 <input type="text"/>	Connector	3 <input type="text"/>	Harness
	4 <input type="text"/>	Display Unit	5 <input type="text"/>	VEMS	6 <input type="text"/>	Navigation CM
	7 <input type="text"/>	Disk	8 <input type="text"/>	VICS	9 <input type="text"/>	TrafficMaster
	10 <input style="width: 500px;" type="text"/>	Others				

Flow Chart No: was followed.	<input type="text"/>	Fault found to be:	<input style="height: 40px;" type="text"/>
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External Conditions	<input type="text"/>	Dry	<input type="text"/>	Wet	<input type="text"/>	Sunny
	<input type="text"/>	Overcast	<input style="width: 250px;" type="text"/>			Other

Driving Conditions	<input type="text"/>	Cruising	<input type="text"/>	Traffic	<input type="text"/>	Built-up zone
	<input type="text"/>	Surrounded by high buildings	<input style="height: 50px;" type="text"/>			Other (Describe)
	<input type="text"/>	Open air				

Road Conditions	<input type="text"/>	Smooth	<input type="text"/>	Bumpy	<input type="text"/>	Twisting
	<input style="width: 250px;" type="text"/>			Other (Describe)		

Occurrences	<input type="text"/>	Constant	<input type="text"/>	Several	<input type="text"/>	Single
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Reporting again same fault as previously reported on same vehicle ?	<input type="text"/>	Yes/No	<input type="text"/>	DTS Call Ref. For previous report
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