

2006 Acura MDX

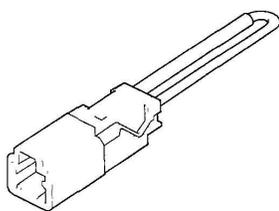
2003-06 ACCESSORIES & EQUIPMENT Navigation System ('05-06 Models) - MDX

2003-06 ACCESSORIES & EQUIPMENT

Navigation System ('05-06 Models) - MDX

SPECIAL TOOLS

Ref. No.	Tool Number	Description	Qty
①	07PAZ-0010100	SCS Service Connector	1



①

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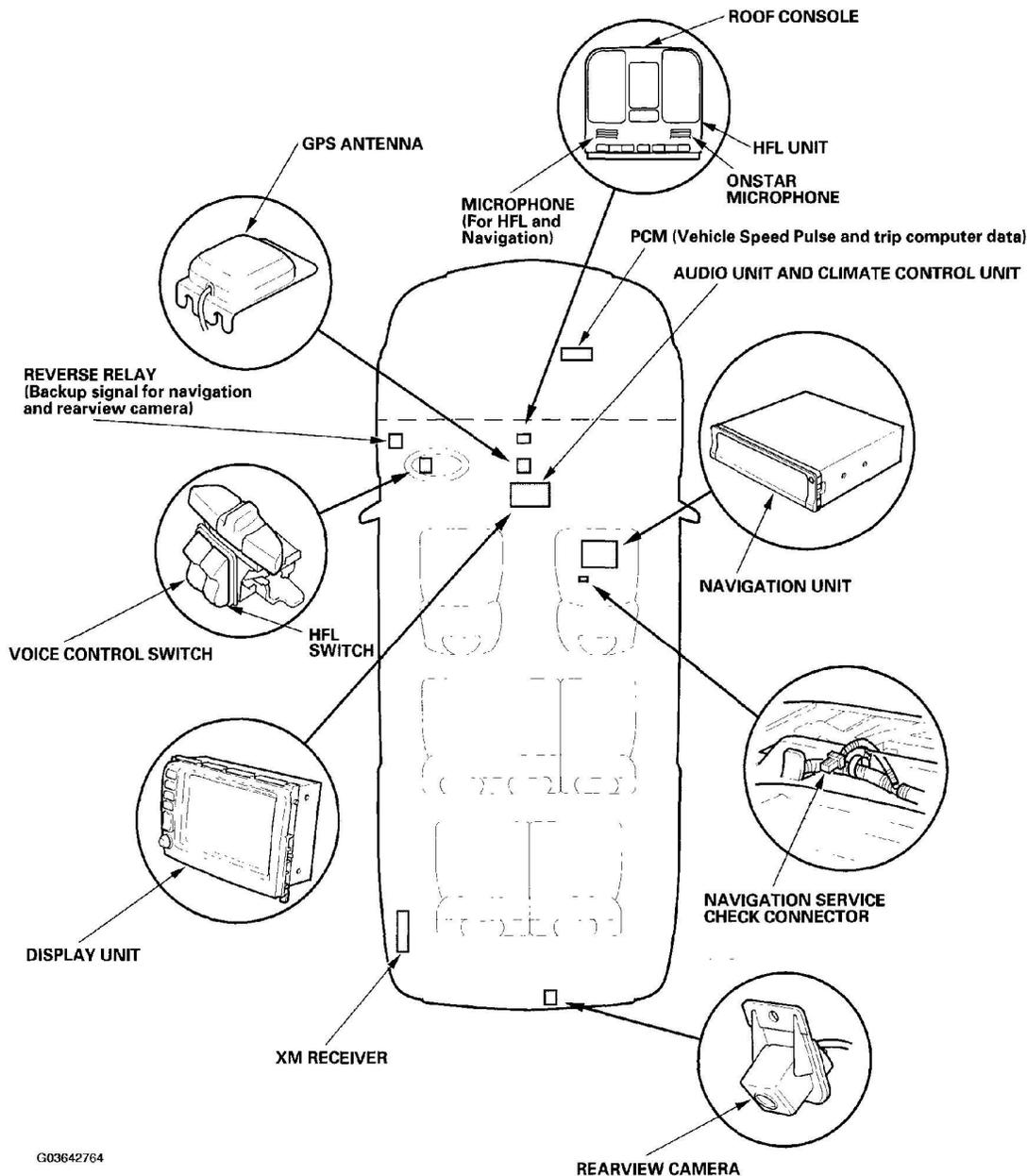
Fig. 1: Identifying Special Tools

Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT LOCATION INDEX

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Fig. 2: Identifying Navigation System Components Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GENERAL TROUBLESHOOTING INFORMATION

GENERAL OPERATION

Refer to the Navigation System Manual for the navigation system operating procedures.

ANTI-THEFT FEATURE

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The navigation system and audio unit have a coded theft protection circuit. Be sure to get the customer's 4-digit navi and 5-digit audio anti-theft security code numbers before:

- Disconnecting the battery.
- Disconnecting the navigation unit 8P connector.
- Removing the No. 11 (10 A) fuse from the passenger's the under-dash fuse/relay box.

After service, reconnect power to the navigation unit, and turn the ignition switch ON (II). Enter the 4-digit anti-theft security code, then select "Done".

If the code cannot be found, use the interactive Network (i N) to look it up. You will need the serial number from the navigation unit. You can view the serial number in the Navi ECU diagnostic screen or find it on a label on the underside of the navi unit that is located in the trunk (see **UNIT CHECK**).

When replacing the navigation unit, be sure to give the customer the new 4-digit anti-theft security code.

SYMPTOM DIAGNOSIS

Certain circumstances and system limitations will result in occasional vehicle positioning errors. Some customers may think this indicates a problem with the navigation system when, in fact, the system is normal. Keep the following items in mind when interviewing customers about symptoms of the navigation system.

SELF-INERTIAL NAVIGATION LIMITATIONS

The limitations of the self-inertial portion of the navigation system (the yaw rate sensor and the vehicle speed signal) can cause some discrepancies between the vehicle's actual position and the indicated vehicle position (GPS vehicle position).

The following circumstances may cause vehicle positioning errors:

- Moving the vehicle with the engine stopped and the vehicle stopped, such as by ferry or tow truck, or if the vehicle is spun on a turn table.
- Tire slippage, changes in tire rolling diameters, and some driving situations may cause discrepancies in travel distances. Examples of this include:
 - Continuous tire slippage on a slippery surface
 - Driving with snow chains mounted
 - Abnormal tire pressure
 - Incorrect tire size
 - Frequent lane changes across a wide highway
 - Continuous driving on a straight or gently curving highway
 - Very bumpy roads
- Tolerances in the system and map inaccuracies sometimes limit how precisely the vehicle position is indicated. Examples of this include:
 - Driving on roads not shown on the map (map matching is not possible)

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- Driving on a road that winds in one direction, such as a loop bridge, an interchange, or a spiral parking garage
- Driving on a road with a series of sharp hair-pin turns
- Driving near a gradual highway exit or transition
- Driving on one of two close parallel roads
- Making many 90 degree turns

GLOBAL POSITIONING SYSTEM (GPS) LIMITATIONS

The GPS cannot detect the vehicle's position during the following instances:

- For the first 5 to 10 minutes after reconnecting the battery (This can take as long as 45 minutes).
- When the satellite signals are blocked by the operation of some electronic aftermarket accessories including, but not limited to non-OEM in-dash entertainment units (radio, CD players/changers, radar detectors and theft recovery systems), and cellphones placed near the navigation system.
- When the satellite signals are blocked by tall buildings, mountains, tunnels, large trees, inside parking structures or large trucks.
- When the GPS antenna is blocked by metallic window tinting or by an object placed above it in the vehicle. The GPS antenna requires a clear unobstructed view of the sky.

The accuracy of GPS is reduced during these instances:

- Metallic window tinting above or to the side of the GPS antenna.
- When the satellite signals are blocked by the operation of some electronic aftermarket accessories including, but not limited to non-OEM in-dash entertainment units (radio, CD players/changers, radar detectors and theft recovery systems), and cellphones placed near the navigation system.
- When only two satellite signals can be received (At least four satellite signals are required for accurate positioning).
- When driving near high tension power lines.

MUTING LOGIC

Whenever the navigation system is giving guidance, the front speakers are muted. When the Navigation, HandsFreeLink, or OnStar voice control system is being used, all of the speakers are muted. If the HandsFreeLink is in use, the voice control system is unavailable. If you are on an HandsFreeLink call, the navigation system will give guidance on top of the caller's voice.

LCD DISPLAY UNIT LIMITATIONS

- In cold temperatures, the display may stay dark for the first 2 or 3 minutes until it warms up.
- When the display is too hot because of direct summer sunlight, it will remain dark until the temperature drops (You may see an error message displayed stating this fact).
- When the humidity is high and the interior temperature is low, the display may appear cloudy. The

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display will clear up after some use.

- Fingerprints on the touch panel may sometimes be noticeable because of the panel's low-reflection coating. Clean the screen with a soft, damp cloth. You may use a mild cleaner intended for eye glasses or computer screens. To avoid scratching the panel, do not rub too hard, or use abrasive cleaners or shop towels.
- The touch panel is an infrared system, so there is no need to press hard. If a touch switch does not function immediately, shift your finger slightly, and touch it again.

NOTE: **Input may be affected by direct sunlight.**

SYMPTOM DUPLICATION

- When the symptom can be duplicated, verify that it is not a characteristic of the system. Review the navigation manual and compare it to a known-good vehicle (with the same software and database), under the same conditions. If not the same, follow the self-diagnostic procedures and the appropriate troubleshooting procedures.
- When the symptom does not reappear or only reappears intermittently, ask the customer about the conditions when the symptom occurred.
 - Ask the customer to demonstrate the problem.
 - Try to establish possible user error or misunderstanding of the system.
 - Try to establish if outside interference may have been the cause.
 - Try to duplication the symptom under the same conditions the customer was experiencing.
 - Vibration, temperature extremes, and moisture (dew, humidity) are factors that are difficult to duplicate.
 - Inspect the vehicle for aftermarket electronic devices (vehicle locators, amps, radar detectors, etc.) that may be hidden.

SERVICE PRECAUTIONS

- If the navigation unit needs to be replaced, inform the customer that personal information in the navigation system will be lost. If possible, have the customer record their personal information before the unit is replaced.
- Before disconnecting the battery, make sure you have the 5-digit anti-theft code for the radio and the 4-digit code for the navigation system, and write down the XM radio channel presets. Also obtain any PGM-FI or transmission DTCs and freeze frame date (which will be lost when the PCM loses power).
- When the battery is disconnected, the internal GPS clock is reset to "0:00". The clock will reset to the correct time after the system finishes GPS initialization.
- After reconnecting the battery, you have to wait to get the initial signal from the satellite. It will take from 10 to 45 minutes.
- Before returning the vehicle to the customer, enter the radio and navigation anti-theft security code, then enter the customer's XM radio channel presets, and adjust the clock, if necessary (in set up) for auto daylight savings time.

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SYSTEM INITIALIZATION

If for any reason, you lose power to the navigation system (like the battery was disconnected). The navigation system will require initialization. Once completed, your system will be ready to use.

This initialization requires the following:

- Entry of the 4-digit navigation anti-theft security code to "unlock" the system
- GPS initialization (may not be needed depending of the length of time the system was without power)
- Map matching to align the GPS to a location on the map

ENTERING SECURITY CODE

The navigation system and audio unit have a coded theft protection circuit. Be sure to get the customer's anti-theft security codes number before;

- Disconnecting the battery
- Disconnecting the navigation unit 8P connector
- Removing the No. 11 (10 A) fuse from the passenger's under-dash fuse/relay box

After service, reconnect power to the navigation unit, and turn the ignition switch ON (II). Enter the 4-digit anti-theft security code, then select "Done".

When replacing the navigation unit or audio unit, be sure to give the customer the new anti-theft security code.

GPS INITIALIZATION

Depending on the length of time the battery was disconnected, your system may require GPS initialization. If it does, the following screen appears:

*****Wait*****

**The system is acquiring its GPS signal.
This could take up to 10 minutes.**

- **Engine must be running**
- **Vehicle must be parked outside,
away from buildings**
- **Do not move the vehicle at this time**

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Fig. 3: GPS Initialization Screen Display (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

If this procedure is not necessary the system proceeds directly to the Disclaimer screen. During initialization, the system searches for all available GPS satellites, and obtains their orbital information. During this procedure the vehicle should be out in the open with a clear view of the sky.

If the navigation system finds the satellites properly, this box clears, and changes to the Disclaimer screen. If within 10 minutes the system fails to locate a sufficient number of satellites to locate your position, the following screen appears.

Navigation system is unable acquire a proper GPS signal.

- **Move vehicle to another location**
- **Turn the ignition switch off**
- **Disconnect the battery for 30 minutes to clear the GPS receiver's memory**
- **Reconnect the battery and follow the screen prompts**

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Fig. 4: GPS Initialization Screen Display (1 Of 2)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

After 30 minutes with this screen displayed, turn off the engine, then restart the vehicle. If you now see the Disclaimer screen, the GPS initialization is complete.

NOTE:

- **The average acquiring time is less than 10 minutes, but it can take as long as 45 minutes.**
- **If the system is still unable to acquire a signal, follow the instructions on the screen. If this screen appears again, go to troubleshooting for the GPS icon is white (see GPS ICON IS WHITE OR NOT SHOWN).**

MAP MATCHING

This part of the initialization matches the GPS coordinates with a road on the map screen. To perform this part of the procedure, ensure that the navigation system is displaying a map, and drive the vehicle on a mapped road shown on the map screen). Do not enter a destination at this time. When the name of the current road you are driving on, appears at the bottom of the screen, the entire procedure is complete. Your system is now ready to use.

DVD LABEL COLOR IDENTIFICATION

Customers may obtain navigation DVDs from a variety of sources (from friends, internet auctions, etc.) outside of the normal ordering process. If they install an incorrect DVD, it can produce an error message, or cause the navigation system to malfunction. The DVD for this model has a WHITE label (white or gray label for Canada).

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The following DVDs will not work in the Acura navigation system:

- Acura navigation DVDs with a color other than WHITE or GRAY
- Map software programs manufactured by other companies
- DVD movies, or DVDs containing audio recordings
- Copies of an original Acura DVD (DVD-R/RW)

OBTAINING A NAVIGATION DVD

If the Navigation DVD is lost or damaged, or you require a yearly updated DVD, you have 2 ways to purchase one. You can either call (888) 549-3798, or order on-line at www.acura.com.

Both methods require a credit card purchase. Updated DVDs are available for purchase usually in the fall of each year.

For general questions about whether a city is covered, view the "map coverage" link on the DVD order site. On the site, you enter a year and model, and then click on the "Coverage" link. You then select a state or province, and the cities listed.

Updated DVD's may contain the following:

- Enhanced maps and points of interest (POI) coverage
- Fixes for minor software bugs
- Additional features

NOTE:

- **Updating is optional, and there is no program to provide free DVDs containing yearly mapping updates.**
- **Replacing a DVD just because there is a higher version number available is not always warranted. A higher version number DOES NOT necessarily mean it contains newer software for this model. The DVD contains software for ALL Acura models that use the same color DVD, and a revised number may or may contain software fixes or upgrades for this model.**
- **The DVD cannot be ordered through the Acura parts system.**

SYMPTOM TROUBLESHOOTING INDEX

NOTE: Also see the "symptom column" for the Navigation unit inputs and outputs for connector A, B, C, D, and E for additional symptom (see NAVIGATION UNIT INPUTS AND OUTPUTS FOR CONNECTOR A (20P)).

SYMPTOM TROUBLESHOOTING INDEX

Symptom	Diagnostic procedure	Also check for

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Navigation system stays on the GPS initialization screen	System Initialization (see <u>SYSTEM INITIALIZATION</u>)	<ul style="list-style-type: none"> • Navigation unit • Wrong color DVD installed or DVD is dirty or damaged • Display unit • GPS antenna or cable • Harness/fuses/switches
No picture is displayed	Troubleshooting (see <u>NO PICTURE IS DISPLAYED</u>)	<ul style="list-style-type: none"> • Navigation unit • Wrong color DVD installed or DVD is dirty or damaged • GPS antenna or cable • Display unit • Harness/fuses/switches
Picture is missing a color or tone (in all gear positions)	Troubleshooting (see <u>PICTURE IS MISSING A COLOR OR TONE (IN ALL GEAR POSITIONS)</u>)	<ul style="list-style-type: none"> • Wrong color DVD installed or DVD is dirty or damaged • Contrast and brightness settings • Navigation unit • Harness/fuses/switches
Picture has lines/rolls/other issues	Troubleshooting (see <u>PICTURE HAS LINES/ROLLS/OTHER ISSUES</u>)	<ul style="list-style-type: none"> • Navigation unit • Wrong color DVD installed or DVD is dirty or damaged • Display unit • Harness/fuses/switches
Display unit buttons or touch screen buttons do not work or respond properly	Troubleshooting (see <u>DISPLAY UNIT BUTTONS OR TOUCH SCREEN BUTTONS DO NOT WORK OR RESPOND PROPERLY</u>)	<ul style="list-style-type: none"> • Display unit • Navigation unit • Harness/fuses/switches
GPS icon is white or not shown	Troubleshooting (see <u>GPS ICON IS WHITE OR NOT SHOWN</u>)	<ul style="list-style-type: none"> • Navigation unit • GPS antenna/cable • Harness/fuses/switches
Voice guidance cannot be heard	Troubleshooting (see <u>VOICE GUIDANCE CANNOT BE HEARD</u>)	<ul style="list-style-type: none"> • Navigation unit • Wrong color DVD installed or DVD is dirty or damaged • Navigation set-up settings • Audio unit/amplifier • Harness/fuses/switches
Voice control does not work/respond	Troubleshooting (see <u>VOICE CONTROL DOES NOT</u>)	<ul style="list-style-type: none"> • Navigation unit

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	<u>WORK/RESPOND)</u>	<ul style="list-style-type: none"> • Wrong color DVD installed or DVD is dirty or damaged • Navigation set-up settings • Microphone/steering buttons • Harness/fuses/switches
Vehicle position icon constantly leaves road, moves erratically, is very far from actual position, or spins when parked on land	Troubleshooting (see <u>VEHICLE POSITION ICON CONSTANTLY LEAVES ROAD, MOVES ERRATICALLY, IS VERY FAR FROM ACTUAL POSITION, OR SPINS WHEN PARKED ON LAND OR ICON WILL NOT MOVE WHEN DRIVING)</u>)	<ul style="list-style-type: none"> • Navigation unit • Aftermarket electronic devices near GPS antenna or Navigation unit • GPS antenna/cable • PCM (no VSP signal) • Harness/fuses/switches
DVD screen error messages	Troubleshooting (see <u>DVD SCREEN ERROR MESSAGES)</u>)	<ul style="list-style-type: none"> • Navigation unit • Display unit • Wrong color DVD installed or DVD is dirty or damaged
No rearview camera picture is displayed or screen goes black when placed in reverse	Troubleshooting (see <u>NO REARVIEW CAMERA PICTURE IS DISPLAYED OR SCREEN GOES BLACK WHEN PLACED IN REVERSE)</u>)	<ul style="list-style-type: none"> • Navigation unit • Rearview camera brightness settings • Harness/connections • Rearview camera control unit • No reverse signal • Rearview camera
The rearview camera picture is missing a color or tone, or picture rolls	Troubleshooting (see <u>THE REARVIEW CAMERA PICTURE IS MISSING A COLOR OR TONE, OR PICTURE ROLLS)</u>)	<ul style="list-style-type: none"> • Navigation unit • Harness/connections • Rearview camera control unit • Rearview camera
Trip computer-no distance	Troubleshooting (see <u>TRIP COMPUTER-NO DISTANCE)</u>)	<ul style="list-style-type: none"> • PCM (speed, fuel level, and fuel pulses) • Harness/fuses/switches
Trip computer-no fuel information	Troubleshooting (see <u>TRIP COMPUTER-NO FUEL INFORMATION)</u>)	<ul style="list-style-type: none"> • OK has not been pressed on the disclaimer screen • PCM (speed, fuel level, and fuel pulses) • Harness/fuses/switches
Trip computer distance to empty calibration is incorrect	Troubleshooting (see <u>TRIP COMPUTER DISTANCE TO EMPTY CALIBRATION IS)</u>)	<ul style="list-style-type: none"> • Fuel gauge operation • Trip calibration

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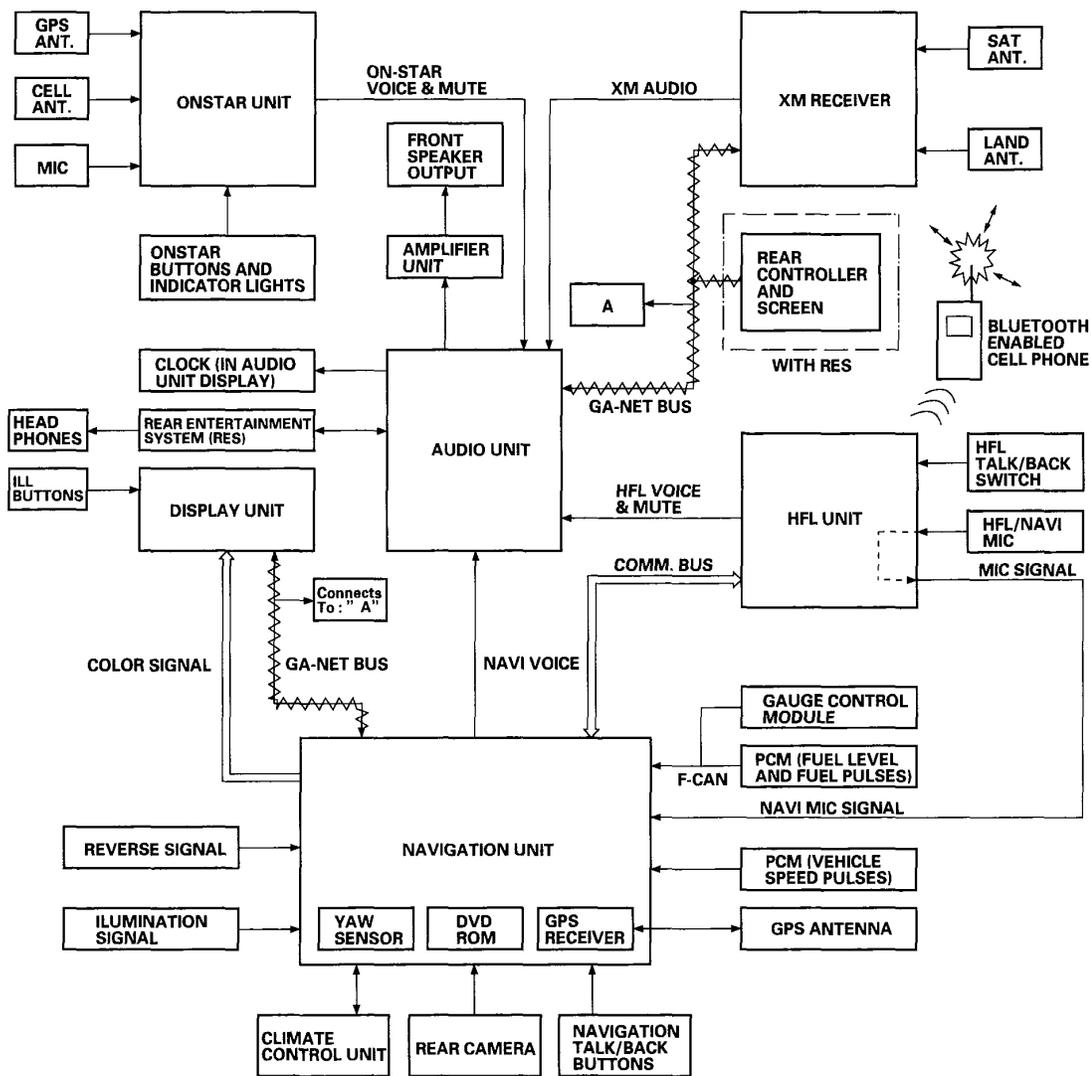
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	<u>INCORRECT</u>)	<ul style="list-style-type: none"> • Characteristic/customer perception • F-CAN communication
Navigation cannot control A/C	Troubleshooting (see <u>NAVIGATION CANNOT CONTROL A/C</u>)	<ul style="list-style-type: none"> • Display unit • Non-navigation A/C control unit is installed • Harness/fuses/switches
Display day/night mode does not work	Troubleshooting (see <u>DISPLAY DAY/NIGHT MODE DOES NOT WORK</u>)	<ul style="list-style-type: none"> • Display unit • Gauge assembly (CAN) • Harness/fuses/switches
System locks up constantly	Troubleshooting (see <u>SYSTEM LOCKS UP CONSTANTLY</u>)	<ul style="list-style-type: none"> • Navigation unit • Wrong color DVD is installed or DVD is dirty or damaged • Harness/fuses/switches • DVD
Vehicle icon wanders across the map when driving (does not follow a displayed road) or spins when driving	Troubleshooting (see <u>VEHICLE ICON WANDERS ACROSS THE MAP (DOES NOT FOLLOW A DISPLAYED ROAD) OR SPINS WHEN DRIVING</u>)	<ul style="list-style-type: none"> • Navigation unit • GPS antenna/cable • PCM (no VSP signal)
Navigation drives by itself when parked	Troubleshooting (see <u>NAVIGATION DRIVES BY ITSELF WHEN PARKED</u>)	
Navigation stays on with ignition switch off	Troubleshooting (see <u>NAVIGATION STAYS ON WITH IGNITION SWITCH OFF</u>)	<ul style="list-style-type: none"> • Harness/fuses/switches • Non OEM assemblies
Navigation frequently asks for anti-theft code and needs GPS initialization	Troubleshooting (see <u>SYSTEM INITIALIZATION</u>)	<ul style="list-style-type: none"> • Navigation unit • Harness/fuses/switches
An In Line Diag screen appears every time the vehicle is started	Troubleshooting (see <u>FACTORY DIAGNOSTIC SCREEN "IN LINE DIAG"</u>)	Software remedy, do not replace hardware, search ISIS for current ASB's
White dots tracked across the map	See Navigation user's guide for "offroad" tracking (bread crumbs)	<ul style="list-style-type: none"> • Non OEM assemblies • GPS/antenna/cable
Measurements are displayed in metric	See Navigation user's guide for selecting English or metric units	

SYSTEM DESCRIPTION

OVERVIEW

Refer to **Fig. 5** for the following system description.



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Fig. 5: Navigation System Component Connection Diagram
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navigation Unit

The navigation unit provides the following functions:

- Controls the display unit, generates graphics images, determines day/night display mode
- Receives input from the Touch screen, and the surrounding "hard buttons" like Menu, and Map/Guide
- Obtains and maintains current position from GPS, Yaw, and VSS signals

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- Reads internal DVD, provides map display, and displays current location on map
- Provides turn-by-turn voice guidance to urban and rural destinations, and utilizes a text-to speech engine for reading lists, and other text on the screen. The audio unit provides voice output.
- Interfaces with microphone, steering wheel voice buttons, and audio unit to provide speech recognition control of navigation, Audio, Climate, RES and HFL systems
- Gathers fuel data from PCM for the trip computer feature
- Sets the vehicle clock in the Audio Display, and can automatically compensate for time changes caused by daylight savings or when driving across a time zone boundary (can be disabled in set up)

Display Unit

The image for the 7-inch diagonal display unit is created by the Navigation unit, and sent to the display unit in RGB format (distinct Red, Blue, Green, and Sync, signals). Activation of the Touch Screen and the surrounding hard buttons (Map/guide, Cancel, Display mode, Menu, and Info) is passed to the navigation unit over the GA-Net bus.

Audio Unit/Muting

This device controls what audio source is output to the designated speakers. OnStar has the highest priority, and when in use, mutes (blocks) all other audio outputs. This is followed by HFL, then Navigation, and finally the audio output.

HFL, and OnStar both have a dedicated mute line running to the audio unit (The navigation system uses the GA-Net bus to send it's mute signal to the audio unit). If for some reason, the mute signal from any of these devices is on, the audio output from devices of lower priority will not be heard.

OnStar

Because the OnStar system provides emergency assistance, it has the highest priority for audio output. Aside from sharing the audio unit, the OnStar system is essentially self-contained. It utilizes it's own microphone, control "keyboard", and GPS/Cellular antenna. See the OnStar section for troubleshooting. If a paired phone is present, the "CALL" button is green on the "Calculate route to." screen.

HFL

The HFL control unit (located in the roof behind the map lights) is a Bluetooth enabled device. If the customer has a bluetooth enabled phone, and the phone is properly "paired," the customer can receive and initiate phone calls in a "Hands Free" mode. For more information and troubleshooting, see the HFL section.

GA-Net

This bus connects the Navigation unit, Navigation display unit, the Audio unit, XM unit and the RES rear controller and screen. It passes control information between the various components described below. Any open in this circuit can affect the operation of the other devices.

Communication (Comm. BUS)

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This bus communicates between the Navigation unit, and the HandsFreeLink (HFL) unit. This bus passes HFL status information to the navigation unit, and passes phone numbers to dial from the navigation unit.

F-CAN bus

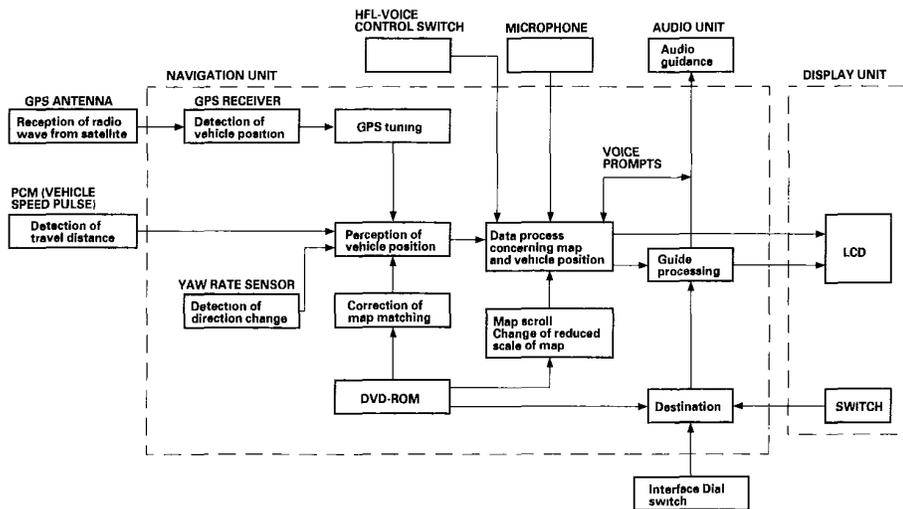
The F-CAN bus connects the Navigation control unit to the PCM/Gauge assembly. Fuel information, is passed from the PCM to the Navigation system. See the F-CAN section for additional information, and troubleshooting.

NAVIGATION FUNCTION

The navigation system is composed of the navigation unit, the PCM (vehicle speed signal), the GPS antenna, microphone, voice control switch, audio unit, climate control unit, and the display unit.

Function Diagram

Function Diagram

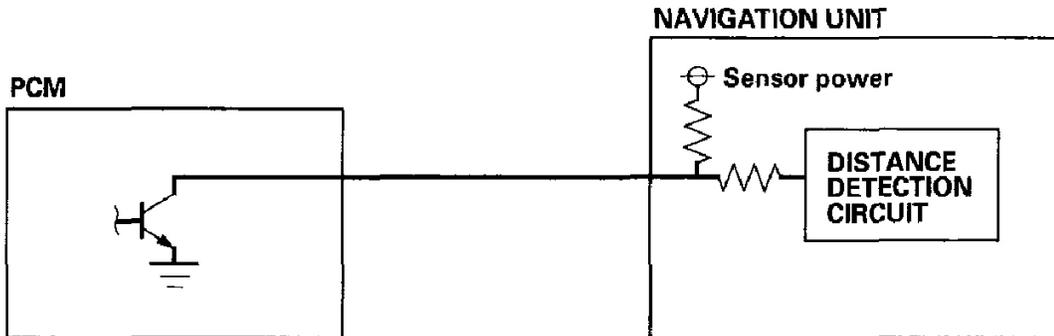


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Fig. 6: Navigation System Of Function Diagram
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Vehicle Speed Pulse

The vehicle speed pulse is sent by the PCM. The PCM receives a signal from the countershaft speed sensor, then it processes the signal and transmits it to the speedometer and other systems.



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Fig. 7: Navigation System Of Vehicle Speed Pulse
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Charge Signal

The PCM sends a charge signal to the navigation unit via F-CAN. A thermister inside the navigation unit monitors the units internal temperature. This information combined with charge signal determines the control units internal cooling fan operation.



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Fig. 8: Navigation System Of Charge Signal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Fuel Pulse and Fuel Level

The PCM sends a fuel pulse and fuel level signal to the navigation unit via F-CAN. This information is used to display mpg, range, and average fuel economy on the trip computer.

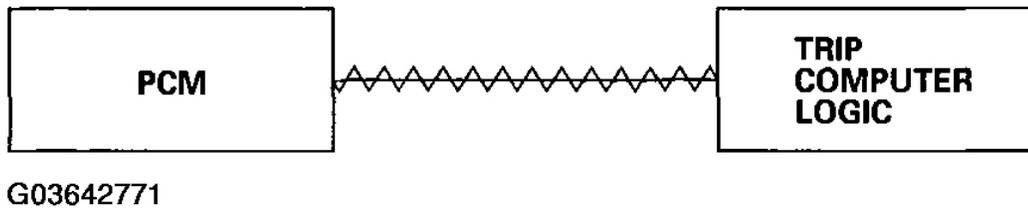


Fig. 9: Navigation System Of Fuel Pulse And Fuel Level
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Yaw Rate Sensor

The yaw rate sensor (located in the navigation unit) detects the direction change (angular speed) of the vehicle. The sensor is an oscillation gyro built into the navigation unit.

Sensor Element Structure

The sensor element is shaped like a tuning fork, and it consists of the piezoelectric parts, the metal block, and the support pin. There are four piezoelectric parts: one to drive the oscillators, one to monitor and maintain the oscillation at a regular frequency, and two to detect angular velocity. The two oscillators, which have a 90-degree twist in the center, are connected at the bottom by the metal block and supported by the support pin. A detection piezoelectric part is attached to the top of each oscillator. The driving piezoelectric part is attached to the bottom of one oscillator, and the monitoring piezoelectric part is attached to the bottom of the other oscillator.

Oscillation Gyro Principles

The piezoelectric parts have "electric/mechanical transfer characteristics." They bend vertically when voltage is applied to both sides of the parts, and voltage is generated between both sides of the piezoelectric parts when they are bent by an external force. The oscillation gyro functions by utilizing this characteristic of the piezoelectric parts and "Coriolis force." (Coriolis force deflects moving objects as a result of the earth's rotation.) In the oscillation gyro, this force moves the sensor element when angular velocity is applied.

Operation

1. The driving piezoelectric part oscillates the oscillator by repeatedly bending and returning when an AC voltage of 6 kHz is applied to the part. The monitoring-side oscillator resonates because it is connected to the driving-side oscillator by the metal block.
2. The monitoring piezoelectric part bends in proportion to the oscillation and outputs voltage (the monitor signal). The navigation unit control circuit controls the drive signal to stabilize the monitor signal.
3. When the vehicle is stopped, the detecting piezoelectric parts oscillate right and left with the oscillators, but no signal is output because the parts are not bent (no angular force).
4. When the vehicle turns to the right, the sensor element moves in a circular motion with the right oscillator

bending forward and the left oscillator bending rearward. The amount of forward/rearward bend varies according to the angular velocity of the vehicle.

- The detecting piezoelectric parts output voltage (the yaw rate signal) according to the amount of bend. The amount of vehicle direction change is determined by measuring this voltage.

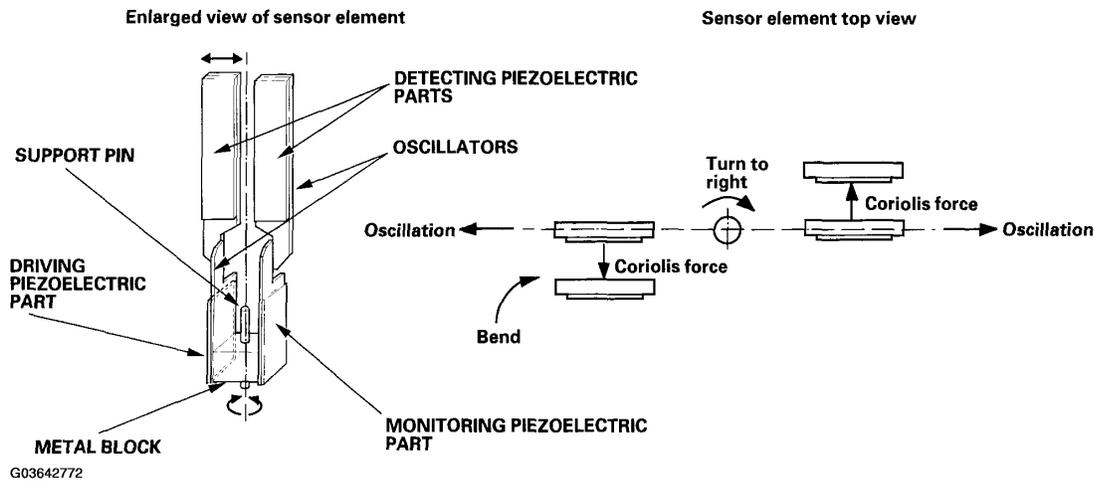


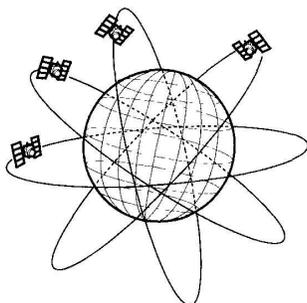
Fig. 10: Enlarged Top View Of Sensor Element
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Global Positioning System (GPS)

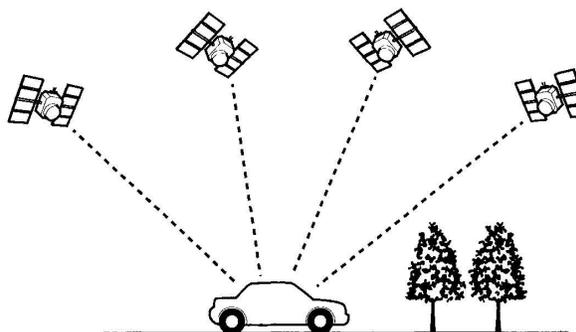
The global positioning system (GPS) enables the navigation system to determine the current position of the vehicle by utilizing the signals transmitted from the satellites in orbit around the earth. The satellites transmit the satellite identification signal, orbit information, transmission time signal, and other information. When the GPS receiver receives a signal from three or more satellites simultaneously, it calculates the current position of the vehicle based on the distance to each satellite and the satellite's position in its respective orbit.

Position detection Image with GPS satellite

Position detection Image with GPS satellite



NOTE: Four satellites on each of 6 orbits.



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Fig. 11: Positioning Detection Image With GPS Satellite
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NOTE: Four satellites on each of 6 orbits.

Precision of GPS

The precision of the GPS varies according to the number of satellites from which signals are received and the view of the sky. The precision is indicated by the color of the GPS icon shown on the display.

GPS PRECISION DESCRIPTION

GPS ICON	NUMBER OF SATELLITES	CONDITION	DESCRIPTION
No GPS icon shown	2 or less	Impossible to detect vehicle position	GPS function is normal. The satellite signals received by the GPS are too few to detect the vehicle position.
Square GPS icon shown with white "GPS"	3	Vehicle position detectable in 2 dimensions	The longitude and latitude of the vehicle position can be detected. (Less precise than detection in three dimensions)
Cube GPS icon shown with green "GPS"	4 or more	Vehicle position detectable in 3 dimensions	The longitude, latitude and the altitude of the vehicle position can be detected. (More precise than detection in two dimensions)

GPS Antenna

The GPS antenna amplifies and transmits the signals received from the satellites to the GPS receiver.

GPS Receiver

The GPS receiver is built in the navigation unit. It calculates the vehicle position by receiving the signal from the GPS antenna. The vehicle position and signal reception condition is transmitted from the GPS receiver to the navigation control unit to adjust vehicle position and set the internal navigation clock.

Navigation Unit

The navigation unit calculates the vehicle position and guides you to the destination. The unit performs map matching correction, GPS correction, and distance tuning. It also controls the menu functions and the DVD-ROM drive, and interprets voice commands. With control of all these items, the navigation unit makes the navigation picture color signal, then it transmits the signal to the Navigation display unit and audio driving instructions to the audio unit.

Calculation of Vehicle Position

The navigation unit calculates the vehicle position (the driving direction and the current position) by receiving the directional change signals from the yaw rate sensor and the travel distance signals from the vehicle speed

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pulse (VSP) sensor.

Map Matching Tuning

The map matching tuning is accomplished by indicating the vehicle position on the roads on the map. The map data transmitted from the DVD-ROM is checked against the vehicle position data, and the vehicle position is indicated on the nearest road. Map matching tuning does not occur when the vehicle travels on a road not shown on the map, or when the vehicle position is far away from a road on the map.

GPS Tuning

The GPS tuning is accomplished by indicating the vehicle position as the GPS's vehicle position. The navigation unit compares its calculated vehicle position data with the GPS vehicle position data. If there is a large difference between the two, the indicated vehicle position is adjusted to the GPS vehicle position.

Distance Tuning

The distance tuning reduces the difference between the travel distance signal from the VSP and the distance data on the map. The navigation unit compares its calculated vehicle position data with the GPS vehicle position data. The navigation unit then decreases the tuning value when the vehicle position is always ahead of the GPS vehicle position, and it increases the tuning value when the vehicle position is always behind the GPS vehicle position.

Route Guidance

The navigation unit can calculate different routes to a selected destination. You have five options:

- Direct Route - Calculate a route that is the most direct and will take the least time.
- Easy Route - Calculate a route that minimizes the number of turns needed.
- Minimize Freeways - Calculate a route that avoids freeway travel. If that is not possible, keep the amount of freeway travel to a minimum.
- Minimize Toll Roads - Calculate a route that avoids, or minimizes travel on toll roads.
- Maximize Freeways - Calculate a route that uses freeways as much as possible.

Audio Guidance

The navigation unit transmits audio driving instructions before entering an intersection or passing a junction. The audio instructions come through the audio unit and the front speakers.

NOTE: The front and rear speakers are muted whenever the navigation system is giving guidance commands or is engaged in voice recognition.

Clock Logic

The navigation unit uses GPS data to set and update its internal clock. The navigation system synchronizes the radio display clock.

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DVD-ROM

The map data (including all scale rates) is stored in the DVD-ROM. The map data includes:

- Road distances, road widths, speed limits, traffic regulations, passing time at junction, distances to junctions, and the driving instructions for audio guidance.
- Latitude and longitude GPS.

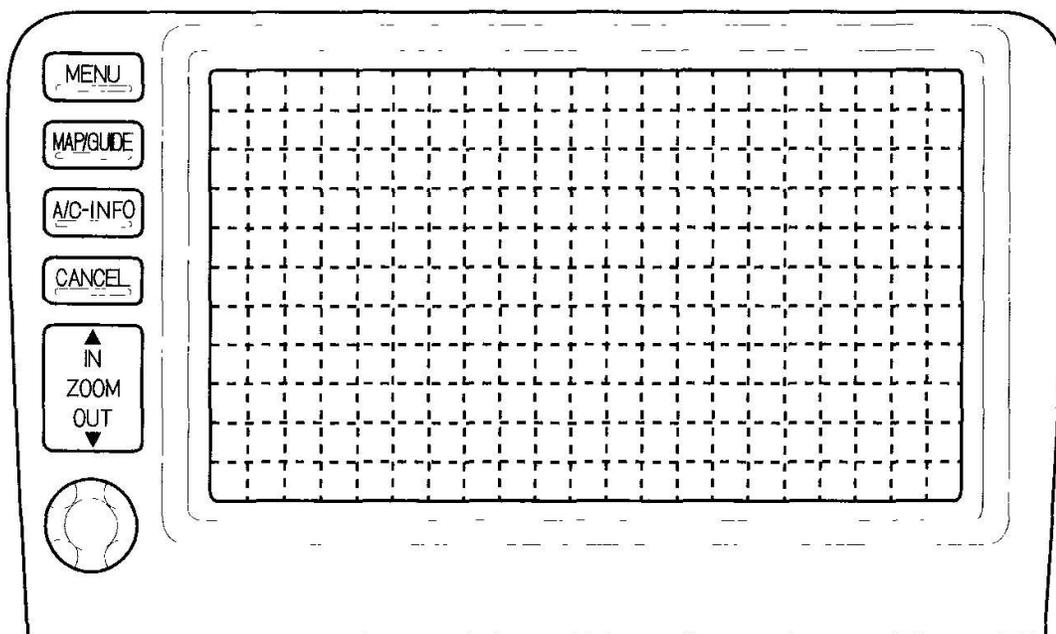
Audio Unit

The audio unit receives the audio driving instructions from the navigation unit and transmits the instructions through the front speakers even when the audio system is in use.

Navigation Display

The Navigation Display unit uses liquid crystal display (LCD). The LCD is a 7-inch-diagonal, thin film transistor (TFT), stripe type with 330,960 picture elements. The color film and fluorescent light are laid out on the back of the liquid crystal film. The touch sensor on the front of the LCD is an infrared type with 20 vertical and 10 horizontal infrared rays to produce 200 sensing points. The navigation display transmits the signal from each button and the touch screen commands to the navigation unit.

Infrared Rays



..... :Infrared for touch switch

Fig. 12: Identifying Infrared Rays

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Microphone (Mic)

Receives voice commands and transmits them to the navigation unit for interpretation.

TALK Button

Activates the voice control system in the navigation unit to accept voice commands.

BACK Button

Returns the display to the previous screen (similar function as the CANCEL button).

Glossary

The following is a glossary of terms pertaining to the Voice Recognition Navigation System.

VOICE RECOGNITION NAVIGATION SYSTEM GLOSSARY

Item	Definition
Breadcrumbs	Off road tracking dots that can be followed on the map to retrace your route back to a mapped (digitized) road. This function can be turned on/off in Setup screen 1.
CAN	Controller Area Network. This communication network allows processors in the vehicle to send/receive information. The fuel pulses used by the trip computer are received from the PCM using the F-CAN (Fast Controller Area Network) bus.
CAM	Abbreviation for the Rearview Camera feature. The camera displays the rear image on the navigation screen when the transmission is put into reverse.
CPU	Central Processing Unit. The main device within the navigation unit that coordinates the rest of the electronic functions.
Database	This consists of the Map data, and the POI (Points Of Interest) data stored on the DVD.
DBW	Drive By Wire. Allows electrical control of the throttle without the need of a mechanical linkage.
DCA	Detailed Coverage Area. Main metropolitan areas in the Lower 48 states, and Canada are mapped to this level. See the Navigation Owner's manual for a list of these areas.
DTC	Diagnostic Trouble Codes. Use the PGM Tester, or HDS tablet to obtain, and troubleshoot the cause of these codes.
Dead Reckoning	The use of the speed signal, and yaw rate sensor to position the vehicle on the map even when the GPS signal is obscured by tall buildings, or while driving in a tunnel.
Digitized Road	A road that appears on the navigation screen. The road name will appear at the bottom of the navigation screen. If the user drives "off road", the navigation system will display "Not on a digitized road", and if you drive 1/2 mile or more, then "breadcrumbs" will appear.
Disclaimer Screen	Screen containing cautionary information. It is meant to be read carefully and acknowledged by the customer when using the navigation system.

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DVD or DVD-ROM	Digital Versatile Disk. The navigation program and database resides on this disk. See the Navigation Owner's manual for information on how to order a replacement or update DVD.
ECM	Engine Control Module. Typically referred to as the PCM.
E/T	Elapsed Time for the current trip as displayed by the trip computer screen.
FAQ	Frequently Asked Question. See the Navigation Owner's manual for a list of the customer FAQs, and troubleshooting information.
F-CAN	Fast CAN Bus (see CAN)
FE	Fuel Economy value as displayed on the trip computer screen.
Fuel Pulses	This signal is transmitted on the CAN bus, and is used by the Trip Computer to calculate the fuel economy.
GPS	Global Positioning System. A network of 24 satellites in orbit around the earth. The navigation system can simultaneously receive signals from up to 12 satellites to accurately position the vehicle on the map.
HDS	Honda Diagnostic System. A hand held tablet PC for use in diagnosing vehicle problems. This device can be used to obtain DTC codes for diagnosis of navigation system CAN related problems.
H/U	Head Unit. The navigation system display unit assembly in the dash.
Initialization	This refers to the period needed to re-acquire the GPS satellite orbital information whenever the navigation system power has been disconnected. This can take from 10 to 45 minutes.
LCD	Liquid Crystal Display (the navigation screen).
Map Matching	The received GPS information allows the navigation system to position the vehicle on the map. Map matching has occurred if the map screen is displaying the current street name in the bottom-shaded area.
Mic	Abbreviation for the microphone used for receiving voice commands. It is located near the map light in the ceiling.
MW	Maneuver Window. While on-route to a destination, this window displays information about the next maneuver.
Navi	Abbreviation for the Navigation System.
Off Route	This occurs when the user leaves mapped roads. Off road tracking dots ("breadcrumbs") are displayed if the option is enabled in Setup. The user can use them to return to a mapped road. The bottom of the navigation screen will say "Not on a digitized road".
Outlying Areas	These are rural areas that typically have only their main roads mapped. All other roads are shown in light brown for reference only, since they have not been verified.
PC Card Slot	The PC Card (PCMCIA, type II) slot is for factory use only. Make sure that the sliding door is closed at all items. If it is opened, an error message is displayed on the screen.
PCM	Powertrain Control Module. This unit supplies the navigation system speed signal, and sends fuel pulses for the trip computer function via the F-CAN network.
PCMCIA	An computer industry defined term referring to the PC Card slot standard.
PIN	Personal Identification Number, a random 4 digit number created by the customer to protect personal information.
	Point Of Interest. These are the businesses, schools etc. found under the "places" option

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POI	on the main menu.
Polygon	Colored areas on the map screen denoting parks, schools etc. See the Navigation Owner's manual "Traveling to Your Destination" for a list of the assigned colors.
QWERTY	Keyboard layout resembling the typewriter keys. The keyboard layout can be changed to an alphabetical layout in the Setup mode.
SCS connector	The 2-pin connector used to put the navigation system into the diagnostic mode.
Security Code	Code needed to activate the navigation system. The security code can be obtained from the "i N" by entering the navigation system control serial number. The serial number can be found from the diagnostic screens (Unit Check, Navi ECU), or from the under side of the control unit.
Touch Switches or Touch Sensor	The sides of the navigation screen have 10 vertical and 20 horizontal infrared beams that are interrupted by the user's finger to select the desired function.
Tuning	A continual update of internal navigation system scaling factors. See the individual sensor tuning discussions under either "System Description", or "System Diagnosis Mode" (see SYSTEM DIAGNOSIS MODE).
Unverified Streets	These streets have not been verified for turn restrictions, one-way, etc. They are shown in light brown on the map. You can enter address destinations in these areas, but voice guidance ends at the last verified street closest to your destination.
Verified Streets	These streets consist of the detailed metropolitan coverage areas, and all other inter-town connection roads. These roads are shown in black on the map.
VP	Vehicle Position. When in map mode, this circular icon shows the vehicle position on the map. Touch this icon to show the latitude, longitude, and elevation of your current position.
VR	Voice Recognition. This allows voice control of many of the navigation functions. The hardware consists of the microphone, steering wheel (Talk/Back) buttons, and the front speakers. See the overview for more information.
VSP	Vehicle Speed Pulse. This pulse signal coming from the PCM is used to update the Vehicle position on the map, and to calculate the trip computer fuel economy. These pulses do not indicate direction (forward or backward). When in reverse, the navigation receives a signal from the MICU and directs the VP to move backwards on the map.
VSS	Vehicle Speed Sensor. This sensor reads the output shaft speed at the transmission and, provides a speed pulse to the PCM. The PCM sends this pulse to the navigation system and speedometer.
Yaw Sensor	This device is located in the navigation system control unit and senses the side-to-side twisting force generated when the vehicle turns. See a detailed description of how this sensor works.

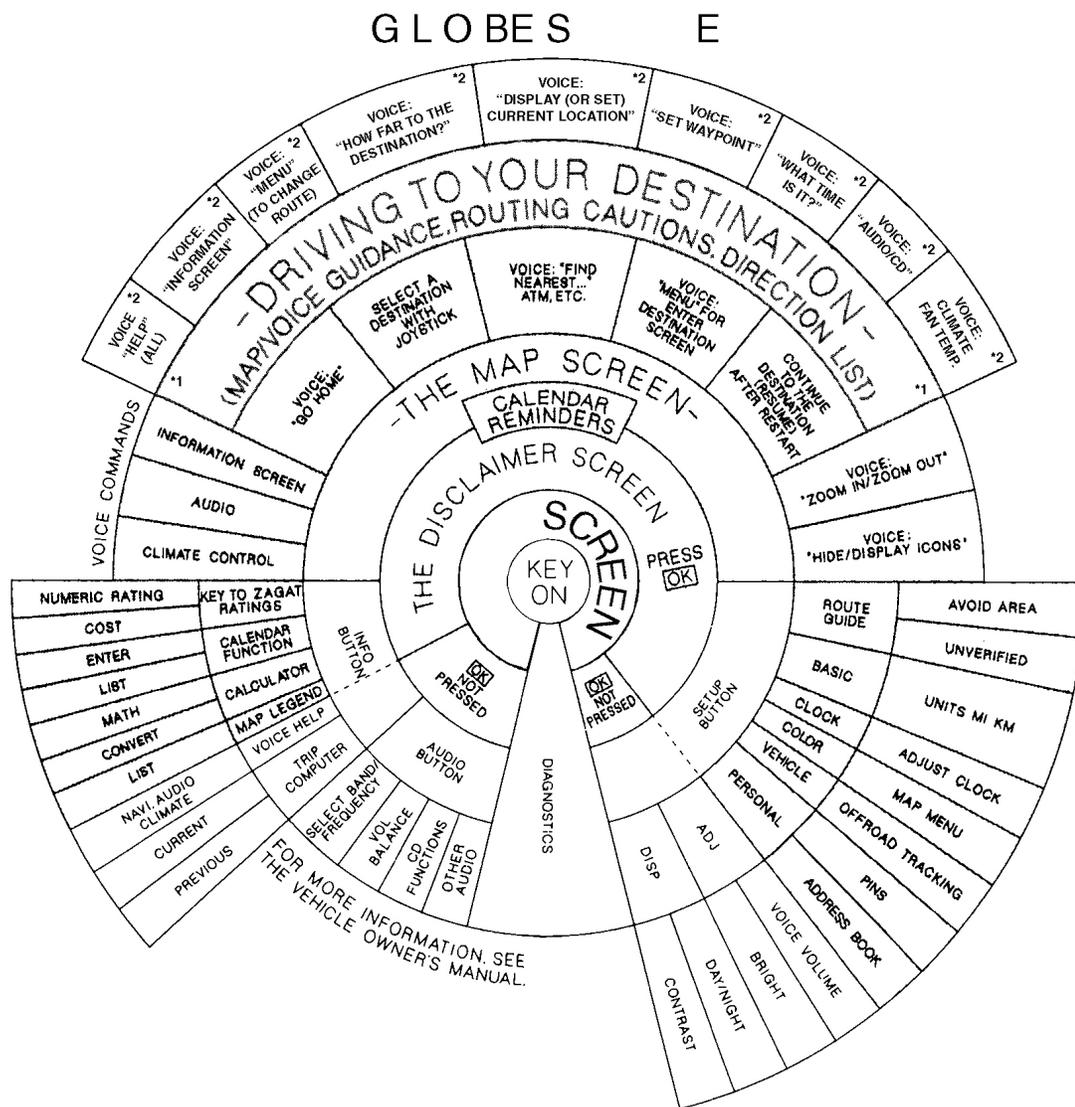
System Function Diagram

This diagram shows the features of the navigation system starting at the center and working outward in layers. The navigation program starts at "Key ON", and then displays the globe screen. Once the disclaimer screen is acknowledged, the next shaded portions of the diagram become active. However, some functions of the INFO and SET UP buttons, and all functions of the AUDIO and A/C buttons can be accessed immediately after the globe screen (white).

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These items above the map screen show various methods to enter a destination, such as "Go Home". Once you begin driving to your destination, you are provided with map/voice guidance, routing cautions (in unverified areas), and a directions list. While driving to your destination, use the voice control system as much as possible to interact with the navigation, audio, and climate control systems.



- Functions accessible at any time
- Disclaimer screen
- Map screen/voice commands to enter a destination
- *1 Driving to your destination
- *2 Voice commands while driving to your destination
- *3 Globe screen

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Fig. 13: Identifying System Function Diagram
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Diagnostic System Diagram

This diagram represents the diagnostic "slice" in the Navigation Functional diagram. The diagram shows an overview of the navigation diagnostic features starting at the center and working outward in layers. The diagram starts with "Key on". The diagram shows 2 ways to get to the diagnostic main menu:

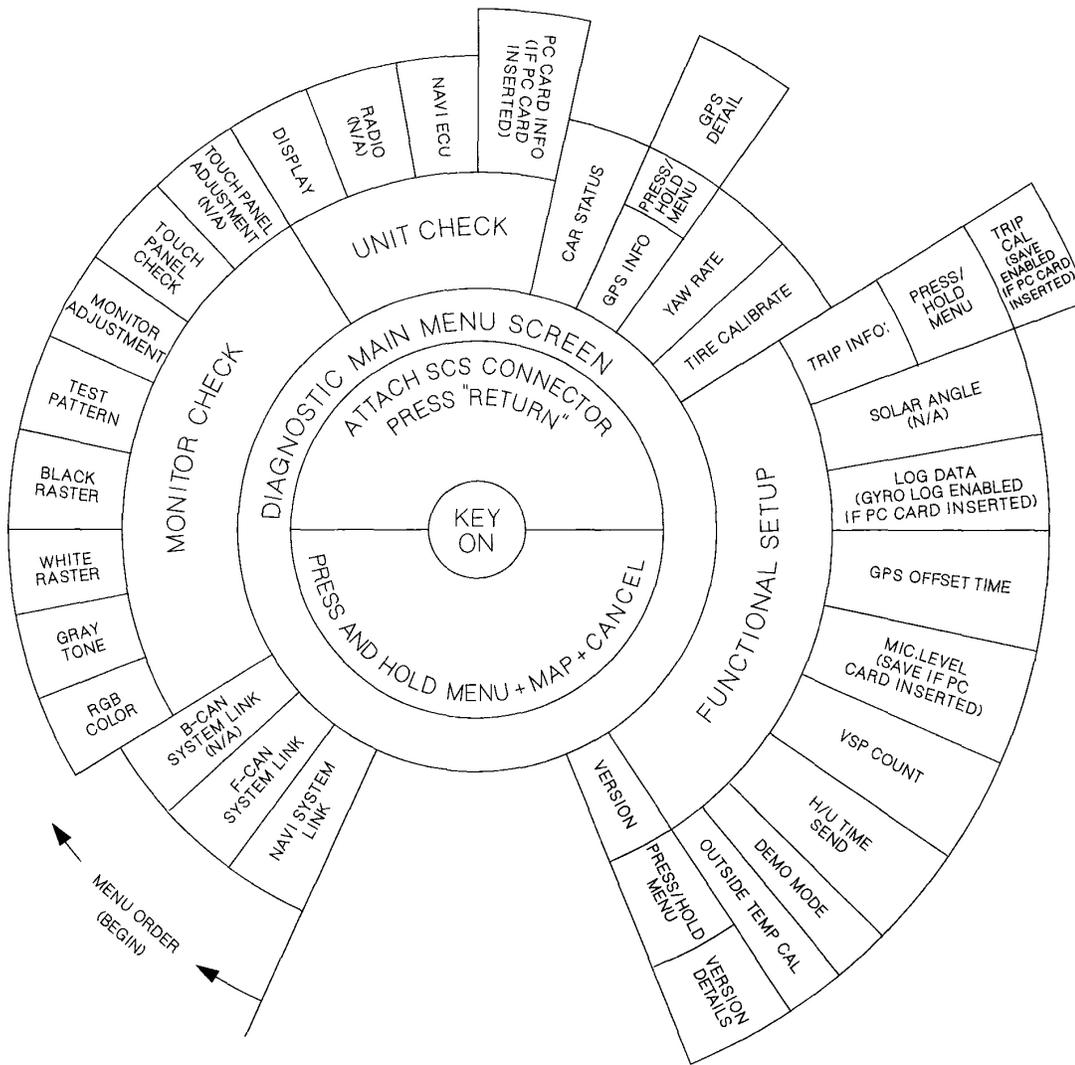
- By starting the vehicle with the SCS connector plugged in, you will enter the diagnostic "System Links" screen. Touch "Return" to get to the main diagnostic menu.
- From any of the navi Map or Menu screens, press and simultaneously hold the keys Menu + Map + Cancel.

The diagram shows the available diagnostic menu choices, starting at the bottom left, and moving clockwise. In most cases, do not clear or change settings in any diagnostic screen unless instructed to do so in the explanation, or by the factory.

If the factory asks you to insert a PCMCIA memory card into the "PC Slot", then the features specified on the diagram as "(Card)" are available. The bottom section labeled "For Developer only", contains items for factory use. For instance, depending on the problem, the factory may ask you for the information in "System History".

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Fig. 14: Identifying Diagnostic System Diagram
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NAVIGATION UNIT INPUTS AND OUTPUTS FOR CONNECTOR A (20P)

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1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Wire side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	WHT	R SIG (Red signal)	Red color signal	0-1 V AC	If open: Red color missing (see "RGB Color" diagnostic). If short to ground: Red color missing (see "RGB Color" diagnostic).
2	RED	G SIG (Green signal)	Green color signal	0-1 V AC	If open: Green color missing (see "RGB Color" diagnostic). If short to ground: Green color missing (see "RGB Color" diagnostic).
3	BRN/BLK	SH SIG (Shield signal)	Shield for terminal No. 1, 2, 11, 12, 13	0 V	If open: No change to display. If short to ground: No change to display.
4	GRN/ORN	ACI (Air condition in)	Communication circuit with climate control unit	0.9 V nominally	If open: AC buttons in "Information screen" do not work (just beep), and no temp display. If short to ground: AC buttons in "Information screen" do not work (just beep), and no temp display.
5	RED/BLK	ILL (+) (Illumination positive)	Parking light on signal from dash and console lights, under-hood "Relay fuse box"	Lights on= battery voltage, Lights off=0 V	If open: When brightness="Auto", night mode for the display is inoperative when lights on. If short to ground: Blows fuse 10 in passenger's under-dash fuse/relay box.
7	BRN	SH CAN (Shield CAN)	Shield for terminal No. 8, 18	0 V	If open: 1) F-CAN diagnostic="NG." 2) Car status CHG (CAN)=0. 3) Functional Setup, Trip into, FUP & Sampled FL=0. If short to ground: Same diagnostic conditions as when open, and also sets the following DTCs. - U0073 (F-CAN bus off) - U0121 (F-CAN TCS control)
8	WHT	CAN-H (CAN high)	F-CAN bus communication with the PCM	Pulses 2.5-6 V average 3 V	If open: 1) F-CAN diagnostic="NG." 2) Car status CHG (CAN)=0. 3) Functional Setup, Trip info, FUP & Sampled FL=0. If short to ground: Same diagnostic conditions as when open, and also sets the following DTCs. - U0073 (F-CAN bus off) - U0121 (F-CAN TCS control)
9	LT BLU	SH DISP BUS (Shield display bus)	Shield for display bus terminal No. 10, 20	0 V	If open: No change to display. If short to ground: No change to display.
10	RED/BLU	DISP BUS (+) (Display bus positive)	Data bus (+) GA-Net	0 V-5 V pulses average 2.5 V, depends on bus traffic	If open: Navigation buttons and touch screen do not work. If short to ground: Navigation buttons and touch screen do not work. XM and RES do no WORK. "NAVI SYSTEM LINK" screen shows "NG".
11	YEL	B SIG (Blue signal)	Blue color signal	0-1 V AC	If open: Blue color missing (see "RGB Color" diagnostic). If short to ground: Blue color missing (see "RGB Color" diagnostic).
12	BRN	C SIG (Composite signal)	Composite video (vertical/horizontal) Synchronizing signal	0.3 V AC	If open: Picture rolls horizontally, colors still visible. If short to ground: Picture rolls horizontally, colors still visible.
13	BLU	GND SIG (Ground signal)	Ground for color signal	0 V	If open: No change to display. If short to ground: No change to display.
14	RED/GRN	ACO (Air conditioner out)	Communication circuit with climate control unit	0.5 V nominally	If open: AC buttons in "Information screen" do not work (just beep), and no temp display. If short to ground: AC buttons in "Information screen" do not work (just beep), and no temp display.
15	YEL/BLU	CLK 2 (Clock 2)	Air conditioner control unit synchronizing signal	0.5 V nominally	If open: AC buttons in "Information screen" do not work (just beep), and no temp display. If short to ground: AC buttons in "Information screen" do not work (just beep), and no temp display.
18	RED	CAN-L (CAN low)	F-CAN bus communication with the PCM	Pulses 2.5-6 V average 3 V	If open: 1) F-CAN diagnostic="NG." 2) Car status CHG (CAN)=0. 3) Functional Setup, Trip info, FUP & Sampled FL=0. If short to ground: Same diagnostic conditions as when open, and also sets the following DTCs. - U0073 (F-CAN bus off) - U0121 (F-CAN TCS control)
20	RED/WHT	DISP BUS (-) (Display bus negative)	Data bus (-) GA-Net	0 V-5 V pulses nominally 2.5 V	If open: Navigation buttons and touch screen do not work. If short to ground: Hard and touch buttons work OK.

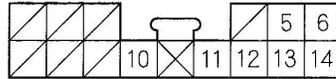
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Fig. 15: Identifying Navigation Unit inputs And Outputs For Connector A (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION UNIT INPUTS AND OUTPUTS FOR CONNECTOR B (14P)

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Wire side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
5	LT GRN	RG L (+) (Routes guidance voice left positive)	Left audio signal of voice guidance, and Voice Recognition (VR) prompts	Audio signal 0.004—0.04 V	If open: If voice activated, radio speakers buzz; if voice off, no effect. If short to ground: If voice activated, radio speakers buzz; if voice off, no effect.
6	BLU	MIC SIG (+) (Mic signal positive)	Microphone output signal positive	4—5 V (TALK button pressed)	If open: No microphone signal shown in diagnostic screens: "Navi System Link" and Functional Setup "Mic Level". If short to ground: No microphone signal shown in diagnostic screens: "Navi System Link" and Functional Setup "Mic Level".
10	GRY	STRG SW (Steering switches)	Steering switch output	4—5 V (TALK button pressed) 2.5—3 V (BACK button pressed)	If open: Steering wheel TALK and BACK buttons do not work. If short to ground: Steering wheel TALK and BACK buttons do not work.
11	LT BLU	SH RG (Shield routs guidance)	Shield for terminal No. 5, 12	0 V	If open: No effect on voice output. If short to ground: No effect on voice output.
12	PUR	GND RG (Ground route guidance)	Ground for voice guidance, and Voice Recognition (VR) prompts	0 V	If open: No effect on voice output. If short to ground: No effect on voice output.
13	LT BLU	SH MIC (Shield mic)	Shield for terminal No. 6, 14	0 V	If open: No effect on voice recognition. If short to ground: No effect on voice recognition.
14	RED	GND MIC (Ground mic)	Ground for microphone signal	0 V	If open: No microphone signal shown in diagnostics: "Navi System Link" and Functional Setup "Mic Level". If short to ground: No effect on voice recognition.

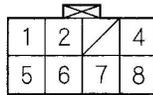
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Fig. 16: Identifying Navigation Unit Inputs And Outputs For Connector B (14P)
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NAVIGATION UNIT INPUTS AND OUTPUTS FOR CONNECTOR C (8P)

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Wire side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	WHT/YEL	+B (+B Power source)	Continuous power source	Battery voltage	If open: Display picture goes out (display back light still on). NOTE: System will reboot to "enter code" screen. If short to ground: Blows fuses No. 13 in the passenger's under-dash fuse/relay box.
2	WHT/RED	ACC (Accessory)	Power source for accessories	Battery voltage at ACC (I)	If open: Display picture goes out (display back light still on). NOTE: When re-connected the system will reboot to "enter code" screen. If short to ground: Blows fuse No. 9 in the passenger's under-dash fuse/relay box.
4	BLK	GND (Ground)	Ground for navigation unit	0 V	If open: No effect on system. If short to ground: No effect on system.
5	GRN/BLK	BACK LT (Back light or reverse signal)	Reverse signal of select lever from "Multiplex Integrated Control Unit" (A/T) or backup light switch (M/T)	In reverse, battery voltage; Otherwise 0 V	If open: Rearview camera does not come on in Reverse and navigation never sees reverse. Diagnostic screen "Car Status", "Back"=0. If short to ground: Rearview camera does not come on in Reverse and blows fuse No. 9 in the driver's under-dash fuse/relay box.
6	BLU/WHT	VSP (Vehicle speed pulse)	Vehicle speed pulse signal from PCM	Pulses 0—5 V; Average 2.5 V, when moving	If open: No vehicle speed pulses. Diagnostic screen "Car Status", VSP Navi=0. If short to ground: No vehicle speed pulses. Diagnostic screen "Car Status", VSP Navi=0.
7	GRN/RED	DIAG P (Diagnostic positive)	Service check signal for navigation system	5—6 V	If open: No effect on system. If short to ground: System goes into diagnostic mode.
8	BLU/GRN	DIAG N (Diagnostic negative)	Ground for service check signal	0 V	If open: No effect on system. If short to ground: No effect on system.

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Fig. 17: Identifying Navigation Unit Inputs And Outputs For Connector C (8P)
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NAVIGATION UNIT INPUTS AND OUTPUTS FOR CONNECTOR E (2P)



Wire side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1		GPS	GPS signal (5 V in, GPS signal out)	5 V	If open: GPS icon on screen is white or system cannot initialize, and system links screen ANT shows "NG." If short to ground: Same as open.
2		GND GPS	Ground for GPS signal and cable shield	0 V	If open: GPS icon on screen is white or system cannot initialize, and system links screen ANT shows "NG." If short to ground: No effect on system.

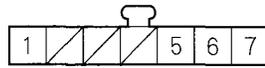
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Fig. 18: Identifying Navigation Unit Inputs And Outputs For Connector E (2P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION UNIT INPUTS AND OUTPUTS FOR CONNECTOR F (7P)



Wire side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	RED ^{*1} RED/WHT ^{*2}	VCC (VCC supply)	Power source for rearview camera	8 V	If open: No rearview camera image in reverse. If short to ground: No rearview camera image in reverse.
5	RED/BLU	V CAM (Video camera)	Video signal for rearview camera	0.3 V	If open: No rearview camera image. If short to ground: When put into reverse, the navigation screen goes black (backlight still operative).
6	GRY ^{*1} ORN ^{*2}	SH CAM (Shield camera)	Shield for terminal No. 5	0 V	If open: No rearview camera image. If short to ground: No change to rearview camera image.
7	WHT ^{*1} Y ^{*2}	ADPT CAM (Adaptive camera)	Control signal for rearview camera	0 V	If open: No rearview camera image. If short to ground: No change to rearview camera image.

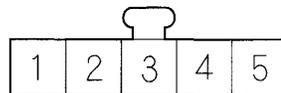
* 1: '05 model

* 2: '08 model

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Fig. 19: Identifying Navigation Unit Inputs And Outputs For Connector F (7P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION UNIT INPUTS AND OUTPUTS FOR CONNECTOR G (5P)



Wire side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	BLU/YEL	HFL COMM3 (HFL communication 3)	Communication signal for HFL	—	Solid red HFL icon in Navi System Link
2	WHT/BLU	HFL COMM4 (HFL communication 4)	Communication signal for HFL	—	Solid red HFL icon in Navi System Link
3	ORN/BLU	HFL COMM1 (HFL communication 1)	Communication signal for HFL	—	HFL icon in Navi System Link changes between red and green
4	BLU/GRN	HFL COMM2 (HFL communication 2)	Communication signal for HFL	—	HFL icon in Navi System Link changes between red and green
5	BRN	SH HFL (Shield HFL)	Shield for terminal No.1, 2, 3, 4	—	—

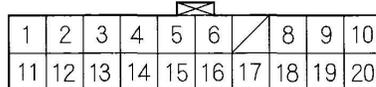
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Fig. 20: Identifying Navigation Unit Inputs And Outputs For Connector G (5P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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2003-06 ACCESSORIES & EQUIPMENT Navigation System ('05-06 Models) - MDX

NAVIGATION DISPLAY INPUTS AND OUTPUTS FOR CONNECTOR B (20P)



Wire side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	WHT/BLU	+B (+B power source)	Continuous power source	Battery voltage	If open: Screen completely off (no backlight visible). If short to ground: Blows fuse No. 11 in the passenger's under-dash fuse/relay box.
2	WHT/RED	ACC (Accessory)	Power source for accessory	Battery voltage ACC (I)	If open: Display and buttons do not work. If short to ground: Blows fuse No. 9 in the passenger's under-dash fuse/relay box.
3	BLU	SAT BUS (+)	Data bus (+) GA-Net	0 V—5 V pulses average 2.5 V depends on bus traffic	If open: Navigation buttons and touch screen do not work for XM radio operation. If short to ground: Navigation buttons and touch screen do not work XM and RES goes completely inoperative.
4	BRN	SH SAT BUS	Shield for terminal No. 3, 13	0 V	If open: No change to display. If short to ground: No change to display.
5	RED/BLU	DISP BUS (+) (Display bus positive)	Data bus (+) GA-Net to XM receiver and audio unit	0 V—5 V pulses average 2.5 V depends on bus traffic	If open: Navigation buttons and touch screen do not work for any input. If short to ground: Navigation buttons and touch screen do not work XM and RES goes completely inoperative.
6	BLU	SCTY 1 (Security 1)	Security signal from multiplex control unit (passenger's)	0 V	If open: The security system will set, and it will not trip if screen is removed. If short to ground: The security system will set, and it will not trip if screen is removed.
8	WHT	R SIG (Red signal)	Red color signal	0—1 V AC	If open: Red color missing (see "RGB Color" diagnostic). If short to ground: Red color missing (see "RGB Color" diagnostic).
9	RED	G SIG (Green signal)	Green color signal	0—1 V AC	If open: Green color missing (see "RGB Color" diagnostic). If short to ground: Green color missing (see "RGB Color" diagnostic).
10	BLK	GND (Ground)	Ground for display unit	0 V	If open: No change to display. If short to ground: No change to display.

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Fig. 21: Identifying Navigation Display Inputs And Outputs For Connector B (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FEMALE TERMINALS WIRE SIDE DESCRIPTION

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
11	RED/BLK	ILL+ (Illumination positive)	Parking light on signal (+), lights navigation hard buttons	Battery voltage if lights on, otherwise 0 V	If open: Hard buttons never illuminated. If short to ground: Hard buttons never illuminated.
12	RED	ILL- (Illumination negative)	Parking light on signal (-), lights navigation hard buttons	0 V, If dash lights turned full bright	If open: Hard buttons full bright. If short to ground: Hard buttons full bright.

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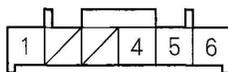
13	PNK	SAT BUS (-)	Data bus (-) GA-Net to XM receiver and audio unit	0-5 V pulses average 2.5 V depends on bus traffic	If open: Navigation buttons and touch screen do not work for XM radio operation. If short to ground: Hard and touch buttons work OK.
14	LT BLU	SH DISP BUS (Shield display bus)	Shield for display bus terminal No. 5,15	0 V	If open: No change to display. If short to ground: No change to display.
15	RED/WHT	DISP BUS(-) (Display bus negative)	Data bus (-) GA-Net	0 V-5 V pulses average 2.5 V depends on bus traffic	If open: Navigation buttons and touch screen do not work for any input. If short to ground: Hard and touch buttons work OK.
16	GRN/WHT	SCTY2 (Security 2)	Security signal to audio unit	0 V	If open: If security system set, it will not trip if screen removed. If short to ground: If security system set, it will not trip if screen removed.
17	BLU	GND SIG (Ground signal)	Ground for color signal	0 V	If open: No change to display. If short to ground: No change to display.
18	YEL	B SIG (Blue signal)	Blue color signal	0-1 V AC	If open: Blue color missing (see " RGB COLOR " diagnostic). If short to ground: Blue color missing (see " RGB COLOR " diagnostic).
19	BRN	C SIG (Composite signal)	Composite video (vertical/horizontal) synchronizing signal	0.3 V AC	If open: Picture rolls horizontally, colors still visible. If short to ground: Pictures rolls horizontally, colors still visible.

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20	BRN/BLK	SH SIG (Shield signal)	Shield for terminal No. 8,9,17,18,19	0 V	If open: No change to display. If short to ground: No change to display.
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REARVIEW CAMERA INPUTS AND OUTPUTS FOR 6P CONNECTOR



Wire side of female terminals

Terminal Number	Wire Color	Terminal Name	Description	Voltage (about)	Symptom
1	RED ^{*1} RED/WHT ^{*2}	VCC (VCC supply)	Power source for rearview camera	8 V	If open: No rearview camera image in reverse. If short to ground: No rearview camera image in reverse.
4	RED/BLU	V CAM (Video camera)	Video signal for rearview camera	0.3 V	If open: No rearview camera image. If short to ground: When put into reverse, navigation screen goes black (display backlight still operative).
5	GRY ^{*1} ORN ^{*2}	SH CAM (Shield camera)	Shield for terminal No. 5	0 V	If open: No rearview camera image. If short to ground: No change to rearview camera image.
6	WHT ^{*1} Y ^{*2}	ADPT CAM (Adaptive camera)	Control signal for rearview camera	0 V	If open: No rearview camera image. If short to ground: No change to rearview camera image.

* 1: '05 model

* 2: '06 model

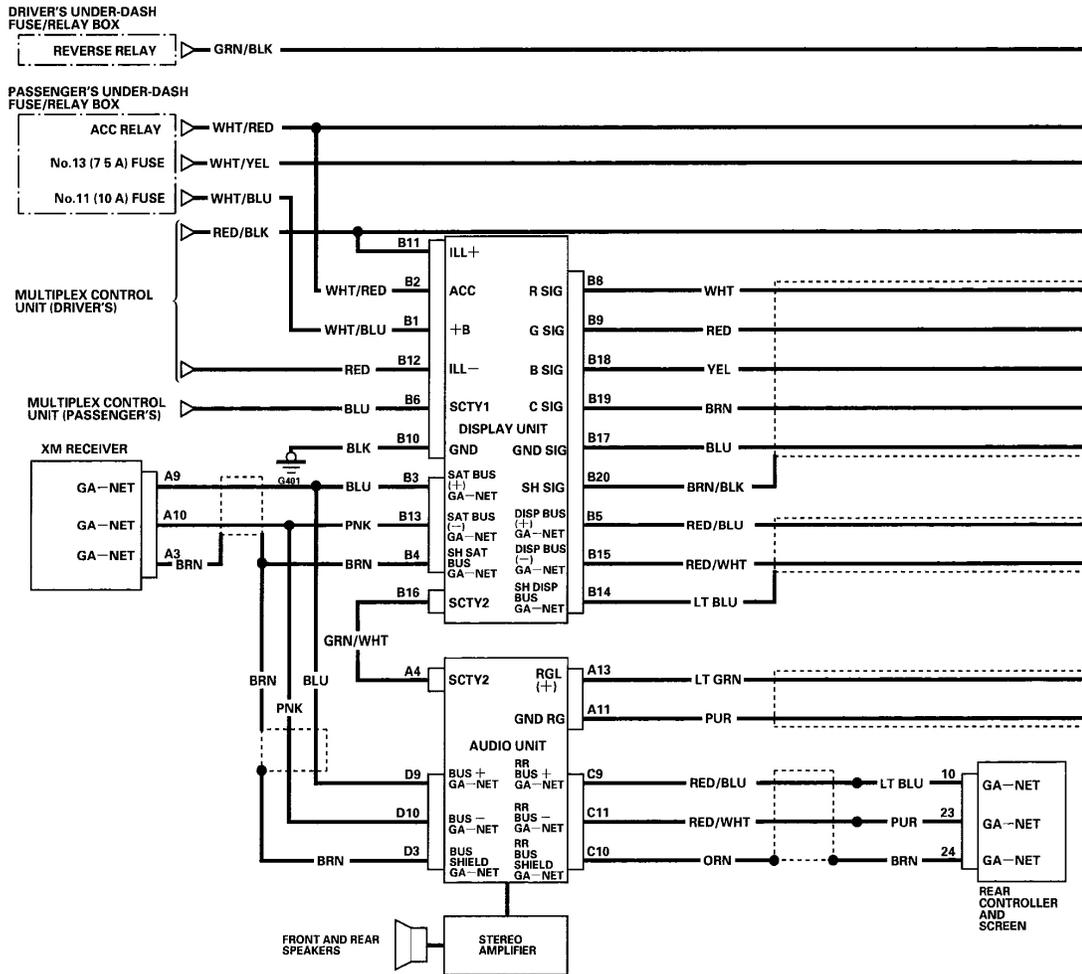
G03642784

Fig. 22: Identifying Rearview Of Camera Inputs And Outputs For 6P Connector
Courtesy of AMERICAN HONDA MOTOR CO., INC.

CIRCUIT DIAGRAM

2006 Acura MDX

2003-06 ACCESSORIES & EQUIPMENT Navigation System ('05-06 Models) - MDX

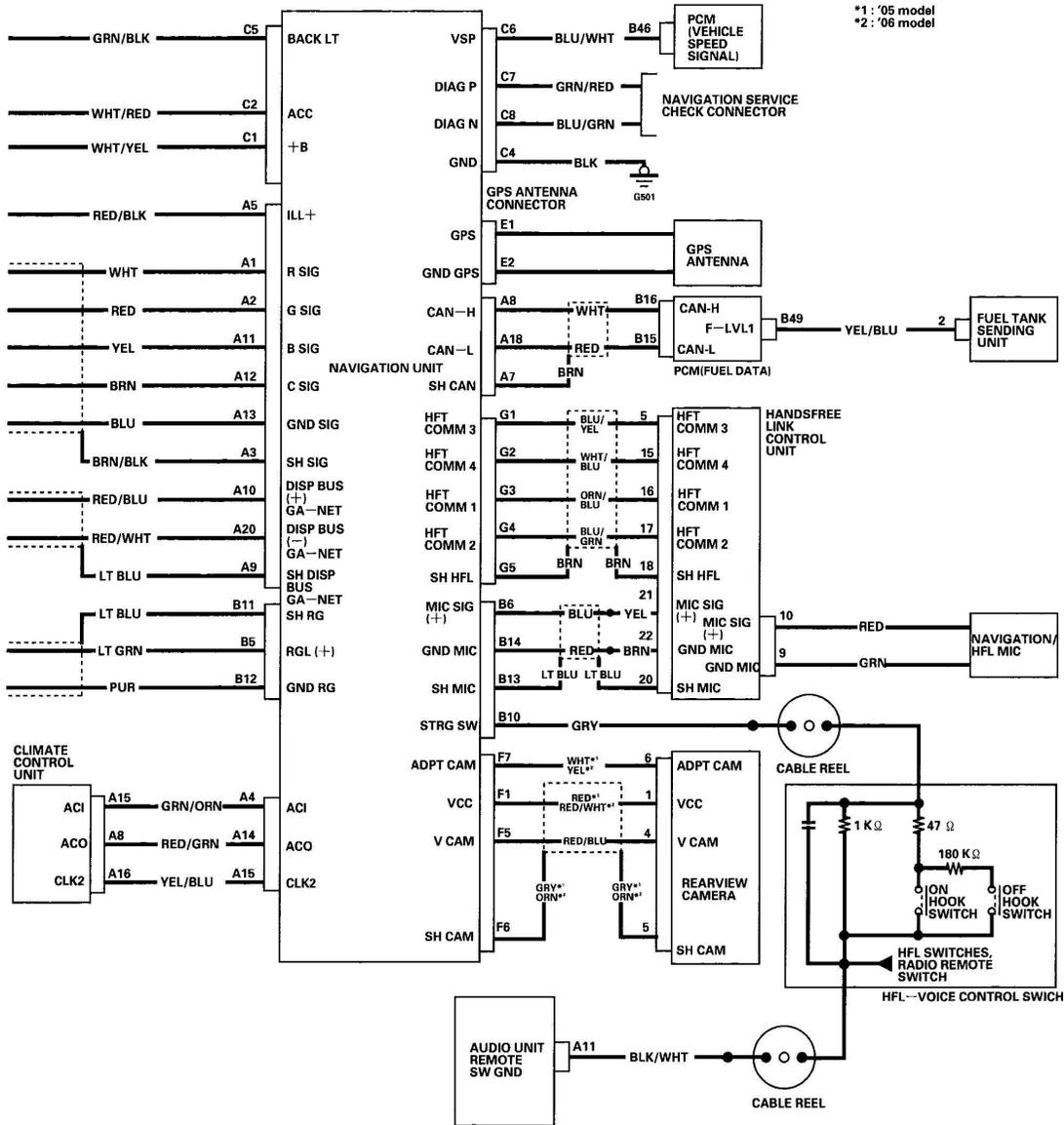


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Fig. 23: Navigation System Circuit Diagram (1 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

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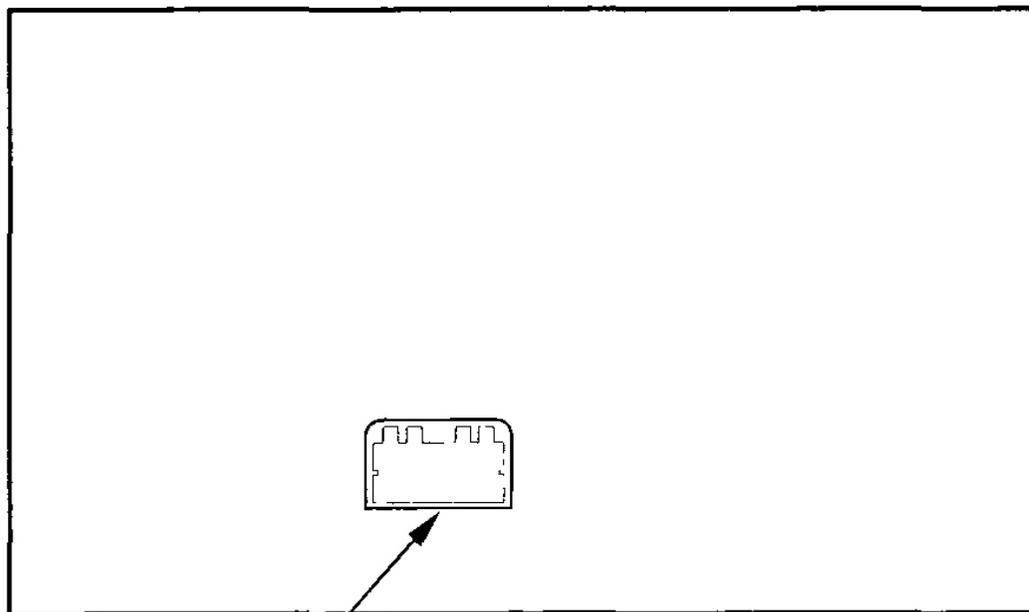
2003-06 ACCESSORIES & EQUIPMENT Navigation System ('05-06 Models) - MDX



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Fig. 24: Navigation System Circuit Diagram (2 Of 2)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION DISPLAY CONNECTOR B (20P)



CONNECTOR B (20P)

CONNECTOR B (20P)

1	2	3	4	5	6	/	8	9	10
11	12	13	14	15	16	17	18	19	20

Wire side of female terminals

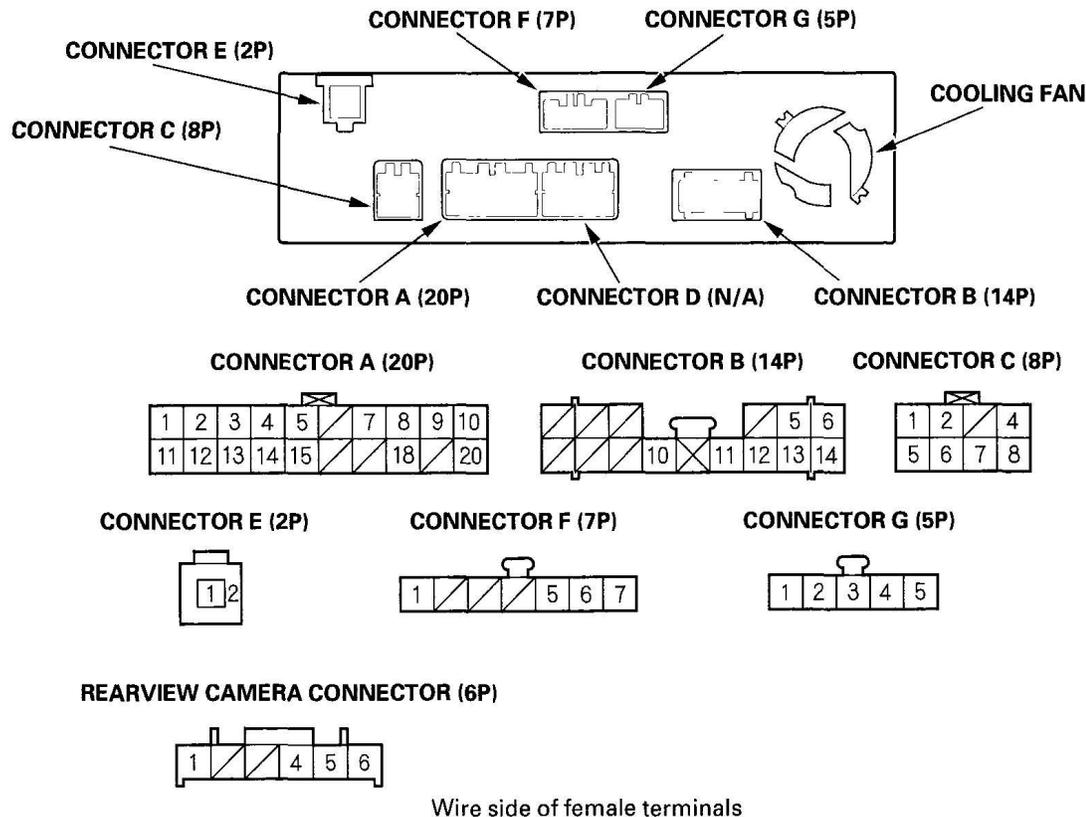
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Fig. 25: Identifying Navigation Display Connector B (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NAVIGATION UNIT CONNECTORS

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G03642788

Fig. 26: Identifying Navigation Unit Connectors
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

SYMPTOM TROUBLESHOOTING

NO PICTURE IS DISPLAYED

NOTE: If there is no image only when in reverse, go to No Rearview Camera Picture is Displayed or Screen goes Black in Reverse troubleshooting (see NO REARVIEW CAMERA PICTURE IS DISPLAYED OR SCREEN GOES BLACK WHEN PLACED IN REVERSE).

1. Check the No. 11 (10 A) fuse in the passenger's under-dash fuse relay box, and reinstall the fuse if it is OK.

Is the fuse OK?

YES - Go to step 2.

NO - Replace the fuse and recheck.

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2. Turn the ignition switch to ACC (I).
3. Operate the radio and listen to the audio.

Can audio be heard?

YES - Go to step 4.

NO - Check the ACC circuit.

4. Operate the navigation unit door and look for an error message "Navigation Unit Door is Open" or "No DVD Disc Installed Please Check System" to appear on the screen.

Did the error message appear?

YES - Go to step 5.

NO - Go to step 6 .

5. Close the navigation unit door and unplug the navigation unit connector E (2P). Turn the ignition switch OFF and then back to ACC (I).

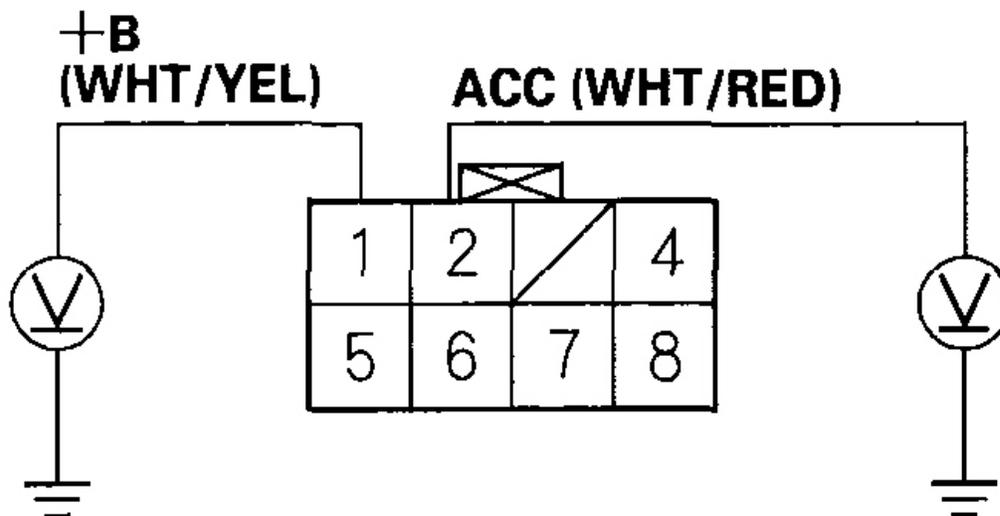
Does either message appear on the screen now?

YES - Replace the GPS antenna.

NO - Plug the navigation unit connector back in, then go to step 6.

6. Turn the ignition switch ON (II).
7. Measure the voltage between body ground and navigation unit connector C (8P) terminals No. 1 and No. 2 individually.

NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

G03642789

Fig. 27: Measuring Voltage Between Body Ground And Navigation Unit Connector C (8P) Terminals No. 1 And No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

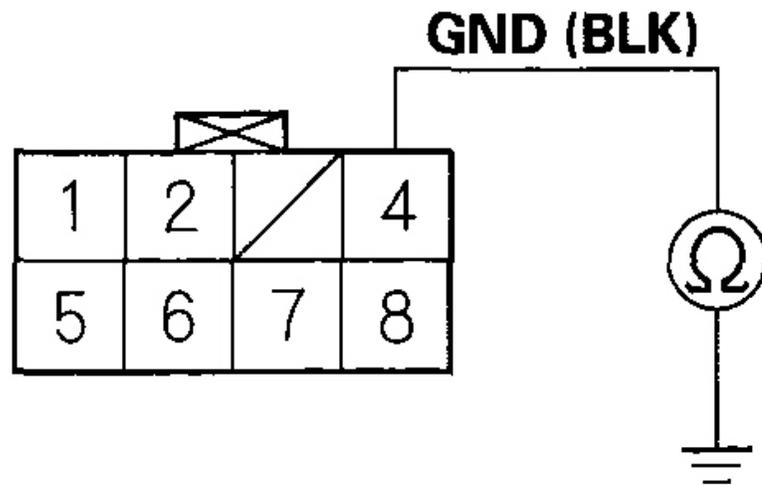
Is there battery voltage?

YES - Go to step 8.

NO - If the +B wire does not have voltage, repair open in the wire between the passenger's under-dash fuse relay box and the navigation unit. If the ACC wire does not have voltage, repair open in the wire between the driver's under-dash fuse relay box and the navigation unit.

8. Check for continuity between navigation unit connector C (8P) terminal No. 4 and body ground.

NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

G03642790

Fig. 28: Checking Continuity Between Navigation Unit Connector C (8P) Terminal No. 4 And Body Ground

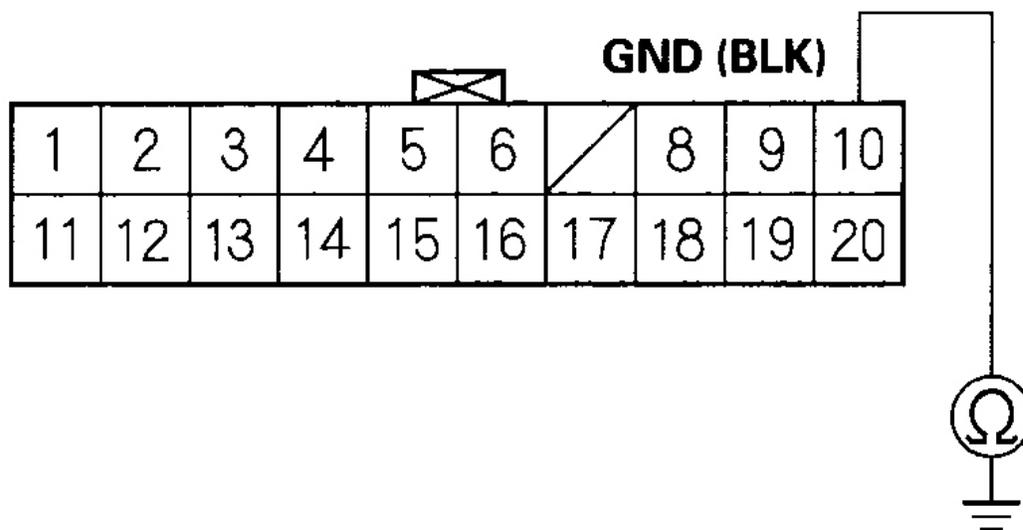
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 9.

NO - Repair open in the wire between the navigation unit and body ground (G501).

9. Check for continuity between display unit connector B (20P) terminal No. 10 and body ground.

DISPLAY UNIT CONNECTOR B (20P)**Wire side of female terminals**

G03642791

Fig. 29: Checking Continuity Between Display Unit Connector B (20P) Terminal No. 10 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?**YES** - Go to step 10.**NO** - Repair open in the wire between the display unit and body ground (G401).

10. Turn the ignition switch OFF.
11. Perform the forced starting of the display (see **FORCED STARTING OF DISPLAY**).

Is the diagnosis menu of the picture diagnosis displayed?**YES** - Go into the Diagnostic mode and use the "Navi System Link" diagnostic (see **NAVI SYSTEM LINK**) to check the links.**NO** - Go to step 12.

12. Shield the display unit from the sun with your hand, and check that the display is black (only back light is ON).

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Can you see the back light?

YES - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/ INSTALLATION**).

NO - Replace the display unit (see **DISPLAY UNIT REMOVAL/INSTALLATION**).

PICTURE IS MISSING A COLOR OR TONE (IN ALL GEAR POSITIONS)

NOTE:

- Always check the connectors for poor connections or loose terminals.
- Before troubleshooting, get the navigation system anti-theft codes.
- After troubleshooting, enter the navigation system anti-theft codes.
- Check for aftermarket accessories.

1. Go into Diagnostic mode and use "RGB Color" diagnostic under Monitor Check (see **MONITOR CHECK**).

Are the red, green, and blue colored circles shown?

YES - The system is OK at this time.

NO - Go to step 2.

2. Turn the ignition switch to OFF.
3. Disconnect the navigation unit connector A (20P) and display unit connector B (20P).
4. Check for loose terminals at navigation unit connector A (20P) and display unit connector B (20P).

Are there loose terminals?

YES - Repair the terminal, then recheck.

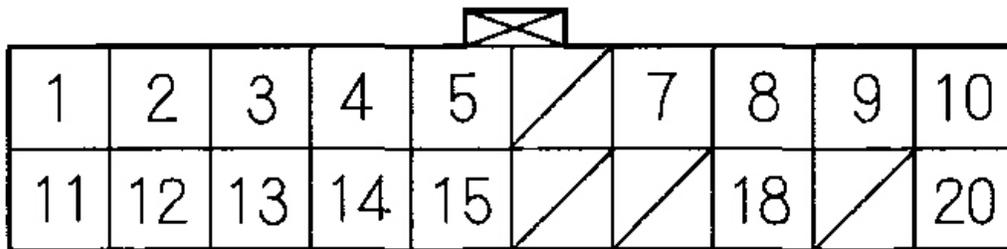
NO - Go to step 5.

5. Check for continuity between the appropriate terminals of navigation unit connector A(20P) to display unit connector B (20P) based on the missing color(s).

NAVIGATION UNIT CONNECTOR A(20P) TO DISPLAY UNIT CONNECTOR B (20P)

Missing color	Navigation unit connector A (20P)	Display unit connector B (20P)	Wire color
Blue	A11	B18	YEL
Green	A2	B9	RED
Red	A1	B8	WHT

NAVIGATION UNIT CONNECTOR A (20P)

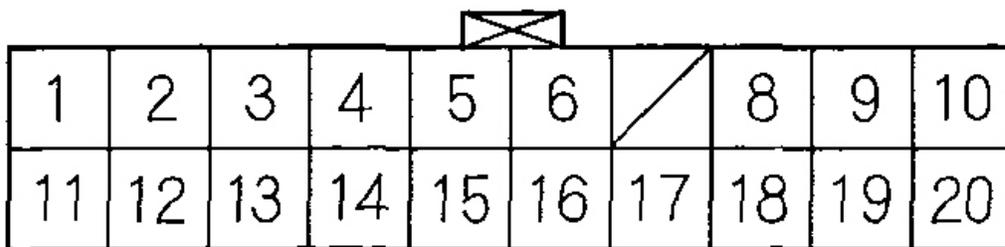


Wire side of female terminals

G03642792

Fig. 30: Identifying Navigation Unit Connector A (20P)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DISPLAY UNIT CONNECTOR B (20P)



Wire side of female terminals

G03642793

Fig. 31: Identifying Display Unit Connector B (20P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 6.

NO - There is an open in the circuit between the display unit and the navigation unit. Check for poor connections or loose terminals at the display and navigation units. If a poor connection or loose terminal is found, replace the affected shielded harness.

- Check for continuity between the appropriate terminals of the display unit connector B (20P) based on the missing color(s).

DISPLAY UNIT CONNECTOR B (20P)

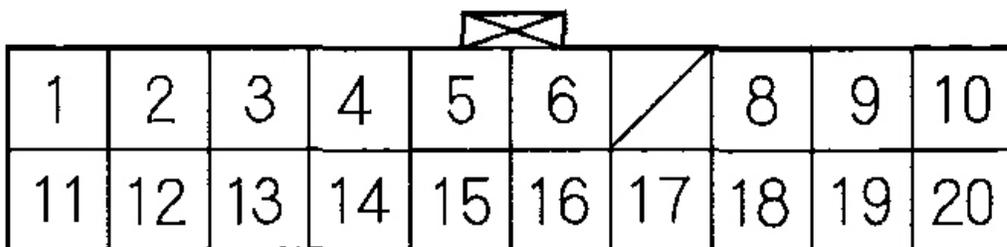
Missing color	Display unit connector B (20P)	
	From	To

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Blue	B18 (YEL)	B10 (BLK)
		B20(BRN/BLK)
Green	B9 (RED)	B10 (BLK)
		B20 (BRN/BLK)
Red	B8 (WHT)	B10 (BLK)
		B20 (BRN/BLK)

DISPLAY UNIT CONNECTOR B (20P)



Wire side of female terminals

G03642794

Fig. 32: Identifying Display Unit Connector B (20P)
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short to body ground in the circuit between the display unit and the navigation unit. Replace the affected shielded harness.

NO - Replace the navigation unit. If the problem is still unresolved, replace the display unit.

PICTURE HAS LINES/ROLLS/OTHER ISSUES

NOTE:

- Always check the connectors for poor connections or loose terminals.
- Before troubleshooting, get the navigation system anti-theft codes.
- After troubleshooting, enter the navigation system anti-theft codes.

1. Check for electronic aftermarket accessories (possibly hidden) mounted near the display unit or the navigation unit.

Are there any electronic accessories?

YES - Disable the accessories, and recheck.

NO - Go to step 2.

2. Start up the navigation picture.

Is the picture scrolling horizontally (left to right or right to left)?

YES - Check for an open or short to ground in the C SIG wire from navigation unit connector A (20P) terminal No. 12 to display unit connector B (20P) terminal No. 18. Also check for a short to ground between display unit connector B terminal No. 19 and terminal No. 20.

NO - Go to step 3.

3. Go into the Diagnostic mode and use "RGB Color" diagnostic under Monitor Check (see **MONITOR CHECK**).

Is the picture missing a red, green or blue color?

YES - Do the troubleshooting for the picture is missing a red, green or blue color or tone (see **PICTURE IS MISSING A COLOR OR TONE (IN ALL GEAR POSITIONS)**).

NO - Go to step 4.

4. Turn the ignition switch OFF.
5. Substitute a known-good display unit, and recheck.

Is the picture OK?

YES - Replace the display unit (see **DISPLAY UNIT REMOVAL/INSTALLATION**).

NO - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/ INSTALLATION**).

DISPLAY UNIT BUTTONS OR TOUCH SCREEN BUTTONS DO NOT WORK OR RESPOND PROPERLY

NOTE:

- Always check the connectors for poor connections or loose terminals.
- Before troubleshooting, get the navigation system anti-theft codes.

- After troubleshooting, enter the navigation system anti-theft codes.

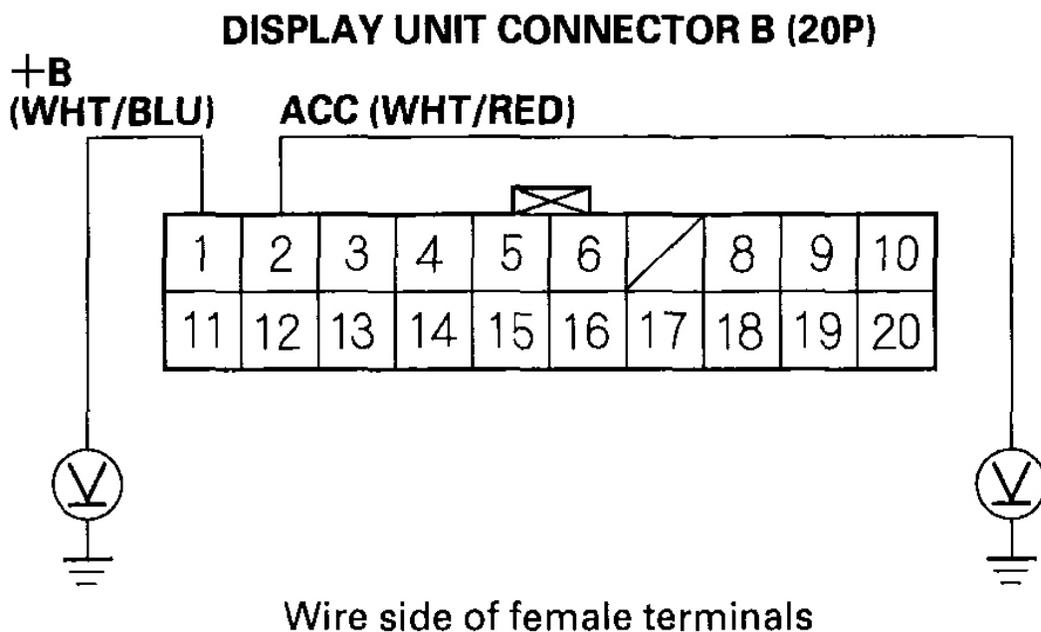
1. Turn the ignition switch to ACC (I).
2. Go into the Diagnostic mode and use the "Touch Panel" diagnostic under Monitor Check (see **MONITOR CHECK**) and, if necessary, the "Display" diagnostic under Unit Check (see **UNIT CHECK**).

Do the buttons work properly?

YES - System is OK.

NO - Go to step 3.

3. Measure the voltage between body ground and display unit connector B (20P) terminal No. 1 and No. 2 individually.



G03642795

Fig. 33: Measuring Voltage Between Body Ground And Display Unit Connector B (20P) Terminals No. 1 And No. 2

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

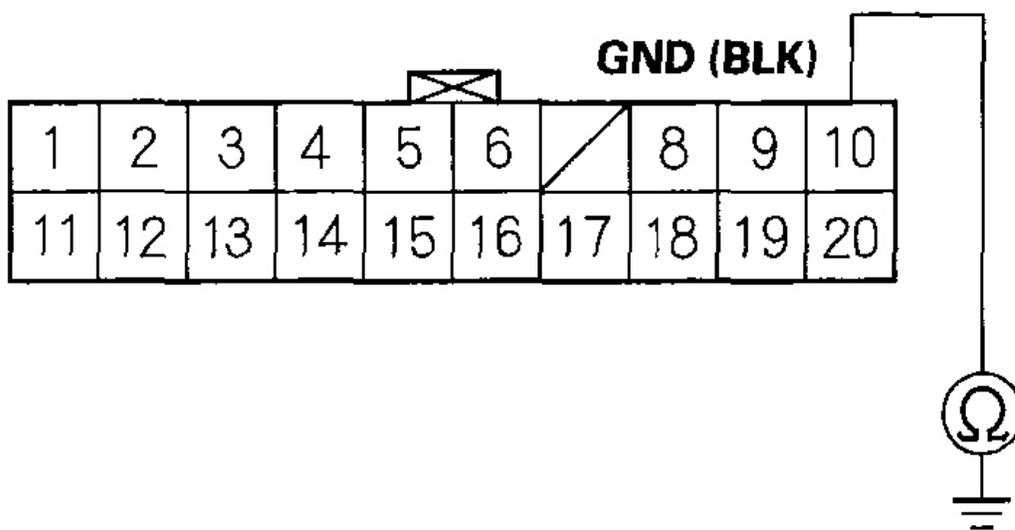
YES - Go to step 4.

NO - If the +B wire does not have voltage, check fuse No. 11 (10 A) in the passenger's under-dash

fuse/relay box. If OK, repair the open in the wire between the passenger's under-dash fuse/relay box and the display unit. If the ACC wire does not have voltage, repair the open in the wire between the passenger's under-dash fuse/relay box and the display unit. If OK, check the ACC relay circuit.

4. Turn the ignition switch OFF.
5. Disconnect the display unit connector B (20P).
6. Check for continuity between display unit connector B (20P) terminal No. 10 and body ground.

DISPLAY UNIT CONNECTOR B (20P)



Wire side of female terminals

G03642796

Fig. 34: Checking Continuity Between Display Unit Connector B (20P) Terminal No. 10 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

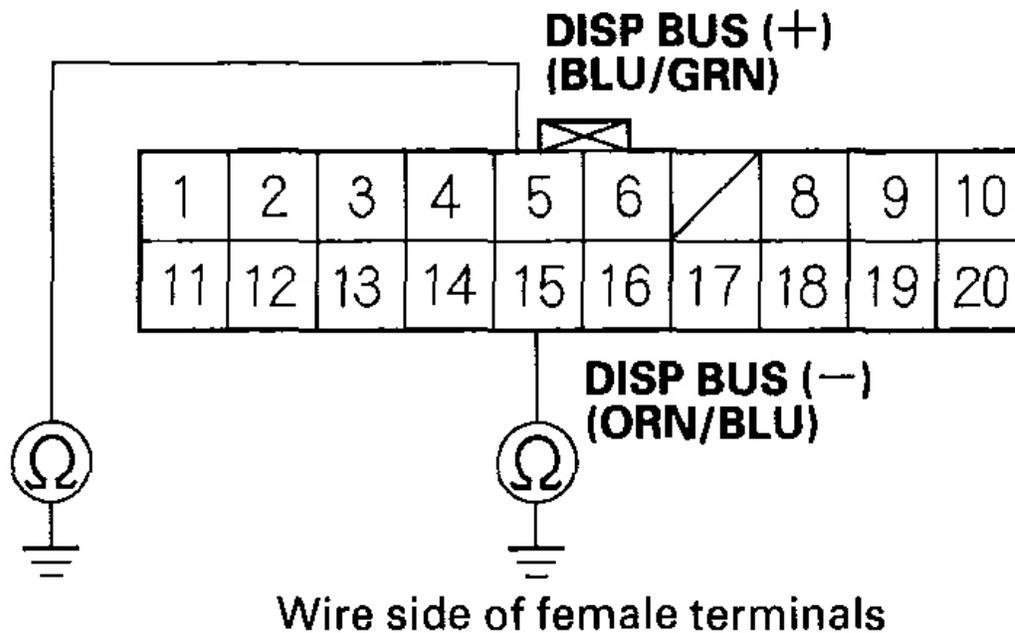
YES - Go to step 7.

NO - Repair an open in the wire between the display unit and body ground (G401).

7. Disconnect the navigation unit connector A (20P).
8. Check for continuity between body ground and display unit connector B (20P) terminal No. 5 and No. 15

individually.

DISPLAY UNIT CONNECTOR B (20P)



G03642797

Fig. 35: Checking Continuity Between Body Ground And Display Unit Connector B (20P) Terminals No. 5 And No. 15

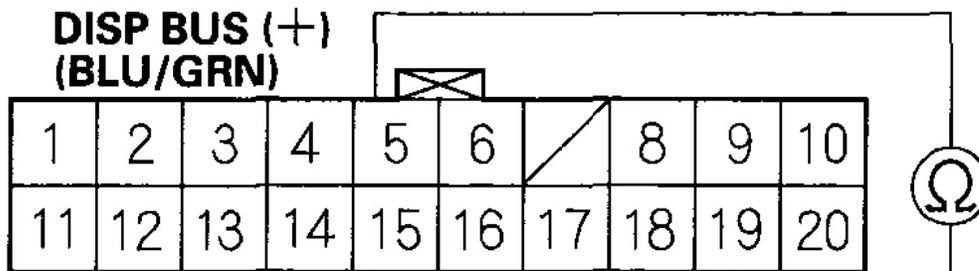
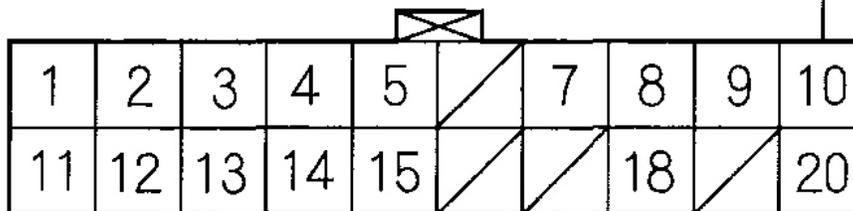
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - There is a short to body ground in the circuit between the display unit and the navigation unit. Replace the affected shielded harness.

NO - Go to step 9.

9. Check for continuity between display unit connector B (20P) terminal No. 5 and navigation unit connector A (20P) terminal No. 10.

DISPLAY UNIT CONNECTOR B (20P)**NAVIGATION UNIT CONNECTOR A (20P)**

Wire side of female terminals

G03642798

Fig. 36: Checking Continuity Between Display Unit Connector B (20P) Terminal No. 5 And Navigation Unit Connector A (20P) Terminal No. 10

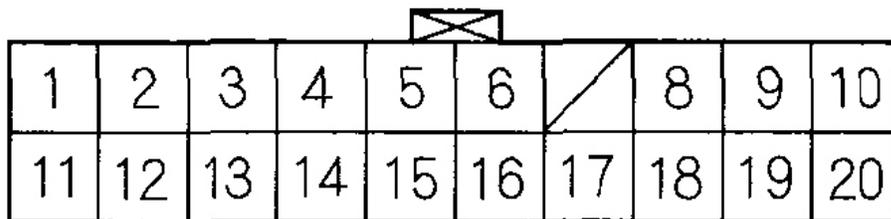
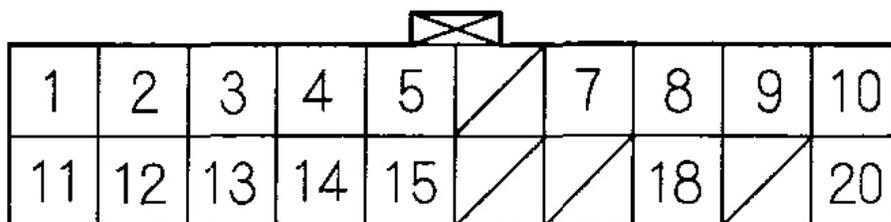
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 10.

NO - There is an open in the circuit between the display unit and the navigation unit. Check for poor connections or loose terminals at the display and navigation units. If a poor connection or loose terminal is found, replace the affected shielded harness.

10. Check for continuity between display unit connector B (20P) terminal No. 15 and navigation unit connector A (20P) terminal No. 20.

DISPLAY UNIT CONNECTOR B (20P)**DISP BUS (-) (ORN/BLU)****NAVIGATION UNIT CONNECTOR A (20P)**

Wire side of female terminals

G03642799

Fig. 37: Checking Continuity Between Display Unit Connector B (20P) Terminal No. 15 And Navigation Unit Connector A (20P) Terminal No. 20
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Substitute a known-good display unit (see **DISPLAY UNIT REMOVAL/INSTALLATION**) and recheck. If problem is gone, replace the display unit. If problem is still present, replace the navigation unit.

NO - There is an open in the circuit between the display unit and the navigation unit. Check for poor connections or loose terminals at the display and navigation units. If a poor connection or loose terminal is found, replace the affected shielded harness.

GPS ICON IS WHITE OR NOT SHOWN

NOTE:

- Make sure the vehicle is parked outside and away from buildings.

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- Refer to GPS information (see GPS INFORMATION) for realtime satellite reception display.

1. Check for electronic aftermarket accessories (possibly hidden) mounted near the GPS antenna or the navigation unit.

Are there any electronic accessories?

YES - Disable the accessories and recheck.

NO - Go to step 2.

2. Go into the Diagnostic mode and use the "Navi System Link" diagnostic (see NAVI SYSTEM LINK) to check the GPS antenna.

Is "GPS Ant" icon red?

YES - Use the "Navi ECU" diagnostic under Unit Check (see UNIT CHECK) to check for a kinked, crushed, or disconnected GPS antenna wire. If necessary, try a known-good GPS antenna. If icon is still red, replace the navigation unit.

NO - Check that nothing is blocking the GPS antenna located under the dashboard and recheck. Substituted a known-good navigation unit, and recheck.

VOICE GUIDANCE CANNOT BE HEARD

NOTE:

- Always check the connectors for poor connections or loose terminals.
- Before troubleshooting, write down the customer's radio station presets, and get the radio and navigation system anti-theft codes.
- After troubleshooting, enter the radio and navigation system anti-theft codes, and the radio station presets.

1. Press the display unit A/C INFO button, and select "set-up".
2. Check the volume setting for the navigation system.

Is it set OFF?

YES - Set the volume to an audible level.

NO - Go to step 3.

3. Check the radio operation.

Can you hear the radio?

YES - Go to step 4.

NO - Troubleshoot the audio system. Some possible causes might be a lack of power or ground to the audio unit, or a short to ground in one of the speakers or speaker wires.

- Go into the Diagnostic mode and use the "Navi System Link" diagnostic (see **NAVI SYSTEM LINK**) to check the radio.

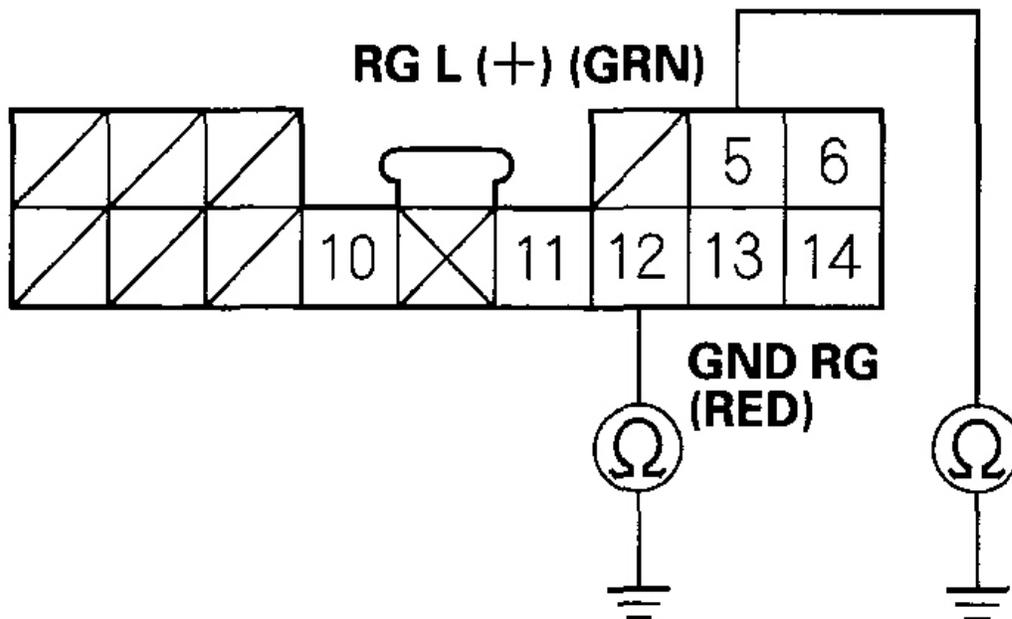
Is "Radio" icon red?

YES - Troubleshoot the wiring and connectors between the navigation unit and the audio system. If OK, substitute a known-good audio unit and recheck.

NO - Go to step 5.

- Turn the ignition switch OFF.
- Disconnect the navigation unit connector B (14P).
- Check for continuity between body ground and navigation unit connector B (14P) terminals No. 5 and No. 12 individually.

NAVIGATION UNIT CONNECTOR B (14P)



Wire side of female terminals

G03642800

Fig. 38: Checking Continuity Between Body Ground And Navigation Unit Connector B (14P) Terminals No. 5 And No. 12

Courtesy of AMERICAN HONDA MOTOR CO., INC.

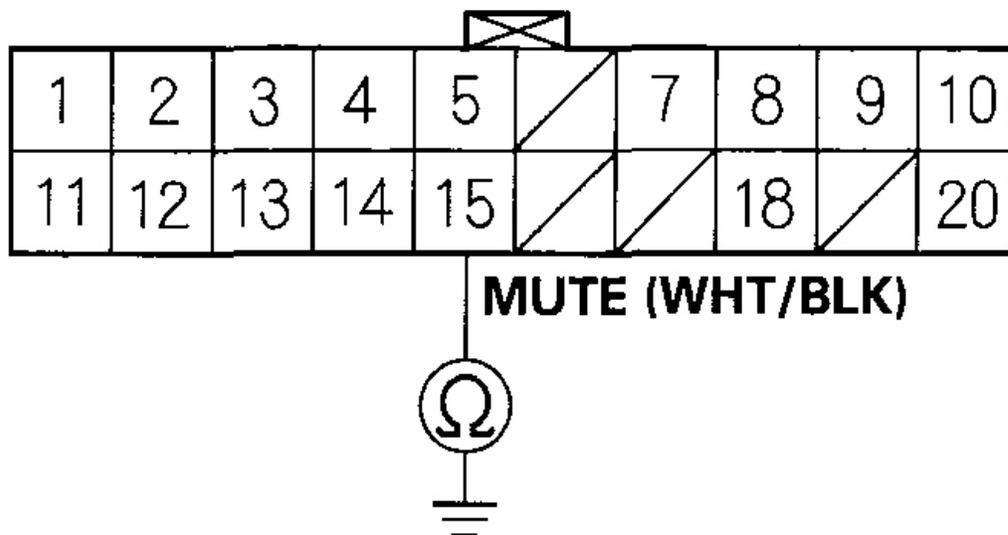
Is there continuity?

YES - Replace the affected shielded harness.

NO - Go to step 8.

8. Disconnect the navigation unit connector A (20P).
9. Check for continuity between the navigation unit connector A (20P) terminal No. 15 and body ground.

NAVIGATION UNIT CONNECTOR A (20P)



Wire side of female terminals

G03642801

Fig. 39: Checking Continuity Between Navigation Unit Connector A (20P) Terminal No. 15 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

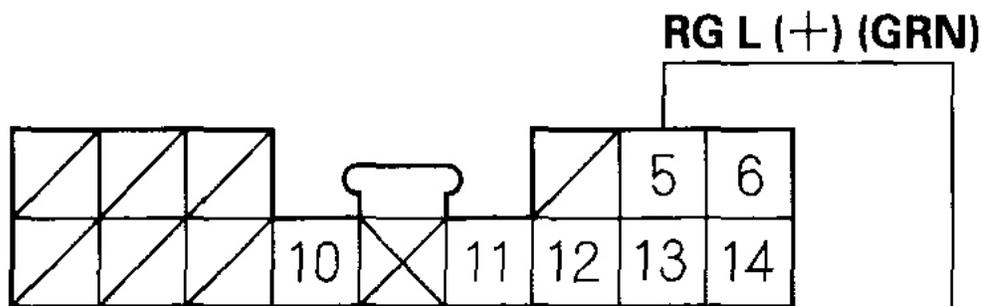
Is there continuity?

YES - Repair short to body ground in the wire between the audio unit and the navigation unit.

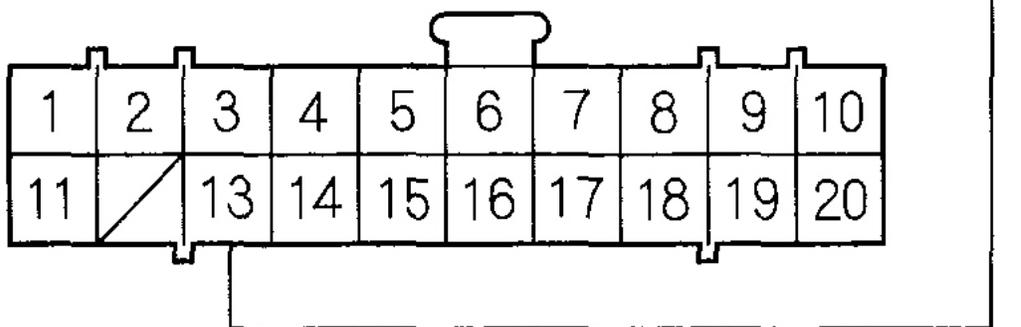
NO - Go to step 10.

10. Check for continuity between navigation unit connector B (14P) terminal No. 5 and the audio unit 20P connector terminal No. 13.

NAVIGATION UNIT CONNECTOR B (14P)



AUDIO UNIT 20P CONNECTOR



Wire side of female terminals

G03642802

Fig. 40: Checking Continuity Between Navigation Unit Connector B (14P) Terminal No. 5 And Audio Unit 20P Connector Terminal No. 13

Courtesy of AMERICAN HONDA MOTOR CO., INC.

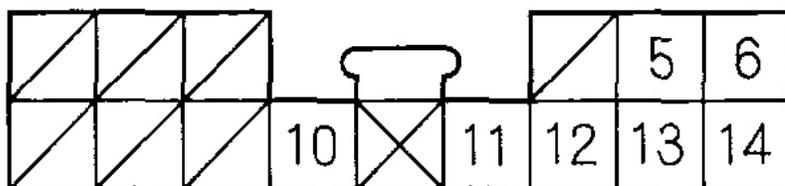
Is there continuity?

YES - Go to step 11.

NO - There is an open in the circuit between the navigation unit and audio unit. Check for poor connections or loose terminals at the audio and navigation units. If a poor connection or loose terminal is found, replace the affected shielded harness.

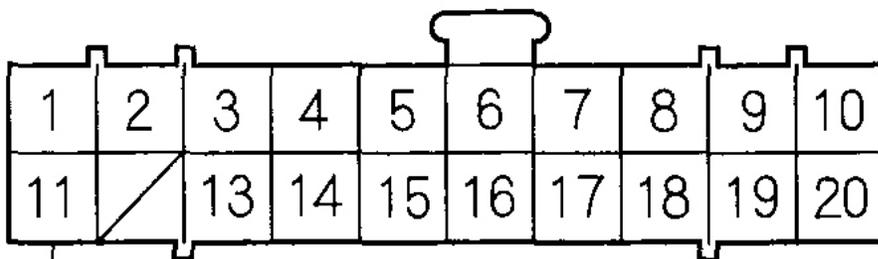
11. Check for continuity between navigation unit connector B (14P) terminal No. 12 and the audio unit 20P connector terminal No. 11.

NAVIGATION UNIT CONNECTOR B (14P)



GND RG (RED)

AUDIO UNIT 20P CONNECTOR



Wire side of female terminals

G03642803

Fig. 41: Checking Continuity Between Navigation Unit Connector B (14P) Terminal No. 12 And

Audio Unit 20P Connector Terminal No. 11

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 12.

NO - There is an open in the circuit between the navigation unit and the audio unit. Check for poor connections or loose terminals at the audio and navigation units. If a poor connection or loose terminal is found, replace the affected shielded harness.

12. Substitute a known-good audio unit and recheck.

Is the system?

YES - Replace the audio unit.

NO - Replace the navigation unit (see NAVIGATION UNIT REMOVAL/ INSTALLATION).

VOICE CONTROL DOES NOT WORK/RESPOND

NOTE:

- **Before assuming that a voice complaint is hardware related, ensure that the voice control system is being operated correctly.**
 - **Make sure you are on the correct screen when trying to issue a voice command. For instance, the command "Find the nearest Italian Restaurant" only works on a Map screen. (See the Navigation System Manual for a complete list of allowed voice commands for the information being displayed).**
 - **Close the windows and sunroof.**
 - **Set the fan speed to low (1 or 2).**
 - **Adjust the air flow from the air conditioning vents so that they do not blow against the microphone on the ceiling.**
 - **Pause after pressing the ON Hook switch button then give a voice command clearly in a natural speaking voice. If the system cannot recognize your command, speak louder.**
 - **If the microphone picks up voices other than yours, the system may not interpret your voice commands correctly.**
 - **If you speak a command with something in your mouth, or your voice is too husky, the system may misunderstand your command.**
- **Always check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, write down the customer's radio station presets, and get the radio and navigation system anti-theft codes.**
- **After troubleshooting, enter the radio and navigation system anti-theft codes, and the radio station presets.**

1. Go into the Diagnostic mode and use the "Mic Level" diagnostic the under Functional Setup (see **MIC**

LEVEL) to check the operation of the ON Hook and OFF Hook switch buttons.

Are the TALK and BACK buttons operational?

YES - Go to step 3 .

NO - Go to step 2.

2. Substitute a known-good steering button assembly.

Are the ON Hook and OFF Hook switch buttons operational?

YES - Replace the steering button assembly.

NO - Check for an open or short to ground on navigation unit connector B (14P) terminal No. 10.

3. Use the "Mic Level" diagnostic under Functional Setup (see **MIC LEVEL**) to check the operation of the microphone.

Is the microphone operational?

YES - Check the operation of the voice control system (See the Navigation System Manual).

NO - Check for a loose front map light (microphone) assembly. If OK, check for an open or short to ground on navigation unit connector B (14P) terminals No. 6 and No. 14 and the microphone assembly. If found, replace the affected shielded harness.

VEHICLE POSITION ICON CONSTANTLY LEAVES ROAD, MOVES ERRATICALLY, IS VERY FAR FROM ACTUAL POSITION, OR SPINS WHEN PARKED ON LAND OR ICON WILL NOT MOVE WHEN DRIVING

1. Check the GPS icon on the navigation picture.

Is the GPS icon white?

YES - Do the troubleshooting for GPS icon is white or not shown (see **GPS ICON IS WHITE OR NOT SHOWN**).

NO - Go to step 2.

2. Go into the Diagnostic mode and use the "Yaw Rate" diagnostic (see **YAW RATE**) to check the yaw rate sensor.
3. Go into the Diagnostic mode and use the "Car Status" diagnostic (see **CAR STATUS**) to check the vehicle speed pulse.

Are the yaw rate sensor and vehicle speed pulse OK?

YES - The problem may be a normal characteristic. Check to see if the problem occurs in the same place and in other like vehicles with the same DVD version. If it does, the problem could be in the database. Report the problem according to the Navigation system manual under "Reporting Errors". Go to step 4.

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NO - If the problem is the yaw rate sensor, replace the navigation unit (see **NAVIGATION UNIT REMOVAL/ INSTALLATION**). If the problem is the vehicle speed pulse, troubleshoot the vehicle speed signal circuit.

4. Substitute a known-good navigation unit that has the same DVD version (transfer the DVD discs if necessary) and check to see if the problem occurs in the same place.

Does the problem occur in the same place?

YES - The problem is in the database. Report the problem according to the Navigation System Manual under "Reporting Errors".

NO - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/ INSTALLATION**).

DVD SCREEN ERROR MESSAGES

NOTE:

- Check the Navigation System Manual for a list of common DVD screen error messages and the probable cause.
- Go into the Diagnostic mode and use the "Car Status" diagnostic (see **CAR STATUS**) to check the status of the DVD lid.

1. Check the DVD-ROM reading surface for scratches.

Are there scratches?

YES - Replace the DVD-ROM (see **FORCED STARTING OF DISPLAY**).

NO - If the problem occurs occasionally when the system is cold, this is normal. If the problem occurs frequently when driving, replace the navigation unit (see **NAVIGATION UNIT REMOVAL/ INSTALLATION**).

NO REARVIEW CAMERA PICTURE IS DISPLAYED OR SCREEN GOES BLACK WHEN PLACED IN REVERSE

NOTE:

- The rearview camera only works when the vehicle is in reverse (R) and the reverse lights are on.
- Always check the connectors for poor connections or loose terminals.
- Before troubleshooting, get the navigation system anti-theft codes.
- After troubleshooting, enter the navigation system anti-theft codes.
- Check the rearview camera brightness settings. Use Zoom In/Zoom Out button to adjust.

1. Turn the ignition switch ON (II).
2. Check the No. 13 (7.5 A) in the passenger's under-dash fuse/relay box.

Is fuse OK?

YES - Go to step 3.

NO - Replace the fuse, and recheck.

3. Put the vehicle in Reverse.

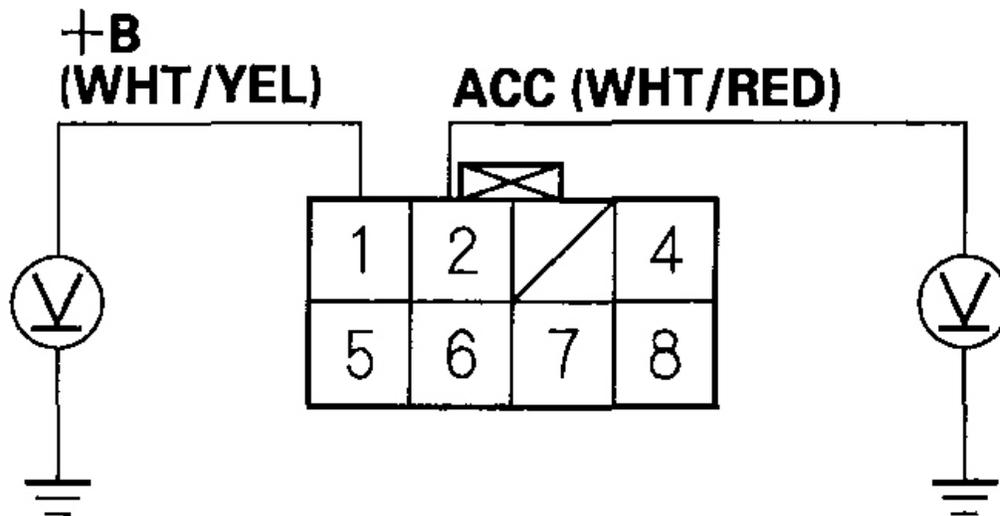
Do the reverse lights come on?

YES - Go into the Diagnostic mode and use the "Car Status" diagnostic to check the back up signal. If OK, go to step 4.

NO - Troubleshoot the backup light circuit.

4. Measure the voltage between body ground and navigation unit connector C (8P) terminals No. 1 and No. 2 individually.

NAVIGATION UNIT CONNECTOR C (8P)



Wire side of female terminals

G03642804

Fig. 42: Measuring Voltage Between Body Ground And Navigation Unit Connector C (8P) Terminals No. 1 And No. 2

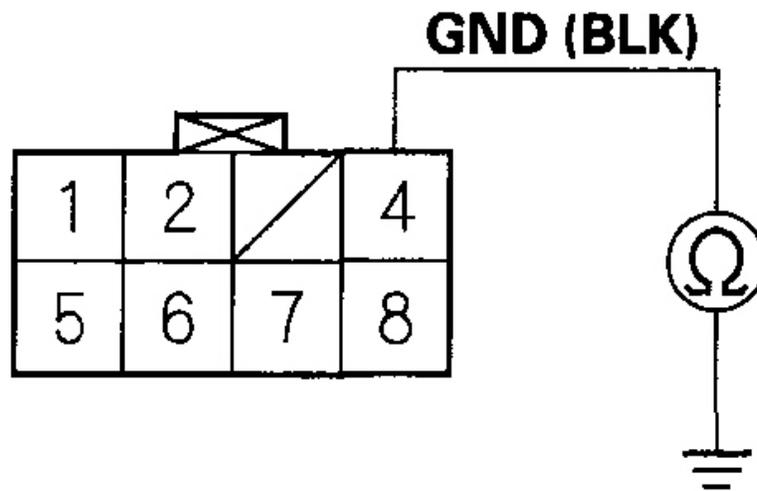
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there battery voltage?

YES - Go to step 5.

NO - If the +B wire does not have voltage, repair open in the wire between the passenger's under-dash fuse/relay box and the navigation unit. If the ACC wire does not have voltage, repair open in the wire between the driver's under-dash fuse/relay box and the navigation unit.

5. Check for continuity between navigation unit connector C (8P) terminal No. 4 and body ground.

NAVIGATION UNIT CONNECTOR C (8P)**Wire side of female terminals**

G03642805

Fig. 43: Checking Continuity Between Navigation Unit Connector C (8P) Terminal No. 4 And Body Ground

Courtesy of AMERICAN HONDA MOTOR CO., INC.

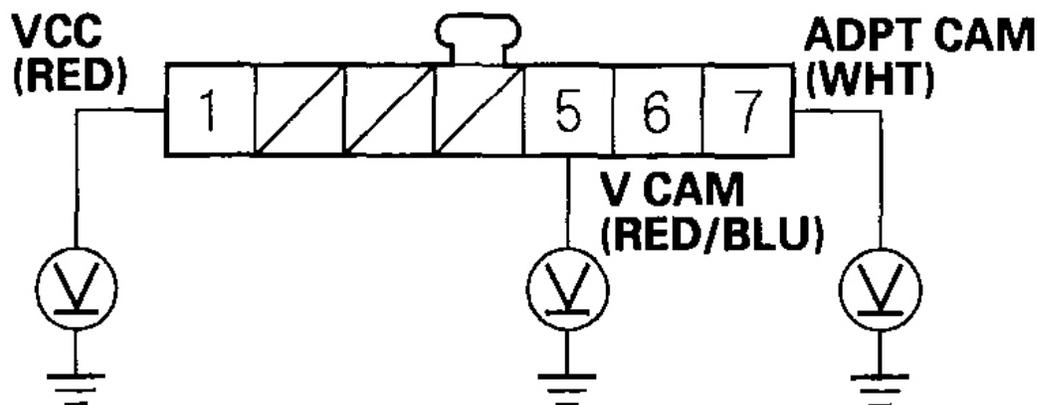
Is there continuity?

YES - Go to step 6.

NO - Repair open in the wire between the navigation unit and body ground (G501).

6. Turn the ignition switch OFF.
7. Disconnect the navigation unit connector F (7P) and rearview camera 6P connector.
8. Turn the ignition switch ON (II).
9. Measure the voltage between body ground and the rearview navigation unit connector F (7P) terminal No. 1, No. 5, No. 7 individually.

NAVIGATION UNIT CONNECTOR F (7P)



Wire side of female terminals

G03642806

Fig. 44: Measuring Voltage Between Body Ground And Rearview Navigation Unit Connector F (7P) Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is the voltage more than 1 V?

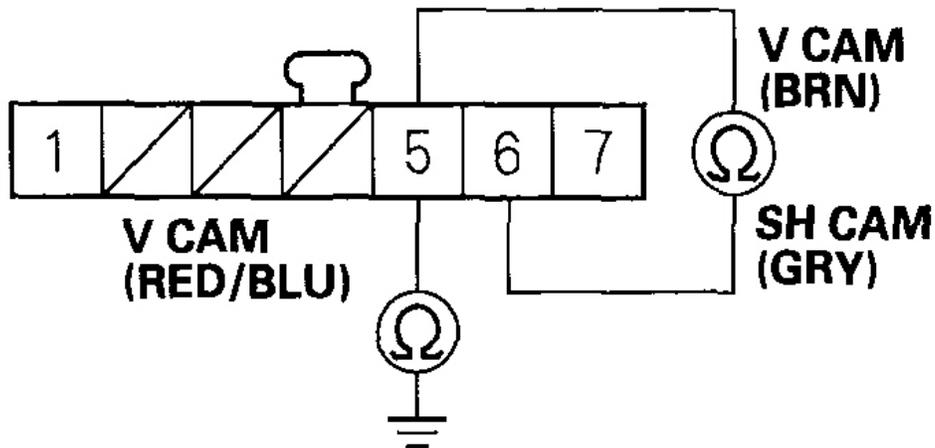
YES - Repair short to power in the wire between the navigation unit and the rearview camera.

NO - Go to step 10.

10. Turn the ignition switch OFF.

11. Check for continuity between the navigation unit connector F (7P) terminal No. 5 and body ground, and between terminals No. 5 and No. 6.

NAVIGATION UNIT CONNECTOR F (7P)



Wire side of female terminals

G03642807

Fig. 45: Checking Continuity Between Navigation Unit Connector F (7P) Terminal No. 5 & Body Ground And Between Terminal No. 5 & 6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

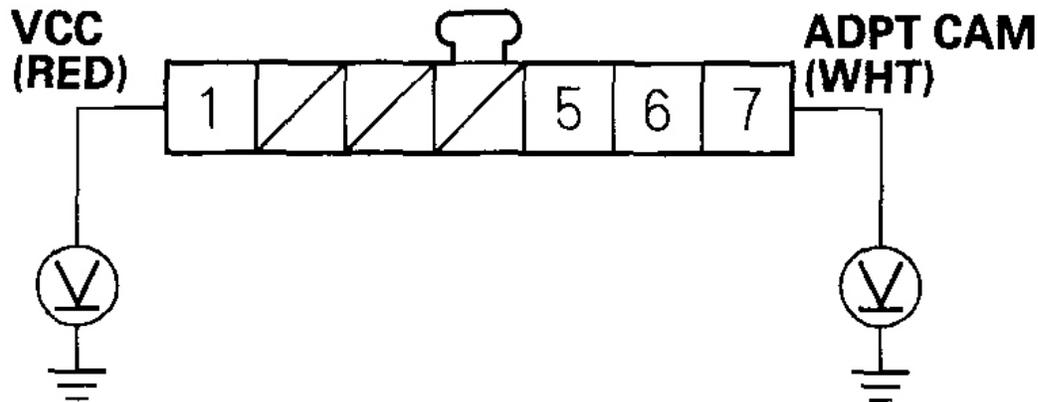
Is there continuity?

YES - Replace the affected shielded harness.

NO - Go to step 12.

12. Check for continuity between body ground and the navigation unit connector F (7P) terminal No. 1, No. 7 individually.

NAVIGATION UNIT CONNECTOR F (7P)



Wire side of female terminals

G03642808

Fig. 46: Checking Continuity Between Body Ground And Navigation Unit Connector F (7P) Terminals No. 1, 7

Courtesy of AMERICAN HONDA MOTOR CO., INC.

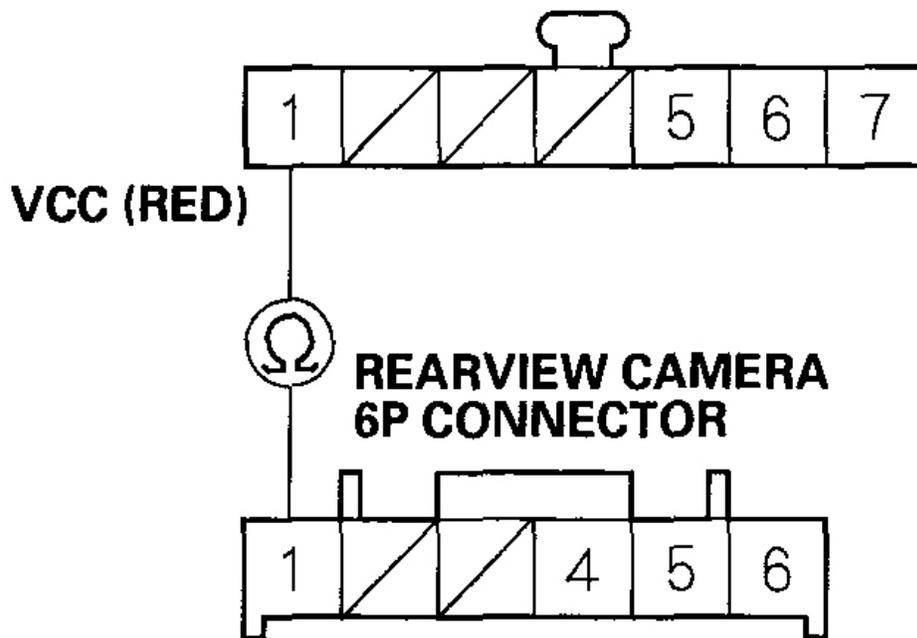
Is there continuity?

YES - Repair short to body ground in the wire between the navigation unit and the rearview camera.

NO - Go to step 13.

13. Check for continuity between the navigation unit connector F (7P) terminal No. 1 and the rearview camera 6P connector terminal No. 1.

NAVIGATION UNIT CONNECTOR F (7P)



Wire side of female terminals

G03642809

Fig. 47: Checking Continuity Between Navigation Unit Connector F (7P) Terminal No. 1 And Rearview Camera 6P Connector Terminal No. 1

Courtesy of AMERICAN HONDA MOTOR CO., INC.

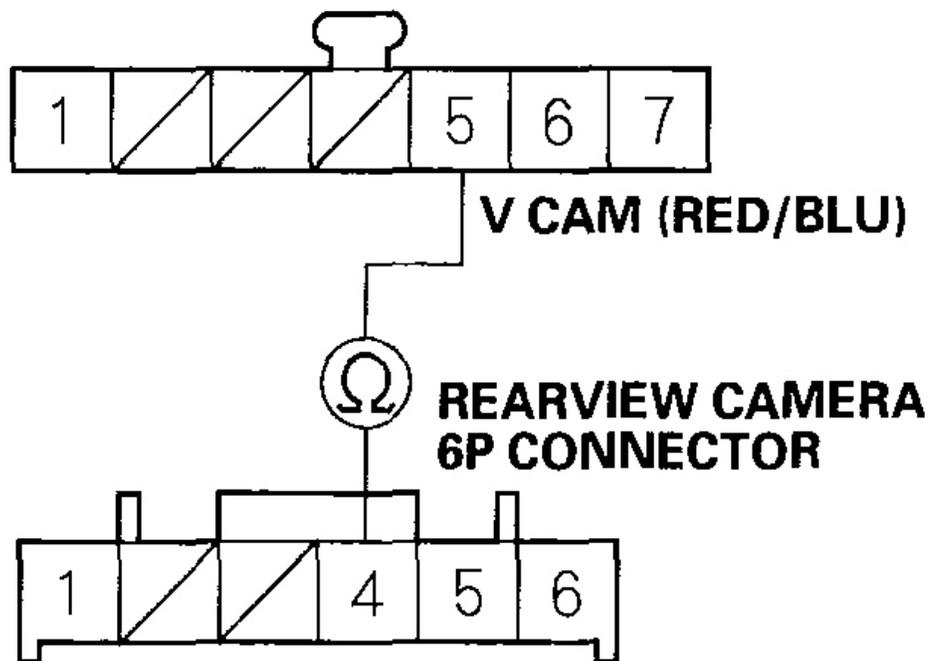
Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire between the navigation unit and the rearview camera.

14. Check for continuity between the navigation unit connector F (7P) terminal No. 5 and the rearview camera 6P connector terminal No. 4.

NAVIGATION UNIT CONNECTOR F (7P)



Wire side of female terminals

G03642810

Fig. 48: Checking Continuity Between Navigation Unit Connector F (7P) Terminal No. 5 And Rearview Camera 6P Connector Terminal No. 4
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

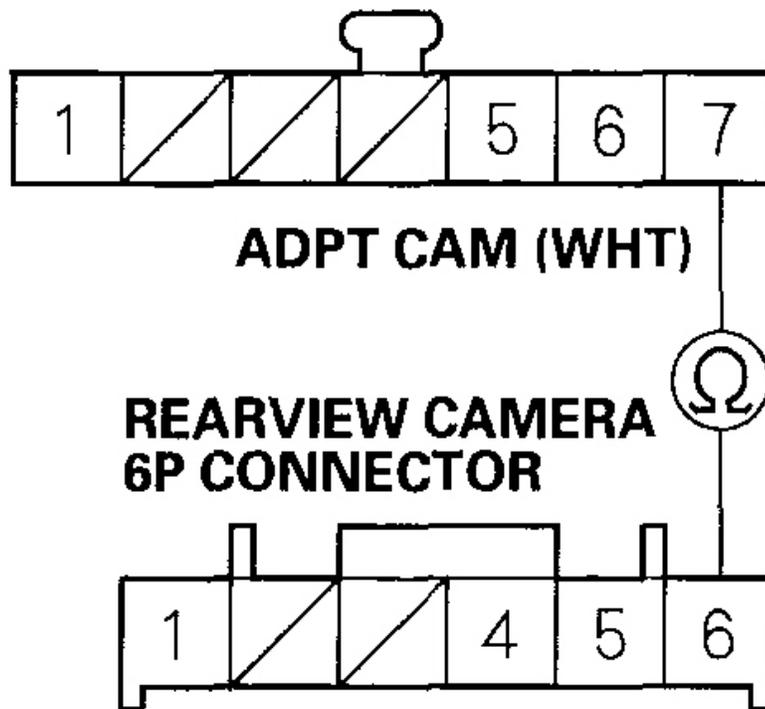
Is there continuity?

YES - Go to step 15.

NO - Replace the affected shield harness.

15. Check for continuity between the navigation unit connector F (7P) terminal No. 7 and the rearview camera 6P connector terminal No. 6.

NAVIGATION UNIT CONNECTOR F (7P)



Wire side of female terminals

G03642811

Fig. 49: Checking Continuity Between Navigation Unit Connector F (7P) Terminal No. 7 And Rearview Camera 6P Connector Terminal No. 6

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Is there continuity?

YES - Go to step 16.

NO - Repair open in the wire between the navigation unit and the rearview camera.

16. Substitute a known-good rearview camera and recheck.

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Is the rearview camera view shown?

YES - Replace the original rearview camera (see REARVIEW CAMERA REMOVAL/INSTALLATION).

NO - Replace the navigation unit (see NAVIGATION UNIT REMOVAL/INSTALLATION).

THE REARVIEW CAMERA PICTURE IS MISSING A COLOR OR TONE, OR PICTURE ROLLS

NOTE:

- Always check the connectors for poor connections or loose terminals.
- Before troubleshooting, get the navigation system anti-theft codes.
- After troubleshooting, enter the navigation system anti-theft codes.

1. Disconnect the navigation unit connector F (7P) and the rearview camera 6P connector.
2. Check for loose terminals at the navigation unit connector F (7P) and the rearview camera 6P connector.

Are there loose terminals?

YES - Repair the terminal.

NO - Go to step 3.

3. Do the troubleshooting for the picture has lines/ rolls/other issues (see PICTURE HAS LINES/ROLLS/OTHER ISSUES).

Is the system OK?

YES - Go to step 4.

NO - Repair the system.

4. Substitute a known-good rearview camera and recheck.

Is the system OK?

YES - Replace the original rearview camera (see REARVIEW CAMERA REMOVAL/INSTALLATION).

NO - Replace the navigation unit (see NAVIGATION UNIT REMOVAL/INSTALLATION).

TRIP COMPUTER-NO DISTANCE

NOTE:

- Always check the connectors for poor connections or loose terminals.
- Before troubleshooting, get the navigation system anti-theft codes.
- After troubleshooting, enter the navigation system anti-theft codes.
- If the Previous button on the Trip Computer screen is not active, make sure to answer OK to the Disclaimer screen.
- Verify the correct navigation unit is installed for this model. Go into the

Diagnostic mode and use "Version" (see VERSION).

1. Go into the Diagnostic Mode and use "Car Status" diagnostic (see CAR STATUS) to check for a vehicle speed pulse (VSP).

Is there a VSP when the vehicle is moving?

YES - Check the CAN bus wires for an open or short to ground between navigation unit connector A (20P) terminals No. 8 and No. 18 and PCM connector B (56P) terminals No. 6 and No. 2. If OK, replace the navigation unit

NO - Check the VSP wire for an open or short to ground between navigation unit connector C (8P) terminal No. 6 and PCM connector B (56P) terminal No. 46.

TRIP COMPUTER-NO FUEL INFORMATION

NOTE:

- Always check the connectors for poor connections or loose terminals.
- Before troubleshooting, get the navigation system anti-theft codes.
- After troubleshooting, enter the navigation system anti-theft codes.
- If the Previous button on the Trip Computer screen is not active, make sure to answer OK to the Disclaimer screen.
- Verify the correct navigation unit is installed for this model. Go into the Diagnostic mode and use "Version" (see VERSION).

Do the "Navi System Link" diagnostic (see NAVI SYSTEM LINK) to check the communication line between the PCM (FI-ECU) and the navigation unit.

1. Go into the Diagnostic mode and use "Trip computer" diagnostic under Unit Check (see UNIT CHECK) with the engine running.

Are the values greater than zero?

YES - The system is OK.

NO - Check the CAN bus wires for an open or short to ground between navigation unit connector A (20P) terminals No. 8 and No. 18 and PCM connector B (56P) terminal No. 6 and No. 2. If OK, replace the navigation unit.

TRIP COMPUTER DISTANCE TO EMPTY CALIBRATION IS INCORRECT

NOTE: Check the F-CAN system links (see F-CAN System Link). If NG, refer to the multiplex system in Body Electrical for DTC's and troubleshooting.

1. Check the fuel gauge.

Does the fuel gauge operate properly?

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YES - Go to step 2.

NO - Refer to **FUEL AND EMISSIONS** for fuel gauge troubleshooting.

2. Start the vehicle.
3. Check the F-CAN system link (see **F-CAN SYSTEM LINK**).

Is the diagnostic screen "OK"?

YES - Change the Trip Calibration Range Tuning to match the customer's expectations (see **TRIP CALIBRATE**).

NO - If the diagnostic screen displays "NG", refer to the **FUEL AND EMISSIONS** for F-CAN troubleshooting.

NAVIGATION CANNOT CONTROL A/C

NOTE:

- **Always check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, get the navigation system anti-theft codes.**
- **After troubleshooting, enter the navigation system anti-theft codes.**
- **Verify that the correct navigation unit is installed for this model. Go into the Diagnostic mode and use "Version" (see **VERSION**).**

1. Go into the Diagnostic Mode and use the "Navi System Link" check (see **NAVI SYSTEM LINK**).

Is "Air-con" icon red?

YES - Do the climate control system troubleshooting.

NO - Check for an open or short to ground between navigation unit connector A (20P) terminals No. 4, No. 14, No. 15 and climate control unit connector A (16P) terminals No. 16, No. 15, No. 8. If OK, check the climate control system for normal operation. If the climate control system works properly, substitute a known-good display unit and recheck.

DISPLAY DAY/NIGHT MODE DOES NOT WORK

NOTE:

- **Always check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, get the navigation system anti-theft codes.**
- **After troubleshooting, enter the navigation system anti-theft codes.**

1. Change the day/night mode under Set-up to AUTO, and recheck.

Does the display change to day and night modes using the headlights?

YES - The system is OK at this time.

NO - Go to step 2.

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2. Go into the Diagnostic Mode and use the "Car Status" diagnostic to check for an ILL signal (see **CAR STATUS**).

Is the "ILL" signal OK?

YES - The system is OK.

NO - Check the ILL+ circuit for an open or short to ground between navigation unit connector A (20P) terminal No. 5 and passenger's under-dash fuse/ relay box connector I terminal No. 2. If OK, substitute a known-good navigation unit and recheck.

SYSTEM LOCKS UP CONSTANTLY

1. Start the engine, then turn the ignition switch OFF, and turn the ignition switch ON (II).

Does the system reboot?

YES - The system is OK at this time.

NO - Check the DVD for scratches or damage and the navigation unit for water damage. If OK, go into the Diagnostic mode and do all of the "Unit Check" diagnostics (see **UNIT CHECK**).

VEHICLE ICON WANDERS ACROSS THE MAP (DOES NOT FOLLOW A DISPLAYED ROAD) OR SPINS WHEN DRIVING

NOTE:

- This is not the same condition as when driving off-road (or on a fire or logging road).
- This condition is caused by a loss of map matching from a bad sensor input. Check for aftermarket electronic devices (possibly hidden) or other objects that can block the GPS signal. Always perform Map matching (see **MAP MATCHING**) before proceeding with the troubleshooting.

1. Go into the Diagnostic mode and do the Navi System Link diagnostic (see **NAVI SYSTEM LINK**), the Navi ECU diagnostic under "Unit Check" (see **NAVI ECU**), the Car Status check (see **CAR STATUS**), the GPS Information check (see **GPS INFORMATION**), the GPS Detail check (see **GPS DETAIL**), , and the Yaw Rate check (see **YAW RATE**).

Are all the tests OK?

YES - The system is OK at this time.

NO - Repair the affected system. If the problem persists, swap a known-good navigation unit, and monitor the condition.

NAVIGATION DRIVES BY ITSELF WHEN PARKED

NOTE:

- Always check the connectors for poor connections or loose terminals.

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- **Before troubleshooting, get the navigation system anti-theft codes.**
- **After troubleshooting, re-enter the anti-theft code, and re-initialize the navigation system.**

1. Start the engine.
2. From the main menu, select places, then select any destination, and begin the trip.
3. With the vehicle parked, watch the vehicle icon on the display.

Does the vehicle position icon move by itself?

YES - Go to step 4.

NO - The system is OK at this time.

4. Go into the Diagnostic mode and select "Demonstration" under Functional Setup.

Is "Demonstration Mode" set to "Yes"?

YES - Set the Demonstration mode to "NO".

NO - Replace the navigation unit (see **NAVIGATION UNIT REMOVAL/ INSTALLATION**).

NAVIGATION STAYS ON WITH IGNITION SWITCH OFF

NOTE:

- **Always check the connectors for poor connections or loose terminals.**
- **Before troubleshooting, get the navigation system anti-theft codes.**
- **After troubleshooting, re-enter the anti-theft code, and re-initialize the navigation system.**
- **Aftermarket accessories or cell phone charger.**

1. With the key out of ignition.

Does the navigation screen stay on?

YES - Go to step 2.

NO - The system is OK at this time.

2. The vehicle may have been used as a demonstration vehicle at an event like an auto show. In these events, power is often jumpered to the navigation system so that the ignition key is not needed in the vehicle. At the end of the show, the jumper wire may not have been removed. Check the navigation unit "C" connector (8P) for a "non-factory" jumper wire in series with the factory cable.

Is there a jumper wire?

YES - Remove the jumper wire, and re-test.

NO - Go to step 3.

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3. The display or audio unit may have been jumpered behind the dash to allow the navigation system to run without the ignition key.

Does the radio function with the ignition switch off?

YES - Go to step 4.

NO - Go to step 5 .

4. Remove the display unit and check to see if the audio 20P connector has a non-factory jumper wire in series with the factory connector.

Is there a jumper wire?

YES - Remove the jumper wire, and re-test.

NO - Go to step 5.

5. Check the interior lights with the ignition switch off.

Can you turn on the interior lights with the ignition switch off?

YES - Troubleshoot the ACC circuit.

NO - Replace the navigation unit (see NAVIGATION UNIT REMOVAL/ INSTALLATION).

SYSTEM DIAGNOSIS MODE

START-UP PROCEDURE AND DIAGNOSIS MENU

There are two ways to enter the diagnostic mode:

1. Connect the SCS connector (see FORCED STARTING OF DISPLAY) to the navigation service connector located in the trunk. Turn the ignition switch to the ON (II) position. The display will go directly to the "System Link" display. Press exit to display the "Main Diagnosis" menu.

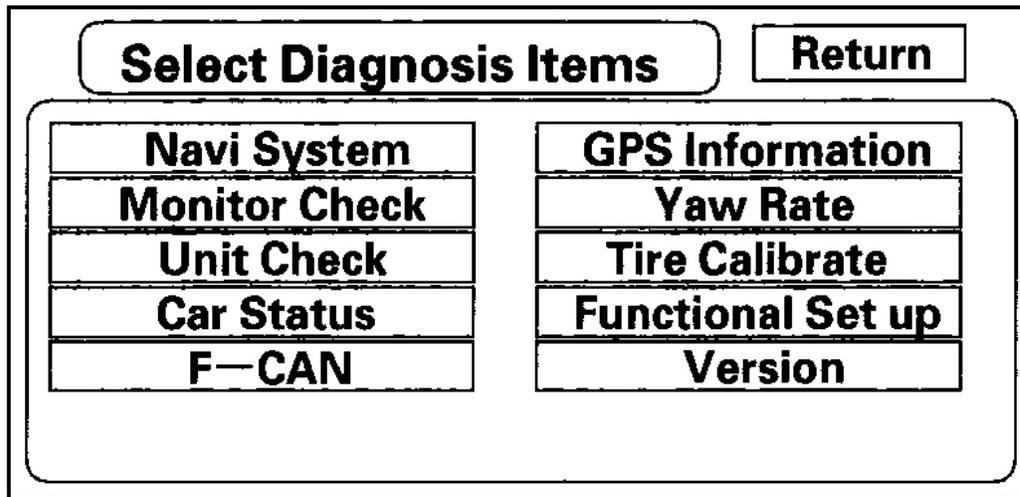
NOTE: When finished troubleshooting, make sure to remove the SCS connector.

2. Turn the ignition switch ON (II).

Use the navigation display hard buttons as described below:

Press and hold the 3 buttons (Menu, Map/Guide, and Cancel), and keep them pressed for approximately 5 seconds. The display screen will go directly to the "Select Diagnosis Items" menu.

NOTE: This only allows access to the diagnostic screens. All other navigation functions are disabled.



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Fig. 50: Identifying Display Diagnostic Screens

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. After the display changes to the Select Diagnosis Items menu, select the item you want to check and the diagnostic will start. To return to the previous screen, select "RETURN".
 - Navi System (Link)
 - Monitor Check
 - Unit Check
 - Car Status
 - F-CAN (System link)
 - GPS Information
 - Yaw Rate
 - Tire Calibrate
 - Functional Setup
 - Version

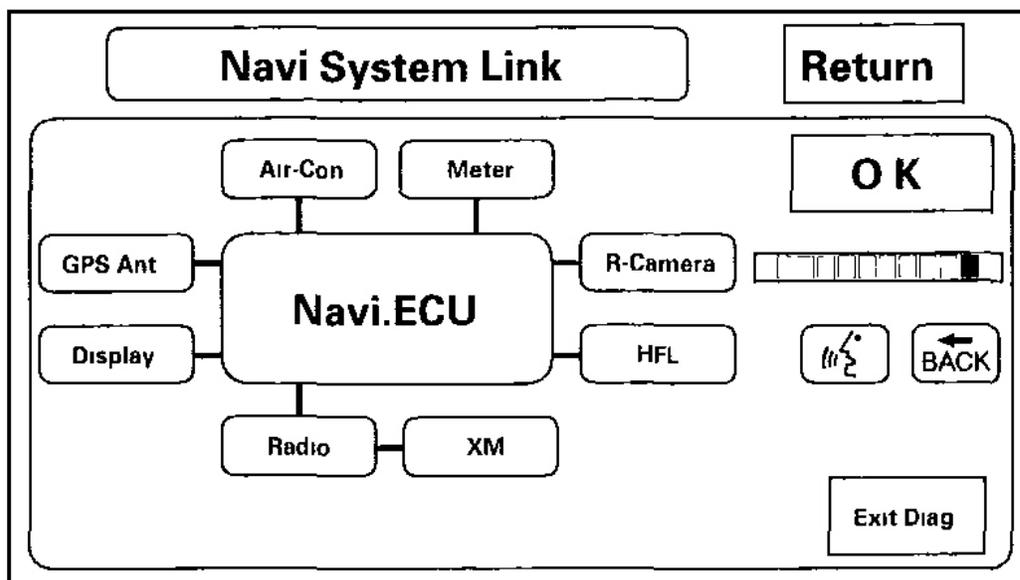
NAVI SYSTEM LINK

- This diagnostic tests the cables connecting the navigation components. Ensure that the ignition switch is in the ON (II) position. When the diagnostic begins, a "bong" sound is heard. The system is in a "Detecting" mode, and is waiting for all items in white to be tested. This includes the voice control (ON Hook/OFF Hook) buttons, and microphone. Press the TALK button on the steering wheel, and in a normal voice, say "testing". The Talk indicator on the screen should become green, and the voice level

indicator should move to at least the 6th bar to pass. Next, press the OFF Hook switch button. This should cause the "Cancel" indicator to go green.

- If all of the communication lines connecting the system components, and the ON Hook/OFF Hook switch buttons/microphone check out OK (all block diagram items green), then the "OK" indicator will become green.
- If there is a problem with the system, the faulty system component item will change to red, and the screen will show "NG" in red. Use the troubleshooting index, and other diagnostic screens to help locate the problem.
- The indication on the screen may not change until the ignition switch is cycled. After repairing the affected cable or system, repeat this diagnostic.

NOTE: Green boxes and green "OK" indicate that the communications lines (cables) are intact. This diagnostic does not necessarily imply that the individual components are functioning properly. For instance, the GPS antenna wire may be crushed, but still show as "green". A road test, or other diagnostic may be necessary to fully test each component.



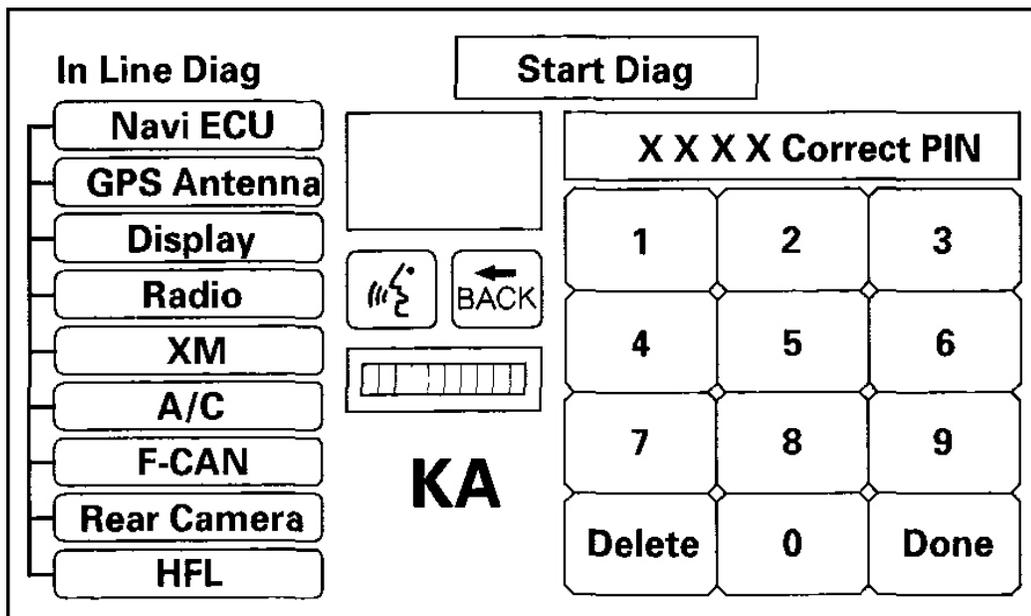
G03642813

Fig. 51: Identifying Navi System Link Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: The mic level indicator must reach the 6th bar or greater to pass the test.

FACTORY DIAGNOSTIC SCREEN "IN LINE DIAG"

When a navigation control unit is powered up for the first time at the factory, the "factory diagnosis" screen (In Line Diag) shows up. Normally the factory performs the steps necessary to verify proper operation and terminate the "factory diagnostic". Until the proper confirmation sequence is performed, the screen will show up every time the vehicle is started.



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Fig. 52: Identifying Factory Diagnostic Screen "In Line Diag"

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Follow the steps below to prevent the screen from showing up in the future:

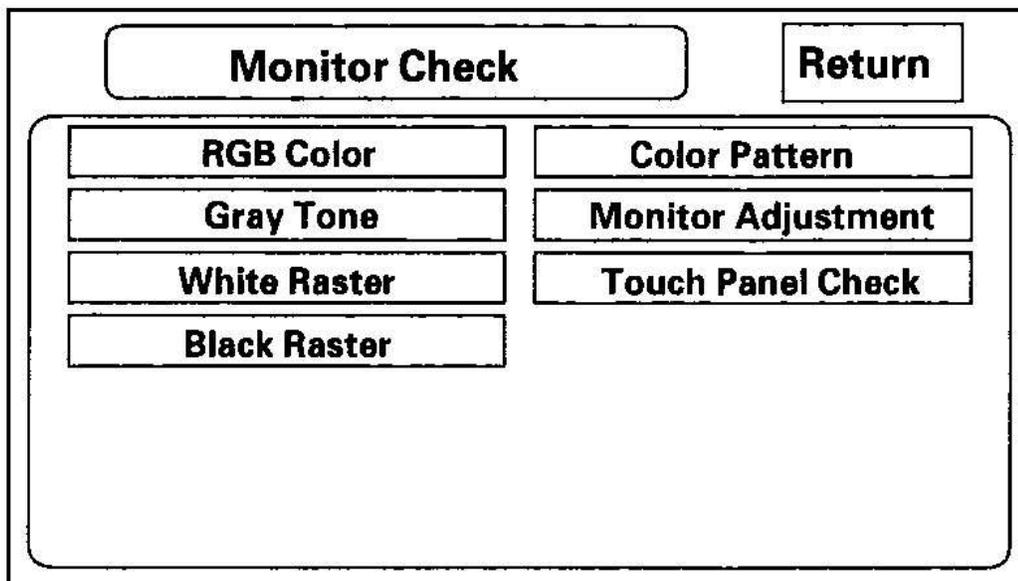
- Hold down the buttons (Menu + Map/Guide + Cancel) for about 5 seconds (the "Select Diagnosis Items" screen will appear)
- Hold down the Map/ Guide button for 5-10 seconds (A screen with a "Complete" button, will appear)
- Touch "Complete", and then the "Return" button (the system may re-boot)
- Restart the vehicle, and confirm normal operation by completing the "PDI of the navigation system" Service Bulletin.

MONITOR CHECK

Overview of the display unit

- The display unit communicates with the navigation unit over its own GA-Net bus. Information is sent to the navigation unit whenever the user activates the touch screen, or buttons. Information sent by the navigation unit to the display unit includes commands to control the LCD back light.
- The navigation unit also sends navigation and rear camera video information to the screen using the Red, Green, Blue, and Composite Video signals.
- The display unit is protected by the security system by daisy-chaining the security signal through it, and then passing the signal to the audio unit.
- The illumination input from the gauge brightness control provides back lighting for the buttons surrounding the screen.

These screens allow troubleshooting of the display unit. Select the item you want to troubleshoot, and follow the diagnostic instructions.



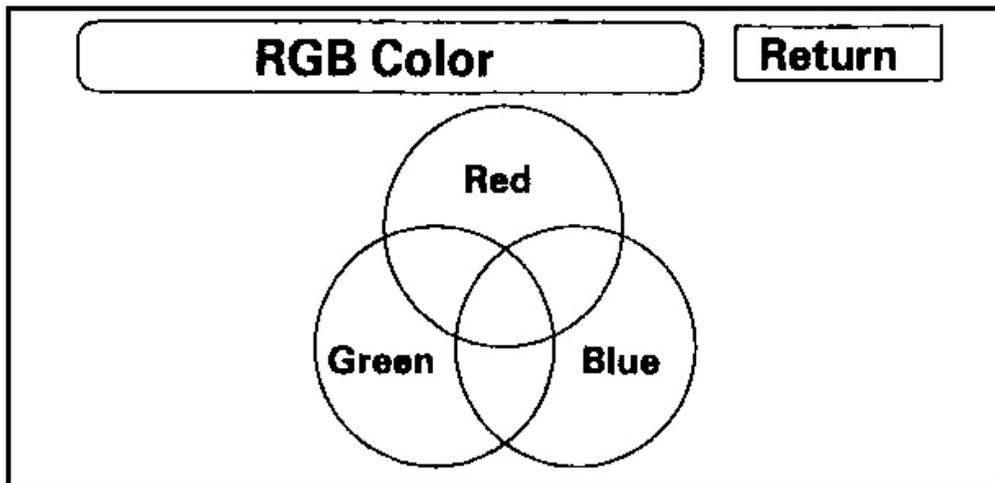
G03642815

Fig. 53: Identifying Monitor Check Display
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

RGB Color

This screen verifies that the display unit is receiving the video (R, G, B and Composite sync) signals properly. The three primary colors should all be shown without distortion. The combination of all three should produce a central white section. If any of the colors are missing, troubleshoot for the color signal (see **PICTURE IS MISSING A COLOR OR TONE (IN ALL GEAR POSITIONS)**). If the picture has lines in it or scrolls horizontally, or vertically, troubleshoot for a Composite sync problem (see **PICTURE HAS**

LINES/ROLLS/OTHER ISSUES).



G03642816

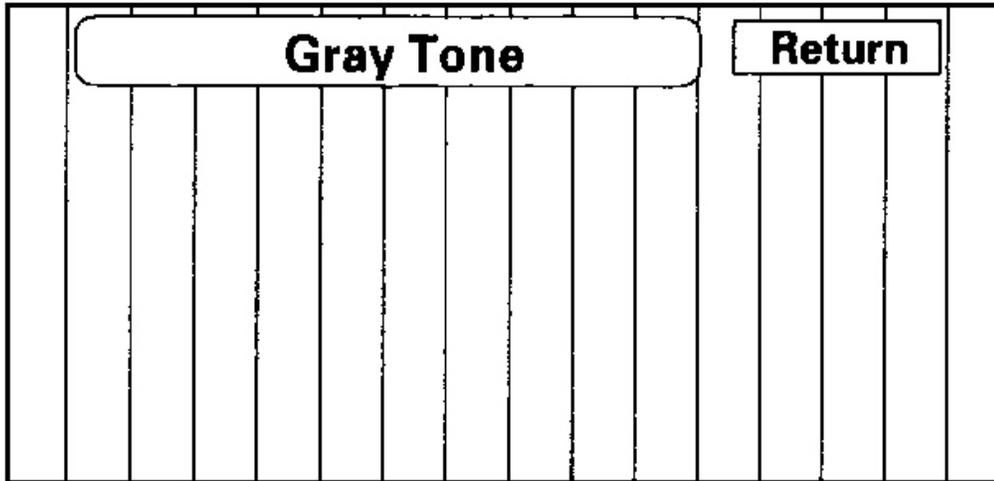
Fig. 54: RGB Color Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Gray Tone

This screen looks for problems with contrast. You should be able to see the changes from bar to bar across the scale. It is normal for the 2 bars on either side to appear the same.

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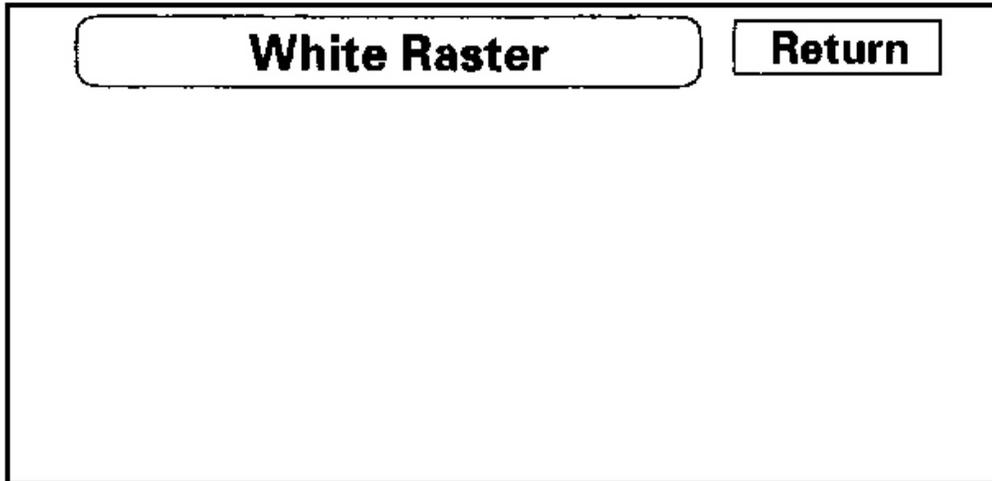


G03642817

Fig. 55: Gray Tone Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

White Raster

The entire display must be shown in white.

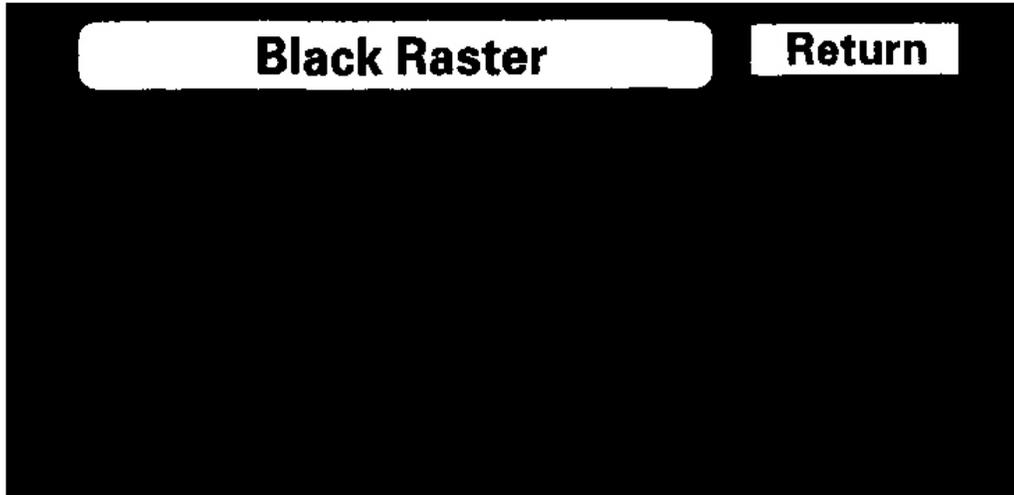


G03642818

Fig. 56: White Raster Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Black Raster

The entire display must be shown in black.



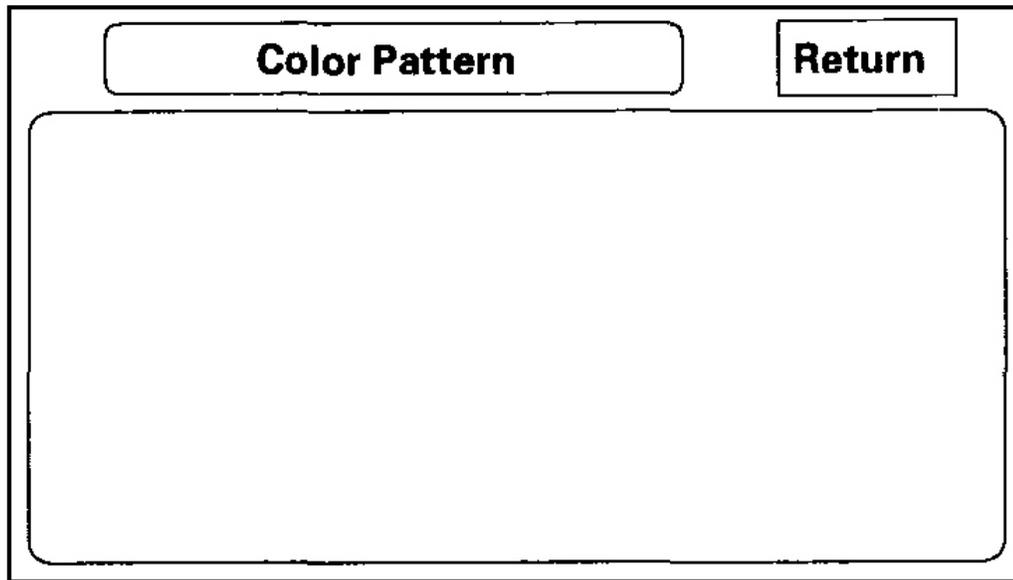
G03642819

Fig. 57: Black Raster Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Color Pattern

The chart below shows the colors being used for the map and menu screens. This is for factory use only. To check the color signal use the "RGB Color" diagnostic found under the Monitor Check.



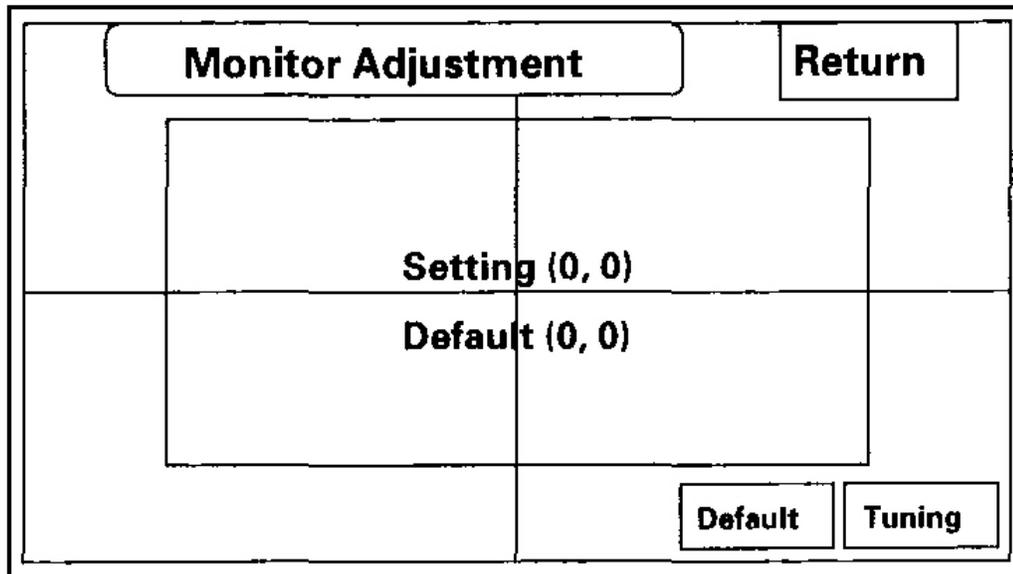
G03642820

Fig. 58: Color Pattern Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Monitor Adjustment

This allows the navigation display to be centered. Use the joystick to move the picture up/down or left/right. It is unlikely that you will ever need to adjust the monitor position. The "Default" button will reset the display position to factory specifications.



G03642821

Fig. 59: Adjusting Monitor

Courtesy of AMERICAN HONDA MOTOR CO., INC.

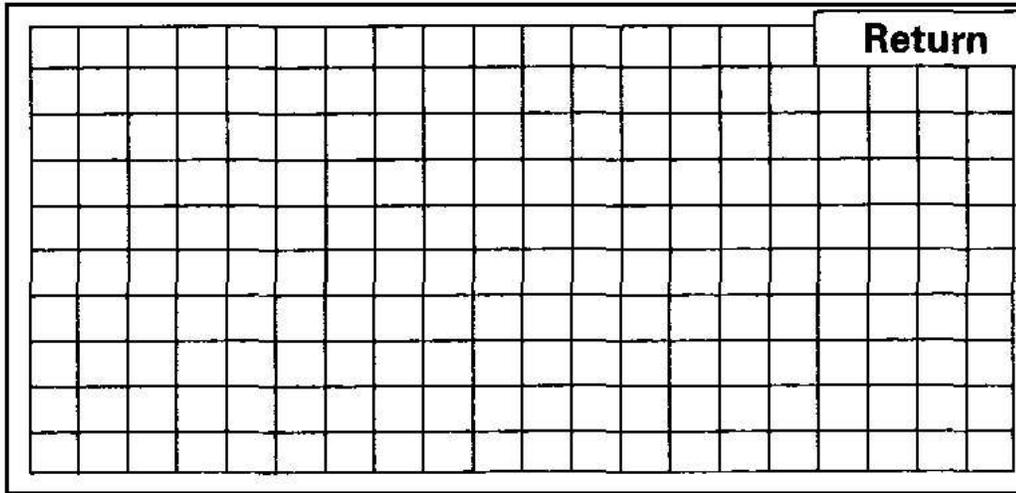
Touch Panel

The panel touch sensing system consists of 10 horizontal and 20 vertical infrared beams. Touching the screen blocks both a horizontal and a vertical beam. Every possible touch position is shown on this diagnostic screen. Touching one of these areas should cause its color to reverse, and sound a "beep". If any areas of the screen either don't respond, or respond at some other location when touched, then replace the display unit. The "Display" diagnostic under in Unit Check provides an additional method to determine if one of the infrared sources or detectors is bad.

NOTE: Direct sunlight can affect this test by falsely triggering the infrared detectors, so perform this diagnostic inside or in a shaded area.

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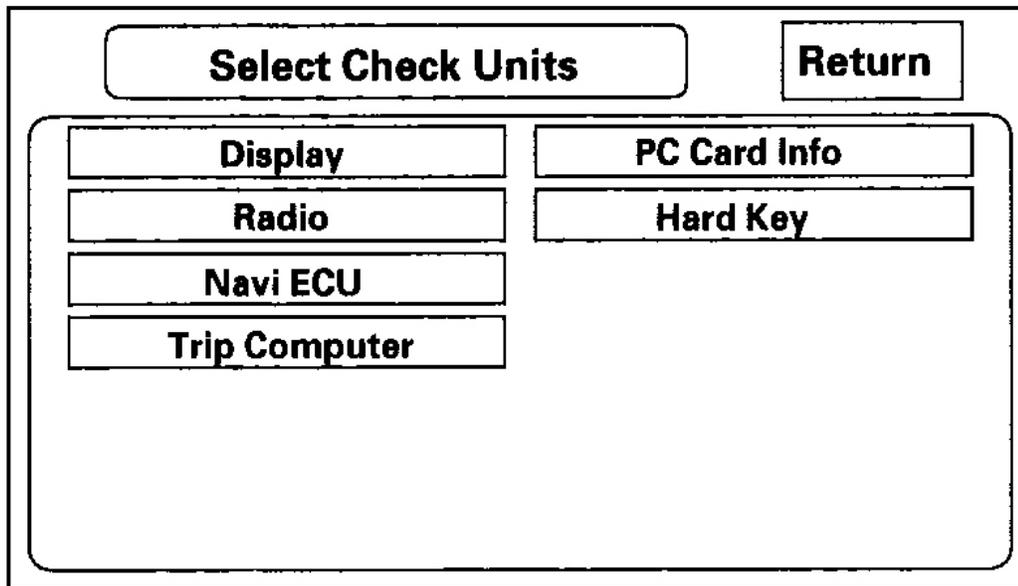


G03642822

Fig. 60: Touch Panel Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

UNIT CHECK

Select the item you want to check and the diagnostic starts.



G03642823

Fig. 61: Select Unit Check Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

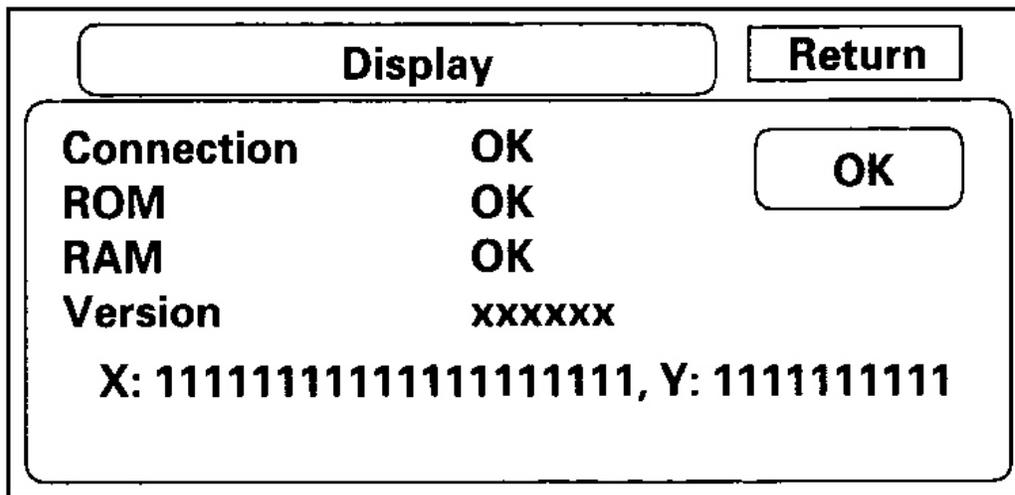
Display

This diagnostic performs additional checks on the communication bus between the control unit and the display. In addition, the internal electronics and touch screen functionality are confirmed.

- When the connection is NG, first check for loose terminals at the navigation unit and the display unit connections. Next check for an open or short in the communication line between the navigation unit and the display unit. If the line is found to have an open or short, replace the affected shielded harness.
- If the ROM or RAM is NG, replace the display unit.
- The version represents the software version in the display.
- The "1" following the X, indicate the 20 working vertical infrared beams/receptors (from left to right). The "1s" following the Y, indicate the 10 working horizontal beams (from top to bottom). If any one of the "1s" is a zero, this indicates that there is a problem with one of the beams or receptors. Check all around the inside rim of the navigation screen for dirt or anything that may be blocking a beam. If nothing is found, replace the display unit. See the display unit diagram in the "System Description" showing the infrared beam layout. Individual touch positions can be verified by running the "Touch Panel" diagnostic under Monitor Check.

NOTE: When selecting this diagnostic from "Unit Check," quickly remove your fingers from the touchscreen to avoid a false detection of the infrared

sensors.



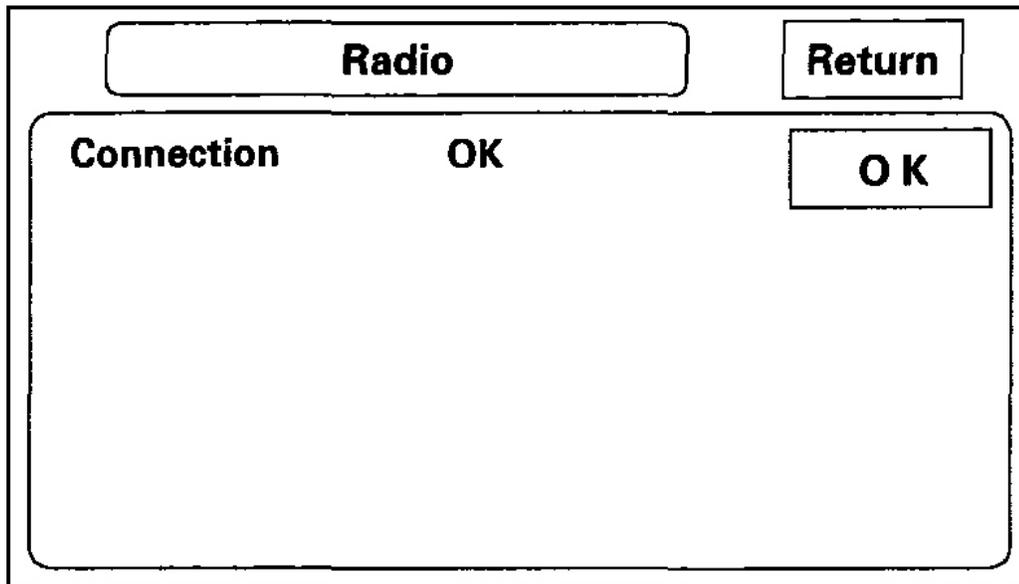
G03642824

Fig. 62: Identifying Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Radio

This diagnostic checks the audio connections. If not OK, do the troubleshooting for audio system.



G03642825

Fig. 63: Identifying Radio Display

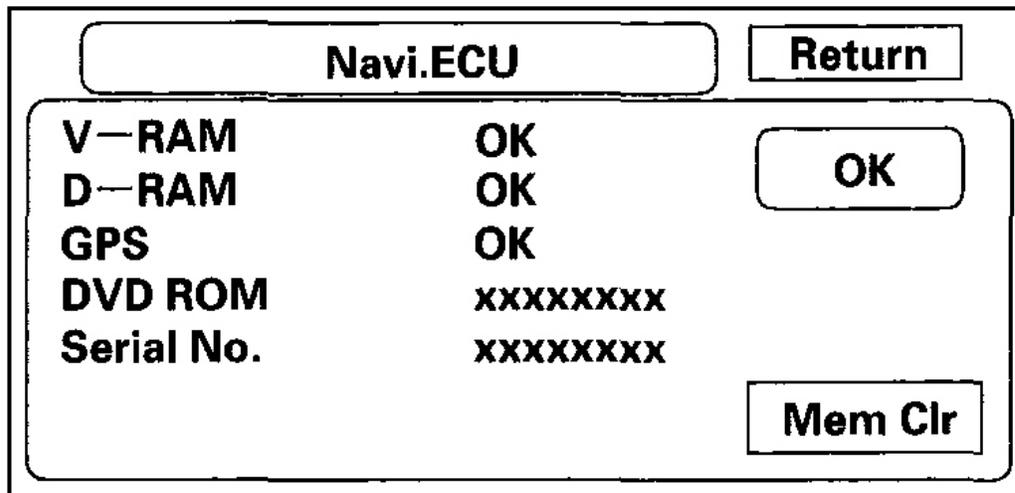
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Navi ECU

This screen looks for problems in the navigation unit. When this diagnostic is initiated, there is a delay of up to a minute while it runs.

NOTE: This diagnostic cannot be cancelled when running.

- If "V-RAM" or "D-RAM" is NG, then replace the navigation unit.
- If "GPS" indicates "NG (ANT)", then check the entire GPS antenna wire from the navigation unit to the antenna. If the wire is crushed or damaged, try a known good antenna. If this diagnostic reads OK, then order a new GPS antenna. If the diagnostic still reads NG (ANT), then replace the navigation unit.
- "DVD ROM" represents the database version on the DVD. This information can also be found in Setup Screen 4 by selecting System Information.
- "Serial No." should be the same as the serial number found on the underside of the navigation unit. This number is needed to obtain the security code from the Interactive Network (IN) system.
- The Mem Clr is for factory use and should not be used unless instructed by the factory. Selecting this will erase the customer's settings, personal information, and anything else stored in memory.



G03642826

Fig. 64: Identifying Navi ECU Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Trip Computer

This screen shows current internal values used for trip computer calculations. They are for factory use only.

- Simulation "Start" is for factory use.
- "Data Save" should always be OFF. It is for factory use only.

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Trip Computer			Return
Distance	0	mm	
FUP	0.0	mL	
Sampled FL	00	L	00 gal
Measured RF	10	L	03 gal
Refuel FL	00	L	00 gal
Calculated RF	00	L	00 gal
RAFE	00	km / L	00 mpg
Displayed Range	-320	km	-199 miles
Calculated Range	00	km	00 miles
Calculated Range1/2	0		0
MPG Setting	3		
Adjustment Range	-32000		
			Simulation
			Start
			Date Save
			ON OFF

G03642827

Fig. 65: Identifying Trip Computer

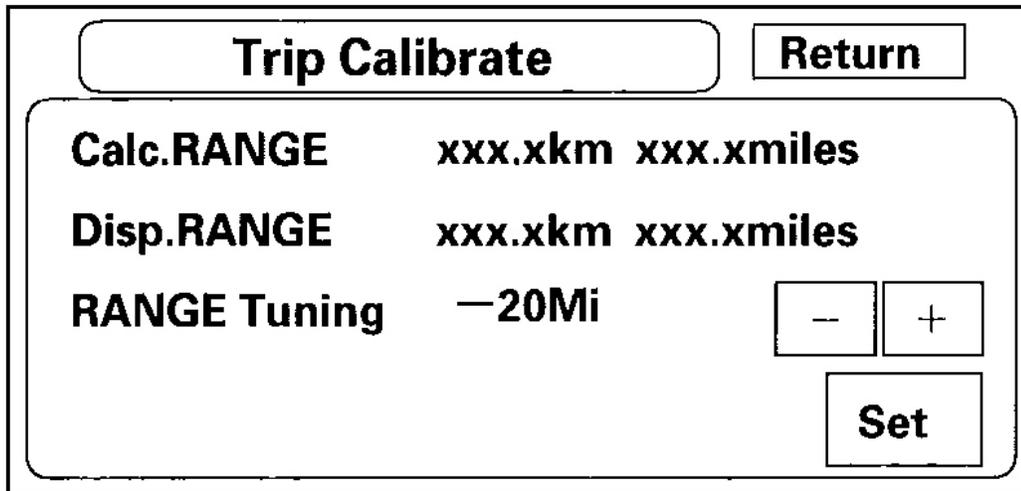
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Trip Calibrate

By holding down the MENU button while on the "Trip Information" screen, you will see the screen below. This screen allows you to adjust the vehicle range (distance to empty).

- "Calc. RANGE" is the calculated value.
- "Disp. RANGE" is the distance displayed on the trip computer "Range" field. If it reads "0", the vehicle will have enough fuel to travel approximately 20 miles.
- Range Tuning can be adjusted "+" or "-" to adjust the range to empty. It is recommended that this value not be changed.

NOTE: Setting the range offset too low (+10) could result in the vehicle running out of gas before the display reads "0". Make changes slowly when changing this value.



G03642828

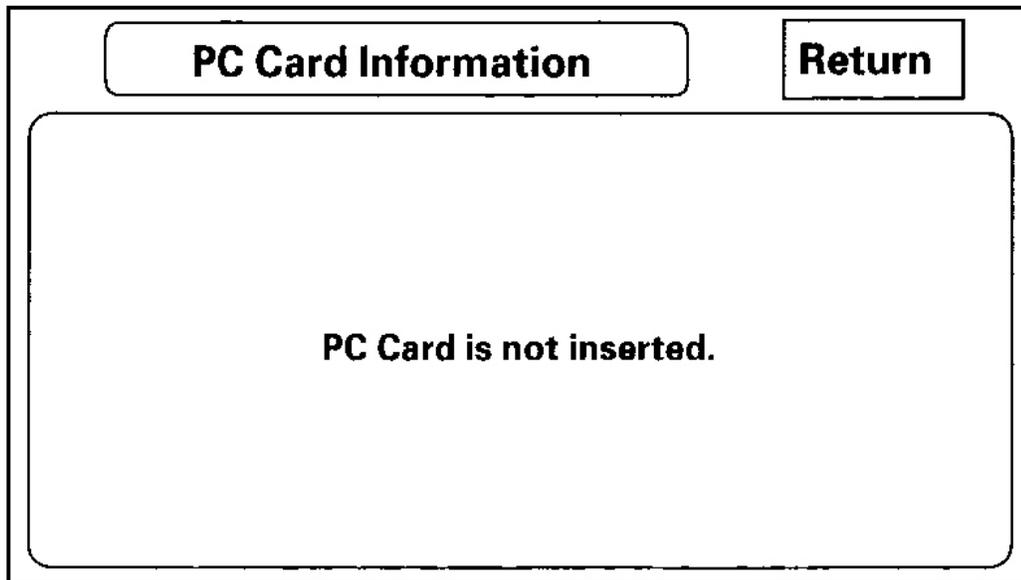
Fig. 66: Identifying Trip Calibrate

Courtesy of AMERICAN HONDA MOTOR CO., INC.

PC Card info.

There is no PC Card in the PC slot, and the screen should say, "PC Card is not inserted."

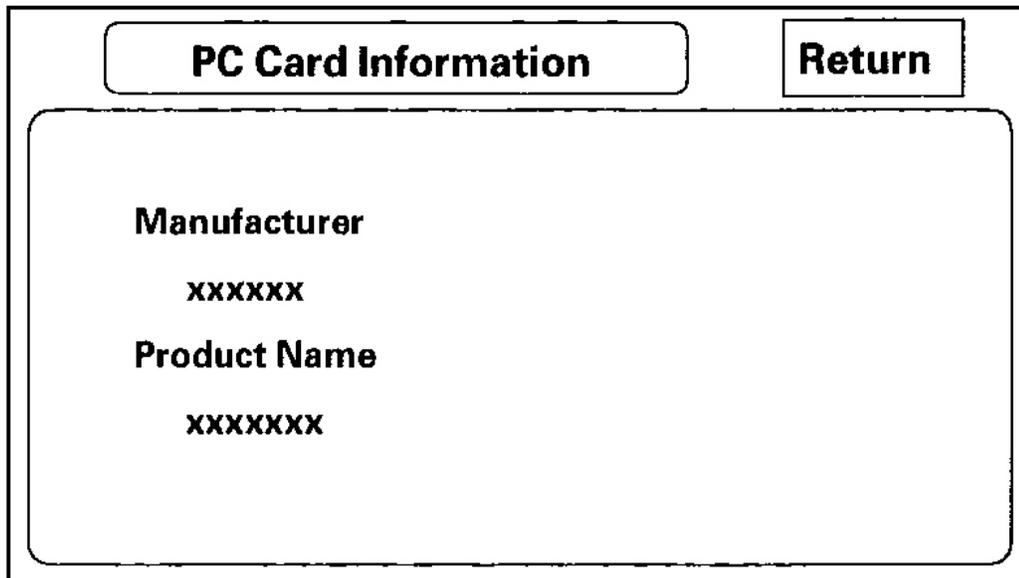
NOTE: Do not insert any card or object into the slot.



G03642829

Fig. 67: Identifying PC Card Information (1 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

If the factory provides a PC card and instructs you to insert a card, then the screen displays the Manufacturer, and Product Name as shown in the following screen.



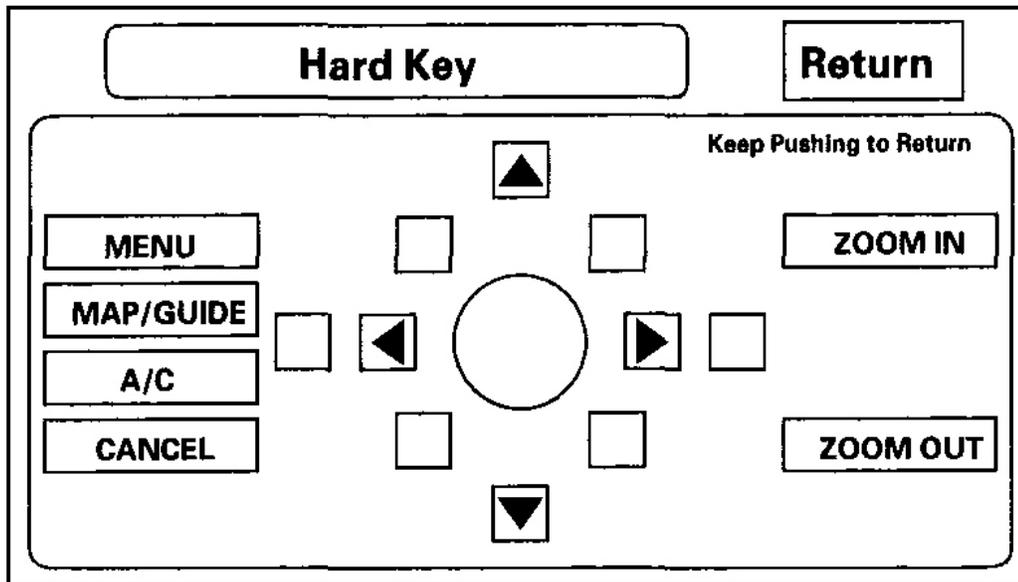
G03642830

Fig. 68: Identifying PC Card Information (2 Of 2)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Hard Key

This diagnostic tests the joystick, and the buttons that surround it. For this model, the joystick and buttons utilize the GA-Net bus for communication to the navigation control unit.

To complete the test, touch each button, and move the joystick to each indicated position. As each function is tested, the corresponding button on the display should highlight. To exit, push in and hold the joystick.



G03642831

Fig. 69: Identifying Hard Key

Courtesy of AMERICAN HONDA MOTOR CO., INC.

CAR STATUS

This screen is used to confirm that the navigation unit is properly receiving input signals. Signals equal to (0) are OFF, and signals equal to (1) are ON. If the value on the display does not match the actual vehicle status, then check the wire carrying the signal.

- VSP-Vehicle Speed Pulse from PCM (Pin 6 of C-connector)
 - a. OFF (0) when vehicle is not moving
 - b. ON (1) when vehicle is moving

The VSP comes from the PCM as a dedicated signal. Internally, the navigation unit compares the actual VP on the map against street data to adjust the pulse to speed scaling factor. As this scaling factor becomes more accurate, the "Level" gradually increases from 0 to 10 (see the **TIRE CALIBRATE** diagnostic screen).

- BACK-Reverse indication from taillight relay (Pin 5 of C-connector)
 - a. OFF (0) when shift lever is in any position other than reverse
 - b. ON (1) when shift lever is in reverse

The Back signal is used by the navigation unit to allow the map screen to show the VP moving backwards when

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in reverse and to activate the rearview camera. This signal is needed because the Speed Pulse has no direction indication.

This signal is obtained off of the F-CAN bus. For problems, perform F-CAN troubleshooting. Diagnostic trouble codes (DTCs) for the F-CAN can be retrieved with the HDS (Honda Diagnostic System).

- ILL-Illumination Indication (Pin 5 of navigation unit A-connector)
 - a. OFF (0) when parking lights, or headlights are off
 - b. ON (1) when parking lights, or headlights are off

This signal is used by the navigation unit to determine whether to put the navigation screen into the Day or Night brightness mode. (Setup screen 1)

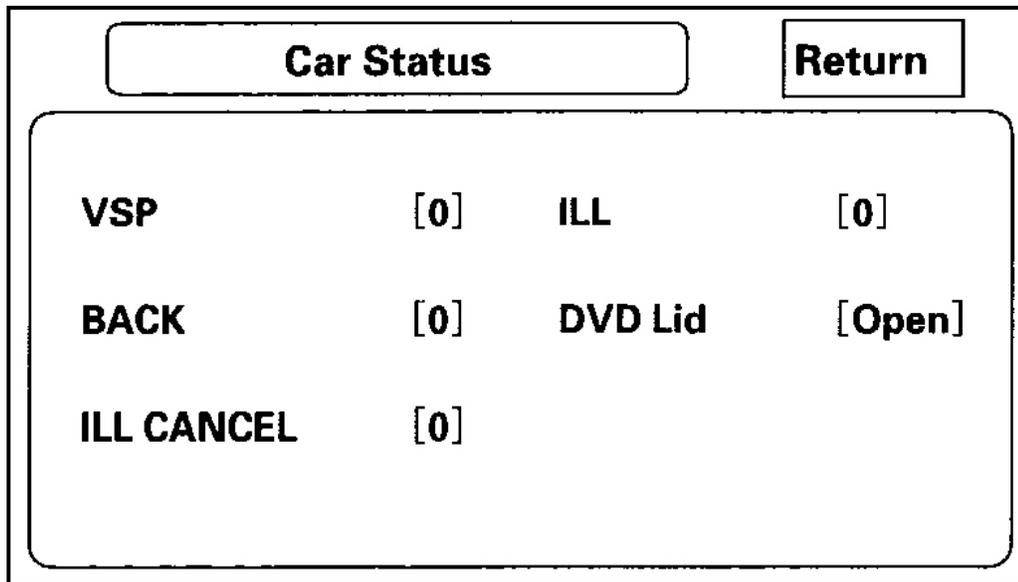
- DVD Lid-senses if DVD door is open
 - a. (Close) when door is closed
 - b. (Open) when door is open

The navigation unit has a micro switch to detect this. If open is indicated when the door is closed, replace the navigation unit.

- PC Card Lid-Senses if PC Card door is open
 - a. (Close) when door is closed
 - b. (Open) when door is open

The navigation unit has a micro switch to detect this. If open is indicated when the door is slid shut, then replace the navigation unit. This slot is for insertion of PC Flash memory cards for gathering diagnostic information. This is for factory use only.

NOTE: If the customer is complaining that the PC door open message appears, but the operation of the door appears to be normal, then most likely their passenger may be accidentally kicking the door open with the heel of their shoes. Take a piece of clear tape and cover the door latch handle to prevent accidental opening.



G03642832

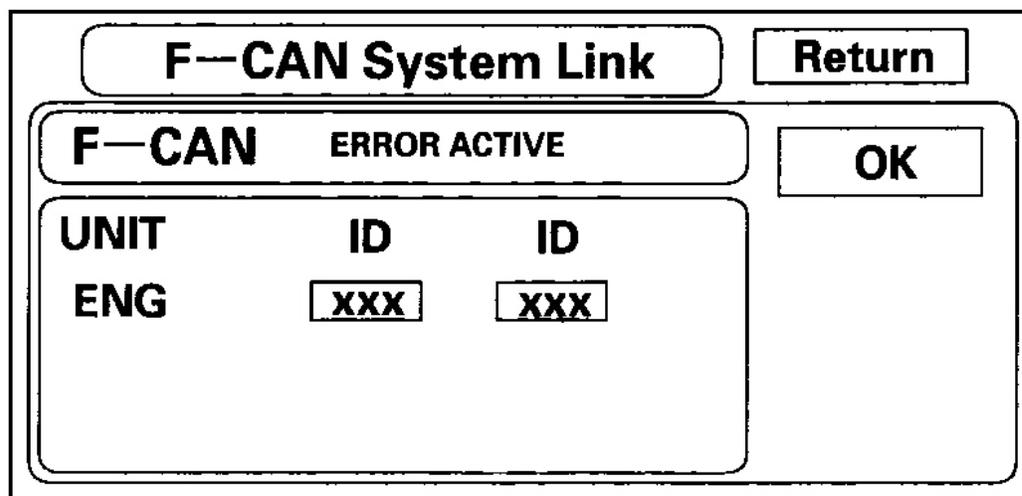
Fig. 70: Identifying Car Status Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

F-CAN SYSTEM LINK

F-CAN (Fast Controller Area Network) passes information between processors on the network. For example, the F-CAN network is used to pass fuel pulses between the PCM and the navigation unit for the trip computer function. The F-CAN network uses a communication protocol that transmits data at 500 Kbps.

- If the diagnostic screen below reads NG with the ignition switch ON (II), then diagnostic trouble codes (DTCs) for the F-CAN can be retrieved with the HDS (Honda Diagnostic System). The data displayed in the ID boxes is irrelevant.
- For more details on troubleshooting the F-CAN, refer to the multiplex system.



G03642833

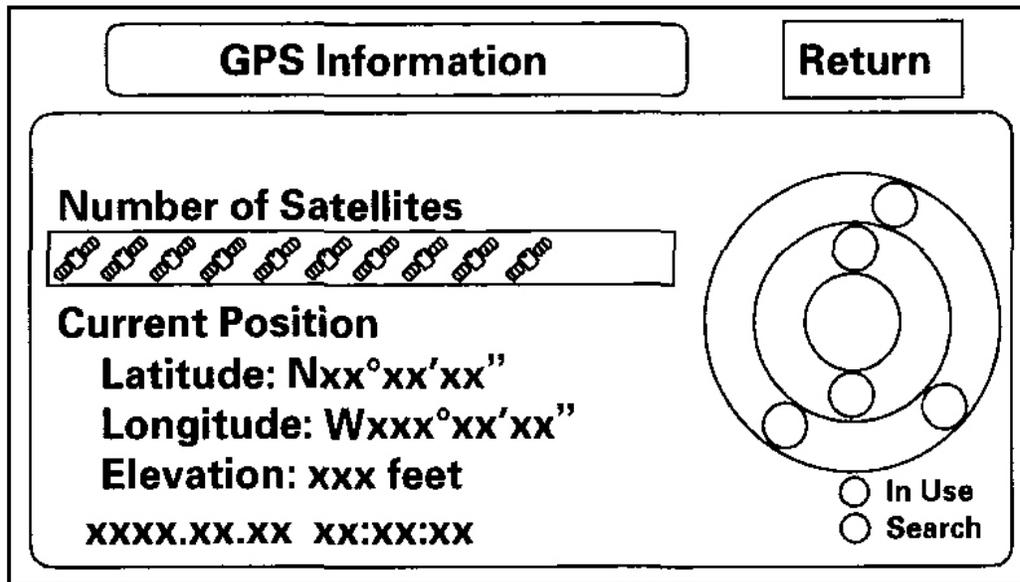
Fig. 71: Identifying F-CAN System Link Display
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

GPS INFORMATION

This screen shows the current status of GPS reception. The circular diagram shows the current location of the GPS satellites (yellow dots) as they would appear in the sky. The outer circle represents the horizon (0 degrees elevation). The middle and inner circles represent 30 and 60 degrees respectively. The very center of the diagram (90 degrees elevation) is directly overhead. Naturally, nearby obstructions, like tall buildings will block satellites in that direction. That is why it is necessary to be in an open area to effectively troubleshoot GPS reception issues. There are always 24 "active" GPS satellites in orbit. Because satellites fail, and have to be removed from service, spares always parked in orbit, ready to be activated. This is why the PRN (satellite ID number) can be greater than 24.

NOTE: To use this screen for troubleshooting, the vehicle should be outside, away from buildings, tall trees, and high-tension wires for at least 10 minutes with the engine running.

- The "Number of Satellites" box shows the number of acquired satellites (maximum of 12). It should contain 3 or more icons. If not troubleshoot for "GPS icon is white or not shown" (see **GPS ICON IS WHITE OR NOT SHOWN**).
- The "Current Position" shows latitude, longitude, and elevation (in meters). If there are less than 3 satellites, the elevation can be grossly inaccurate.
- The Date/Time field shows the current date, and also a time that includes daylight savings and other offsets entered by the customer in Setup screen 2 "Adjust Time Zone/Clock".

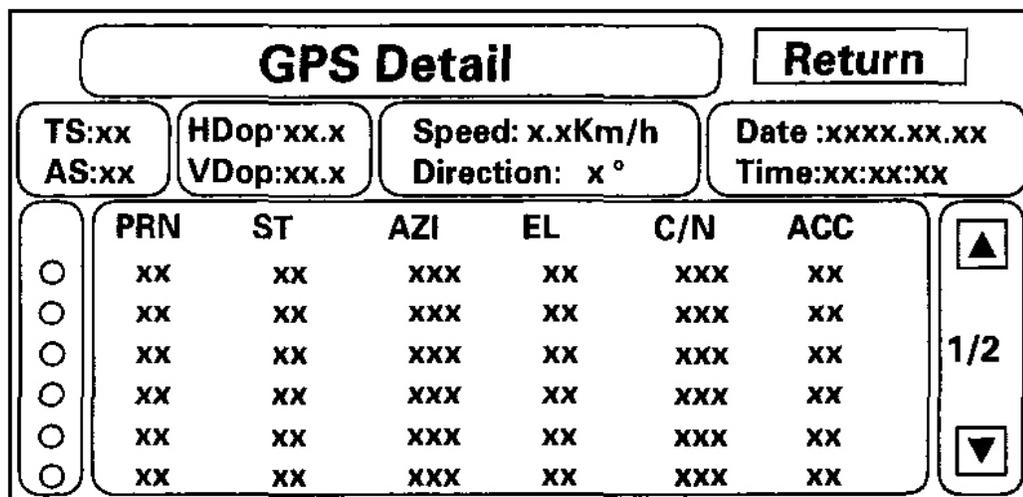


G03642834

Fig. 72: Identifying GPS Information Display
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

GPS DETAIL

By pressing and holding the MENU button for 10 seconds, a GPS Detail screen is displayed. This screen displays real time incoming satellite positional data. Most of the information shown on this screen is for factory use, however some of the data can indicate partial GPS signal interference.



G03642835

Fig. 73: Identifying GPS Detail Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- The box TS/AS and HDop/VDop is for factory use.
- The Speed and Direction information is updated in real time when driving, and can be used to detect intermittent speed sensor problems.
- The Date/Time Information is the same as in Setup screen "Adjust Time Zone/Clock".
- If the "3D" icon is shown above the yellow dots, this implies that at least 4 satellites are available for map positioning, and the "GPS" indicator on the map screen will be green. See the "**GLOBAL POSITIONING SYSTEM**" detailed explanation in the "System Description".
- If the row of data in the table below begins with a "yellow dot", the AZI and EL fields can be used to locate each satellite on the circular GPS diagram (see prior screen).

NOTE: The data shown in the GPS Detail screen is an example only.

The table of values shown on the screen below has the following columns:

GPS DETAIL SCREEN VALUES

Column	Description	Problem indication
Active	Active satellites (Yellow Dot)	If "3D" is missing, follow GPS icon is white troubleshooting (see GPS ICON IS WHITE OR NOT SHOWN).
PRN	The satellite ID number	

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ST	The status: 0= cannot view or searching, 2= acquiring	If all 0, then, follow GPS icon is white troubleshooting (see GPS ICON IS WHITE OR NOT SHOWN).
AZI	Azimuth, the angle (0-360) clockwise from north	
EL	Elevation from the horizon (90 deg is overhead)	
C/N	N/A	Healthy signal is 49-52, no signal: 27-33
ACC	N/A	

YAW RATE

This diagnostic checks the yaw rate sensor in the control unit. This device detects when the vehicle turns, and repositions the vehicle position icon on the map screen. For more detailed information, see the yaw rate sensor theory of operation under "System Description"

- "Sensor" indicates the voltage output from the yaw rate sensor. It should indicate about 2.500 volts when stopped.
- "Offset" is the reference voltage or standard within the yaw rate sensor. It also should indicate about 2.500 volts when stopped.
- A "sensor" output voltage **HIGHER** than the "Offset" voltage indicates that the vehicle is turning to the right.
- A "sensor" output voltage **LOWER** than the "Offset" voltage indicates that the vehicle is turning to the left.
- The yaw rate offset, and sensor should both indicate about 2.500 volts when stopped. If either reads zero, or 5.000 volts, replace the navigation unit.
- The yaw rate offset and sensor should be within +/-0.01 V of each other when stopped. The sensor value should change relative to the offset as the car is turned while driving. If not, replace the navigation unit.

Example: Car stopped

YAW RATE OFFSET AND SENSOR VALUES (CAR STOPPED)

Normal		Abnormal	
Offset	2.526 V	Offset	2.526 V
Sensor	2.516-2.536 V	Sensor	2.623 V

Example: Car Turning

YAW RATE OFFSET AND SENSOR VALUES (CAR TURNING)

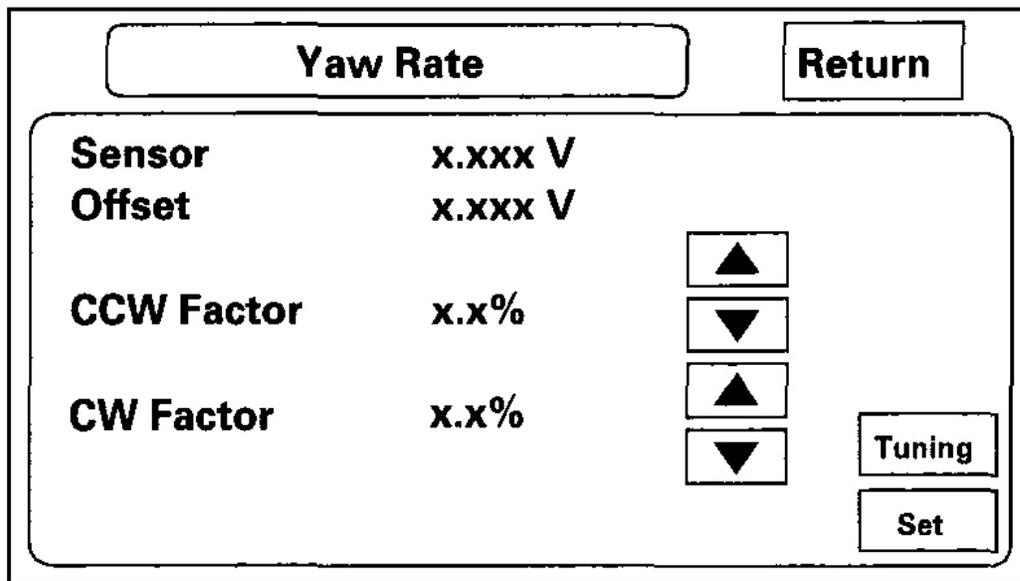
Normal		Abnormal	
Offset	2.526 V	Offset	2.526 V

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Sensor	2.678 V (right turn) 2.478 V (left turn)	Sensor	2.623 V (no change on turns)
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- The settings "CCW Cal Factor", "CW Cal Factor", and "Set" are for factory use only. THIS SHOULD NEVER BE USED.
- Touch "Tuning" to view small but gradual yaw rate problems.



G03642836

Fig. 74: Identifying Yaw Rate Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

Yaw Rate Tuning

This diagnostic allows you to graphically display problems with the yaw rate sensor.

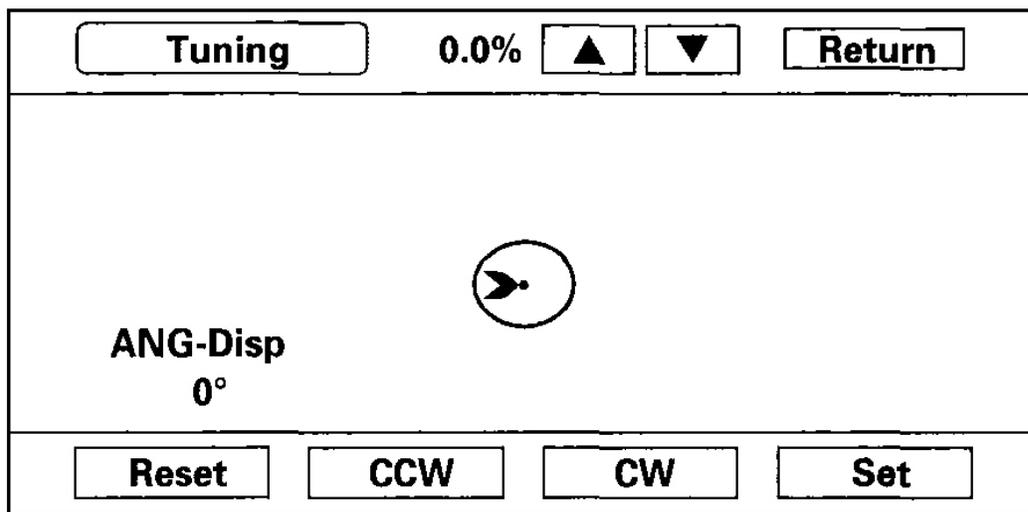
- The "ANG-Disp" value accumulates any differences between the "offset", and "sensor" voltages (see Yaw Rate diagnostic). When the sensor is healthy, the random changes in these two voltages generally cancels out, so the value is 0. However if one voltage is consistently higher than the other, then the "ANG-Disp" value accumulates the constant change.
- The "Reset" button temporarily clears the angular accumulation (ANG-Disp), and clears the display dots.
- Do not touch the "CCW" or "CW", or "Set" buttons. These are used for factory setup only.

Two tests are explained below. For gross problems with the sensor, the stationary test usually confirms whether the sensor is defective. For yaw rate issues related to driving, perform the road test described below.

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1. Stationary test: If the "VP" icon spins in place and the "ANG-Disp" value slowly increases or decreases in value, the yaw rate sensor is defective. Replace the Navigation control unit.
2. Road test: Drive the vehicle on a very straight road. Enter the diagnostic mode, select "Yaw rate", and touch the "Tuning" button. While driving down a straight road, the white "dots" should trace a straight line across the screen. However, if you are driving on a straight road, and you notice the dots constantly dropping down or heading up as you drive, the navigation control unit's yaw sensor is defective. You can touch "Reset" to clear "ANG-Disp", and dotted line.
3. If either test above fails, please enter "Yaw rate sensor defective" for the problem description, on the "Navigation core return form".



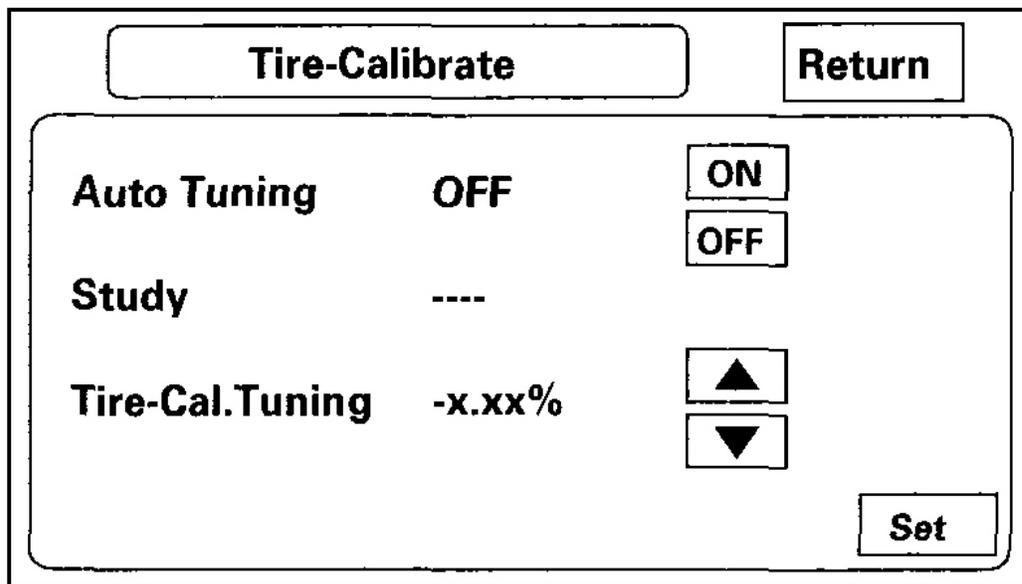
G03642837

Fig. 75: Identifying Tuning Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

TIRE CALIBRATE

As the vehicle moves, the navigation system receives speed pulses from the PCM. These pulses are converted using a conversion factor to a mph speed that moves the vehicle position (VP) on the map. The navigation system has an internal tuning function that generates and refines this factor based on actual driving. The "Level" indicates the status of the tuning. At initialization, it begins at 0, and increases to 10 as the navigation system is used.

- The "Auto Tuning" is factory set to "ON", and should remain on.
- The "LEVEL" indicates the tuning status. If it is less than 10, the unit is still calibrating.
- The "Tire-Cal. Tuning" and Set should not be used. It is for factory use only.

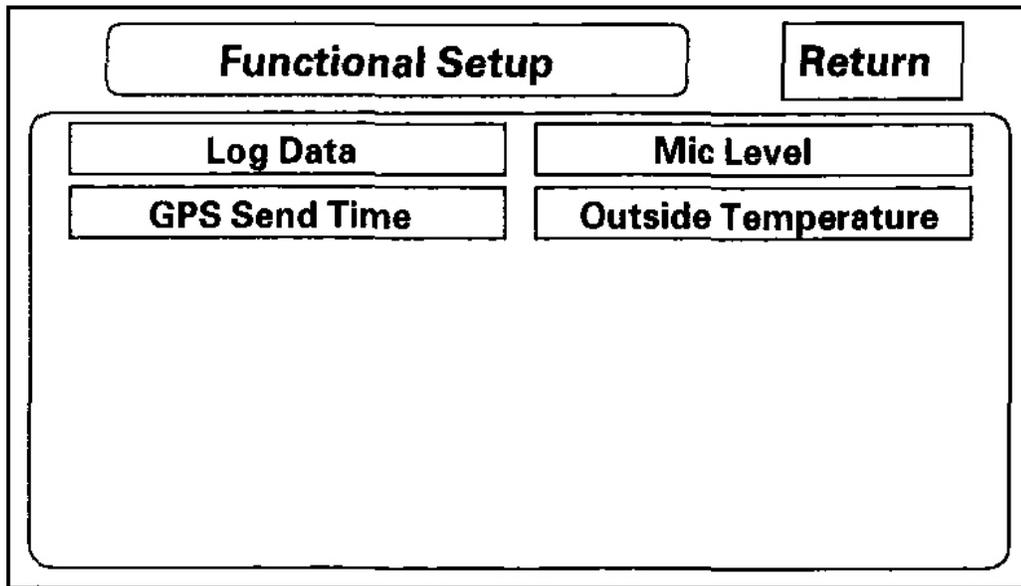


G03642838

Fig. 76: Identifying Tire Calibrate Display
Courtesy of AMERICAN HONDA MOTOR CO., INC.

FUNCTIONAL SETUP

Select the item you want to check.



G03642839

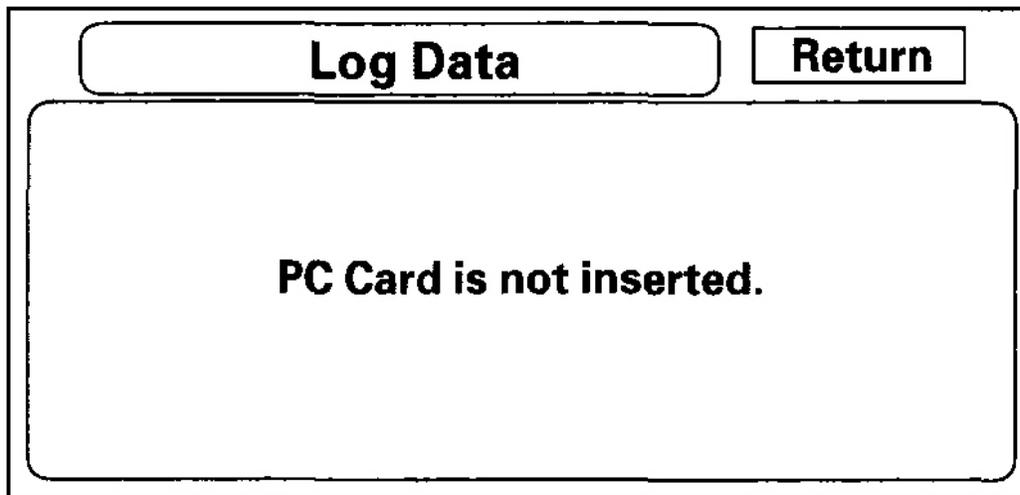
Fig. 77: Functional Setup Display

Courtesy of AMERICAN HONDA MOTOR CO., INC.

Log Data

This screen allows the factory to collect log data to troubleshoot navigation system issues.

- Normally there is no card in the "PC Card slot", and the PC slot door should always be closed.

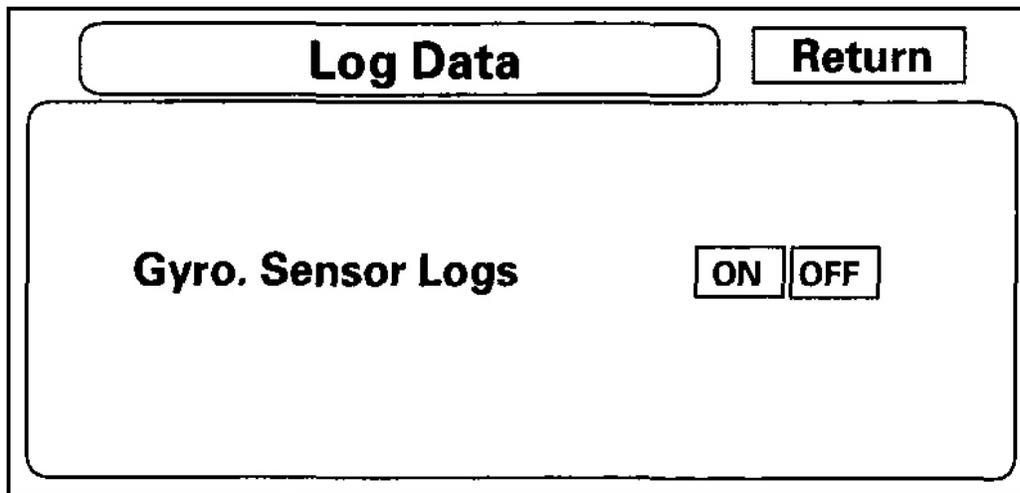


G03642840

Fig. 78: Log Data Display ("PC Card Slot")

Courtesy of AMERICAN HONDA MOTOR CO., INC.

- However, if the factory provides a PC card and instructs you to insert it into the card slot (label side up), and then slide the PC Card door shut. If instructed by the factory, select "Gyro. Sensor Logs ON". Follow the factory procedure for gathering test data, and properly ending the test.



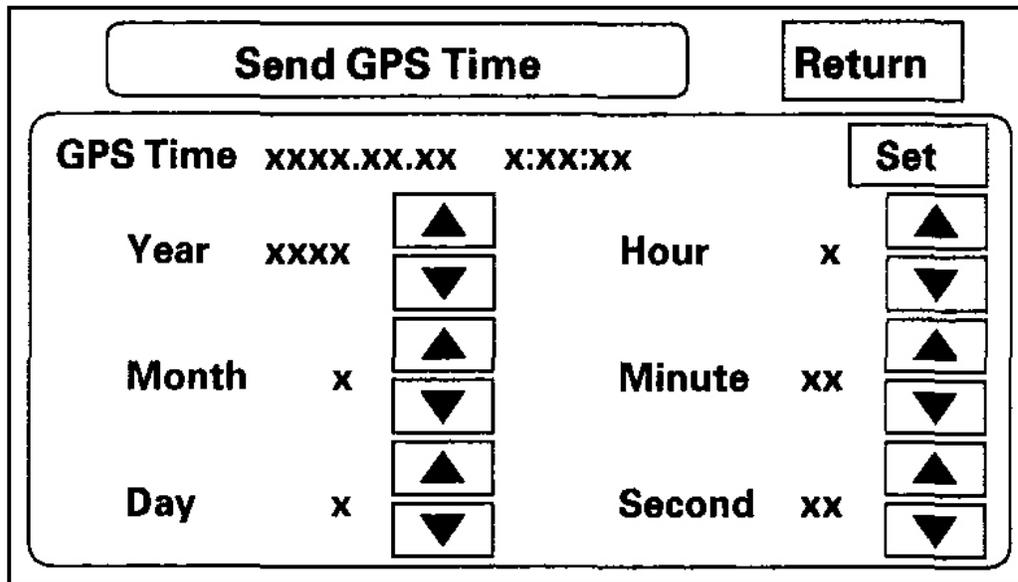
G03642841

Fig. 79: Log Data Display ("Gyro. Sensor Logs ON")
Courtesy of AMERICAN HONDA MOTOR CO., INC.

GPS Send Time

This screen is for factory use only, do not adjust. It allows adjustment of the GPS time. This display updates in real time.

- "GPS Time" is the time as received from the GPS satellites. It is in Greenwich Mean Time (GMT).
- "System Time" is the internal time used by the navigation unit to calculate your position on the map. It is also in Greenwich Mean Time (GMT).
- "Display Time" is the time shown on Setup screen 2 "Adjust Time Zone/Clock", and reflects any changes due to daylight savings time or time adjustments entered by the customer.
- Date, Hour, Minute, and "Set" should not be used.



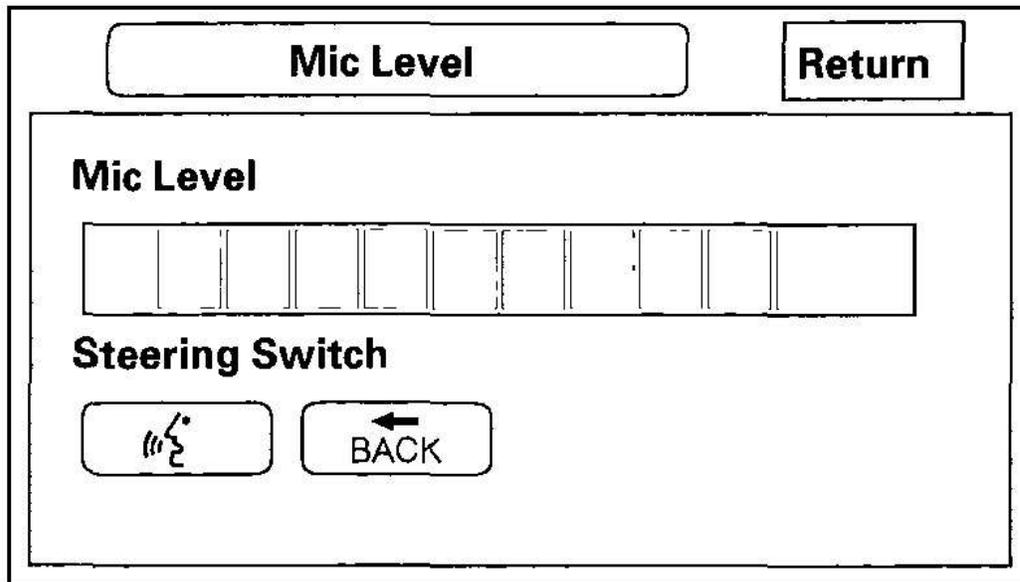
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Fig. 80: Identifying GPS Send Time Display
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

Mic Level

This diagnostic allows you to independently test the microphone and the ON Hook and OFF Hook switch buttons. They are used to activate the voice control system. The microphone is located near the map light in the ceiling. It is directional, and works best if the voice is coming from the drivers seat.

- Press the ON Hook switch button on the steering wheel, and in a normal voice say "testing". The TALK indicator on the screen should momentarily become green, and the text "Now Recording..." should appear in yellow. In addition, the Mic Level indicator should move at least to the 6th bar. If the Talk indicator on the screen does not briefly become green, then check the wiring from the ON Hook switch button to the navigation unit. If there is no "Mic Level" movement when you speak, then you should check the wire running from the microphone to the control unit.
- Press the OFF Hook switch button on the steering wheel. This should cause the Cancel indicator on the screen to momentarily become green. If it does not briefly change to green, then check the wiring from the steering wheel OFF Hook switch button to the navigation unit.



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Fig. 81: Identifying Mic Level Display
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

OUTSIDE TEMP. CAL.

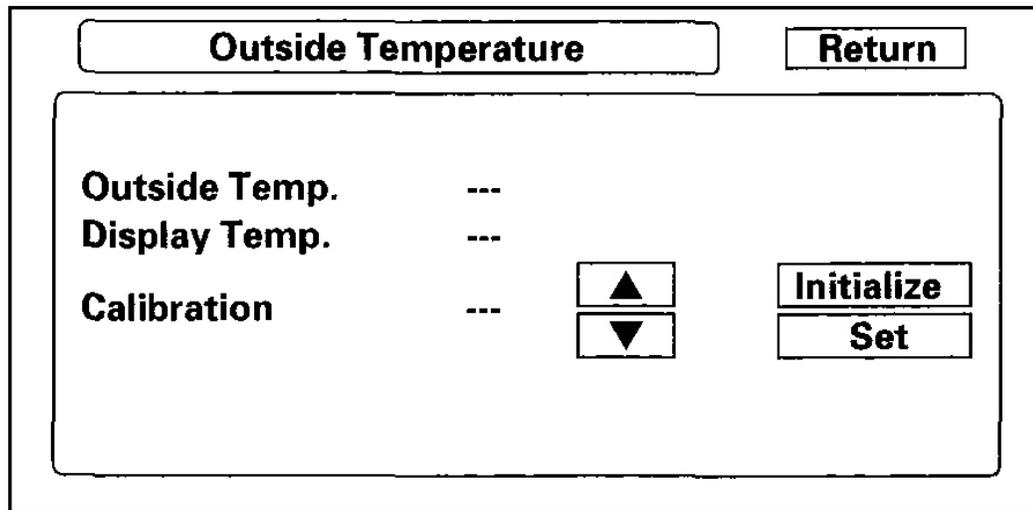
The navigation unit receives the outside temperature signal from the climate control unit, then the display unit indicates the outside temperature. If you think the indicated temperature different from actual temperature, calibrate the indicated temperature using this screen.

Std. button: Return to default setting.

"UTRIF" button: 1° F up

"DTRIF" button: 1° F down

Set button: Set the calibration setting.



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Fig. 82: Identifying Outside Temp. Cal. Display
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: In almost all cases, the temperature does not actually need adjustment. The customer is typically unaware that there is damping logic deliberately built into the temperature reading to avoid temperature spikes due to the hot pavement, or heat from the vehicle in front of you. The damping logic causes sluggishness that the customer interprets as inaccuracy.

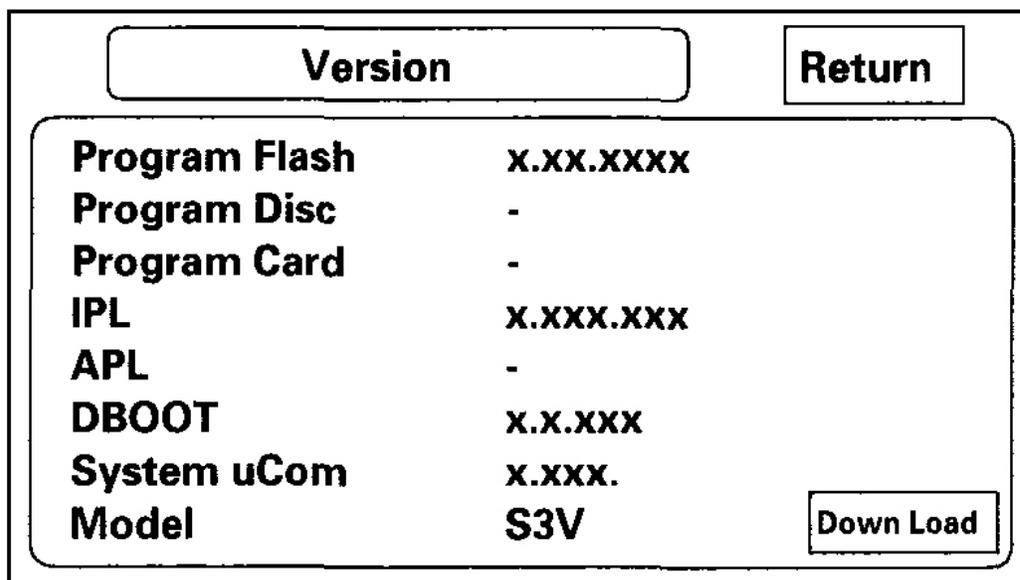
VERSION

This screen displays the current version of the program, and allows the loading of a new version of the program either from a CD/DVD or from a PC card.

- Program Flash is the version of the navigation program in memory.
- Program Disc is the version of the program on the DVD.
- The Values "IPL", "APL", "DBOOT", and "System uCom" are for factory use.
- The value for "Models" should begin with the letters "S3V", and indicates that the navigation unit is for an MDX. If any other letters appear after "Models", then verify the part number on the underside of the navigation unit, and replace the navigation unit if necessary.
- "Download" should never be touched unless instructed by the factory. Touching download overwrites the navigation software version in memory, with the software version on the DVD.

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Fig. 83: Identifying Version Display
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

NOTE: If any model number other than S3V is displayed, replace the navigation unit with the correct part. The model code tells the navigation unit what software to load off the DVD.

Error Message Table

ERROR MESSAGE

Screen Error Message	Solution
Navigation system is unable to acquire a proper GPS signal.	Make sure there is nothing on the rear package tray blocking the GPS antenna. If not, move the vehicle to an open space away from tall buildings, trees, etc. Rear window tinting and aftermarket devices can affect the GPS reception.
Navigation unit door is open or No DVD disc installed. Please check system.	Make sure the navigation DVD is installed with the label side up and the navigation unit door is fully snapped closed.
PC card slot door is open. Please check system.	Make sure that the sliding door for the PC card is fully closed.
No DVD disc, please check	Check that the navigation DVD is installed with the label side up (refer to

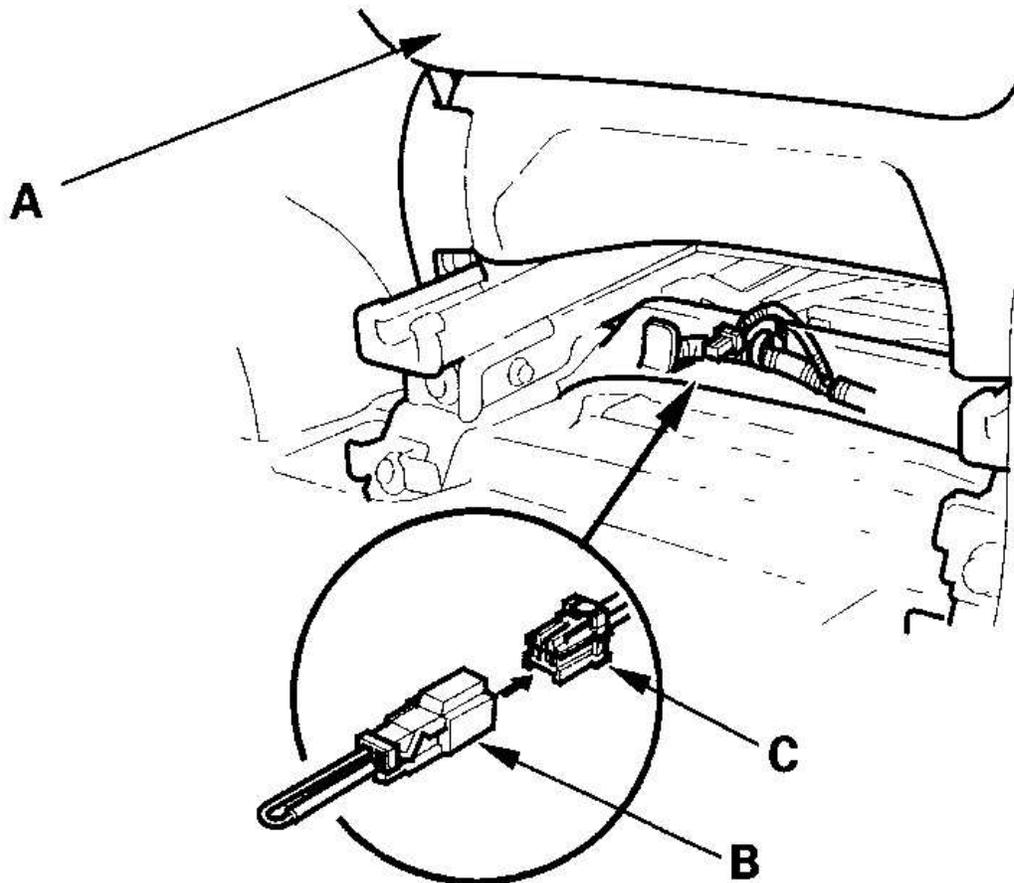
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system.	navigation service manual).
Display temp is too high. System will shut down until display cools down.	This message will appear briefly when the display temperature is too high, and then the display will turn off until the temperature cools down. The system will turn back on when the display cools down.
Outside temperature is low; system will take a while to start up.	The temperature is below -30° C and the navigation unit has difficulties reading the DVD. The system will start up when the temperature warms up.
DVD disc reading error (unformatted), please consult your dealer.	Check the DVD source for deep scratches or other damage. Make sure you are using an official Honda navigation DVD (orange in color). The system cannot read other mapping databases or video DVDs. If the problem persists, see your dealer.
Route has not been completed. Please try again from a different location.	Routing to, or from a place (new area) that is not in the database. Try planning a different route to or from a different location.
No alternate route found. Original route will be guided.	No alternate route method was found. The original route method will be used.
This destination cannot be found in database.	The destination was not found in the database. Try another destination nearby, or select the destination with the joystick.

FORCED STARTING OF DISPLAY

1. Slide the passenger's seat (A) forward.

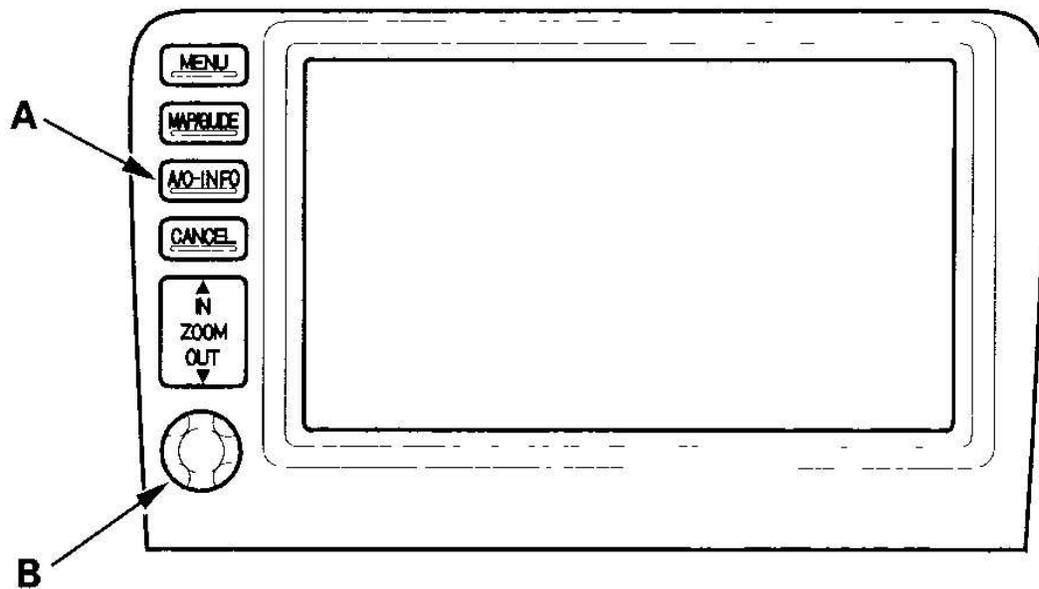


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Fig. 84: Sliding Passenger's Seat Forward
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Connect the SCS service connector (B) to the navigation service check connector (C) located behind the navigation unit.
3. Turn the ignition switch ON (II).
4. Check that the system starts up and then changes to the "Navi System Link" screen.

NOTE: If the system fails to display the "Navi System Link" screen, refer to No picture is displayed (see SYMPTOM TROUBLESHOOTING).



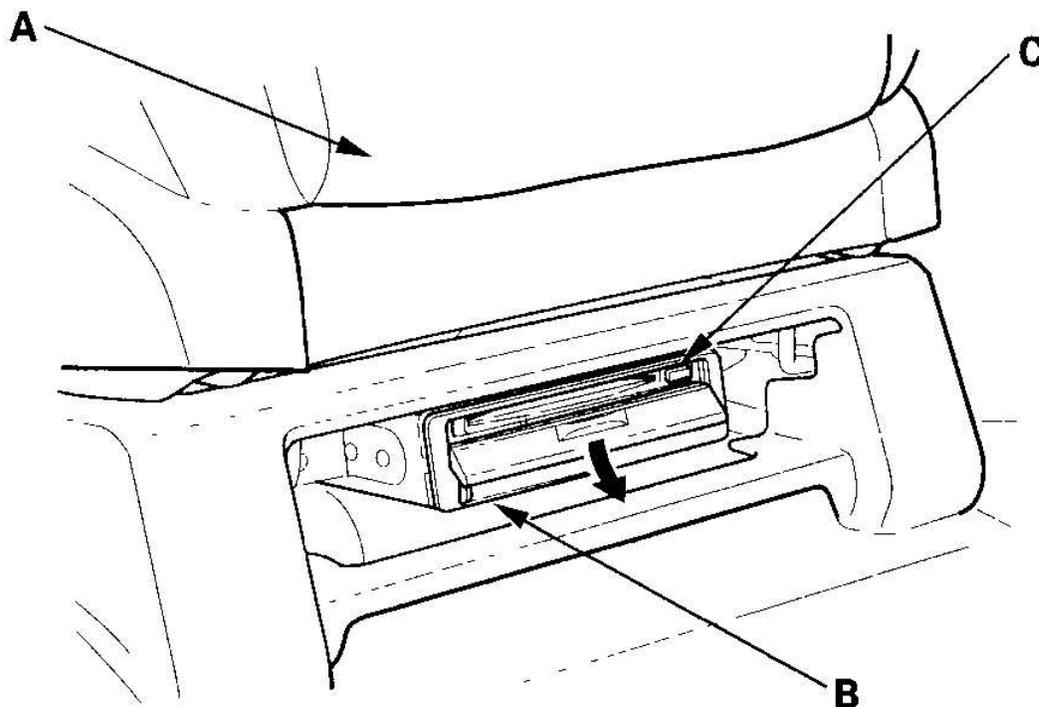
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Fig. 85: Identifying Display "Navi System Link" Screen
Courtesy of AMERICAN HONDA MOTOR CO., INC.

DVD-ROM REPLACEMENT

NOTE: When the DVD-ROM is re-inserted or replaced, a map match must be done (see MAP MATCHING).

1. Slide the passenger's seat (A) to the rear.



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Fig. 86: Sliding Passenger's Seat To Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Open the front cover (B) of the navigation unit.
4. Press the EJECT button (C).
5. Remove the DVD-ROM.
6. Insert the new DVD-ROM.
7. Close the front cover. Do not turn the ignition switch OFF until data is down loaded to the navigation unit.

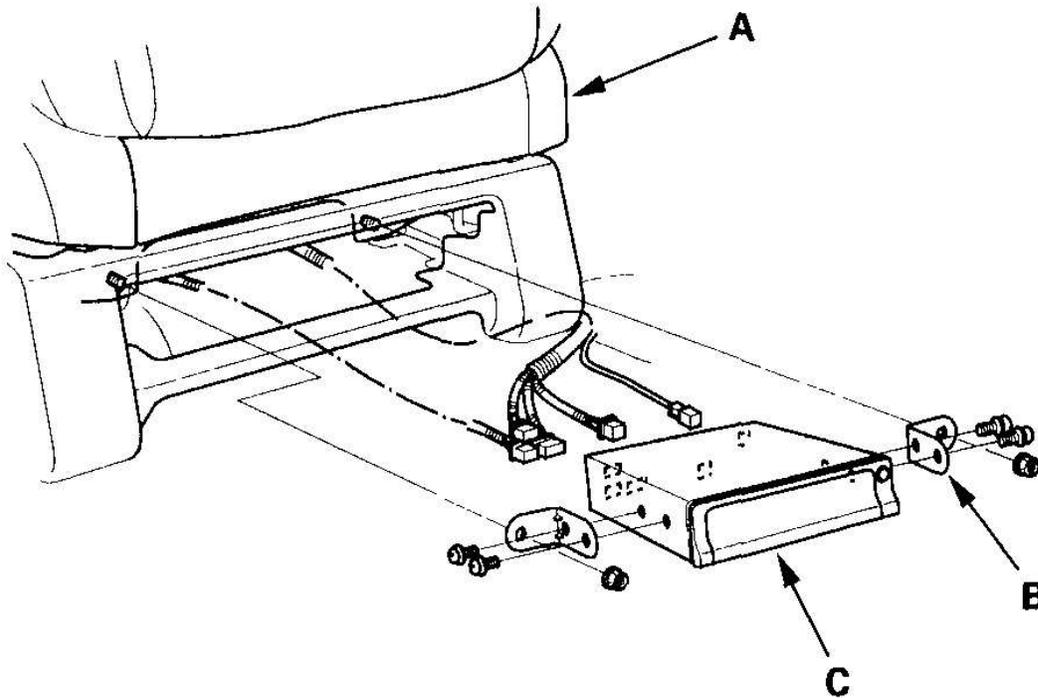
NOTE: After servicing, the front cover must be closed. If you start up the navigation system with the front cover open, the display will indicate. "Navigation unit door is open or No DVD Disk installed. Please check system".

NAVIGATION UNIT REMOVAL/ INSTALLATION

NOTE: If the navigation unit is replaced or disconnected, a Map Match must be done

(see MAP MATCHING).

1. Slide the passenger's seat (A) to the rear.



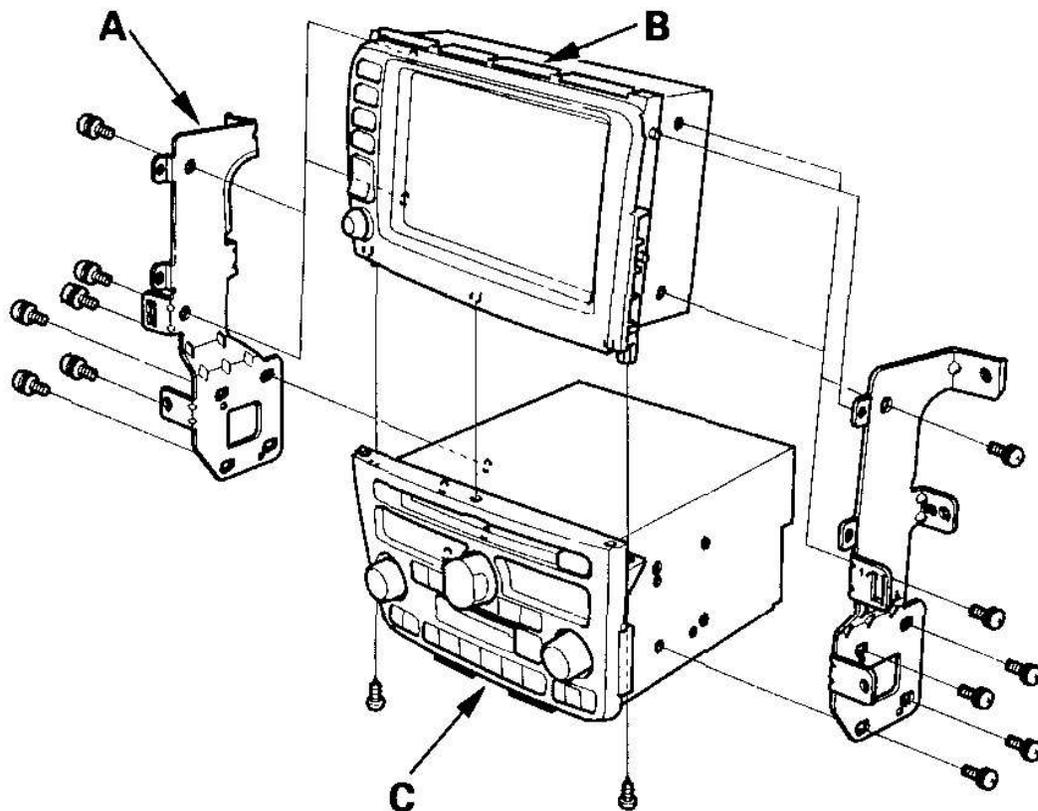
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Fig. 87: Sliding Passenger's Seat To Rear
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the navigation unit bracket (B) from the passenger's seat.
3. Remove the bracket from the navigation unit (C).
4. Install in the reverse order of removal.

DISPLAY UNIT REMOVAL/INSTALLATION

1. Remove the center panel (see DASHBOARD CENTER PANEL REMOVAL/INSTALLATION).
2. Remove the display unit/audio unit.
3. Remove the bracket (A), then remove the display unit (B) from the audio unit (C).



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Fig. 88: Removing Bracket And Display Unit From Audio Unit
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install in the reverse order of removal.

REARVIEW CAMERA REMOVAL/ INSTALLATION

1. Remove the tailgate trim panel (see **TRIM REMOVAL/INSTALLATION - TAILGATE AREA**).
2. Remove the rear license trim.
3. Remove the rearview camera (A).

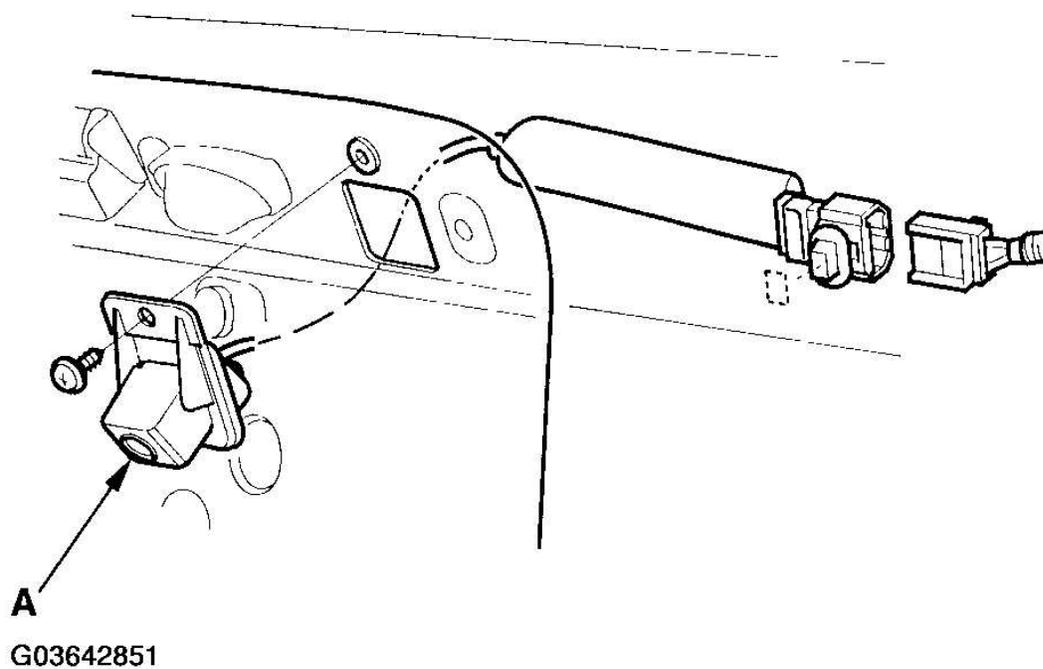
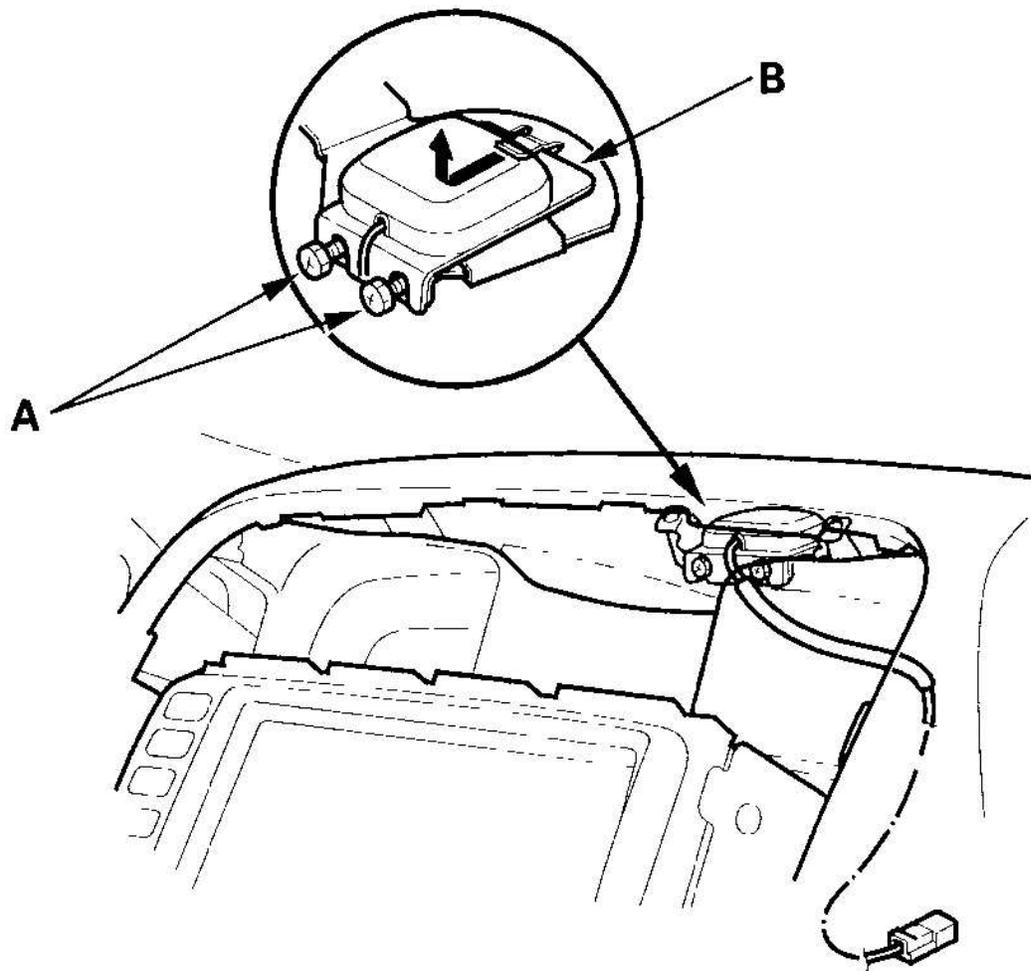


Fig. 89: Removing Rearview Camera
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install in the reverse order of removal.

GPS ANTENNA REMOVAL/INSTALLATION

1. Remove the center panel (see **DASHBOARD CENTER PANEL REMOVAL/INSTALLATION**).
2. Loosen the two screw-bolts (A).



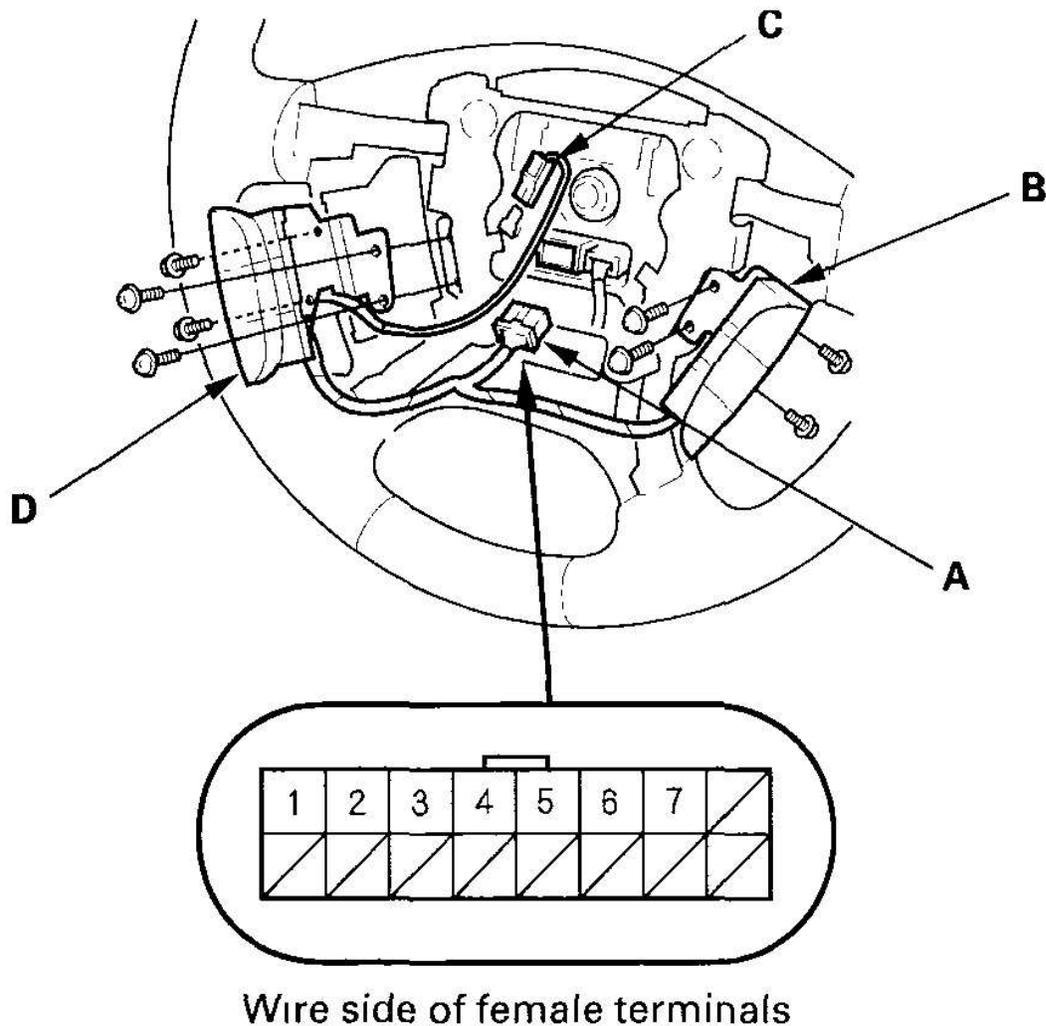
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Fig. 90: Loosening Two Screw-Bolts
Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Pull and pry up the GPS antenna (B), then remove it.
4. Install the parts in the reverse order of removal.

VOICE CONTROL SWITCH TEST/REPLACEMENT

1. Remove the driver's airbag assembly (see **DRIVER'S AIRBAG REPLACEMENT**).
2. Disconnect the 16P connector (A) from the cable reel.



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Fig. 91: Disconnecting 16P Connector From Cable Reel
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Measure the resistance between the 16P connector No. 4 and No. 7 terminals in each switch position according to **16P CONNECTOR NO. 4 AND NO. 7 TERMINALS** .

16P CONNECTOR NO. 4 AND NO. 7 TERMINALS

Position	Resistance
OFF	about 10 k ohm
Talk	about 3.2 k ohm
Back	about 1.6 k ohm

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4. If the resistance is not as specified, go to step 5.
5. Remove the two screws and the cruise control set/ resume/switch (B) from the steering wheel.
6. Remove the four screws, the 1P connector (C) and the radio remote switch (D), HFL-voice control switch and cruise set/resume/cancel switch as an assembly.