DP12-002

HONDA

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ATTACHMENT Q7

VSA communication

HONDA **ServiceNews Article**
Helping you fix it right the *first* time - *every* time
Aug 2007

Check Out These VSA Troubleshooting Tips

Currently Applies To: '03–07 Accord V6s, '05–07 Accord Hybrids, '06–07 CR-Vs, '06–08 Elements, '05–07 Odysseys, '03–08 Pilots, '06–08 Ridgelines, and '06–07 S2000s

Vexed by a VSA troubleshooting problem? Here's a handy chart that can help you out. Keep in mind, this is a **generic** chart, so the DTC ID numbers and descriptions may vary slightly with model applicability. If you've still got the problem after following these troubleshooting tips, then refer to the applicable S/M or go into ISIS for more detailed info.

DTC	Description	Symptom	Probable Cause
U0073 or U0028 with any other DTCs	F-CAN malfunction (Bus-off)	• MIL is on • No F-CAN communication • HDS won't communicate on some models • Tachometer, speedometer, and temperature gauge don't work • Multiple warning indicators are on • Body electrical DTCs B1168, B1169, B1170, and B1178	• CAN-H wire shorted to ground • CAN-H wire shorted to power • Bad F-CAN-related control unit • Poor power or ground to an F-CAN-related control unit
U0122 only. No other DTCs.	F-CAN malfunction (PCM-VSA)	• MIL is off • VSA indicator is on • VSA activation indicator is on	• Poor or no +B FSR voltage • Poor or no Ignition 1 voltage • Poor or no VSA ground
U0122 with VSA 86	• F-CAN malfunction (PCM-VSA) • F-CAN communication	• MIL is off • VSA indicator is on • VSA activation indicator is on	• Poor or no +B FSR voltage • Poor or no Ignition 1 voltage • Poor or no VSA ground • Open or poor connection on F-CAN-H or F-CAN-L wires
25	Yaw rate sensor	• MIL is off • VSA indicator is on • VSA activation indicator is on	• S-GND, YAW, or SVCC open circuit • Yaw signal wire shorted to ground • Bad yaw rate sensor or cluster sensor
26	Lateral acceleration sensor	• MIL is off • VSA indicator is on • VSA activation indicator is on	• S-GND, GLAT, or SVCC open circuit • GLAT signal wire shorted to ground • Bad yaw rate-lateral acceleration (cluster) sensor
27	Steering angle sensor	• MIL is off • VSA indicator is on • VSA activation indicator is on	• Open or poor connection on STRA, STRB, or STRD (STRZ) signal wire • Short to ground on STRA, STRB, or STRD (STRZ) signal wire • Open on S-GND wire • Bad steering angle sensor
28	Longitudinal acceleration sensor	• MIL is off • VSA indicator is on • VSA activation indicator is on	• Open or poor connection on GLONG signal wire • Short to ground on GLONG signal wire • Open on S-GND wire
51	Motor lock	• MIL is off • VSA indicator is on • VSA activation indicator is on	• +B-MR open or poor connection • Poor or no VSA ground

DTC	Description	Symptom	Probable Cause
53	Motor stuck ON	• MIL is off • VSA indicator is on • VSA activation indicator is on	• Poor or no VSA MOTOR ground
64	Sensor power voltage	• MIL is off • VSA indicator is on • VSA activation indicator is on	• SVCC short to ground or open
68	Brake pedal position switch	• MIL is off • VSA indicator is on • VSA activation indicator is on	• If the VSA modulator-control unit sees brake pressure without a brake pedal position switch signal, check for an open in the brake light circuit or a misadjusted brake pedal position switch. • If the VSA modulator-control unit sees the brake pedal position switch is on without brake pressure, check for a short to power in the brake pedal position switch circuit or a misadjusted switch.
86	F-CAN communication	• MIL is off • VSA indicator is on • VSA activation indicator is on	• Poor or no +B FSR voltage • Poor or no Ignition 1 voltage • Poor or no VSA ground • Open or poor connection on F-CAN-H or F-CAN-L wires

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ServiceNews Article

Helping you fix it right the *first* time - *every* time

June 2009

Gauges Won't Work, Multiple Indicators On? Check Body Ground G1

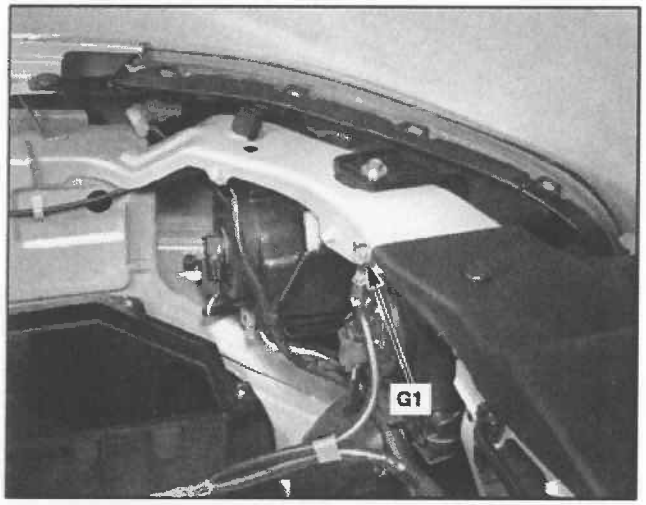
Currently Applies To: '03–08 Pilot

A bad body ground G1 on the left side of the engine compartment can cause any or all of these symptoms:

- The instrument panel gauges don't work.
- Multiple indicators come on.
- The audio unit intermittently shuts off.
- These VTM-4 DTCs are set:
  - VTM-4 DTC 21 (left-front wheel sensor)
  - VTM-4 DTC 23 (left-rear wheel sensor)
  - VTM-4 DTC 26 (VSA modulator-control unit or wire harness)
- These ABS or VSA DTCs are set:
  - ABS DTC 61 (IG2 voltage) ('03–04 models and '05 models without VSA).
  - VSA DTC 61 (low +B FSR voltage) ('05 models with VSA and '06–08 models).

You're likely to run across these symptoms if the vehicle came back from a body shop after a collision. Ground points aren't always masked when prepping for painting, so you can wind up with paint on the body and threads, which acts like an insulator. Using anodized bolts or star washers can also contribute to these symptoms.

To fix things, inspect the ground bolt. Make sure it's a self-tapping ground bolt; its threads aren't corroded or painted over; there's no star washer being used; and the bolt is nice and snug. Refer to the applicable ETM or ISIS for its exact location. Here's where it's at on a '06–07 model:



Fix any problems you find, then use the HDS to clear any DTCs.

HONDA ServiceNews June 2005

Multiple VSA, VTM-4, and PGM-FI DTCs

Got a '05 Odyssey or '05 Pilot EX-L in your shop with any or all of these symptoms?

- One or more of these VSA DTCs are set:
  - DTC 25 (yaw rate sensor)
  - DTC 27 (steering angle sensor)
  - DTC 51 (motor lock)
  - DTC 53 (motor stuck ON)
  - DTC 81 [central processing unit (CPU)]
  - DTC 86 (F-CAN communication)

  OR

  The VSA indicator is lit but no VSA DTCs are set.
- *Pilot only:* VTM-4 DTC 41-2 (CAN communication) is set.
- One or more of these PGM-FI DTCs are set:
  - DTC U0073 [F-CAN malfunction (BUS-OFF)]
  - DTC U0144 [F-CAN malfunction (VTM-4 control unit - PCM)]
  - DTC U0122 [F-CAN malfunction (VSA - PCM)]

A poor ground G302 is the likely culprit. If this ground is loose or it's not making good contact because there's paint or debris under the terminal, you can wind up with an intermittent or complete loss of communication between the PCM, the VSA control unit, and in Pilot EX-Ls, the VTM-4 control unit. Make sure the terminal is clean and tight. If it already is, then refer to the appropriate DTC troubleshooting in the appropriate S/M or in ISIS.

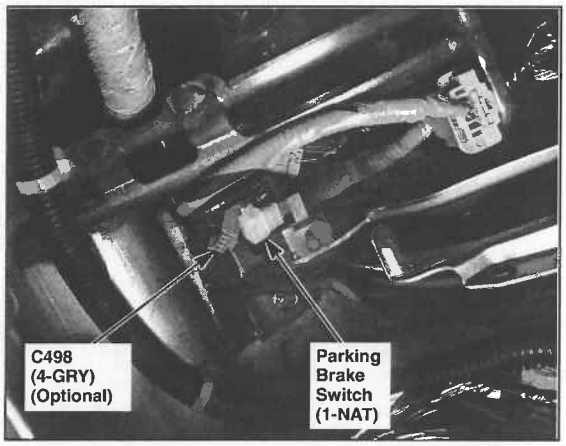
Turning the Current Fuel Mileage Display On and Off

The procedure listed in '03–05 Civic Hybrid O/Ms to turn the current fuel mileage display on and off needs a bit of tweaking. As written, you're told in step 3 to press and hold the **SELECT/RESET** knob for about **10 to 15 seconds** and then to release it.

To turn the display either on or off, you really need to press and hold that knob for *at least* **10 seconds** *but not more than* **15 seconds** and then release it. If you hold the knob *for more than* **15 seconds**, the display doesn't respond. And one more thing: although the O/M may say to do so, you don't really need to set the parking brake for this operation. In the interest of safety, however, it's a good practice to set it just the same.

Installing an Electric Trailer Brake Controller

To install an electric trailer brake controller in a '06 Ridgeline, look for the gray 4P connector that's under the dashboard near the top of the parking brake pedal.



This 4P connector includes all the circuits needed to install most electric trailer brake controllers. Here's a breakdown:

Pin	Wire Color	Circuit Description
1	BLU	Battery power from No. 6 (20A) fuse in auxiliary under-hood fuse box
2	WHT/BLK	Brake light input
3	BRN/WHT	Output from electric trailer brake controller to trailer lighting connector at rear bumper
4	BLK	Ground from G401

Electric trailer brake controllers aren't sold by American Honda, but are available at most retail trailer supply stores.

Back-Up Lamp Circuit Can't Handle Additional Load

The 7P trailer connector for the '06 Ridgeline doesn't support back-up lights, even though the connector schematic that's molded into the connector cover says **Back-Up Lamp**. Don't add extra back-up lights or accessories to this circuit; the wiring and switches can't handle the additional load.

VSA Activation Indicator On After VSA Modulator-Control Unit R&R

Currently Applies To: '06–08 Accords, '07 Civic Sis, '05–08 Odysseys, and '05–08 Pilots

Just replaced the VSA modulator-control unit (VSA modulator assembly), but now the VSA activation indicator is on? Try doing the VSA sensor neutral position memorization in the applicable S/M. (Online, enter keywords **VSA SENSOR** and select **VSA Sensor Neutral Position Memorization** from the list.)

The VSA activation indicator should go out when you're done, but if it's still on . . . continue with normal troubleshooting.

VSA DTC 86 After ECM/PCM Replacement

Currently Applies To: '05 Pilot EX-L

Just replaced the ECM/PCM, but now you've got a VSA DTC 86 (F-CAN communication) and it won't clear? Check its part number. If it's **37820-PVJ-305**, you've got the **wrong** part installed. That part number applies to just LX and EX models, which have ABS and **not** VSA. The **right** part number for EX-L models is **37820-PVJ-306**.

2005 PILOT - DTC Troubleshooting: U0122

DTC U0122: F-CAN Malfunction (VSA-PCM)

NOTE: If DTC U0073 is stored at the same time as DTC U0122, troubleshoot DTC U0073 first, then recheck for DTC U0122.

1. Turn the ignition switch ON (II).
2. Clear the DTC with the HDS.
3. Check for Temporary DTCs or DTCs with the HDS.

Is DTC U0122 indicated?

YES - Go to step 4.

NO - Intermittent failure, system is OK at this time.Check for poor connections or loose terminals at the gauge assembly, the VSA control unit and the PCM.■

4. Check for a DTC in the DTCs MENU with the HDS.

Is VSA DTC 86 indicated?

YES - Go to step 5.

NO - Go to step 9.

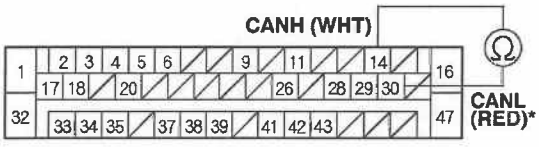
5. Turn the ignition switch OFF.
6. Disconnect the VSA control unit 47P connector.
7. Check for continuity between VSA control unit 47P connector terminals No. 14 and No. 30.

Is there continuity?

YES - Go to step 8.

NO - Repair open in the wire between the VSA control unit (No. 14 (No. 30)*) and the PCM (A36 (A1)*), then go to step 14.
*: CANL line

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

8. Check for poor connection at the left engine compartment wire harness/dashboard wire harness B 6P connector.

Is it OK?

YES - Substitute a known-good VSA control unit, then go to step 14 and recheck. If no DTC is indicated, replace the original VSA control unit, then go to step 14.

NO - Reconnect the left engine compartment wire harness/dashboard wire harness B 6P connector, then go step 14.

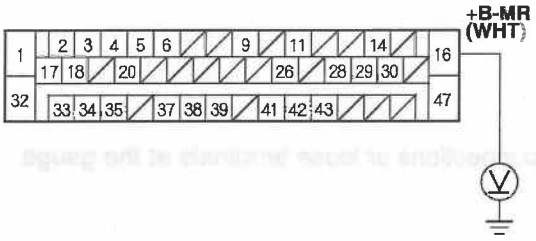
9. Turn the ignition switch OFF.
10. Disconnect the VSA control unit 47P connector.
11. Turn the ignition switch ON (II).
12. Measure voltage between VSA control unit 47P connector terminal No. 16 and body ground.

Is there battery voltage?

YES - Go to step 13.

NO - Check the No. 3 VSA MTR (30 A) fuse in the driver's under-dash fuse/relay box. If the fuse is OK, repair open in the wire between the No. 3 VSA MTR (30 A) fuse and the VSA control unit, then go to step 14.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

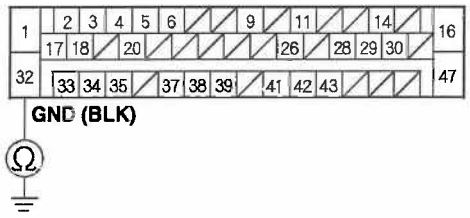
13. Check for continuity between VSA control unit 47P connector terminal No. 32 and body ground.

Is there continuity?

YES - Substitute a known-good VSA control unit, then go to step 14 and recheck. If no DTC is does not indicated, replace the original VSA control unit, then go to step 14.

NO - Repair open in the wire between the VSA control unit and G302, then go to step 14.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

14. Turn the ignition switch ON (II).
15. Clear the DTC with the HDS.
16. Do the PCM idle learn procedure.
17. Check for Temporary DTCs or DTCs with the HDS.

Are any Temporary DTCs or DTCs indicated?

YES - If DTC U0122 is indicated, check for poor connections or loose terminals at the gauge assembly, the VSA control unit and the PCM, then go to step 1. If any other Temporary DTCs or DTCs are indicated, go to the indicated DTC's troubleshooting.

NO - Troubleshooting is complete.■

2005 PILOT - Symptom Troubleshooting: ABS indicator does not come on

ABS indicator does not come on

1. Turn the ignition switch ON (II), and watch the ABS indicator.

   Does the ABS indicator come on for several seconds?

   YES - The system is OK at this time.■

   NO - Go to step 2.

2. Apply the parking brake.

   Does the brake system indicator come on?

   YES - Go to step 3.

   NO - Repair open in the gauge assembly indicator power source circuit.■

3. Turn the ignition switch OFF.
4. Disconnect the VSA control unit 47P connector.
5. Turn the ignition switch ON (II).

   Does the VSA indicator come on?

   YES - Go to step 6.

   NO - Do the troubleshooting for the gauge assembly.■

6. Turn the ignition switch OFF.
7. Substitute a known-good VSA modulator-control unit.
8. Turn the ignition switch ON (II).

   Does ABS indicator come on?

   YES - Replace the VSA modulator-control unit.■

   NO - Do the troubleshooting for the gauge assembly.■

2005 PILOT - Symptom Troubleshooting: ABS indicator does not go off, and no DTCs are stored

ABS indicator does not go off, and no DTCs are stored

1. Check the VSA FSR (40 A) fuse in the auxiliary fuse box.

   Is the fuse OK?

   YES - Reinstall the fuse, and go to step 2.

   NO - Replace the fuse, and recheck. If the fuse is blown, check for a short to body ground in this fuse circuit. If the circuit is OK, replace the VSA modulator-control unit.■

2. Check the No. 6 (15 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Reinstall the fuse, and go to step 3.

   NO - Replace the fuse, and recheck. If the fuse is blown, check for a short to body ground in this fuse circuit. If the circuit is OK, replace the VSA modulator-control unit.■

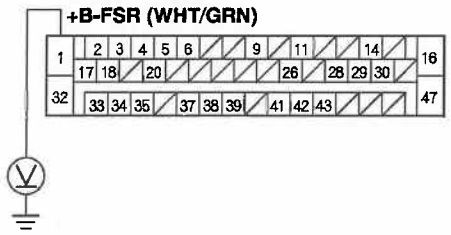
3. Turn the ignition switch OFF.
4. Disconnect the VSA control unit 47P conector.
5. Measure the voltage between the VSA control unit 47P connector terminal No. 1 and body ground.

   Is there battery voltage?

   YES - Go to step 6.

   NO - Repair open in the wire between the VSA FSR (40 A) fuse in the auxiliary fuse box and the VSA control unit.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

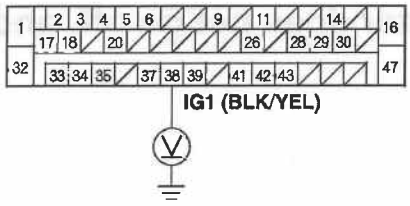
6. Turn the ignition switch ON (II).
7. Measure the voltage between the VSA control unit 47P connector terminal No. 38 and body ground.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Repair open in the wire between the No. 6 (15 A) fuse in the driver's under-dash fuse/relay box and the VSA control unit.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

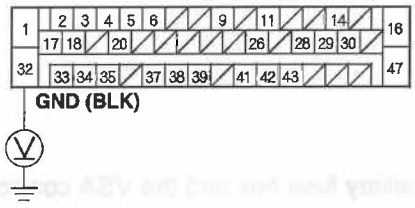
8. Reconnect the VSA control unit 47P connector.
9. Measure the voltage between the VSA control unit 47P connector terminal No. 32 and body ground.

Is there 0.1 V or more?

YES - Check for loose terminals in the VSA control unit 47P connector. Substitute a known-good gauge assembly, and recheck. If the test results are the same, substitute a known-good VSA modulator-control unit, and recheck.■

NO - Repair open in the wire between the VSA control unit and body ground (G302).■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

2005 PILOT - Symptom Troubleshooting: ABS indicator does not go off, and no DTCs are stored

ABS indicator does not go off, and no DTCs are stored

1. Check the VSA FSR (40 A) fuse in the auxiliary fuse box.

   Is the fuse OK?

   YES - Reinstall the fuse, and go to step 2.

   NO - Replace the fuse, and recheck. If the fuse is blown, check for a short to body ground in this fuse circuit. If the circuit is OK, replace the VSA modulator-control unit.■

2. Check the No. 6 (15 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Reinstall the fuse, and go to step 3.

   NO - Replace the fuse, and recheck. If the fuse is blown, check for a short to body ground in this fuse circuit. If the circuit is OK, replace the VSA modulator-control unit.■

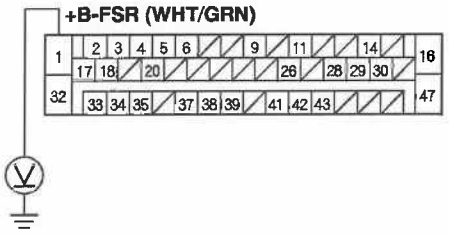
3. Turn the ignition switch OFF.
4. Disconnect the VSA control unit 47P conector.
5. Measure the voltage between the VSA control unit 47P connector terminal No. 1 and body ground.

   Is there battery voltage?

   YES - Go to step 6.

   NO - Repair open in the wire between the VSA FSR (40 A) fuse in the auxiliary fuse box and the VSA control unit.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

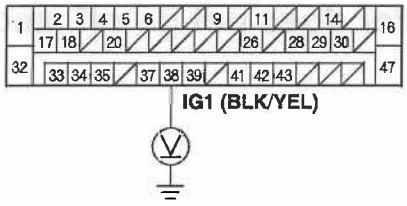
6. Turn the ignition switch ON (II).
7. Measure the voltage between the VSA control unit 47P connector terminal No. 38 and body ground.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Repair open in the wire between the No. 6 (15 A) fuse in the driver's under-dash fuse/relay box and the VSA control unit.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

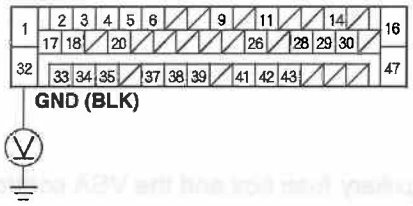
8. Reconnect the VSA control unit 47P connector.
9. Measure the voltage between the VSA control unit 47P connector terminal No. 32 and body ground.

Is there 0.1 V or more?

YES - Check for loose terminals in the VSA control unit 47P connector. Substitute a known-good gauge assembly, and recheck. If the test results are the same, substitute a known-good VSA modulator-control unit, and recheck.■

NO - Repair open in the wire between the VSA control unit and body ground (G302).■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

2005 PILOT - Symptom Troubleshooting: Brake system indicator does not go off

Brake system indicator does not go off

1. Turn the ignition switch ON (II).
2. Release the parking brake.

Does the brake system indicator go off after several seconds?

YES - The system is OK at this time.■

NO - Go to step 3.

3. Check the brake fluid level.

Is the level OK?

YES - Go to step 4.

NO - Check for leaks in the brake system. If no leaks are found, inspect the brake lining, and replace the worn brake pads.■

4. Check the ABS indicator.

Does the ABS indicator stay on?

YES - Read the DTC, and do the applicable troubleshooting for the DTC.■

NO - Check the brake system indicator circuit:

- Short to body ground between the gauge assembly and the parking brake switch.■
- Short to body ground between the gauge assembly and the brake fluid level switch.■
- Parking brake switch stuck ON.■
- Brake fluid level switch stuck ON.■
- Faulty gauge assembly.■

2005 PILOT - Symptom Troubleshooting: VSA activation indicator does not come on at start-up (bulb check)

VSA activation indicator does not come on

1. Turn the ignition switch ON (II), and watch the VSA activation indicator.

   Does the VSA activation indicator come on for several seconds?

   YES - The system is OK at this time.■

   NO - Go to step 2.

2. Apply the parking brake.

   Does the brake system indicator come on?

   YES - Go to step 3.

   NO - Repair open in the gauge assembly indicator power source circuit.■

3. Turn the ignition switch OFF.
4. Substitute a known-good VSA modulator-control unit.
5. Turn the ignition switch ON (II).

   Does the VSA activation indicator come on?

   YES - Replace the VSA modulator-control unit.■

   NO - Do the troubleshooting for the gauge assembly.■

2005 PILOT - Symptom Troubleshooting: VSA activation indicator does not go off, and no DTCs are stored

VSA activation indicator does not go off, and no DTCs are stored at start-up (bulb check)

1. Turn the ignition switch ON (II), and watch the VSA indicator.

   Does the VSA indicator go off?

   YES - The system is OK at this time.■

   NO - Go to step 2.

2. Turn the ignition switch OFF.
3. Check the VSA OFF switch.

   Is the switch OK?

   YES - Go to step 4.

   NO - Replace the VSA OFF switch.■

4. Clear the DTC using the HDS.

   Does the VSA activation indicator go off?

   YES - The system is OK at this time.■

   NO - Go to step 5.

5. Do the VSA sensor neutral memorization.
6. Clear the DTC using the HDS.
7. Disconnect the HDS from the 16P DLC.
8. Check the VSA activation indicator.

   Does the VSA activation indicator go off?

   YES - The system is OK at this time.■

   NO - Go to step 9.

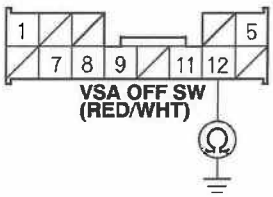
9. Disconnect the gauge assembly connector A (30P).
10. Disconnect the VSA off switch 13P connector.
11. Check for continuity between the VSA OFF switch 13P connector terminal No. 12 and body ground.

    Is there continuity?

    YES - Repair short to body ground in the wire between the gauge assembly and the VSA OFF switch.■

    NO - Go to step 12.

VSA OFF SWITCH 13P CONNECTOR



Wire side of female terminals

12. Reconnect the gauge assembly connector A (30P).

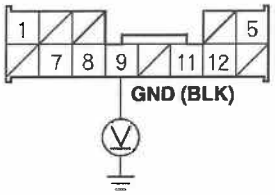
13. Turn the ignition switch ON (II).
14. Measure the voltage between the VSA OFF switch 13P connector terminal No. 9 and body ground.

Is there 0.1 V or more?

YES - Go to step 15.

NO - Repair open in the wire between the VSA OFF switch and body ground (G401).■

VSA OFF SWITCH 13P CONNECTOR



Wire side of female terminals

15. Substitute a known-good VSA modulator-control unit.
16. Reconnect all of the disconnected connectors.
17. Clear the DTC using the HDS.
18. Test-drive the vehicle.

Does the VSA activation indicator go off?

YES - Replace the VSA modulator-control unit.■

NO - Check for loose terminals in the gauge assembly connectors. If necessary, substitute a known-good gauge assembly, and recheck.■

Close

2005 PILOT - Symptom Troubleshooting: VSA indicator does not come on

VSA indicator does not come on

1. Turn the ignition switch ON (II), and watch the VSA indicator.

   Does the VSA indicator come on for several seconds?

   YES - The system is OK at this time.■

   NO - Go to step 2.

2. Apply the parking brake.

   Does the brake system indicator come on?

   YES - Go to step 3.

   NO - Repair open in the indicator power source circuit.■

3. Turn the ignition switch OFF.
4. Disconnect the VSA control unit 47P connector.
5. Turn the ignition switch ON (II).

   Does the VSA indicator come on?

   YES - Go to step 6.

   NO - Do the troubleshooting for the gauge assembly.■

6. Turn the ignition switch OFF.
7. Substitute a known-good VSA modulator-control unit.
8. Turn the ignition switch ON (II).

   Does the VSA indicator come on?

   YES - Replace the VSA modulator-control unit.■

   NO - Do the troubleshooting for the gauge assembly.■

2005 PILOT - Symptom Troubleshooting: VSA indicator does not go off, and no DTCs are stored

VSA indicator does not go off, and no DTCs are stored

1. Check the VSA FSR (40 A) fuse in the auxiliary fuse box.

   Is the fuse OK?

   YES - Reinstall the fuse, and go to step 2.

   NO - Replace the fuse, and recheck. If the fuse is blown, check for a short to body ground in this fuse circuit. If the circuit is OK, replace the VSA modulator-control unit.■

2. Check the No. 6 (15 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Reinstall the fuse, and go to step 3.

   NO - Replace the fuse, and recheck. If the fuse is blown, check for a short to body ground in this fuse circuit. If the circuit is OK, replace the VSA modulator-control unit.■

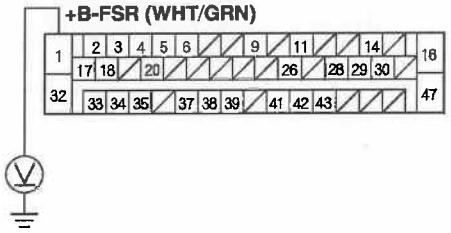
3. Turn the ignition switch OFF.
4. Disconnect the VSA control unit 47P connector.
5. Turn the ignition switch ON (II).
6. Measure the voltage between the VSA control unit 47P connector terminal No. 1 and body ground.

   Is there battery voltage?

   YES - Go to step 7.

   NO - Repair open in the wire between the VSA FSR (40 A) fuse and the VSA control unit.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

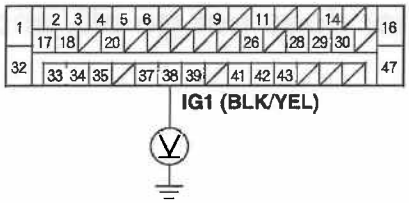
7. Measure the voltage between the VSA control unit 47P connector terminal No. 38 and body ground.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Repair open in the wire between the No. 6 (15 A) fuse in the driver's under-dash fuse/relay box and the VSA control unit.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

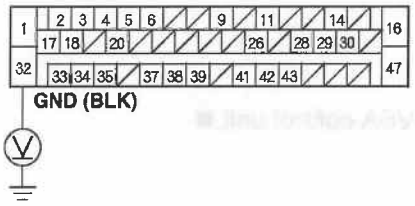
8. Turn the ignition switch OFF.
9. Reconnect the VSA control unit 47P connector.
10. Turn the ignition switch ON (II).
11. Measure the voltage between the VSA control unit 47P connector terminal No. 32 and body ground.

Is there 0.1 V or more?

YES - Check for loose terminals in the VSA control unit 47P connector. Substitute a known-good gauge assembly, and recheck. If the test results are the same, substitute a known-good VSA modulator-control unit and recheck.■

NO - Repair open in the wire between the VSA control unit and body ground (G302).■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

Close

2005 PILOT - The VTM-4 indicator comes on, but no DTCs are stored in any system: VTM-4, VSA, ABS, or PGM-FI

The VTM-4 indicator comes on, but no DTCs are stored in any system: VTM-4, VSA, ABS, or PGM-FI

1. Check the No.11 (7.5 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Go to step 2.

   NO - Replace the fuse, and recheck.■

2. Reinitialize the VTM-4 control unit, and watch the VTM-4 indicator.

   Does the VTM-4 indicator come on and stay on?

   YES - Go to step 3.

   NO - The system is OK at this time.■

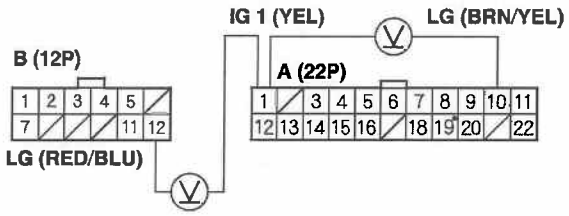
3. Turn the ignition switch OFF.
4. Measure the voltage between the A1 and A10 terminals of the VTM-4 control unit, and between the A1 and B12 terminals of the VTM-4 control unit.

   Is there battery voltage?

   YES - Go to step 5.

   NO - Repair open in the wire between A1 terminal of the VTM-4 control unit and the driver's under-dash fuse/relay box, or repair open in the wire between A10 or B12 terminals of the VTM-4 control unit and body ground.■

VTM-4 CONTROL UNIT CONNECTORS



***: Without VSA**

Wire side of female terminals

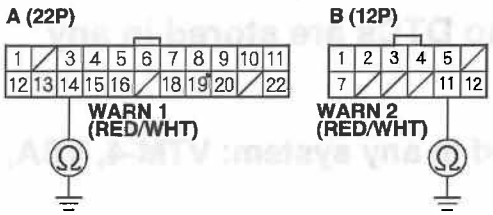
5. Turn the ignition switch OFF.
6. Disconnect the VTM-4 control unit and the gauge assembly connectors.
7. Check for continuity between the A14 and B11 terminals of the VTM-4 control unit and body ground.

   Is there continuity?

   YES - Repair short to ground in the wire between the A14 or B11 terminals of the VTM-4 control unit and the gauge assembly.■

   NO - Go to step 8.

VTM-4 CONTROL UNIT CONNECTORS



***: Without VSA**

Wire side of female terminals

8. Reconnect the gauge assembly connectors only, then turn the ignition switch ON (II).

Does the VTM-4 indicator come on?

YES - Replace the gauge assembly.■

NO - Check for loose terminal fit in VTM-4 connectors. If it is normal, replace the VTM-4 control unit.■

2005 PILOT - Symptom Troubleshooting: VSA activation indicator does not go off, and no DTCs are stored

VSA activation indicator does not go off, and no DTCs are stored at start-up (bulb check)

1. Turn the ignition switch ON (II), and watch the VSA indicator.

   Does the VSA indicator go off?

   YES - The system is OK at this time.■

   NO - Go to step 2.

2. Turn the ignition switch OFF.
3. Check the VSA OFF switch.

   Is the switch OK?

   YES - Go to step 4.

   NO - Replace the VSA OFF switch.■

4. Clear the DTC using the HDS.

   Does the VSA activation indicator go off?

   YES - The system is OK at this time.■

   NO - Go to step 5.

5. Do the VSA sensor neutral memorization.
6. Clear the DTC using the HDS.
7. Disconnect the HDS from the 16P DLC.
8. Check the VSA activation indicator.

   Does the VSA activation indicator go off?

   YES - The system is OK at this time.■

   NO - Go to step 9.

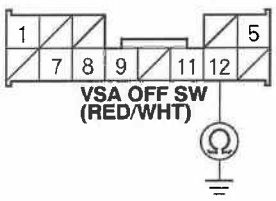
9. Disconnect the gauge assembly connector A (30P).
10. Disconnect the VSA off switch 13P connector.
11. Check for continuity between the VSA OFF switch 13P connector terminal No. 12 and body ground.

    Is there continuity?

    YES - Repair short to body ground in the wire between the gauge assembly and the VSA OFF switch.■

    NO - Go to step 12.

VSA OFF SWITCH 13P CONNECTOR



Wire side of female terminals

12. Reconnect the gauge assembly connector A (30P).

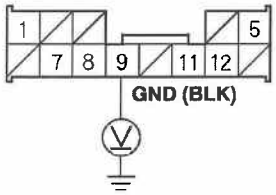
13. Turn the ignition switch ON (II).
14. Measure the voltage between the VSA OFF switch 13P connector terminal No. 9 and body ground.

Is there 0.1 V or more?

YES - Go to step 15.

NO - Repair open in the wire between the VSA OFF switch and body ground (G401).■

VSA OFF SWITCH 13P CONNECTOR



Wire side of female terminals

15. Substitute a known-good VSA modulator-control unit.
16. Reconnect all of the disconnected connectors.
17. Clear the DTC using the HDS.
18. Test-drive the vehicle.

Does the VSA activation indicator go off?

YES - Replace the VSA modulator-control unit.■

NO - Check for loose terminals in the gauge assembly connectors. If necessary, substitute a known-good gauge assembly, and recheck.■

2005 PILOT - VSA DTC Troubleshooting: 107, 108

DTC 107: TCS Operation
DTC 108: VSA Operation

NOTE: The ABS/VSA indicators do not come on by memorizing the DTC 107 or 108.

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle.

Is DTC 107 or DTC 108 indicated ?

YES - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

NO - Intermittent failure, the system is OK at this time.■

Close

2005 PILOT - VSA DTC Troubleshooting: 11, 13, 15, 17

DTC 11, 13, 15, 17: Wheel Sensor (Short to Power/Short to Body Ground/Open)

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle.

Do the VSA or ABS indicator come on?

YES - Go to step 5.

NO - Intermittent failure; system is OK at this time. Check for loose or poor connections.■

5. Disconnect the VSA control unit 47P connector.
6. Start the engine.
7. Measure the voltage between body ground and the appropriate wheel sensor (+) and (-) terminals of the VSA control unit 47P connector individually (see table).

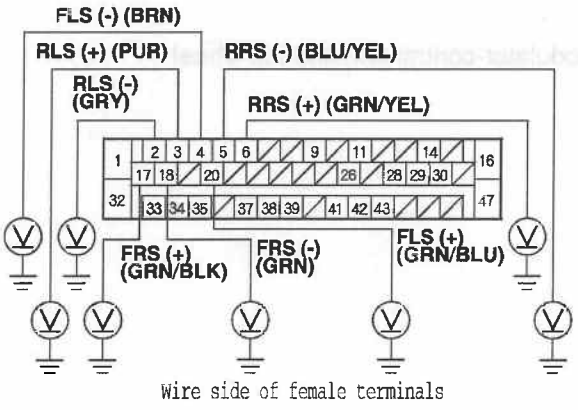
DTC	Appropriate Terminal	
	(+) Side	(-) Side
11 (Right-front)	No. 17: FRS (+)	No. 18: FRS (-)
13 (Left-front)	No. 20: FLS (+)	No. 4: FLS (-)
15 (Right-rear)	No. 6: RRS (+)	No. 5: RRS (-)
17 (Left-rear)	No. 3: RLS (+)	No. 2: RLS (-)

Is there 1 V or more?

YES - Repair short to power in the wire between the VSA modulator-control unit and the appropriate wheel sensor.■

NO - Go to step 8.

VSA CONTROL UNIT 47P CONNECTOR



8. Turn the ignition switch OFF.
9. Check for continuity between body ground and the appropriate wheel sensor (+) and (-) terminals of the VSA control unit 47P connector individually (see table).

DTC	Appropriate Terminal	
	(+) Side	(-) Side
11 (Right-front)	No. 17: FRS (+)	No. 18: FRS (-)
13 (Left-front)	No. 20: FLS (+)	No. 4: FLS (-)

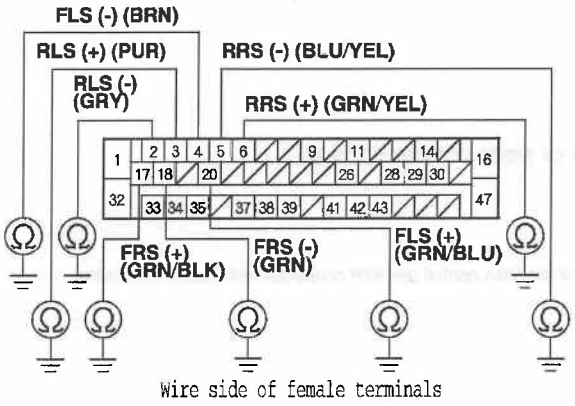
15 (Right-rear)	No. 6: RRS (+)	No. 5: RRS (-)
17 (Left-rear)	No. 3: RLS (+)	No. 2: RLS (-)

Is there continuity?

YES - Go to step 10.

NO - Go to step 12.

VSA CONTROL UNIT 47P CONNECTOR



10. Disconnect the appropriate wheel sensor 2P connector.
11. Check for continuity between body ground and the appropriate wheel sensor (+) and (-) terminals of the VSA control unit 47P connector individually (see table).

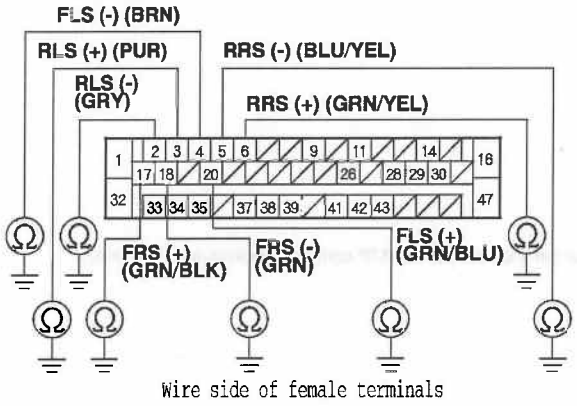
DTC	Appropriate Terminal	
	(+) Side	(-) Side
11 (Right-front)	No. 17: FRS (+)	No. 18: FRS (-)
13 (Left-front)	No. 20: FLS (+)	No. 4: FLS (-)
15 (Right-rear)	No. 6: RRS (+)	No. 5: RRS (-)
17 (Left-rear)	No. 3: RLS (+)	No. 2: RLS (-)

Is there continuity?

YES - Repair short to body ground in the wire between the VSA modulator-control unit and the wheel sensor. ■

NO - Replace the appropriate wheel sensor. ■

VSA CONTROL UNIT 47P CONNECTOR



12. Disconnect the appropriate wheel sensor 2P connector.
13. Check for continuity between the appropriate wheel sensor (+) and (-) terminals of the VSA control unit 47P connector (see table).

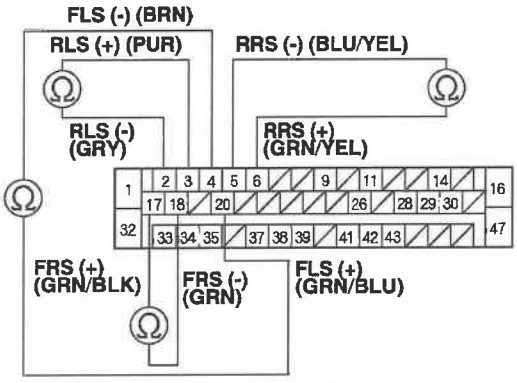
DTC	Appropriate Terminal	
	(+) Side	(-) Side
11 (Right-front)	No. 17: FRS (+)	No. 18: FRS (-)
13 (Left-front)	No. 20: FLS (+)	No. 4: FLS (-)
15 (Right-rear)	No. 6: RRS (+)	No. 5: RRS (-)
17 (Left-rear)	No. 3: RLS (+)	No. 2: RLS (-)

Is there continuity?

YES - Repair short in the wires between the VSA control unit and the wheel sensor.■

NO - Go to step 14.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

14. Substitute a known-good wheel sensor for the appropriate wheel sensor (see table).

DTC	Appropriate Wheel Sensor
11	Right-front
13	Left-front
15	Right-rear
17	Left-rear

15. Clear the DTCs using the HDS.
16. Disconnect the HDS from the 16P DLC.
17. Turn the ignition switch ON (II), and then turn it OFF.
18. Turn the ignition switch ON (II), then test-drive the vehicle at speeds above 19 mph (30 km/h).

Does the ABS indicator come on?

YES - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

NO - Replace the original wheel sensor.■

2005 PILOT - VSA DTC Troubleshooting: 112

DTC 112: Internal Power Source Stuck OFF

NOTE: If the battery cable was disconnected three times with the ignition switch ON (II), this DTC may be stored.

1. Check for other DTCs.

   Is another DTC indicated?

   YES - Do the appropriate troubleshooting for the DTC.■

   NO - Go to step 2.

2. Clear the DTC using the HDS.
3. Disconnect the HDS from the 16P DLC.
4. Test-drive the vehicle.

   Does the ABS indicator come on, and is DTC 112 indicated?

   YES - Go to step 5.

   NO - Intermittent failure; the vehicle is OK at this time.■

5. Inspect G302 for a clean and tight connection.

   Is G302 clean and properly connected?

   YES - Go to step 6.

   NO - Repair the connection at G302.■

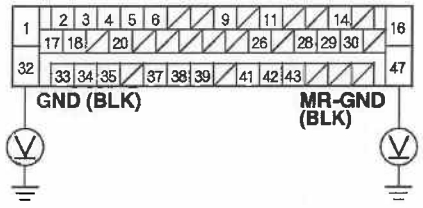
6. Turn the ignition switch ON (II).
7. Measure the voltage between body ground and VSA control unit 47P connector terminals No. 32 and No. 47 individually.

   Is there 0.1 V or more?

   YES - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

   NO - Repair open or high resistance in the wire between the VSA modulator-control unit and body ground (G302).■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

2005 PILOT - VSA DTC Troubleshooting: 12, 14, 16, 18

DTC 12, 14, 16, 18: Wheel Sensor (Electrical Noise/Intermittent Interruption)

NOTE: If the ABS indicator comes on because of electrical noise, the indicator goes off when you test-drive the vehicle at 19 mph (30 km/h).

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.
5. Check the appropriate wheel sensor and pulser for debris or damage and proper air gap.

DTC	Appropriate Wheel Sensor
12	Right-front
14	Left-front
16	Right-rear
18	Left-rear

Are they OK?

YES - Go to step 6.

NO - Clean and reinstall or replace the appropriate wheel sensor or pulser.■

6. Disconnect the VSA control unit 47P connector.
7. Check for continuity between the appropriate wheel sensor (+) terminal and other wheel sensor (+) terminals of the VSA control unit 47P connector (see table).

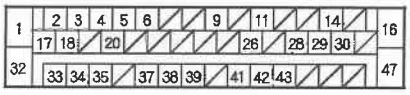
DTC	Appropriate (+) Terminal	Other (+) Terminals		
12	No. 17: FRS (+)	No. 20	No. 6	No. 3
14	No. 20: FLS (+)	No. 17	No. 6	No. 3
16	No. 6: RRS (+)	No. 17	No. 20	No. 3
18	No. 3: RLS (+)	No. 17	No. 20	No. 6

Is there continuity?

YES - Repair short in the wire between the appropriate wheel sensor and the other wheel sensor.■

NO - Go to step 8.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

8. Substitute a known-good wheel sensor for the appropriate wheel sensor (see table).

DTC	Appropriate Wheel Sensor

12	Right-front
14	Left-front
16	Right-rear
18	Left-rear

9. Clear the DTCs using the HDS.
10. Disconnect the HDS from the 16P DLC.
11. Turn the igniton switch ON (II), and then turn it OFF.
12. Start the engine, and test-drive the vehicle at speeds above 19 mph (30 km/h).

Does the ABS indicator come on?

YES - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

NO - Replace the original wheel sensor.■

2005 PILOT - VSA DTC Troubleshooting: 12, 14, 16, 18

DTC 12, 14, 16, 18: Wheel Sensor (Electrical Noise/Intermittent Interruption)

NOTE: If the ABS indicator comes on because of electrical noise, the indicator goes off when you test-drive the vehicle at 19 mph (30 km/h).

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.
5. Check the appropriate wheel sensor and pulser for debris or damage and proper air gap.

DTC	Appropriate Wheel Sensor
12	Right-front
14	Left-front
16	Right-rear
18	Left-rear

Are they OK?

YES - Go to step 6.

NO - Clean and reinstall or replace the appropriate wheel sensor or pulser.■

6. Disconnect the VSA control unit 47P connector.
7. Check for continuity between the appropriate wheel sensor (+) terminal and other wheel sensor (+) terminals of the VSA control unit 47P connector (see table).

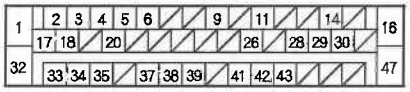
DTC	Appropriate (+) Terminal	Other (+) Terminals		
12	No. 17: FRS (+)	No. 20	No. 6	No. 3
14	No. 20: FLS (+)	No. 17	No. 6	No. 3
16	No. 6: RRS (+)	No. 17	No. 20	No. 3
18	No. 3: RLS (+)	No. 17	No. 20	No. 6

Is there continuity?

YES - Repair short in the wire between the appropriate wheel sensor and the other wheel sensor.■

NO - Go to step 8.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

8. Substitute a known-good wheel sensor for the appropriate wheel sensor (see table).

DTC	Appropriate Wheel Sensor

12	Right-front
14	Left-front
16	Right-rear
18	Left-rear

9. Clear the DTCs using the HDS.
10. Disconnect the HDS from the 16P DLC.
11. Turn the igniton switch ON (II), and then turn it OFF.
12. Start the engine, and test-drive the vehicle at speeds above 19 mph (30 km/h).

Does the ABS indicator come on?

YES - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

NO - Replace the original wheel sensor.■

2005 PILOT - VSA DTC Troubleshooting: 121, 122, 123, 124

DTC 121, 122, 123, 124: VSA Solenoid

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle.

Does the VSA indicator come on, and is DTC 121, 122, 123, or 124 indicated?

YES - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

NO - Intermittent failure, the system is OK at this time.■

2005 PILOT - VSA DTC Troubleshooting: 21, 22, 23, 24

DTC 21, 22, 23, 24: Pulser

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the igniton switch ON (II), then turn it OFF.
4. Start the engine, and test-drive the vehicle at 19 mph (30 km/h) or more.

Does the ABS indicator come on, and are DTCs 21, 22, 23, and/or 24 indicated?

YES - Go to step 5.

NO - The system is OK at this time.■

5. Check the appropriate pulser for debris or damage and proper air gap (see table).

DTC	Appropriate Pulser
21	Right-front
22	Left-front
23	Right-rear
24	Left-rear

Is the pulser OK?

YES - Go to step 6.

NO - Clean and reinstall or replace the pulser.■

6. Clear the DTCs using the HDS.
7. Disconnect the HDS from the 16P DLC.
8. Turn the ignition switch OFF, then cycle the ignition swith to ON (II), then back to OFF.
9. Start the engine, and test-drive the vehicle at speeds above 19 mph (30 km/h).

Does the ABS indicator come on?

YES - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

NO - Replace the original wheel sensor.■

2005 PILOT - VSA DTC Troubleshooting: 25

DTC 25: Yaw Rate Sensor

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Start the engine, and test-drive the vehicle around a number of corners.
5. Verify the DTC.

Is DTC 27 or 64 indicated?

YES - Do the appropriate troubleshooting for the DTC.■

NO - Go to step 6.

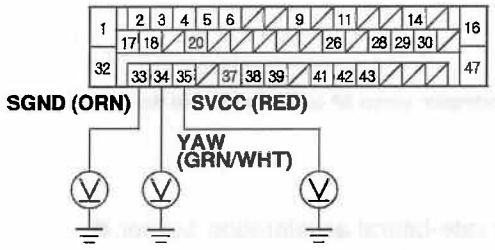
6. Turn the ignition switch OFF.
7. Disconnect the VSA control unit 47P connector, steering angle sensor 5P connector and yaw rate-lateral acceleration sensor 5P connector.
8. Turn the ignition switch ON (II).
9. Measure the voltage between body ground and the VSA control unit 47P connector terminal No. 33, No. 34, and No. 35 individually.

Is there 1 V or more?

YES - Repair short to power in the wire between the VSA control unit, the yaw rate-lateral acceleration sensor and the steering angle sensor.■

NO - Go to step 10.

VSA CONTROL UNIT 47P CONNECTOR



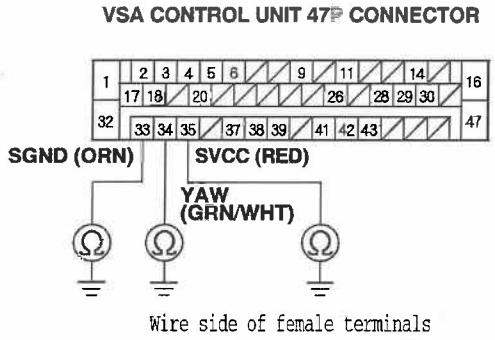
Wire side of female terminals

10. Turn the ignition switch OFF.
11. Check for continuity between body ground and the VSA control unit 47P connector terminal No. 33, No. 34, and No. 35 individually.

Is there continuity?

YES - Repair short to body ground in the wire between the VSA control unit, the yaw rate-lateral acceleration sensor and the steering angle sensor.■

NO - Go to step 12.

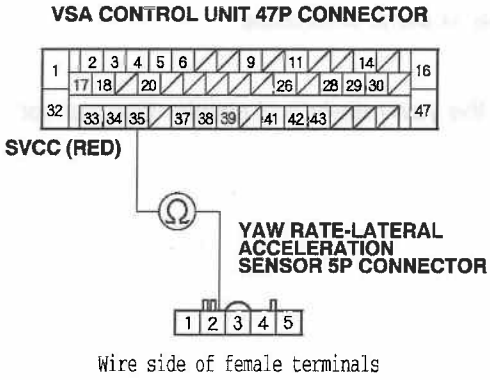


12. Check for continuity between the VSA control unit 47P connector terminal No. 35 and yaw rate-lateral acceleration sensor 5P connector terminal No. 2.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the VSA control unit and the yaw rate-lateral acceleration sensor.■

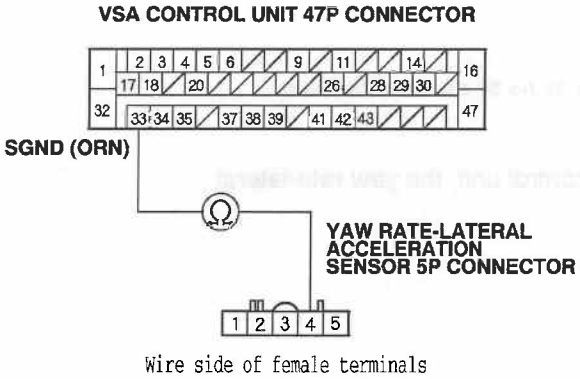


13. Check for continuity between the VSA control unit 47P connector terminal No. 33 and yaw rate-lateral acceleration sensor 5P connector terminal No. 4.

Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire between the VSA control unit and the yaw rate-lateral acceleration sensor.■

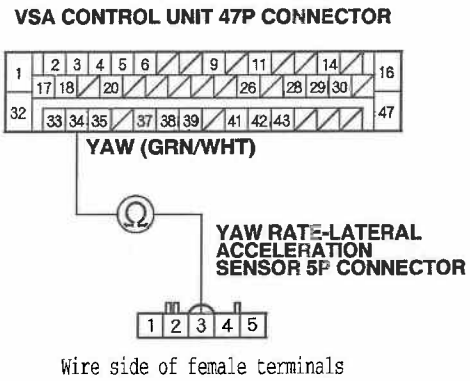


14. Check for continuity between the VSA control unit 47P connector terminal No. 34 and yaw rate-lateral acceleration sensor 5P connector terminal No. 3.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the VSA control unit and the yaw rate-lateral acceleration sensor.■



15. Substitute a known-good yaw rate-lateral acceleration sensor.
16. Reconnect all of the disconnected connectors.
17. Clear the DTC using the HDS.
18. Disconnect the HDS from the 16P DLC.
19. Turn the ignition switch OFF, then turn it ON (II) again.
20. Test-drive the vehicle around a number of corners.
21. Verify the DTC.

Is DTC 25 indicated?

YES - Check for loose connector terminals and repair if necessary. Replace the VSA modulator-control unit.■

NO - Replace the original yaw rate-lateral acceleration sensor.■

2005 PILOT - VSA DTC Troubleshooting: 26

DTC 26: Lateral Acceleration Sensor

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.
5. Verify the DTC.

Is DTC 64 indicated?

YES - Do the appropriate troubleshooting for the DTC.■

NO - Go to step 6.

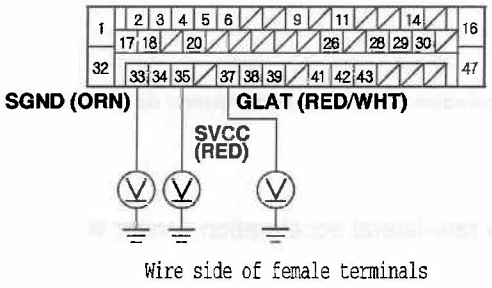
6. Turn the ignition switch OFF.
7. Disconnect the VSA control unit 47P connector, steering angle sensor 5P connector and yaw rate-lateral acceleration sensor 5P connector.
8. Turn the ignition switch ON (II).
9. Measure the voltage between body ground and the VSA control unit 47P connector terminal No. 33, No. 35, and No. 37 individually.

Is there 1 V or more?

YES - Repair short to power in the wire between the VSA control unit, the yaw rate-lateral acceleration sensor and the steering angle sensor.■

NO - Go to step 10.

VSA CONTROL UNIT 47P CONNECTOR



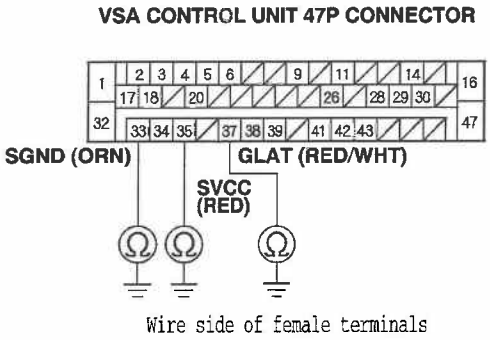
Wire side of female terminals

10. Turn the ignition switch OFF.
11. Check for continuity between body ground and the VSA control unit 47P connector terminal No. 33, No. 35, and No. 37 individually.

Is there continuity?

YES - Repair short to body ground in the wire between the VSA control unit, the yaw rate-lateral acceleration sensor and the steering angle sensor.■

NO - Go to step 12.

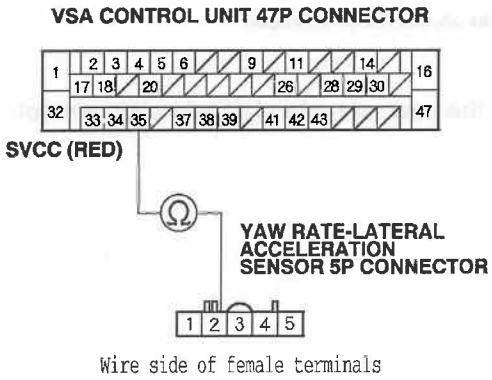


12. Check for continuity between the VSA control unit 47P connector terminal No. 35 and yaw rate-lateral acceleration sensor 5P connector terminal No. 2.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the VSA control unit and the yaw rate-lateral acceleration sensor.■

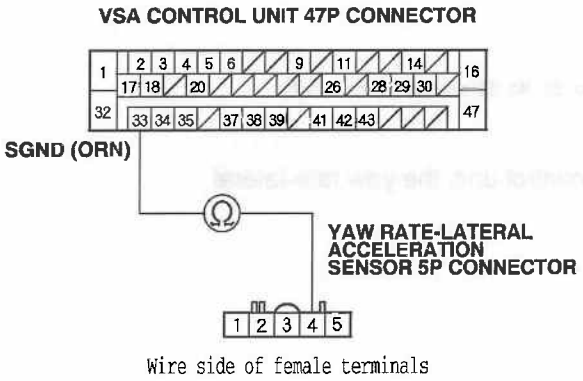


13. Check for continuity between the VSA control unit 47P connector terminal No. 33 and yaw rate-lateral acceleration sensor 5P connector terminal No. 4.

Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire between the VSA control unit and the yaw rate-lateral acceleration sensor.■

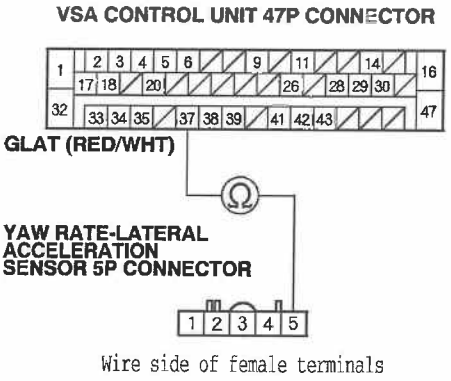


14. Check for continuity between the VSA control unit 47P connector terminal No. 37 and yaw rate-lateral acceleration sensor 5P connector terminal No. 5.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the VSA control unit and the yaw rate-lateral acceleration sensor.■



15. Substitute a known-good yaw rate-lateral acceleration sensor.
16. Reconnect all of the disconnected connectors.
17. Clear the DTC using the HDS.
18. Disconnect the HDS from the 16P DLC.
19. Turn the ignition switch OFF, then turn it ON (II) again.
20. Test-drive the vehicle around a number of corners.
21. Verify the DTC.

Is DTC 25 indicated?

YES - Check for loose terminals and repair if necessary. Replace the VSA modulator-control unit.■

NO - Replace the original yaw rate-lateral acceleration sensor.■

2005 PILOT - VSA DTC Troubleshooting: 27

DTC 27: Steering Angle Sensor

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.
5. Verify the DTC.

Is DTC 64 indicated?

YES - Do the appropriate troubleshooting for the DTC.■

NO - Go to step 6.

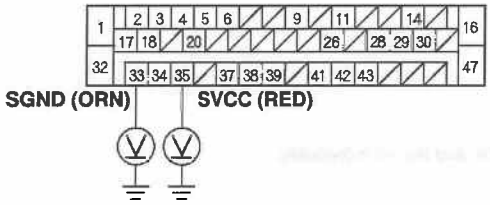
6. Turn the ignition switch OFF.
7. Disconnect the VSA control unit 47P connector, steering angle sensor 5P connector and yaw rate-lateral acceleration sensor 5P connector.
8. Turn the ignition switch ON (II).
9. Measure the voltage between body ground and the VSA control unit 47P connector terminal No. 33, No. 35 individually.

Is there 1 V or more?

YES - Repair short to power in the wire between the VSA control unit, the steering angle sensor and the yaw rate-lateral acceleration sensor.■

NO - Go to step 10.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

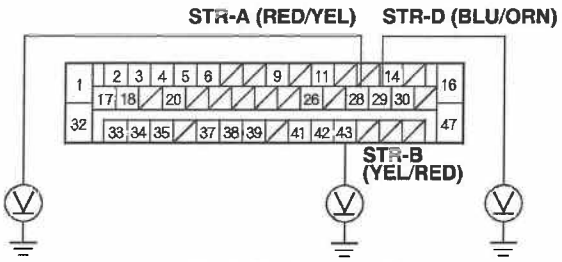
10. Measure the voltage between body ground and the VSA control unit 47P connector terminal No. 28, No. 29, and No. 43 individually.

Is there 1 V or more?

YES - Repair short to power in the wire between the VSA control unit, the steering angle sensor and the yaw rate-lateral acceleration sensor.■

NO - Go to step 11.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

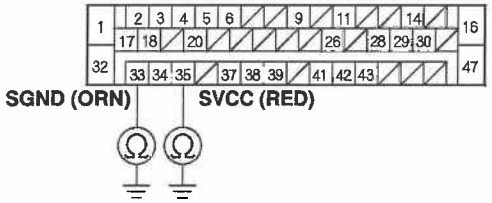
11. Turn the ignition switch OFF.
12. Check for continuity between body ground and the VSA control unit 47P connector terminal No. 33, No. 35 individually.

Is there continuity?

YES - Repair short to body ground in the wire between the VSA control unit, the steering angle sensor and the yaw rate-lateral acceleration sensor.■

NO - Go to step 13.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

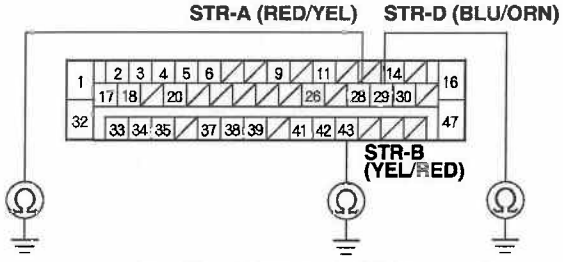
13. Check for continuity between body ground and the VSA control unit 47P connector terminal No. 28, No. 29, and No. 43 individually.

Is there continuity?

YES - Repair short to body ground in the wire between the VSA control unit, the steering angle sensor and the yaw rate-lateral acceleration sensor.■

NO - Go to step 14.

VSA CONTROL UNIT 47P CONNECTOR



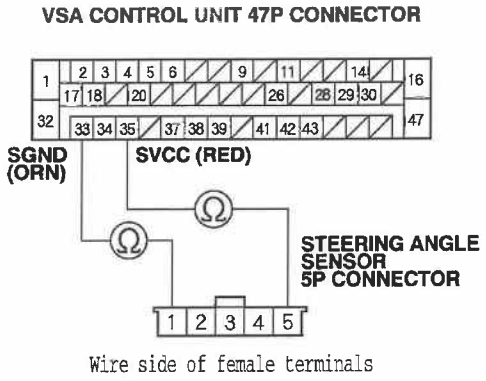
Wire side of female terminals

14. Check for continuity between the VSA control unit 47P connector terminal No. 33, No. 35 and steering angle sensor 5P connector terminal No. 1, No. 5 individually.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the VSA control unit and the steering angle sensor.■

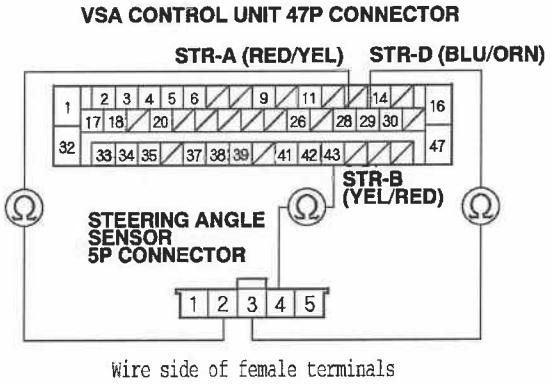


15. Check for continuity between the VSA control unit 47P connector terminal No. 28, No. 29, No. 43 and steering angle sensor 5P connector terminal No. 2, No. 3, and No. 4 individually.

Is there continuity?

YES - Go to step 16.

NO - Repair open in the wire between the VSA control unit and the steering angle sensor.■



16. Substitute a known-good steering angle sensor.
17. Reconnect all of the disconnected connectors.
18. Clear the DTC using the HDS.
19. Disconnect the HDS from the 16P DLC.
20. Turn the ignition switch OFF, then turn it ON (II) again.
21. Test-drive the vehicle around a number of corners.
22. Verify the DTC.

Is DTC 27 indicated?

YES - Check for loose terminals and repair if necessary. Replace the VSA modulator-control unit.■

NO - Replace the original steering angle sensor.■

2005 PILOT - VSA DTC Troubleshooting: 28

DTC 28: Longitude Acceleration Sensor

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.
5. Verify the DTC.

Is DTC 64 indicated?

YES - Do the appropriate troubleshooting for the DTC.■

NO - Go to step 6.

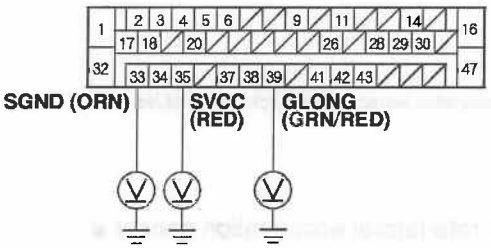
6. Turn the ignition switch OFF.
7. Disconnect the VSA control unit 47P connector, steering angle sensor 5P connector, and yaw rate-lateral acceleration sensor 5P connector.
8. Turn the ignition switch ON (II).
9. Measure the voltage between body ground and the VSA control unit 47P connector terminal No. 33, No. 35, and No. 39 individually.

Is there 1 V or more?

YES - Repair short to power in the wire between the VSA control unit, the yaw rate-lateral acceleration sensor and the steering angle sensor.■

NO - Go to step 10.

VSA CONTROL UNIT 47P CONNECTOR



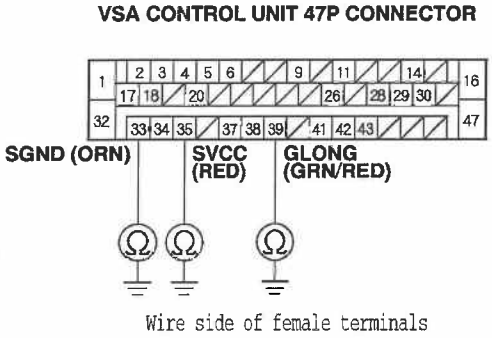
Wire side of female terminals

10. Turn the ignition switch OFF.
11. Check for continuity between body ground and the VSA control unit 47P connector terminal No. 33, No. 35, and No. 39 individually.

Is there continuity?

YES - Repair short to body ground in the wire between the VSA control unit, the yaw rate-lateral acceleration sensor and the steering angle sensor.■

NO - Go to step 12.

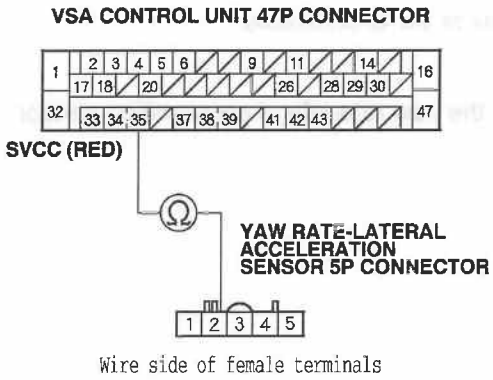


12. Check for continuity between the VSA control unit 47P connector terminal No. 35 and yaw rate-lateral acceleration sensor 5P connector terminal No. 2.

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the VSA control unit and the yaw rate-lateral acceleration sensor.■

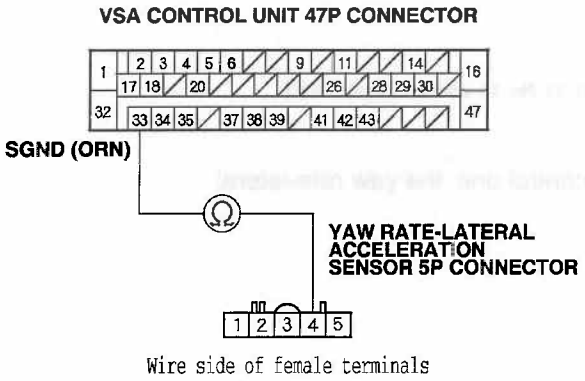


13. Check for continuity between the VSA control unit 47P connector terminal No. 33 and yaw rate-lateral acceleration sensor 5P connector terminal No. 4.

Is there continuity?

YES - Go to step 14.

NO - Repair open in the wire between the VSA control unit and the yaw rate-lateral acceleration sensor.■



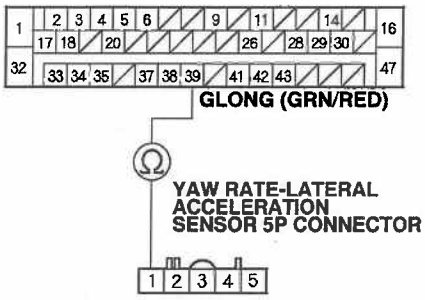
14. Check for continuity between the VSA control unit 47P connector terminal No. 39 and yaw rate-lateral acceleration sensor 5P connector terminal No. 1.

Is there continuity?

YES - Go to step 15.

NO - Repair open in the wire between the VSA control unit and the yaw rate-lateral acceleration sensor.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

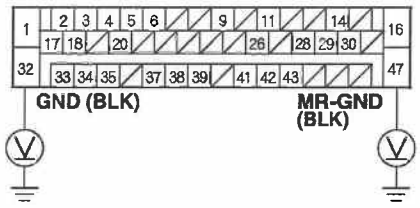
15. Reconnect the VSA control unit 47P connector.
16. Turn the ignition switch ON (II).
17. Measure the voltage between body ground and the VSA control unit 47P connector terminals No. 32 and No. 47 individually.

Is there 0.1 V or less?

YES - Go to step 18.

NO - Repair open in the wire between the VSA control unit and G302. If the wire is OK, check for a poor connection at G302.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

18. Substitute a known-good yaw rate-lateral acceleration sensor.
19. Reconnect all of the disconnected connectors.
20. Clear the DTC using the HDS.
21. Disconnect the HDS from the 16P DLC.
22. Turn the ignition switch OFF, then turn it ON (II) again.
23. Test-drive the vehicles around a number of corners.
24. Verify the DTC.

Is DTC 28 indicated?

YES - Replace the VSA modulator-control unit.■

NO - Replace the yaw rate-lateral acceleration sensor.■

2005 PILOT - VSA DTC Troubleshooting: 31, 32, 33, 34, 35, 36, 37, 38

DTC 31, 32, 33, 34, 35, 36, 37, 38: ABS Solenoid

1. Clear the DTC using the HDS.
2. Turn the ignition switch ON (II).
3. Verify the DTC.

Does the ABS indicator come on, and are DTCs 31, 32, 33, 34, 35, 36, 37, and/or 38 indicated?

YES - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

NO - The system is OK at this time.■

2005 PILOT - VSA DTC Troubleshooting: 41, 42, 43, 44

DTC 41, 42, 43, 44: Wheel Lock

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle, and check for brake drag by duplicating city driving at speeds over 30 mph (50 km/h). Use the brakes often.

   Do the brakes drag?

   YES - Repair the brake drag.■

   NO - Go to step 5.

5. Check the installation of the appropriate wheel sensor and the pulser for damage, debris, or excessive air gap.

DTC	Appropriate Wheel Sensor
41	Right-front
42	Left-front
43	Right-rear
44	Left-rear

Is it correct?

YES - If the DTC does not reappear, the most probable cause for the DTC is that the vehicle might have lost traction in poor weather and spun around.■

NO - Reinstall or replace the wheel sensor.■

2005 PILOT - VSA DTC Troubleshooting: 51, 52

DTC 51: Motor Lock
DTC 52: Motor Stuck OFF

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.

Does the ABS or VSA indicator come on?

YES - Go to step 5.

NO - Intermittent failure. The system is OK at this time. Check for loose terminals at the VSA control unit 47P connector.■

5. Check the VSA MTR (30 A) fuse in the auxiliary fuse box.

Is the fuse OK?

YES - Reinstall the fuse, and go to step 6.

NO - Replace the fuse, and recheck.■

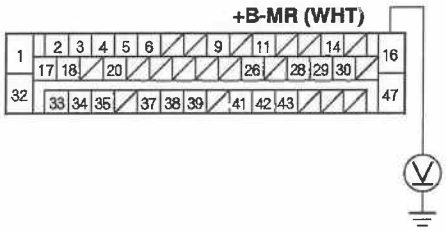
6. Disconnect the VSA control unit 47P connector.
7. Measure the voltage between the VSA control unit 47P connector terminal No. 16 and body ground.

Is there battery voltage?

YES - Go to step 8.

NO - Repair open in the wire between the VSA MTR (30 A) fuse in the auxiliary fuse box and the VSA modulator-control unit.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

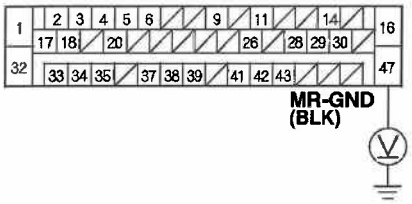
8. Reconnect the VSA control unit 47P connector.
9. Turn the ignition switch ON (II).
10. Measure the voltage between the VSA control unit 47P connector terminal No. 47 and body ground.

Is there less than 0.1 V or more?

YES - Go to step 11.

NO - Repair open or high resistance in the wire between the VSA modulator-control unit and body ground (G302).■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

11. Clear the DTC using the HDS.
12. Turn the ignition switch OFF, then turn it ON (II) again.
13. Test-drive the vehicle at 10 mph (15 km/h) or more.

Does the ABS indicator come on, and is DTC 51 or 52 indicated?

YES - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

NO - The system is OK at this time.■

2005 PILOT - VSA DTC Troubleshooting: 53

DTC 53: Motor Stuck ON

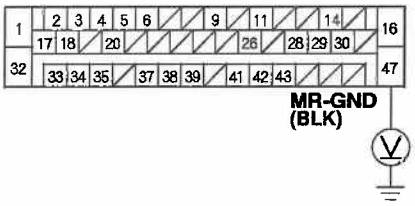
1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.
5. Turn the ignition switch ON (II).
6. Measure the voltage between the VSA control unit 47P connector terminal No. 47 and body ground.

Is there less than 0.1 V or more?

YES - Go to step 7.

NO - Repair open or high resistance in the wire between the VSA modulator-control unit and body ground (G302).■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

7. Clear the DTC using the HDS.
8. Turn the ignition switch OFF, then turn it ON (II) again.
9. Test-drive the vehicle.

Does the ABS indicator come on, and is DTC 53 indicated?

YES - Check for loose connector terminals and repair if necessary. Replace the VSA modulator-control unit.■

NO - The system is OK at this time.■

2005 PILOT - VSA DTC Troubleshooting: 54

DTC 54: Fail-safe Relay

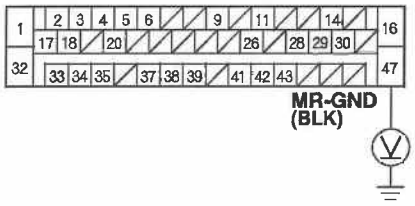
1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.
5. Turn the ignition switch ON (II).
6. Measure the voltage between the VSA control unit 47P connector terminal No. 47 and body ground.

Is there less than 0.1 V or more?

YES - Go to step 7.

NO - Repair open or high resistance in the wire between the VSA modulator-control unit and body ground (G302).■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

7. Clear the DTC using the HDS.
8. Turn the ignition switch OFF, then turn it ON (II) again.
9. Test-drive the vehicle.

Does the ABS indicator come on, and is DTC 54 indicated?

YES - Check for loose connector terminals and repair if necessary. Replace the VSA modulator-control unit.■

NO - The system is OK at this time.■

2005 PILOT - VSA DTC Troubleshooting: 61, 62

DTC 61, 62: Low/High +B-FSR Voltage

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.
5. Clear the DTC using the HDS.
6. Turn the ignition switch ON (II).

Does the ABS indicator come on?

YES - Go to step 7.

NO - The system is OK at this time.■

7. Verify the DTC.

Is DTC 61 or 62 indicated?

YES - Check the battery and the charging system.■

NO - Do the appropriate troubleshooting for the DTC indicated.■

2005 PILOT - VSA DTC Troubleshooting: 64

DTC 64: Sensor Power Voltage

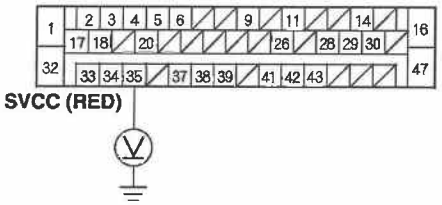
1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle around a number of corners.
5. Disconnect the VSA control unit 47P connector.
6. Start the engine.
7. Measure the voltage between the VSA control unit 47P connector terminal No. 35 and body ground.

Is there 1 V or more?

YES - Repair short to power in the wire between the VSA modulator-control unit and yaw rate-lateral acceleration sensor and steering angle sensor.■

NO - Go to step 8.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

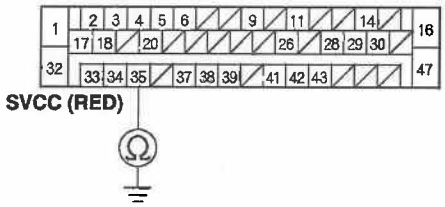
8. Check for continuity between the VSA control unit 47P connector terminal No. 35 and body ground.

Is there continuity?

YES - Repair short to ground in the wire between the VSA modulator-control unit and yaw rate-lateral acceleration sensor and steering angle sensor.■

NO - Go to step 9.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

9. Clear the DTC using the HDS.
10. Test-drive the vehicle.

Does the ABS indicator come on, and is DTC 64 indicated?

YES - Replace the VSA modulator-control unit.■

NO - Intermittent failure, the system is OK at this time. Check connections at the VSA control unit 47P connector and G302.■

2005 PILOT - VSA DTC Troubleshooting: 65

DTC 65: Brake Fluid Level

1. Check the brake fluid level.

   Is the level correct?

   YES - Go to step 2.

   NO - Check for leaks in the brake system. If no leaks are found, inspect the brake lining and replace any worn brake pads.■

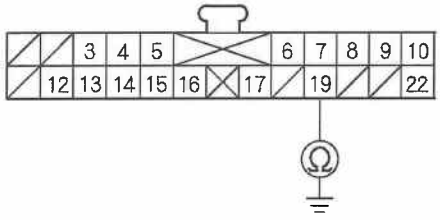
2. Disconnect the gauge assembly connector B (22P), and brake fluid level switch 2P connector.
3. Check for continuity between terminal No. 19 of the gauge assembly connector B (22P) and body ground.

   Is there continuity?

   YES - Repair short to ground in the wire between the gauge assembly connector B and the brake fluid level switch.■

   NO - Go to step 4.

GAUGE ASSEMBLY CONNECTOR B (22P)



Wire side of female terminals

4. Check the brake fluid level switch.

   Is the switch OK?

   YES - Do the troubleshooting for the gauge assembly.■

   NO - Replace the brake fluid level switch.■

2005 PILOT - VSA DTC Troubleshooting: 66

DTC 66: VSA Pressure Sensor (Inside of VSA Modulator-Control Unit)

1. Clear the DTC using the HDS.
2. Remove the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II).
4. Test-drive the vehicle.

Does the ABS indicator come on, and is DTC 25, 26, 27, or 64 indicated?

YES - Do the appropriate troubleshooting for the DTC.■

NO - Go to step 5.

5. Do the VSA sensor neutral position memorization.
6. Clear the DTC using the HDS.
7. Disconnect the HDS from the 16P DLC.
8. Turn the ignition switch OFF, then turn it ON (II).
9. Test-drive the vehicle.

Does the ABS indicator come on, and is DTC 66 indicated?

YES - Check for loose connector terminals and repair if necessary. Replace the VSA modulator-control unit.■

NO - The system is OK at this time.■

2005 PILOT - VSA DTC Troubleshooting: 68

DTC 68: Brake Pedal Position Switch

1. Check for other DTCs in the PGM-FI system.

   Are other DTCs indicated?

   YES - Do the appropriate troubleshooting for the DTCs.■

   NO - Go to step 2.

2. Check the brake pedal position switch.

   Is the switch OK?

   YES - Go to step 3.

   NO - Adjust the brake pedal position switch.■

3. Clear the DTC using the HDS.
4. Disconnect the HDS from the 16P DLC.
5. Turn the ignition switch OFF, then turn it ON (II).
6. Test-drive the vehicle.

   Does the ABS indicator come on, and is DTC 68 indicated?

   YES - Go to step 7.

   NO - The system is OK at this time.■

7. Troubleshoot the brake pedal position switch circuit.

   Is the brake pedal position switch circuit OK?

   YES - Substitute a known-good PCM and recheck:

   - If the problem is gone, replace the original PCM.■
   - If the problem continues, replace the VSA modulator-control unit.■

   NO - Repair the brake pedal position switch circuit.■

2005 PILOT - VSA DTC Troubleshooting: 71

DTC 71: Different Diameter Tire

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle.

Does the ABS indicator come on, and is DTC 71 indicated?

YES - Go to step 5.

NO - Intermittent failure, confirm that tire inflation is set to spec. The vehicle is OK at this time.■

5. Check that all four tires are the specified size and are inflated to the proper specification.

Are all four tires the correct size and properly inflated?

YES - Go to step 6.

NO - Install the correct tires or set the tires to the correct inflation, and retest.■

6. With the vehicle on level ground, mark each tire with a small spot of grease. Roll the vehicle until each of the tires makes two grease spots on the floor.
7. Measure and record the distance between the two grease spots.

Is the difference between the shortest and the longest measurement more than 10 %?

YES - Replace the tire/tires that is smaller or larger than the others.■

NO - Replace the VSA modulator-control unit.■

2005 PILOT - VSA DTC Troubleshooting: 81

DTC 81: Central Processing Unit (CPU)

1. Check for other DTCs.

   Is another DTC indicated?

   YES - Do the appropriate troubleshooting for the DTC.■

   NO - Go to step 2.

2. Clear the DTC using the HDS.
3. Disconnect the HDS from the 16P DLC.
4. Turn the ignition switch OFF, then turn it ON (II) again.
5. Test-drive the vehicle.

   Does the ABS indicator come on, and is DTC 81 indicated?

   YES - Go to step 6.

   NO - Intermittent failure; the vehicle is OK at this time.■

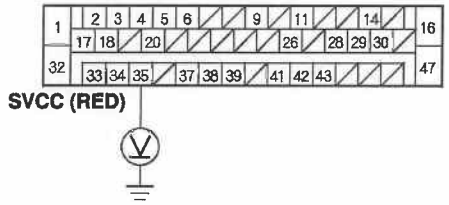
6. Disconnect the VSA control unit 47P connector.
7. Start the engine.
8. Measure the voltage between the VSA control unit 47P connector terminal No. 35 and body ground.

   Is there 1 V or more?

   YES - Repair short to power in the wire between the VSA modulator-control unit, the yaw rate-lateral acceleration sensor, and the steering angle sensor.■

   NO - Go to step 9.

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

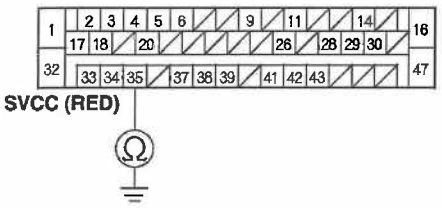
9. Check for continuity between the VSA control unit 47P connector terminal No. 35 and body ground.

   Is there continuity?

   YES - Repair short to body ground in the wire between the VSA modulator-control unit, the yaw rate-lateral acceleration sensor, and the steering angle sensor.■

   NO - Check for loose terminals in the VSA control unit 47P connector. If necessary, substitute a known-good VSA modulator-control unit, and recheck.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

2005 PILOT - VSA DTC Troubleshooting: 83

DTC 83: PCM

1. Check the DTC.

   Is DTC 86 indicated?

   YES - Do the troubleshooting for DTC 86.■

   NO - Go to step 2.

2. Clear the DTC using the HDS.
3. Disconnect the HDS from the 16P DLC.
4. Turn the ignition switch OFF, then turn it ON (II) again.
5. Test-drive the vehicle.

   Do the VSA and VSA activation indicators come on, and is DTC 83 indicated?

   YES - Go to step 6.

   NO - The system is OK at this time.■

6. Check the PGM-FI system.

   Does the MIL indicator come on or is PCM's DTC indicated?

   YES - Do the applicable troubleshooting for PCM.■

   NO - Go to step 7.

7. Check the gear position.

   Does the D indicator come on while N position is selected or is PCM's DTC indicated?

   YES - Do the applicable troubleshooting for PCM.■

   NO - Check for loose terminals at the PCM connectors, and go to step 8.

8. Clear the DTC using the HDS.
9. Turn the ignition switch OFF, then turn it ON (II) again.
10. Test-drive the vehicle.

    Is DTC 83 indicated and no PCM's DTC?

    YES - Substitute a known-good PCM, and recheck. If the code returns, replace the VSA modulator-control unit.■

    NO - The system is OK at this time.■

2005 PILOT - VSA DTC Troubleshooting: 84

DTC 84: VSA Sensor Neutral Position

1. Clear the DTC using the HDS.
2. Disconnect the HDS from the 16P DLC.
3. Turn the ignition switch OFF, then turn it ON (II) again.
4. Test-drive the vehicle.

Does the VSA indicator come on, and is DTC 84 indicated?

YES - Go to step 5.

NO - The system is OK at this time.■

5. Check for other DTCs.

Are any other DTCs indicated?

YES - Troubleshoot the appropriate DTC.■

NO - Go to step 6.

6. Do the VSA sensor neutral position memorization.
7. Clear the DTC using the HDS.
8. Disconnect the HDS from the 16P DLC.
9. Turn the ignition switch OFF, then turn it ON (II) again.
10. Test-drive the vehicle.

Does the VSA indicator come on, and is DTC 84 indicated?

YES - Replace the VSA modulator-control unit.■

NO - The system is OK at this time.■

2005 PILOT - VSA DTC Troubleshooting: 86

DTC 86: F-CAN Communication

1. Clear the DTC using the HDS.
2. Start and run the engine for at least 5 seconds then turn the engine off.
3. Check for DTCs using the HDS.

Is DTC 86 indicated?

YES - Go to step 4.

NO - Intermittent failure, the F-CAN communication line is OK at this time.■

4. Check for DTCs in the PCM.

Are any DTCs indicated?

YES - Troubleshoot the PCM DTCs.■

NO - Replace the VSA modulator-control unit.■

2005 PILOT - Symptom Troubleshooting: VSA indicator does not come on

VSA indicator does not come on

1. Turn the ignition switch ON (II), and watch the VSA indicator.

   Does the VSA indicator come on for several seconds?

   YES - The system is OK at this time.■

   NO - Go to step 2.

2. Apply the parking brake.

   Does the brake system indicator come on?

   YES - Go to step 3.

   NO - Repair open in the indicator power source circuit.■

3. Turn the ignition switch OFF.
4. Disconnect the VSA control unit 47P connector.
5. Turn the ignition switch ON (II).

   Does the VSA indicator come on?

   YES - Go to step 6.

   NO - Do the troubleshooting for the gauge assembly.■

6. Turn the ignition switch OFF.
7. Substitute a known-good VSA modulator-control unit.
8. Turn the ignition switch ON (II).

   Does the VSA indicator come on?

   YES - Replace the VSA modulator-control unit.■

   NO - Do the troubleshooting for the gauge assembly.■

2005 PILOT - Symptom Troubleshooting: VSA indicator does not go off, and no DTCs are stored

VSA indicator does not go off, and no DTCs are stored

1. Check the VSA FSR (40 A) fuse in the auxiliary fuse box.

   Is the fuse OK?

   YES - Reinstall the fuse, and go to step 2.

   NO - Replace the fuse, and recheck. If the fuse is blown, check for a short to body ground in this fuse circuit. If the circuit is OK, replace the VSA modulator-control unit.■

2. Check the No 6 (15 A) fuse in the driver's under-dash fuse/relay box.

   Is the fuse OK?

   YES - Reinstall the fuse, and go to step 3.

   NO - Replace the fuse, and recheck. If the fuse is blown, check for a short to body ground in this fuse circuit. If the circuit is OK, replace the VSA modulator-control unit.■

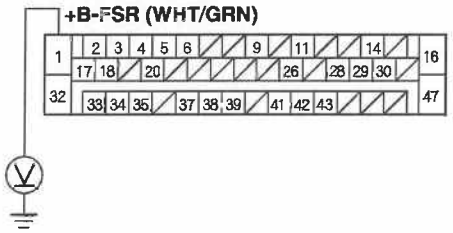
3. Turn the ignition switch OFF.
4. Disconnect the VSA control unit 47P connector.
5. Turn the ignition switch ON (II).
6. Measure the voltage between the VSA control unit 47P connector terminal No. 1 and body ground.

   Is there battery voltage?

   YES - Go to step 7.

   NO - Repair open in the wire between the VSA FSR (40 A) fuse and the VSA control unit.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

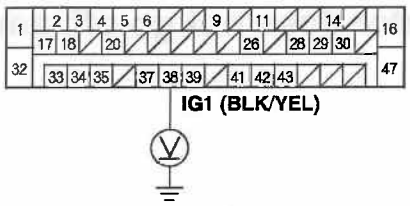
7. Measure the voltage between the VSA control unit 47P connector terminal No. 38 and body ground.

   Is there battery voltage?

   YES - Go to step 8.

   NO - Repair open in the wire between the No. 6 (15 A) fuse in the driver's under-dash fuse/relay box and the VSA control unit.■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

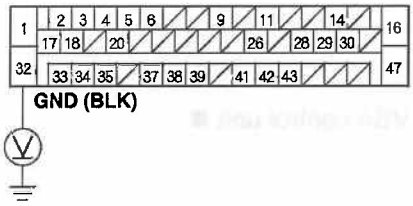
8. Turn the ignition switch OFF.
9. Reconnect the VSA control unit 47P connector.
10. Turn the ignition switch ON (II).
11. Measure the voltage between the VSA control unit 47P connector terminal No. 32 and body ground.

Is there 0.1 V or more?

YES - Check for loose terminals in the VSA control unit 47P connector. Substitute a known-good gauge assembly, and recheck. If the test results are the same, substitute a known-good VSA modulator-control unit and recheck.■

NO - Repair open in the wire between the VSA control unit and body ground (G302).■

VSA CONTROL UNIT 47P CONNECTOR



Wire side of female terminals

2005 PILOT - How to Troubleshoot the VSA System

System Indicator

This system has four indicators: ABS indicator (A), VSA indicator (B), VSA activation indicator (C) and brake system indicator (D). When the system detects a problem, it turns on the appropriate indicators. Depending on the failure, the control unit determines which indicators are turned on.

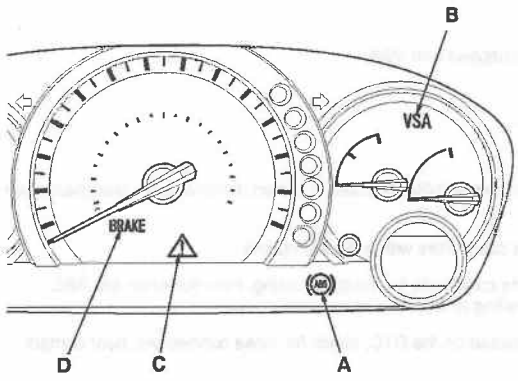
- When ABS function is lost:

  ABS indicator, VSA indicator and VSA activation indicator turn on.
- When VSA function is lost:

  VSA indicator and VSA activation indicator turn on.
- When all functions are lost:

  All four indicators turn on.
- When the gauge assembly detects F-CAN circuit problem:

  ABS indicator, VSA indicator and brake system indicator turn on.



ABS/VSA Indicator

- If the system is OK, the ABS and VSA indicators will go off 2 seconds after turning the ignition switch ON (II).
- The ABS and VSA indicators come on when the control unit detects a problem in the system. However, even though the system is operating properly, the activation indicator may come on under these conditions:

  - Only the drive wheels rotate.
  - One drive wheel is stuck.
  - The vehicle goes into a spin.
  - The ABS or VSA continues to operate for a long time.
  - The vehicle is subjected to an electrical signal disturbance.
  - The VSA switch has been manually turened off.

To determine the actual cause of the problem, question the customer about the problem, taking these conditions into consideration.

- When a problem is detected and the ABS indicator comes on, but not the VSA indicator, there are cases when the indicator stays on until the ignition switch is turned OFF, and cases when the indicator goes off automatically when the system returns to normal.

  - DTC 61 or 62:
  - The ABS and VSA indicators go off automatically when the system returns to normal.
  - DTC 11, 13, 15, 17, 31, 32, 33, 34, 35, 36, 37, 38, 54, 71, 81, 112, 121, 122, 123 or 124:
  - The ABS and VSA indicators stay on until the ignition switch is turned OFF whether or not the system returns to normal.
  - DTC 12, 14, 16, 18, 21, 22, 23, 24, 41, 42, 43, 44, 51, 52 or 53:
  - The ABS and VSA indicators stay on until the system returns to normal after the vehicle is driven.
  - DTC 25, 26, 27, 28, 64, 65, 66, 68, 83, 84 or 86:
  - The VSA indicator stays on until the ignition switch is turned OFF whether or not the system returns to normal.

Diagnostic Trouble Code (DTC)

- The memory can hold any number of DTCs. However, when the same DTC is detected more than once, the more recent DTC is written over the earlier one.

  Therefore, when the same problem is detected repeatedly, it is memorized as a single DTC.
- The DTCs are indicated in ascending number order, not in the order they occur.
- The DTCs are memorized in the EEPROM (non-volatile memory). Therefore, the memorized DTCs cannot be canceled by disconnecting the battery. Do the specified

procedures to clear the DTCs.

Self-diagnosis

- Self-diagnosis can be classified into two categories:

  - Initial diagnosis: Done right after the ignition switch is turned ON (II) and until the ABS or VSA indicator goes off.
  - Regular diagnosis: Done right after the initial diagnosis until the ignition switch is turned OFF.

- When the system detects a problem, the VSA control unit shifts to fail-safe mode.

Kickback

The pump motor operates when the ABS or VSA is functioning, and the fluid in the reservoir is forced out to the master cylinder, causing kickback at the brake pedal.

Pump Motor

- The pump motor operates when the ABS or VSA is functioning.
- The VSA control unit checks the pump motor operating during initial diagnosis when the vehicle is driven over 10 mph (15 km/h) the first time after the ignition switch is turned ON (II). You may hear the motor operate at this time, but it is normal.

Brake Fluid Replacement/Air Bleeding

Brake fluid replacement and air bleeding procedures are identical to the procedures used on vehicles not equipped with VSA.

How to Troubleshoot DTCs

The troubleshooting flowchart procedures assume that the cause of the problem is still present and the ABS and/or VSA indicator is still on. Following the flowchart when the ABS and/or VSA indicator does not come on can result in incorrect diagnosis.

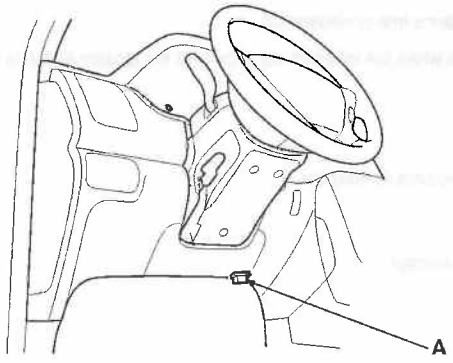
The connector illustrations show the female terminal connectors with a single outline and the male terminal connectors with a double outline.

1. Question the customer about the conditions when the problem occured, and try to reproduce the same conditions for troubleshooting. Find out when the ABS and/or VSA indicator came on, such as during ABS control, after ABS control, when vehicle was travelling at a certain speed, etc.
2. When the ABS or VSA indicator does not come on during the test drive, but troubleshooting is done based on the DTC, check for loose connectors, poor contact of the terminals, etc. before you start troubleshooting.
3. After troubleshooting, or repairs are done, clear the DTCs, and test-drive the vehicle under the same conditions as originally set with the DTCs. Make sure the ABS and VSA indicators do not come on.

How to Retrieve DTCs

1. With the ignition switch OFF, connect the HDS to the 16P data link connector (DLC) (A) under the right side of the driver's dashboard.
2. Turn the ignition switch ON (II), and follow the prompts on the HDS to display the DTC(s) on the screen. After determining the DTC, refer to the DTC Troubleshooting.

   NOTE: See the HDS help menu for specific instructions.



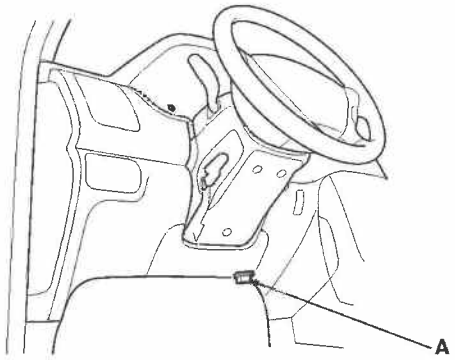
How to Clear DTCs

NOTE: You cannot clear the DTCs manually.

INTERACTIVE NETWORK

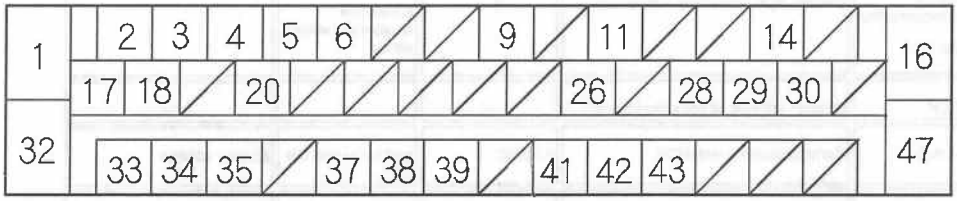
1. With the ignition switch OFF, connect the HDS to the 16P data link connector (DLC) (A) under the right side of the driver's dashboard.
2. Turn the ignition switch ON (II), and clear the DTC(s) by following the screen prompts on the HDS.

   NOTE: See the HDS help menu for specific instructions.
3. If the VSA activation indicator remains on, but the VSA and ABS indicators are off, do the VSA sensor neutral position memorization.



2005 PILOT - VSA System Description

VSA Control Unit Inputs and Outputs for 47P Connector



Wire side of female terminals

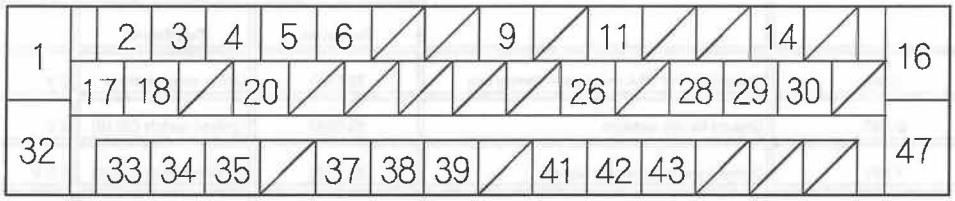
Terminal number	Wire color	Terminal sign	Description	Measurement (VSA control unit 47P connector connected)		
				Terminals	Conditions	Voltage
1	WHT/GRN	+B-FSR	Power source for the fail-safe relay	1-GND	At all times	Battery voltage
2	GRY	RLS (-)	Detects left-rear wheel sensor signal	2-3	Ammeter connected in series with the wheel speed sensor, then ignition switch ON (II)*1 Rotate the appropriate wheel slowly	About 7 mA to about 14 mA alternately
3	PUR	RLS (+)				
4	BRN	FLS (-)	Detects left-front wheel sensor signal	4-20		
5	BLU/YEL	RRS (-)	Detects right-rear wheel sensor signal	5-6		
6	GRN/YEL	RRS (+)				
9	GRY/YEL	RLP	Outputs left-rear wheel speed signal	---	---	---
11	GRY	K-LINE	Communications with HDS	11-GND	Ignition switch ON (II)	Battery voltage
14	WHT	CAN-H	F-CAN communication circuit	14-GND	Ignition switch ON (II)	About 2.5 V
16	WHT	+B-MR	Power source for the motor relay	16-GND	At all times	Battery voltage

*1: If a DTC is set during set up, turn the ignition switch OFF, then back ON (II) before testing.

Terminal number	Wire color	Terminal sign	Description	Measurement (VSA control unit 47P connector connected)		
				Terminals	Conditions	Voltage
17	GRN/BLK	FRS (+)	Detects right-front wheel sensor signal	17-18	Ammeter connected in series with the wheel speed sensor, then ignition switch ON (II) *1 Rotate the appropriate wheel slowly	About 7 mA to about 14 mA alternately
18	GRN	FRS (-)				
20	GRN/BLU	FLS (+)	Detects left-front wheel sensor signal	4-20		
26	LT GRN	FRP	Outputs right-front wheel sensor signal	---	---	---
28	RED/YEL	STR-A	Detects steering angle sensor signal	28-GND	Ignition switch ON (II), turn steering wheel very slowly	1-4 V Alternately
29	BLU/ORN	STR-D	Detects steering angle sensor signal	29-GND	Ignition switch ON (II), steering wheel in straight ahead position, then turned off at center	1 V on center 4 V off center
30	RED	CAN-L	CAN communication circuit	30-GND	Ignition switch ON (II)	2.5 V

*1: If a DTC is set during set up, turn the ignition switch OFF, then back ON (II) before testing.

VSA Control Unit Inputs and Outputs for 47P Connector (cont'd)



Wire side of female terminals

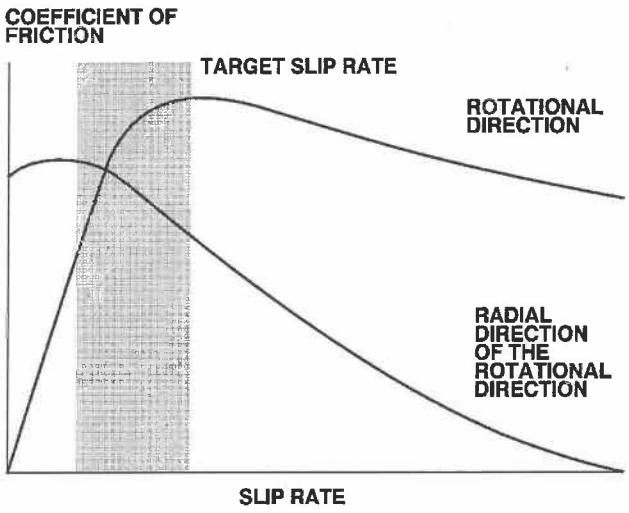
Terminal number	Wire color	Terminal sign	Description	Measurement (VSA control unit 47P connector connected)		
				Terminals	Conditions	Voltage
32	BLK	GND	Ground for the VSA modulator-control unit	32-GND	Under all conditions	0 V
33	ORN	SGND	Ground for the sensors	33-GND	Ignition switch ON (II)	0 V
34	GRN/WHT	YAW	Detects yaw rate sensor signal	34-GND	Ignition switch ON (II)	2.5 V
35	RED	SVCC	Power source for the sensors	35-GND	Ignition switch ON (II)	5 V
37	RED/WHT	GLAT	Detects lateral acceleration sensor signal	37-GND	Ignition switch ON (II)	2.5 V
38	BLK/YEL	IG1	Power source for activating the system	38-GND	Ignition switch ON (II)	Battery voltage
39	GRN/RED	GLONG	Detects longitude acceleration sensor signal	---	Ignition switch ON (II)	2.5 V
41	GRY/RED	RRP	Outputs right-rear wheel sensor signal	---	---	---
42	WHT/RED	FLP	Outputs left-front wheel sensor signal	---	---	---
43	YEL/RED	STR B	Detects steering angle sensor signal	43-GND	Ignition switch ON (II), turn steering wheel very slowly	1-4 V Alternately
47	BLK	MR-GND	Ground for the pump motor	47-GND	Under all conditions	0 V

ABS Features

When the brake pedal is pressed while driving, the wheels can lock before the vehicle comes to a stop. In such an event, the maneuverability of the vehicle is reduced if the front wheels are locked, and the stability of the vehicle is reduced if the rear wheels are locked, creating an extremely unstable condition. The ABS precisely controls the slip rate of the wheels to ensure maximum grip force from the tires, and it thereby ensures maneuverability and stability of the vehicle.

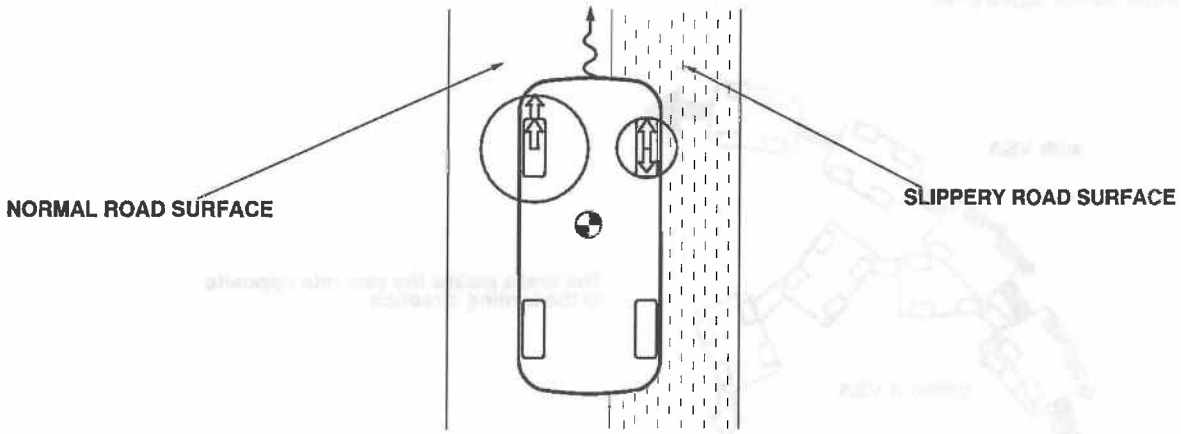
The ABS calculates the slip rate of the wheels based on the vehicle speed and the wheel speed, then it controls the brake fluid pressure to reach the target slip rate.

Grip Force of Tire and Road Surface



TCS Features

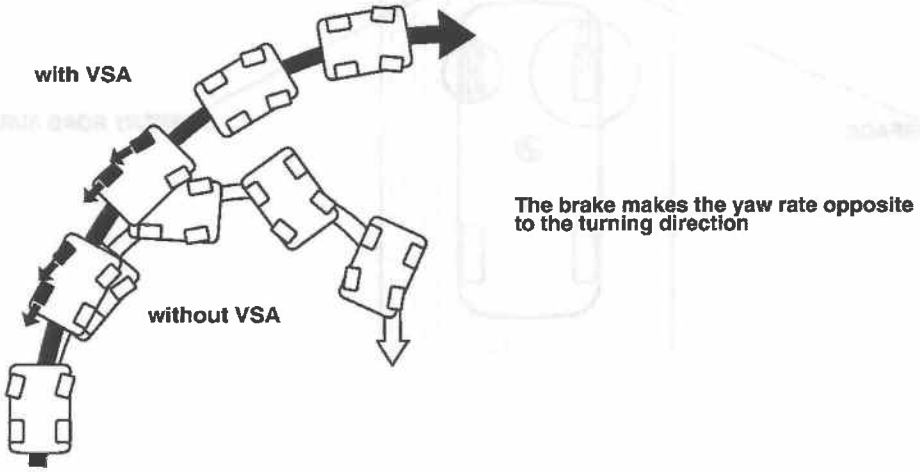
The TCS provides low-speed traction. When a drive wheel loses traction on a slippery road surface and starts to spin, the VSA modulator-control unit applies brake pressure to slow the spinning wheel. At that time, the VSA control unit sends a traction control signal to the PCM to reduce engine power.



VSA System Features

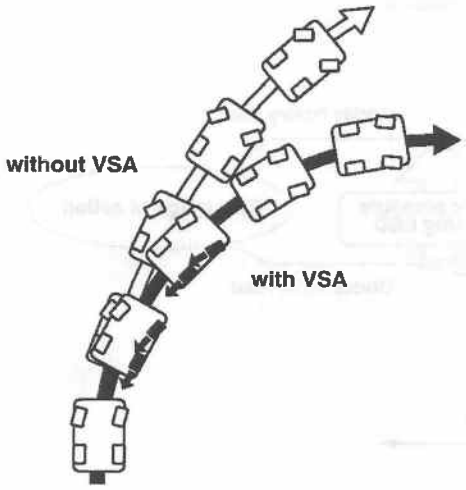
Oversteer control

Applies the brake to the front and rear outside wheels



Understeer control (in acceleration)

- Applies the brake to the front and rear inside wheels
- Controls the engine torque



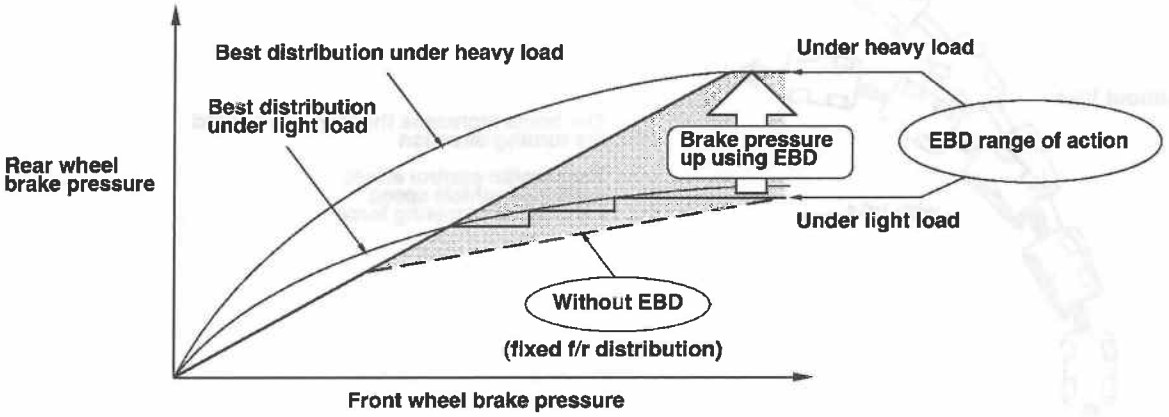
The brake increases the yaw rate toward the turning direction

The throttle control effect;
- **reduces vehicle speed**
- **increases cornering force**

Electronic Brake Distribution (EBD)

Electronic Brake Distribution (EBD) has been added to the VSA system. EBD eliminates the need for an external, mechanical proportioning valve and improves overall braking performance.

When the vehicle is heavily loaded, most of the increase in weight is born by the rear wheels, increasing braking capability. Proportioning valves maintain a fixed distribution of brake pressure between the front and the rear wheels, making it very difficult to fully utilize increased rear wheel braking capability. EBD varies brake pressure distribution according to load, using input from the wheel speed sensors, which improves overall braking performance.



Normal Braking

Under normal braking conditions, brake pressure is evenly distributed between the front and rear brakes, and EBD is not used.

Firm Braking

Under hard braking conditions, the VSA control unit monitors wheel speed in order to allow a maximum amount of brake distribution individually to the rear wheels. Once the VSA control unit detects that one or both rear wheels are nearing their maximum braking potential, the inlet valve closes for one or both rear wheels, maintaining the current pressure. If the traction is improved, and the wheel(s) is no longer nearing its limits, the VSA control unit will open the inlet solenoid allowing additional pressure to be distributed to the rear wheel. The rear wheels are controlled independently of each other during EBD function.

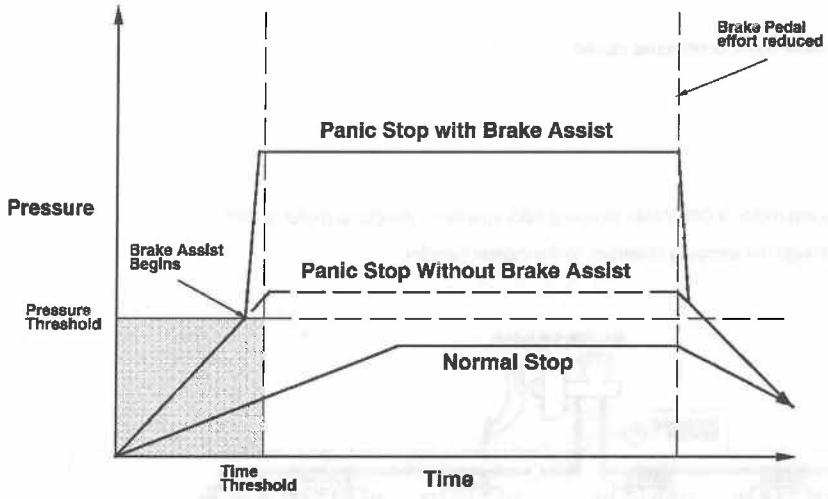
If during EBD function the VSA control unit determines that the wheels are begining to slip more than a predetermined amount, the control unit abandons EBD control and shifts to select low 3-channel ABS control.

Brake Assist

Brake assist has been added to the VSA system. Brake assist helps ensure that any driver can achieve the full braking potential of the vehicle by increasing brake system pressure in a panic situation, bringing the vehicle into a full ABS stop.

Each time the ignition switch is turned ON (II), the VSA control unit learns the current driver's normal braking characteristics by monitoring the brake pressure sensor and the brake pedal position switch at each stop. Using these inputs and their values, the VSA control unit is able to learn the driver's normal braking habits, and then determine the difference between a normal stop and a panic stop for the individual driver of the vehicle. If during a panic stop the VSA control unit determines that the brake system pressure increases above a learned threshold in less than a learned amount of time, the VSA control unit engages brake assist.

Because the Brake system pressure crossed the threshold before the time threshold had expired, the VSA control unit goes into Brake Assist mode.



Normal Braking

During normal braking conditions, brake assist does not affect brake system pressure.

Panic Stop

During a panic stop, the control unit turns the VSA pump ON, and opens the inlet valve. This brings the brake system pressure up high enough to cause a full ABS stop. As soon as the brake pedal is released, brake assist is stopped and the brake system returns to normal operation.

Modulator Unit

The modulator unit consists of the inlet solenoid valve, outlet solenoid valve, VSA normally open (NO) solenoid valve, VSA normally closed (NC) solenoid valve, reservoir, pump, pump motor, and the damping chamber.

The modulator controls the caliper fluid pressure directly. It is a circulating-type modulator because the brake fluid circulates through the caliper, the reservoir, and the master cylinder.

The hydraulic control has three modes: pressure intensifying, pressure retaining, and pressure reducing.

The hydraulic circuit is an independent four channel type, one channel for each wheel.

ABS Control

Pressure intensifying mode

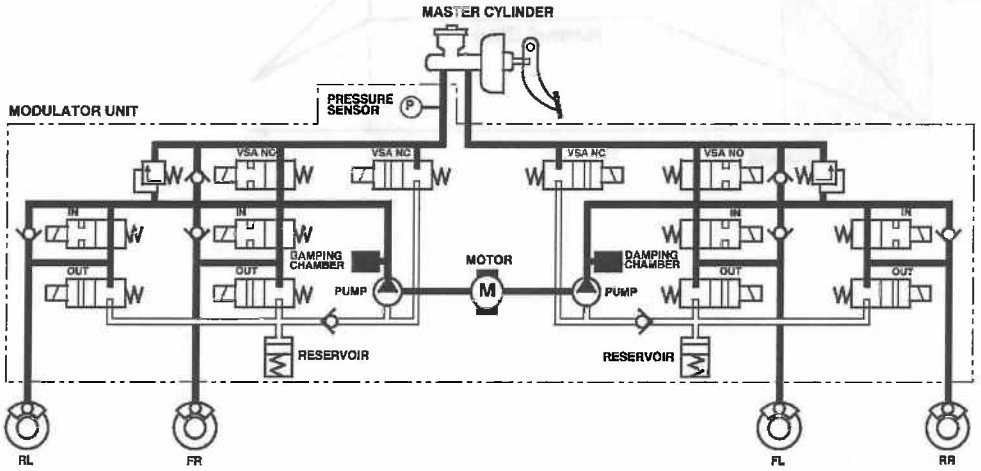
VSA NO valve open, VSA NC valve closed, inlet valve open, outlet valve closed.

Master cylinder fluid is pumped out to the caliper.

Pump motor

When starting the pressure reducing mode, the pump motor is ON. When stopping ABS operation, the pump motor is OFF.

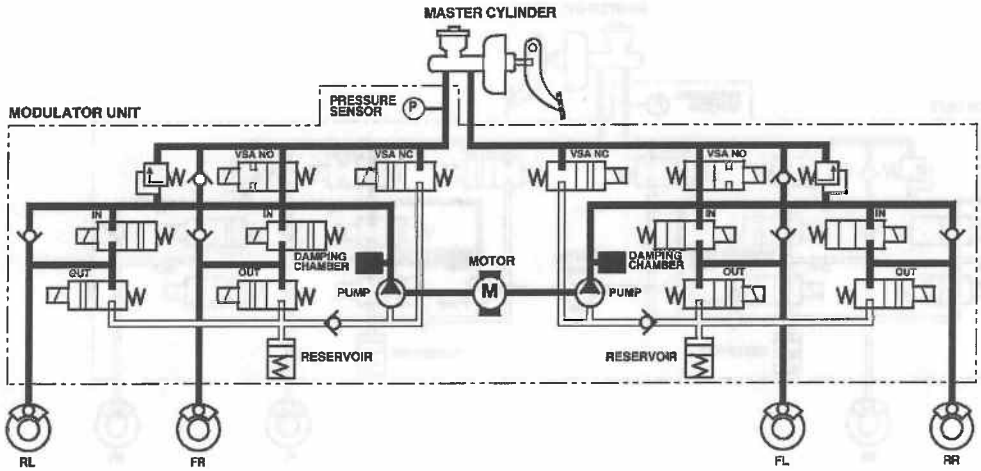
The reservoir fluid is pumped out by the pump, through the damping chamber, to the master cylinder.



Pressure retaining mode

VSA NO valve open, VSA NC valve closed, inlet valve closed, outlet valve closed.

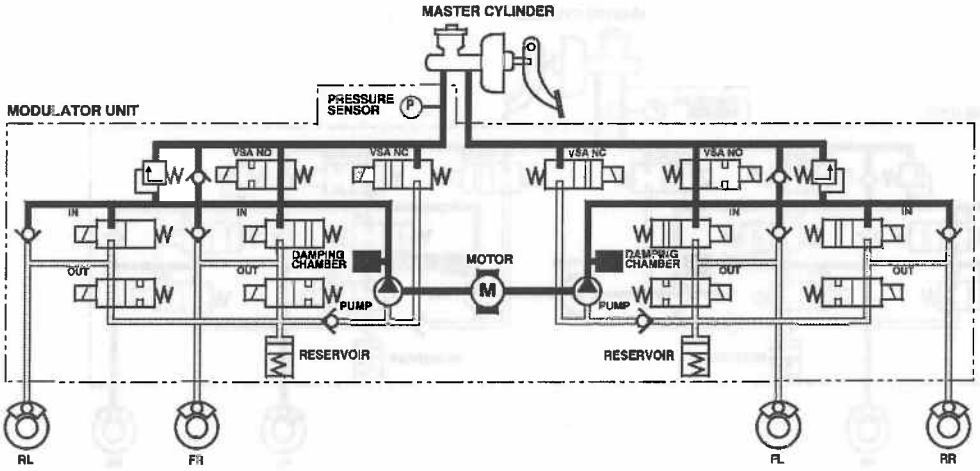
Caliper fluid is retained by the inlet valve and outlet valve.



Pressure reducing mode

VSA NO valve open, VSA NC valve closed, inlet valve closed, outlet valve open.

Caliper fluid flows through the outlet valve to the reservoir.

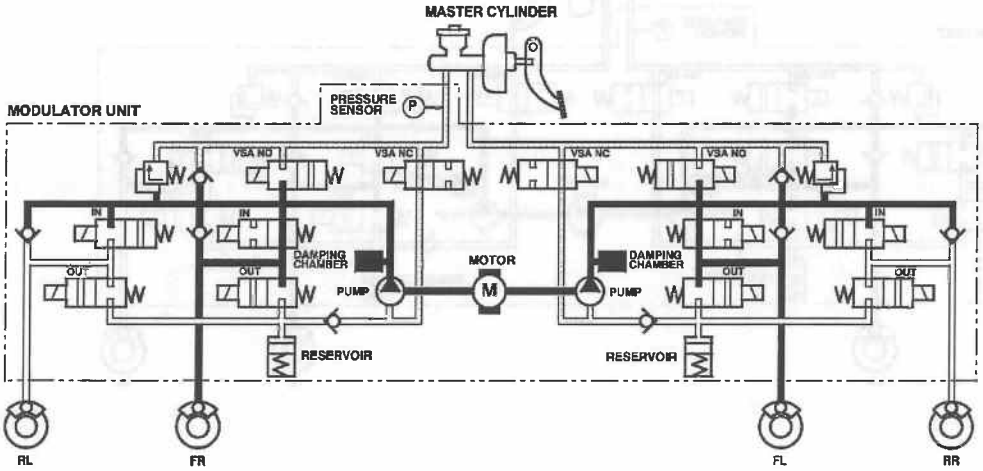


TCS Control

Pressure intensifying mode

VSA NO valve closed, VSA NC valve open, inlet valve open, outlet valve closed, pump motor ON.

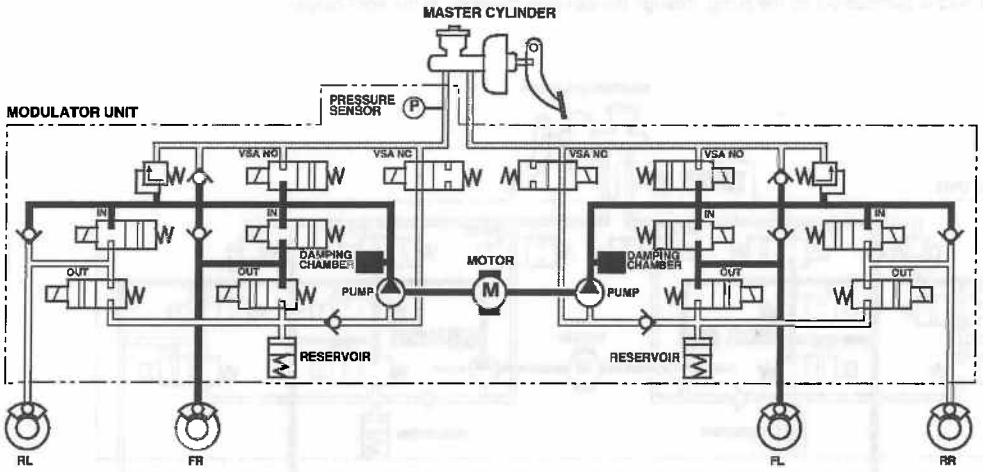
The reservoir and master cylinder fluid is pumped out by the pump, through the damping chamber, to the front caliper.



Pressure retaining mode

VSA NO valve closed, VSA NC valve open, inlet valve closed, outlet valve closed, pump motor ON.

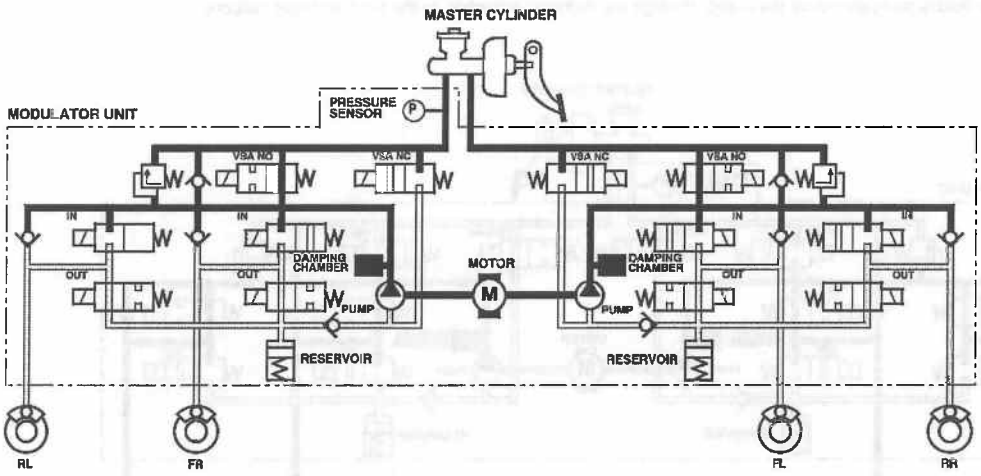
Front caliper fluid is retained by the inlet valve and outlet valve.



Pressure reducing mode

VSA NO valve open, VSA NC valve closed, inlet valve closed, front outlet valve open, pump motor ON.

Caliper fluid flows through the outlet valve to the reservoir.

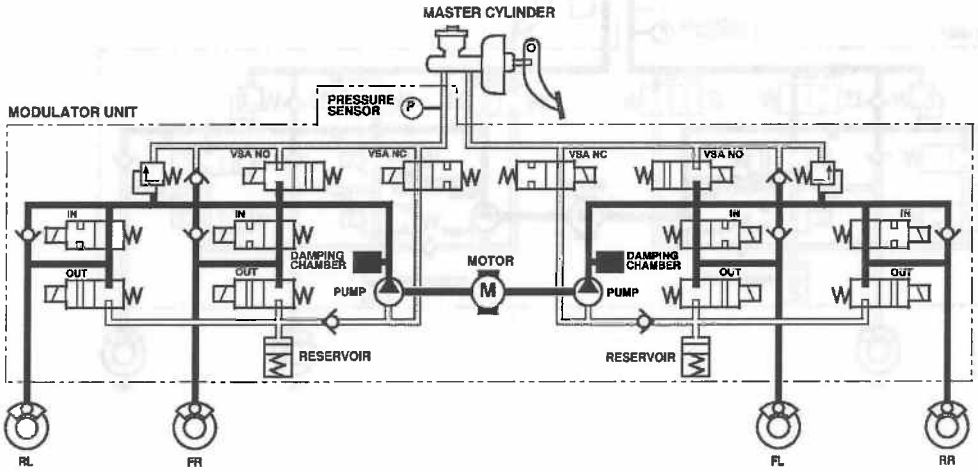


VSA Control

Pressure intensifying mode

VSA NO valve closed, VSA NC valve open, inlet valve open, outlet valve closed, pump motor ON.

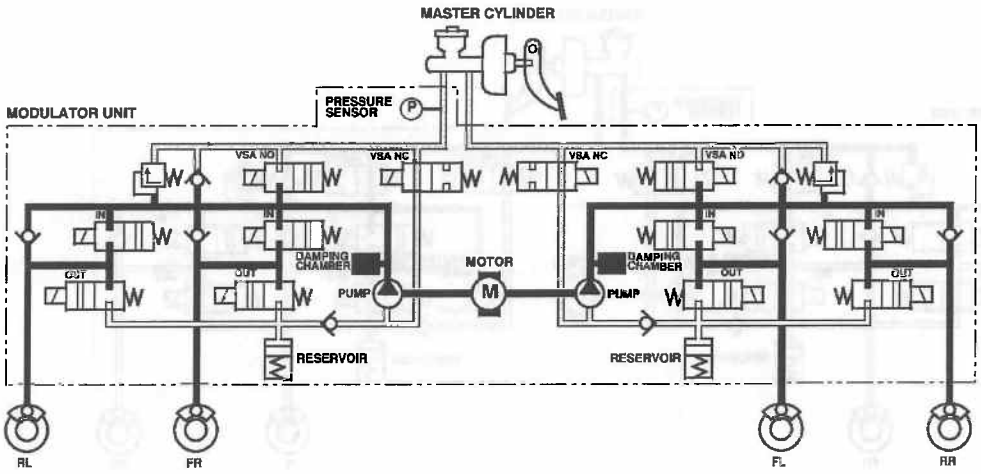
The reservoir and master cylinder fluid is pumped out by the pump, through the damping chamber, to the front and rear calipers.



Pressure retaining mode

VSA NO valve closed, VSA NC valve open, inlet valve closed, outlet valve closed, pump motor ON.

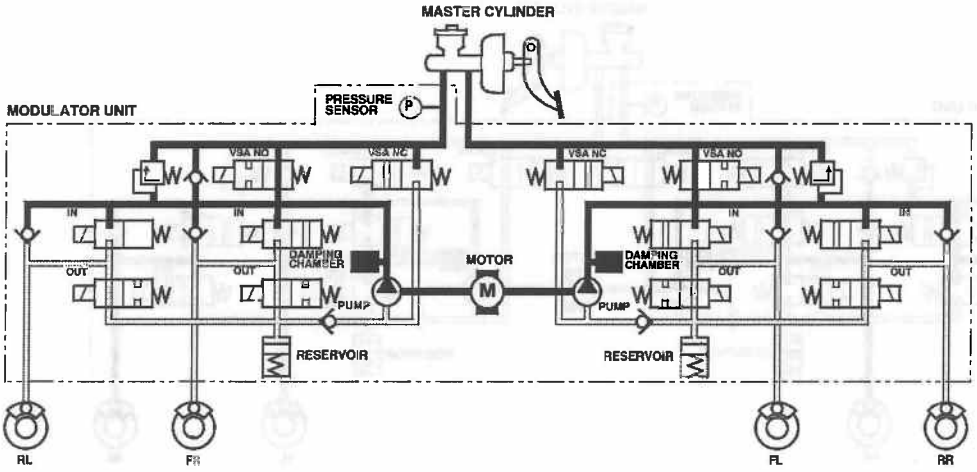
Front and rear caliper fluid is retained by the inlet valve and outlet valve.



Pressure reducing mode

VSA NO valve open, VSA NC valve closed, inlet valve closed, outlet valve open, pump motor ON.

Caliper fluid flows through the outlet valve to the reservoir.



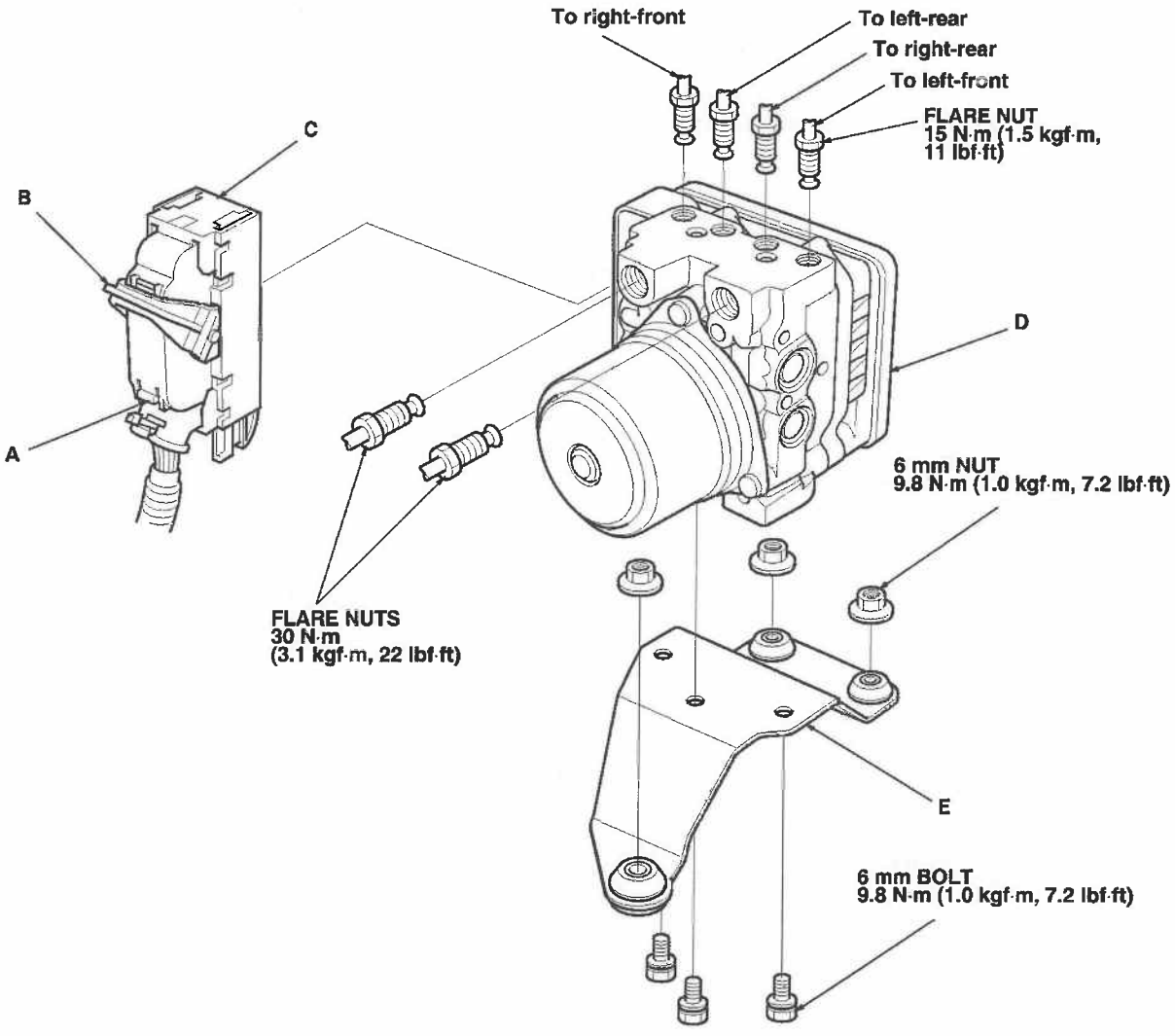
2005 PILOT - VSA Modulator-Control Unit Removal and Installation

NOTE:

- Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid gets on the paint, wash it off immediately with water.
- Be careful not to damage or deform the brake lines during removal and installation.
- To prevent the brake fluid from flowing, plug and cover the hose ends and joints with a shop towel or equivalent material.

Removal

1. Push the tab (A), and pull up the lock (B) of the VSA control unit 47P connector (C), and the connector disconnects itself.
2. Disconnect the six brake lines from the VSA modulator-control unit (D).
3. Remove the three 6 mm nuts, then remove the VSA modulator-control unit with bracket (E) from the body.
4. Remove the three 6 mm bolts, then remove the VSA modulator-control unit from the bracket.



Installation

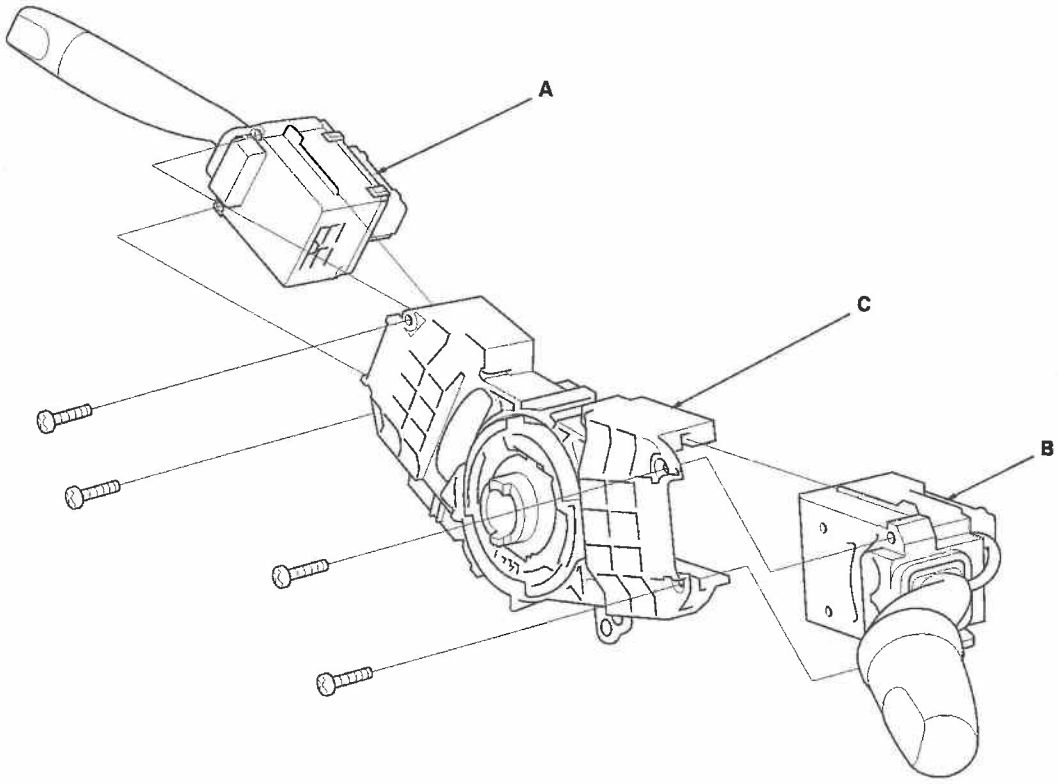
1. Install the VSA modulator-control unit on the bracket with three 6 mm bolts.
2. Install the VSA modulator-control unit/bracket on the body, then tighten the three 6 mm nuts.
3. Reconnect the six brake lines, then tighten the flare nuts.
4. Align the connecting surface of the VSA control unit 47P connector.
5. Carefully push in the lock of the VSA control unit 47P connector until you hear it click into place, then confirm the connector is fully seated.
6. Bleed the brake system, starting with the front wheels.
7. Do VSA sensor neutral position memorization.
8. Start the engine, and check that the ABS and VSA indicators go off.
9. Test-drive the vehicle, and check that the ABS and VSA indicators do not come on.

2005 PILOT - VSA System Steering Angle Sensor Replacement

NOTE: Do not damage or drop the combination switch as the steering angle sensor is sensitive to shock and vibration.

1. Remove the steering wheel, and steering column cover.
2. Remove the combination switch assembly.
3. Remove the combination light/turn switch (A) and the wiper/washer switch (B).
4. Replace the combination switch body complete (C).
5. Install the combination switch in the reverse order of removal.

   NOTE: Do not remove the steering angle sensor from the combination switch body.
6. Do the VSA sensor neutral position memorization.



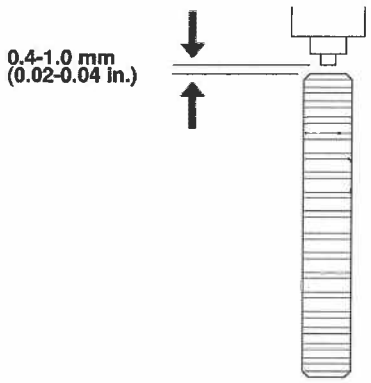
2005 PILOT - VSA System Wheel Sensor Inspection

1. Inspect the front and rear pulsers for chipped or damaged teeth.
2. Measure the air gap between the wheel sensor and pulser all the way around while rotating the pulser. If the gap exceeds 1.0 mm (0.04 in.), repair as needed.

Standard:

Front/Rear: 0.4-1.0 mm (0.02-0.04 in.)

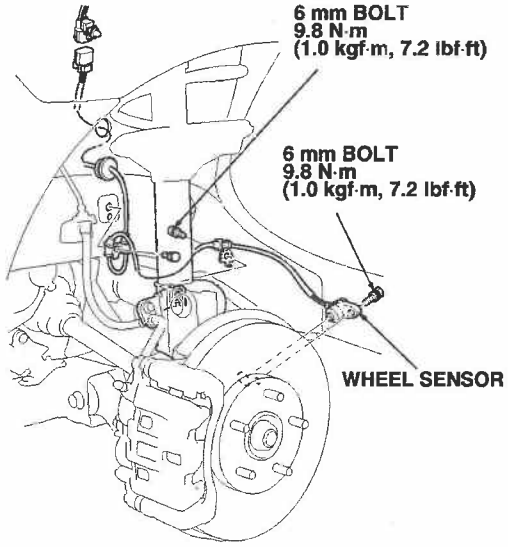
Front/Rear



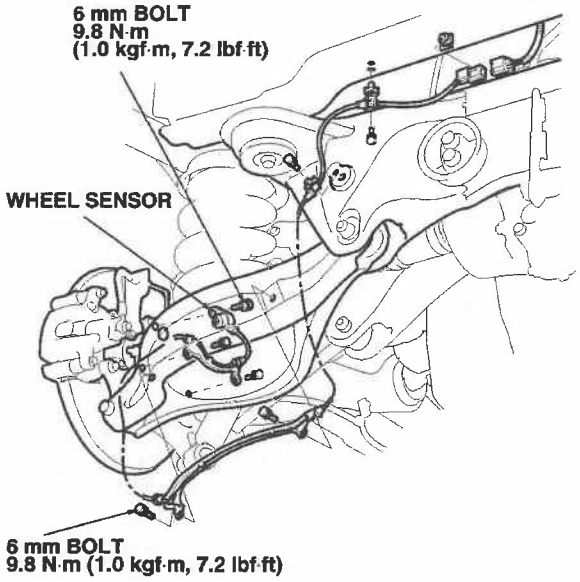
2005 PILOT - VSA System Wheel Sensor Replacement

NOTE: Install the sensors carefully to avoid twisting the wires.

Front:



Rear:

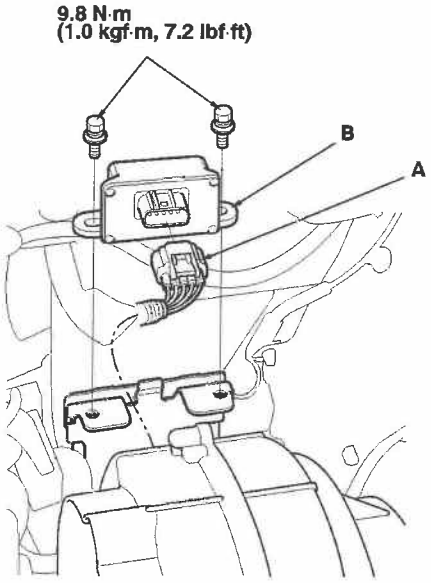


2005 PILOT - VSA System Yaw Rate-Lateral Acceleration Sensor Replacement

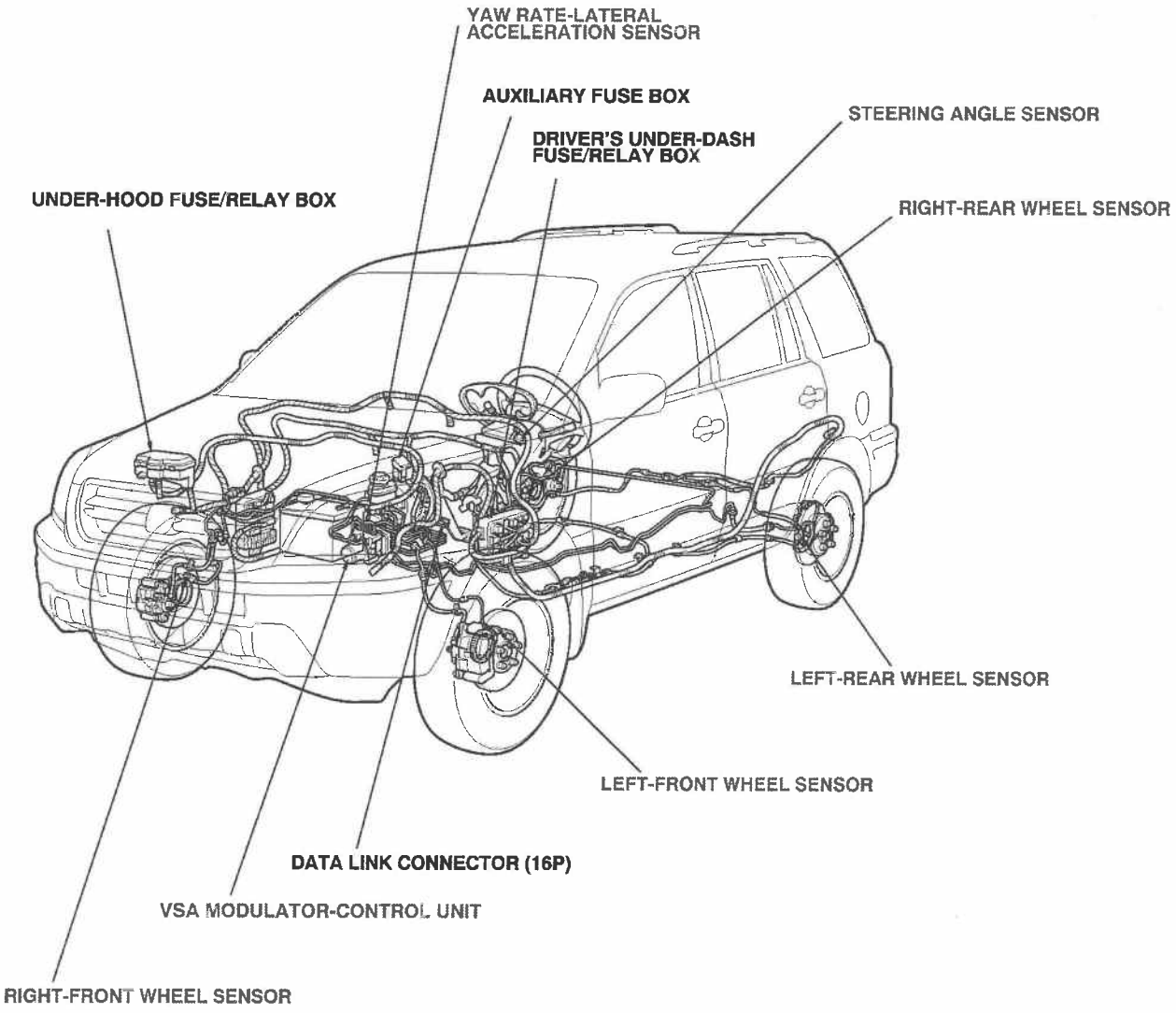
NOTE:

- Do not damage or drop the sensor as it is sensitive.
- Do not use an impact wrench.

1. Remove the center console.
2. Disconnect the connector (A).
3. Remove the yaw rate-lateral acceleration sensor (B).
4. Install the sensor in the reverse order of removal.



2005 PILOT - VSA System Component Location Index



DP12-002

HONDA

8-3-2012

ATTACHMENT Q8

Labor Operation Number_Problem Code Description

Labor Operation Number	Labor Operation Number Description
052501	NAVIGATION SYSTEM - DIAGNOSE.
055102	BACKUP SENSOR (ANY) - REPLACE.
055199	REAR VIEW CAMERA - STRAIGHT TIME (WITH PARTS)
116500	STARTING SYSTEM - DIAGNOSE/ INACTIVE.
121097	FUEL INJECTION - PARTS ONLY
121170	OXYGEN/AIR FUEL RATIO SENSOR - REPLACE. INCLUDES: FRT FOR ONE OR MORE SENSORS
121192	FUEL INJECTION - TEST DRIVE
121199	FUEL INJECTION - STRAIGHT TIME (WITH PARTS)
122099	EMISSION TEST - STRAIGHT TIME (WITHOUT PARTS)
1221A2	ACCELERATOR POSITION - REPLACE/ INACTIVE.
123097	EMISSION TEST F.I. - PARTS ONLY
123099	EMISSION TEST F.I. - STRAIGHT TIME (WITHOUT PARTS)
123503	DIAGNOSTIC TROUBLE CODE / PROGRAMMED FUEL INJECTION (PGM-FI) - RETRIEVE CODES WITH THE HDS, READ DATA, TROUBLESHOOT, AND CLEAR DTC.
123505	DIAGNOSTIC TROUBLE CODES / PROGRAMMED FUEL INJECTION (PGM-FI) - RETRIEVE CODES WITH THE HDS, READ DATA, TROUBLESHOOT, AND CLEAR DTC. TO COMPLETE REQUIRED TROUBLESHOOTING.
125517	ECM/PCM - REPROGRAM.
218199	AUTOMATIC TRANSMISSION - STRAIGHT TIME (WITH PARTS)
2181T7	SPEED SENSOR, FRONT - REPLACE.
219098	DIFFERENTIAL AND DRIVESHAFTS - REIMBURSEMENT
219199	DIFFERENTIAL AND DRIVESHAFTS - STRAIGHT TIME (WITH PARTS)
2191A6	YAW SENSOR (CLUSTER ASSY)- REPLACE.
222099	LINEAR SOLENOID - STRAIGHT TIME (WITHOUT PARTS)
222199	LINEAR SOLENOID - STRAIGHT TIME (WITH PARTS)
223199	EMISSIONS TEST - STRAIGHT TIME (WITH PARTS)
223505	DIAGNOSTIC TEST DRIVE TO COMPLETE REQUIRED TROUBLESHOOTING. DIAGNOSTIC TROUBLE CODE / TRANSMISSION - RETRIEVE CODES WITH THE HDS, READ DATA, TROUBLESHOOT, AND CLEAR DTC. INCLUDES
323505	DIAGNOSTIC TROUBLE CODE / FUEL SUPPLY OR EVAPORATIVE EMISSION CONTROL SYSTEM (EVAP) - RETRIEVE CODES WITH THE HDS, READ DATA, TROUBLESHOOT, AND CLEAR DTC. INCLUDES DIAGNOSTIC TEST DRIVE TO COMPLETE REQUIRED TROUBLESHOOTING.

Labor Operation Number	Labor Operation Number Description
410199	FRONT BRAKES - STRAIGHT TIME (WITH PARTS)
413030	BRAKE SYSTEM - BLEED.
413096	MASTER CYLINDER AND BOOSTER - WARRANTY SUBLET ONLY
413097	MASTER CYLINDER AND BOOSTER - PARTS ONLY
413098	MASTER CYLINDER AND BOOSTER - REIMBURSEMENT
413099	MASTER CYLINDER AND BOOSTER - STRAIGHT TIME (WITHOUT PARTS)
413117	TCS/VSA SWITCH - REPLACE.
413119	REAR DIFFERENTIAL OIL TEMPERATURE SENSOR - REPLACE.
413160	WHEEL SENSOR, LEFT FRONT - REPLACE.
413161	WHEEL SENSOR, RIGHT FRONT - REPLACE.
413162	WHEEL SENSOR, LEFT REAR - REPLACE.
413163	WHEEL SENSOR, RIGHT REAR - REPLACE.
413170	ABS/TCS/VSA MODULATOR - REPLACE. BLEEDING AIR FROM THE SYSTEM
413190	ABS/TCS/VSA CONTROL UNIT - REPLACE.
413199	MASTER CYLINDER AND BOOSTER - STRAIGHT TIME (WITH PARTS)
4131H7	WHEEL SENSOR, BOTH FRONT - REPLACE.
4131H8	WHEEL SENSORS, BOTH REAR - REPLACE.
416099	FRONT BUSHINGS, STABILIZER BAR - STRAIGHT TIME (WITHOUT PARTS)
416199	FRONT BUSHINGS, STABILIZER BAR - STRAIGHT TIME (WITH PARTS)
417130	SHOCK ABSORBER/STRUT, RIGHT REAR - REPLACE. INCLUDES: REPLACE MOUNTING PARTS AND ALIGNMENT.
418099	REAR BUSHINGS - STRAIGHT TIME (WITHOUT PARTS)
418159	REAR KNUCKLE, RIGHT - REPLACE.
419199	REAR AXLE BEARINGS, STABILIZER - STRAIGHT TIME (WITH PARTS)
421199	WHEELS AND TIRES - STRAIGHT TIME (WITH PARTS)
4211A9	TIRE PRESSURE MONITORING SYSTEM (TPMS) SENSOR, ONE - REPLACE. INCLUDES DIAGNOSTICS AND SENSOR ID LEARN
423099	REAR SHOCK ABSORBER - STRAIGHT TIME (WITHOUT PARTS)
423199	REAR SHOCK ABSORBER - STRAIGHT TIME (WITH PARTS)

Labor Operation Number	Labor Operation Number Description
423501	DIAGNOSTIC TROUBLE CODE / ANTILOCK BRAKES (ABS) OR TRACTION CONTROL SYSTEM (TCS) OR VEHICLE STABILITY ASSIST (VSA) - RETRIEVE CODES WITH THE HDS, READ DATA, TROUBLESHOOT, AND CLEAR DTC.
423505	DIAGNOSTIC TROUBLE CODE / ANTILOCK BRAKES (ABS) OR TRACTION CONTROL SYSTEM (TCS) OR VEHICLE STABILITY ASSIST (VSA) - RETRIEVE CODES WITH THE HDS, READ DATA, TROUBLESHOOT, AND CLEAR DTC. INCLUDES DIAGNOSTIC TEST DRIVE TO COMPLETE
510199	STEERING COLUMN - STRAIGHT TIME (WITH PARTS)
511199	MANUAL STEERING GEARBOX - STRAIGHT TIME (WITH PARTS)
512199	POWER STEERING PUMP - STRAIGHT TIME (WITH PARTS)
723505	SUPPLEMENTAL RESTRAINT SYSTEM (SRS) CODES OPERATING DATA - RETRIEVE OR CLEAR CODES WITH THE HONDA DIAGNOSTIC SYSTEM (HDS). ACCESS FLASH CODES WITH THE SRS INDICATOR LIGHT. PERFORM INPUT TESTS. INCLUDES REQUIRED DIAGNOSTIC TEST
726120	BRAKE LIGHT SWITCH - REPLACE.
730098	RELAY - WARRANTY SUBLET ONLY
737099	WIRE HARNESS - STRAIGHT TIME (WITHOUT PARTS)
737199	WIRE HARNESS - STRAIGHT TIME (WITH PARTS)
745099	ELECTRICAL TEST - STRAIGHT TIME (WITHOUT PARTS)
746099	INTEGRATED SWITCH - STRAIGHT TIME (WITHOUT PARTS)
746104	MULTIPLEX OR MULTIPLEX INTEGRATED CONTROL UNIT (LEFT/DRIVER SIDE) - REPLACE.
746105	MULTIPLEX OR MULTIPLEX INTEGRATED CONTROL UNIT (BOTH) - REPLACE
746199	INTEGRATED SWITCH - STRAIGHT TIME (WITH PARTS)
747099	FUSE BOX - STRAIGHT TIME (WITHOUT PARTS)
751104	DASH FRONT SRS SENSOR, ANY- REPLACE.
751199	SIDE AIRBAG - STRAIGHT TIME (WITH PARTS)
753199	SRS CABLE REEL - STRAIGHT TIME (WITHOUT PARTS)
813199	GRILLE AND FENDER - STRAIGHT TIME (WITH PARTS)
823099	REAR COMPARTMENT - STRAIGHT TIME (WITHOUT PARTS)

Labor Operation Number	Labor Operation Number Description
823505	DIAGNOSTIC TROUBLE CODE/OPERATING DATA/INITIALIZATION (SRS)- RETRIEVE OR CLEAR CODES PGM TESTER/ HDS. INITIALIZE RESTRAINT/SRS SYSTEM. PERFORM INPUT TESTS. INCLUDES REQUIRED DIAGNOSTIC TEST DRIVE/ INACTIVE.
841099	INSTRUMENT PANEL - STRAIGHT TIME (WITHOUT PARTS)
841199	INSTRUMENT PANEL - STRAIGHT TIME (WITH PARTS)
843199	DOOR TRIM, LEFT FRONT - STRAIGHT TIME (WITH PARTS)

Attachment #Q8
Problem Code and Description

Problem Code	Problem Code Description
00201	BENT
00401	DISTORTED
00504	PREMATURE WEAR AND TEAR
00603	AIR INCLUSION
01801	BROKEN
03001	BINDING/STICKING
03214	ERRONEOUS OPERATION
03217	NOT OPERATING
06401	SHORT CIRCUIT
06402	INSUFFICIENTLY ISOLATED
06403	POOR GROUND
06601	POOR/NO ELECTRICAL CONTACT
06801	OPEN CIRCUIT
07403	INTERFERENCE
07406	IMPROPERLY ADJUSTED
07407	INSUFFICIENT SEALING MATERIAL
07701	IMPROPERLY MACHINED
08001	INCORRECT ASSEMBLY
08103	FOREIGN MATTER CONTAMINATION
09999	FOR PHENOMENA OTHER THAN THOSE STIPULATE

DP12-002

HONDA

8-3-2012

ATTACHMENT Q10 a_b_c

Change history of design & supplier

Change history of design & supplier

NHTSA Request Item # 10a,b,c

■ Pilot Modulator Manufacturing change point history (IPPAARs)

NHTSA Request # 10a,b,c

Year	2005-2008
Modulator	Nissin NK11 VSA

MP Date	Part # affected (Mod with Bracket)	What changed	Why changed	Plant Approval #
12-8-04	57110-S9V-A610	Additional Diode supplier for PCB	Part shortage from current supplier	11507 -HCM
8-9-2005	57110-S9V-A621	Modulator production localized from Japan	Software UP-date Localization	3106-HMA 12461- HCM
10-15-2005	57110-STW-A010	NBO to produce 720pc weekly of 2WD pilot	Capacity concerns in Japan	3511 - HMA
1-17-2006	57110-STW-A020 57110-S9V-A720	Inventory build ahead	Line modified to make new generation mod (NK12)	4019 –HMA 14598 - HCM
10-25-06	57110-S9V-A720	Capacitor supplier change from Nippon Chemi-con to Hitachi	Commonize components for 06 and 07 models	4362-HMA 5515 - HCM
11-15-06	57110-STW-A020	Capacitor supplier change from Nippon Chemi-con to Hitachi	Commonize components for 06 and 07 models	4362-HMA
7-13-2007	57110-S9V-A730	Line layout moved	Moved line to create room for NK21 (next Generation) modulator line.	10805-HMA
10-15-2007	57110-S9V-A730	Japan began supplying the cast and machined body	NBO began production of NK21 mod – machining of the extruded body. Built out all cast to Japan supply	12876-HMA
12-14-2007	57110-S9V-A730	Coil assembly to be supplied by Japan	NBO retooled existing coil line to be used on higher volume NK21 modulator line.	13985-HMA

Appendix

- Pilot Modulator design change history
  The following information was already submitted to HMA from HRA-O.

■ Pilot Modulator application history

Year	2003-2005	2005-2007
Modulator	Bosch ABS 5.3	Nissin NK11 VSA

2005Y

Parts number	Revision No	Issue date	DWG timing	SOFTWARE NUMBER SPEC,MODULATOR ASSY SPEC,CONROL SPEC,CONTROL FOR FACILITY	Issued by	Contents
57110-S9VY-A610-M1	S9VY-F-195	30/Jun/03	Prototype for C1	6VX-X66L0***** 5711Z-SFY -0031 NA 5716Z-S3V –A110-M2	HRA-O	Issue supplier DWG for C1.
57110-S9VY-A620-M1	S9VY-F-455	13/Feb/04	Final Prototype	7VX-X67L0***** ***5711Z-SFY -0032*** ***5715Z-SJK –N010-M1*** ***5716Z-SJK -0031***	HRA-O	Indicate ***brake assist*** in system type. Update soft ware number and etc.
57110-S9V –A610-M1	C44-2-500	20/Feb/04	Replace to Mass-production DWG	↑	HGT	---
57110-S9V –A620-M1	C45-2-885	10/Mar/05	***M/P DWG change***	***7XV-X67L0MSK01*** ***5711Z-SFY -0032*** ***5715Z-SFE –A010-M1*** ***5716Z-SJK -0031***	HGT	***04M Odyssey VSA Modulator software change.*** ① Change the condition to start brake assist function. ② Add the condition to allow brake switch fail diagnosis.
57110-S9V –A621-M1	C45-2-1088	29/Mar/05	M/P DWG change	***7XV-X67L0MSK01*** ***5711Z-SFY -0032*** ***5715Z-SFE –A010-M1*** ***5716Z-SJK -0031***	HGT	05M all destination. The production district of motor of VSA Modulator change.

2006-2007Y

Parts number	Revision No	Issue date	DWG timing	SOFTWARE NUMBER SPEC,MODULATOR ASSY SPEC,CONROL SPEC,CONTROL FOR FACILITY	Issued by	Contents
57110-S9VX-A710-M1 57110-STWX-A010-M1	S9VX-F-243	4/Aug/04	Prototype for C1	TBD *5711Z-SFY -0032* *5715Z-SDB –A210-M1* *5716Z-SJK -0031*	HRA-O	Issue C1 DWG. Software change for new gear ratio.
57110-S9V – A710-M1 57110-STW – A010-M1	C45-2-650	24/Feb/05	Replace to Mass-production DWG	↑	HGT	---
57110-S9V – A720-M1 57110-STW – A020-M1	C45-2-3695	29/Aug/05	M/P DWG change	7XV-X69L1MSK00 7XV-X67L2MSK00 *5711Z-SFY -0032* *5715Z-SJA -0030* *5716Z-SJK -0031*	HRA-O	06M Pilot Improve VSA marketability. Update software and DWG.
57110-S9V – A730-M1 57110-STW – A030-M1	C46-2-4963	17/Nov/06	M/P DWG change	7VX-X69L1MSK0**1** 7XV-X67L2MSK0**1** *5711Z-SFY -0032* *5715Z-SJA -0030* *5716Z-SJK -0031*	HRA-O	07M Pilot and Accord VSA Modulator software update.

Weastec (All NHTSA Items)

Steering Angle Sensor (39250 S9V –all)

*Confidential: Re: URGENT NHTSA Request

Joe_Ciniglio 07/19/2012 02:22 PM

tami.darbyshire, tammy.moore, Ted.Wolford, Jim.Tomko, Dave.Griffith

Joe,

Please make me the contact for this issue.

We have reviewed our documentation and found no changepoints for the VSA Sensor or Main Scale during the period being investigated.

Additionally, the SEA VSA Sensor used on the S9V Combi Switch has also been used on the following vehicles produced in North America:

- SEP (TL)
- SDA (Accord)

Thank You,
Brian Gilbert
Supervisor
Quality Engineering Department

Weastec, Inc.
1600 N. High Street
Hillsboro, OH 45133

Office: 937.840.1234
Mobile: 937.763.7084

Continental
Wheel Speed Sensor

Pilot WSS Manufacturing change point history (IPPAARs) for NHTSA Request # 10a,b,c

MP Date	Part # affected	What changed	Why changed	Plant Approval #
2/1/2006	57470-S3V-A520	change of supplier from Ritus to Saliens (Grommet)	new supplier	
3/1/2005	57470-S3V-A520	process change on pole piece assembly	Improvement process	
2/1/2006	57475-S3V-A520	change of supplier from Ritus to Saliens (Grommet)	new supplier	
3/1/2005	57475-S3V-A520	process change on pole piece assembly	Improvement process	

Continental
Wheel Speed Sensor

Pilot WSS application history for NHTSA Request # 10a,b,c

Parts number	Revision No	Issue date	DWG timing	SOFTWARE NUMBER SPEC, PART NAME SPEC,CONROL SPEC,CONTROL FOR FACILITY	Issued by	Contents
57470-S3V-A520	REV 2	2/1/2006 3/1/2005	n/a		Jose Juarez Jose Nuñez	new supplier/ improvement process
57475-S3V-A520	REV 2	2/1/2006 3/1/2005	n/a		Jose Juarez Jose Nuñez	new supplier/ improvement process

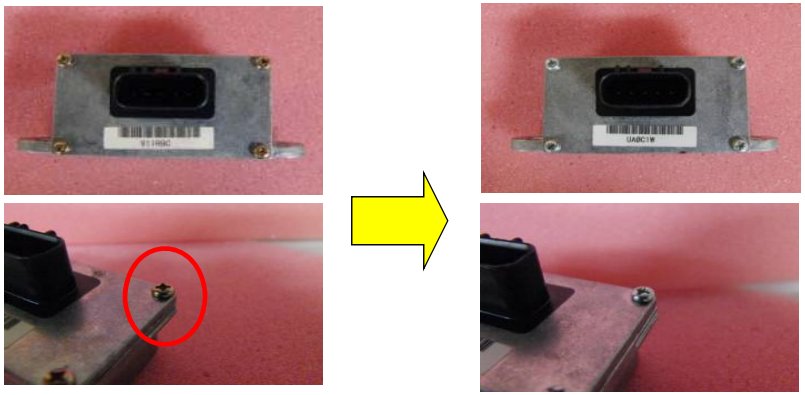
Akebono

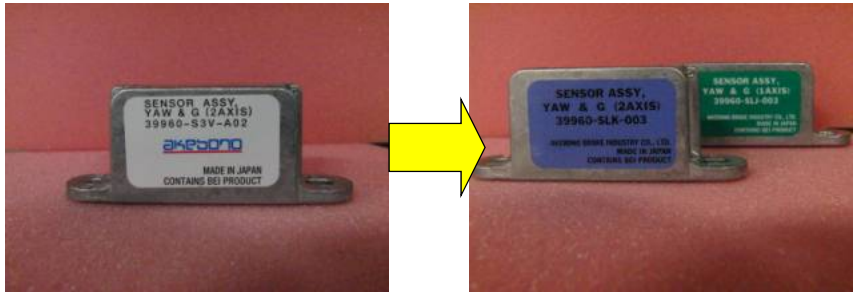
Yaw & G Sensor

Pilot SENSOR ASSY YAW & G Manufacturing change point history (IPPAARs) **NHTSA Request # 10a,b,c**

MP Date	Part # affected	What changed	Why changed	~~Plant Approval #~~ Submit to
26-Nov-03	39960-S3V-A022-M1	SOP	--	Functional Parts Engineering Block Automotive Purchasing Division 2 (World wide)@HONDA.Tochigi.japan
5-Apr-04	39960-S3V-A022-M1	Forming screw metal coating is changed into Cr(III) from Cr(VI).	environmentally hazardous substance	Functional Parts Engineering Block Automotive Purchasing Division 2 (World wide)@HONDA.Tochigi.japan
5-Oct-04	39960-S3V-A022-M1	Place change of board mounting (Poland -> Thailand)	cost saving	Functional Parts Engineering Block Automotive Purchasing Division 2 (World wide)@HONDA.Tochigi.japan
16-May-05	39960-SLK-003 39960-SLJ-003	Pb free type	environmentally hazardous substance	Functional Parts Engineering Block Automotive Purchasing Division 2 (World wide)@HONDA.Tochigi.japan

Forming screw (Plating change:Cr+6 ->Cr+3)





Non Pb free type -> Pb free type

Akebono
Yaw & G Sensor

Pilot SENSOR ASSY,YAW&G application history NHTSA Request # 10a,b,c

Parts number	Revision No	Issue date	DWG timing	SPECIFICATION	Issued by	Contents
39960-S3VY-A010	S3VY-F-48	09-May-01	Prototype for C1-2	3996Z-S3VY-A000	HGT	Issue supplier DWG for C1-2.
39960-S3VY-A010-M1	S3VY-F-0518	22-Feb-02	Final Prototype	3996Z-S3VY-A010-M1	HGT	Issue supplier DWG for Final Prototype.
39960-S3V-A010-M1	C42-2-450	06-Mar-02	Replace to Mass-production DWG	3996Z-S3V-A010-M1	HGT	Issue Supplier DWG for Mass-production.
39960-S3V-A020-M1	C42-2-792	25-Mar-02	***M/P DWG change***	***3996Z-S3V-A020-M1***	HGT	***Changed SPECIFICATION***
39960-S3V-A021-M1	C42-2-5205	13-Sep-02	***M/P DWG change***	***3996Z-S3V-A020-M1***	HGT	***Changed letter of product label.***
39960-S3V-A022-M1	C43-2-5696	11-Dec-03	***M/P DWG change***	***3996Z-S3V-A020-M1***	HGT	***Applied "NH" mark to drawing with the plating change of the screw to SOC free type.***
39960-SLJ-0030 ***39960-SLK-0030*** ***39960-SLK-0030***	08-Jan-05 08-Jan-05	08-Jan-05 08-Jan-05	***Replace to SOC free type sensor DWG***	***3996Z-SLJ-0030***	HGT	***Replaced to SOC free type sensor.*** ***SLJ for 2WD*** ***SLK for 4WD***

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ATTACHMENT Q11

Parts demand

DP12-002
Aug. 3, 2012

Q11
COMPONENT SALES HISTORY
AS OF 07/17/2012

PART DESC	SERVICE PART NO.	MODEL APPLICATION	PART RELEASE DATE	CALENDAR YEAR 2008	2009	2010	2011	2012
MODULATOR ASSY., VSA	57110-S9V-A61	2005 Pilot	8/31/2004	72	67	64	50	33
SENSOR ASSY., YAW RATE (2-AXIS)	39960-S3V-A02	2005 Pilot	9/16/2002	219	206	205	174	95
BODY, SWITCH	35251-S9V-A21	2005-08 Pilot	8/31/2004	117	1724	1559	956	383
SENSOR ASSY., R. FR.	57450-S3V-A02	2003-05 Pilot	9/23/2002	788	845	1177	1450	799
SENSOR ASSY., L. FR.	57455-S3V-A11	2005 Pilot	9/18/2002	440	376	406	497	327
SENSOR ASSY., R. RR	57470-S3V-A52	2003-08 Pilot	9/27/2000	1054	1026	1064	1341	502
SENSOR ASSY., L. RR.	57475-S3V-A52	2003-08 Pilot	9/27/2000	852	780	850	1128	409

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8-3-2012

ATTACHMENT Q13

DP12-002

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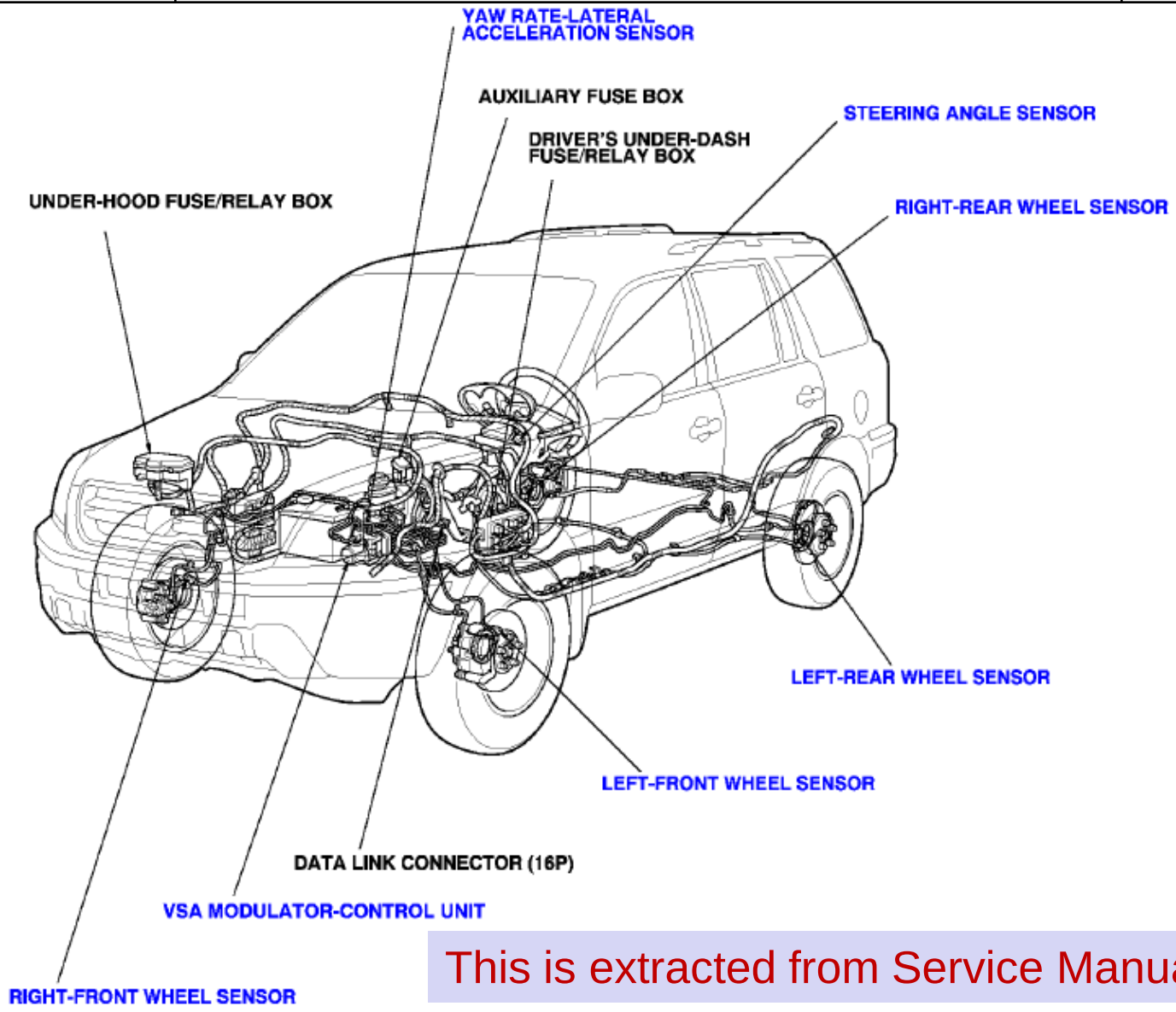
8-3-2012

ATTACHMENT

Q13A

2005 Pilot NHTSA Investigation	**Request:** Vehicle diagram showing the location of all VSA components;	**Item:** 13 - a - i **Page** 1



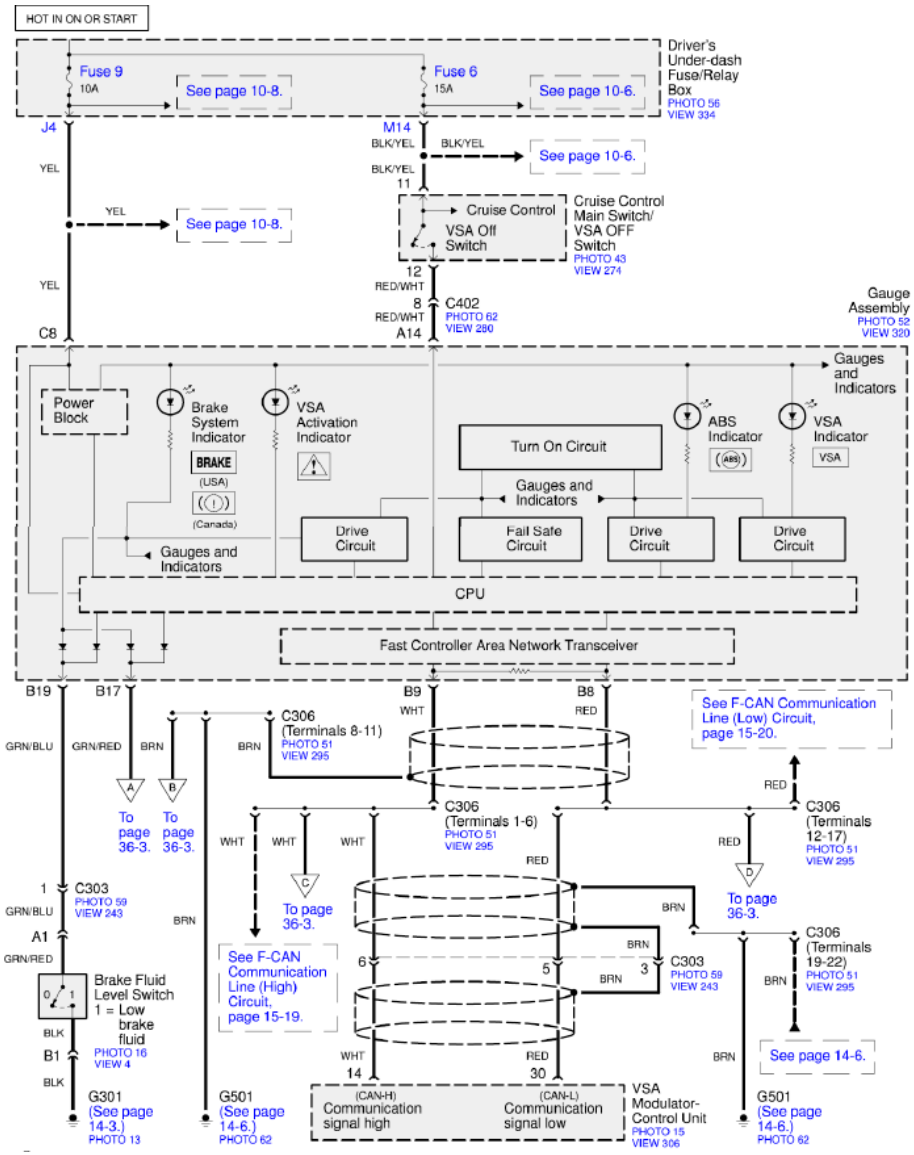
This is extracted from Service Manual

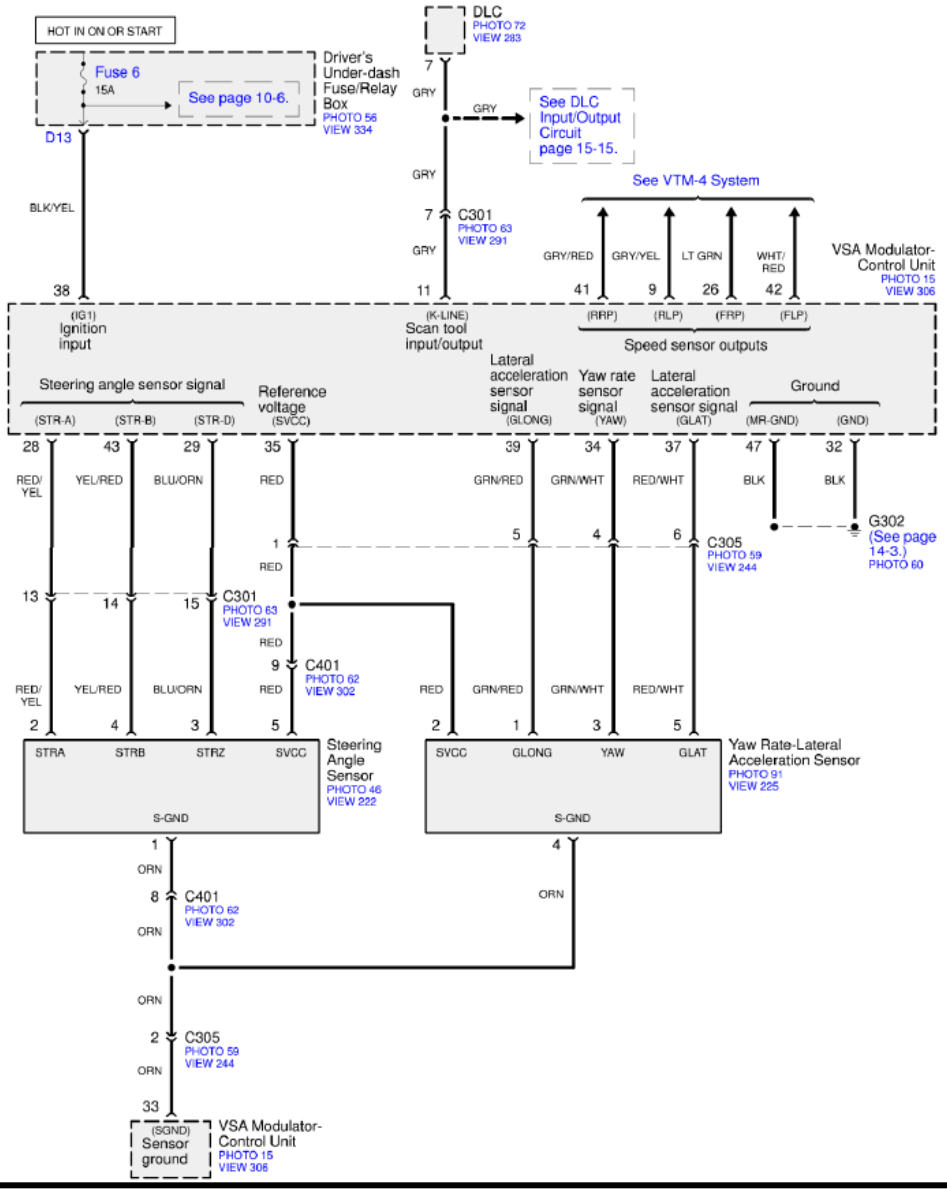
2005 Pilot NHTSA Investigation

Request: Wiring diagram(s);

Item: 13 - a - ii

Page 2

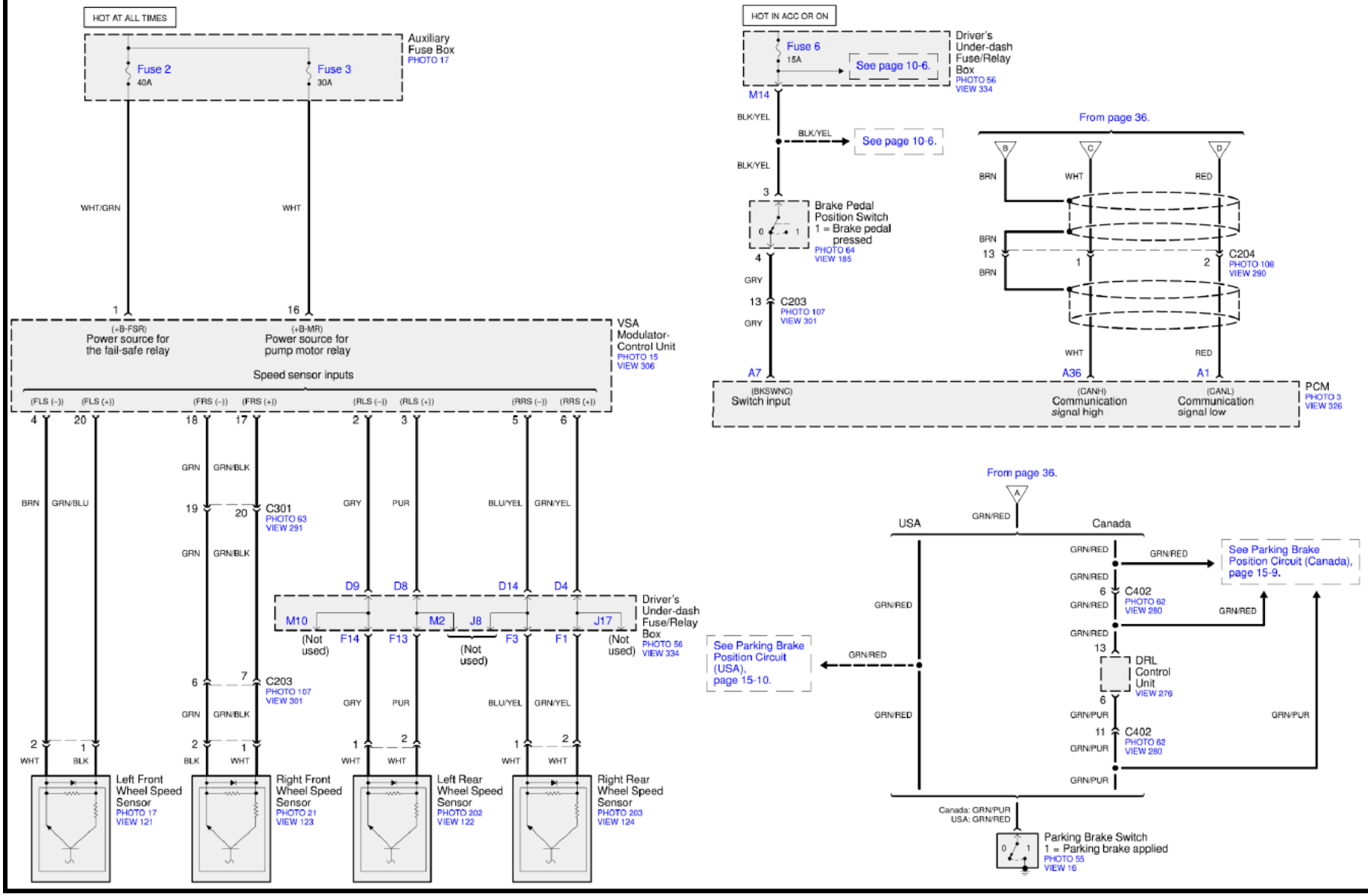




2005 Pilot NHTSA Investigation

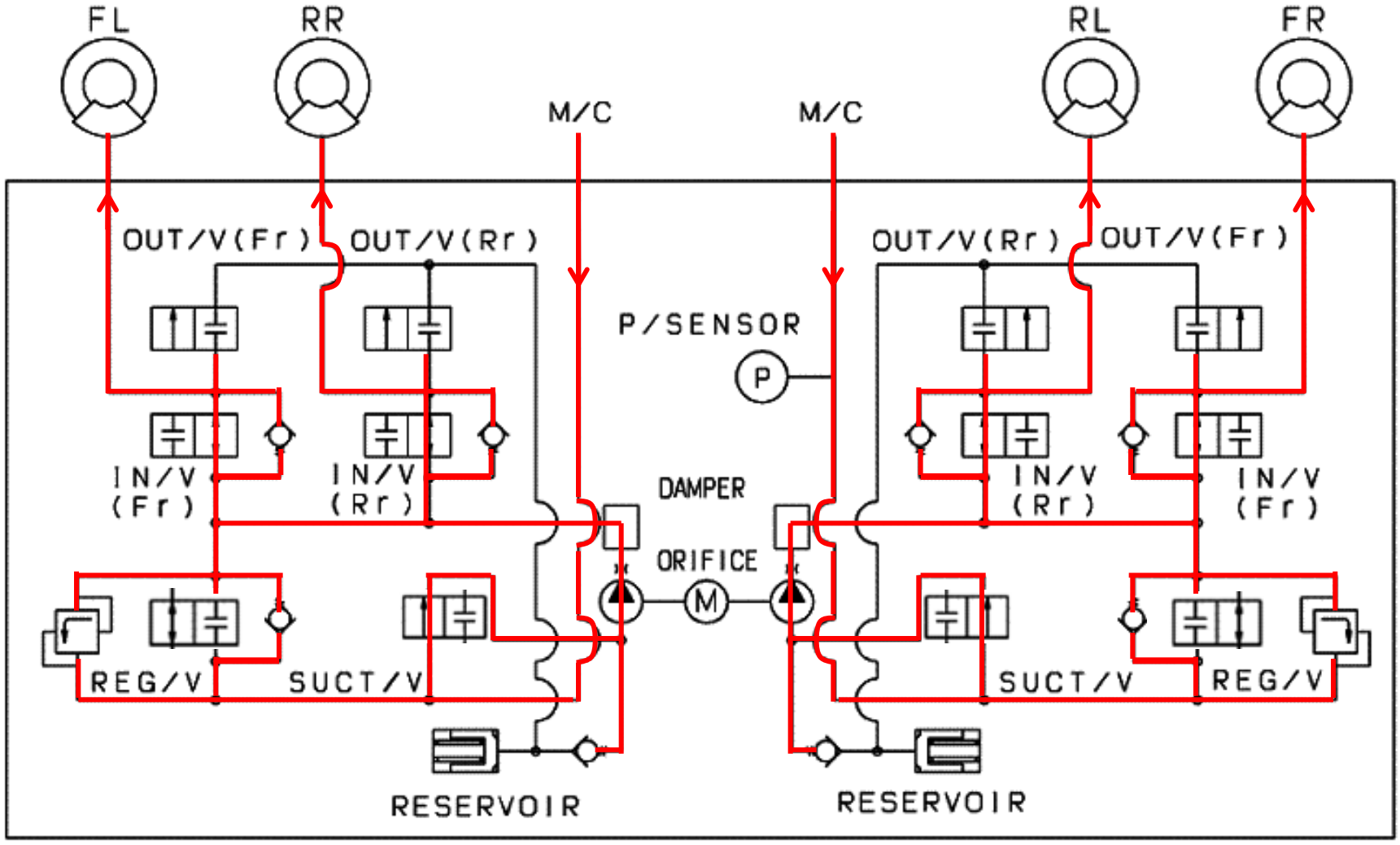
Request: Wiring diagram(s);

Item: 13 - a - ii

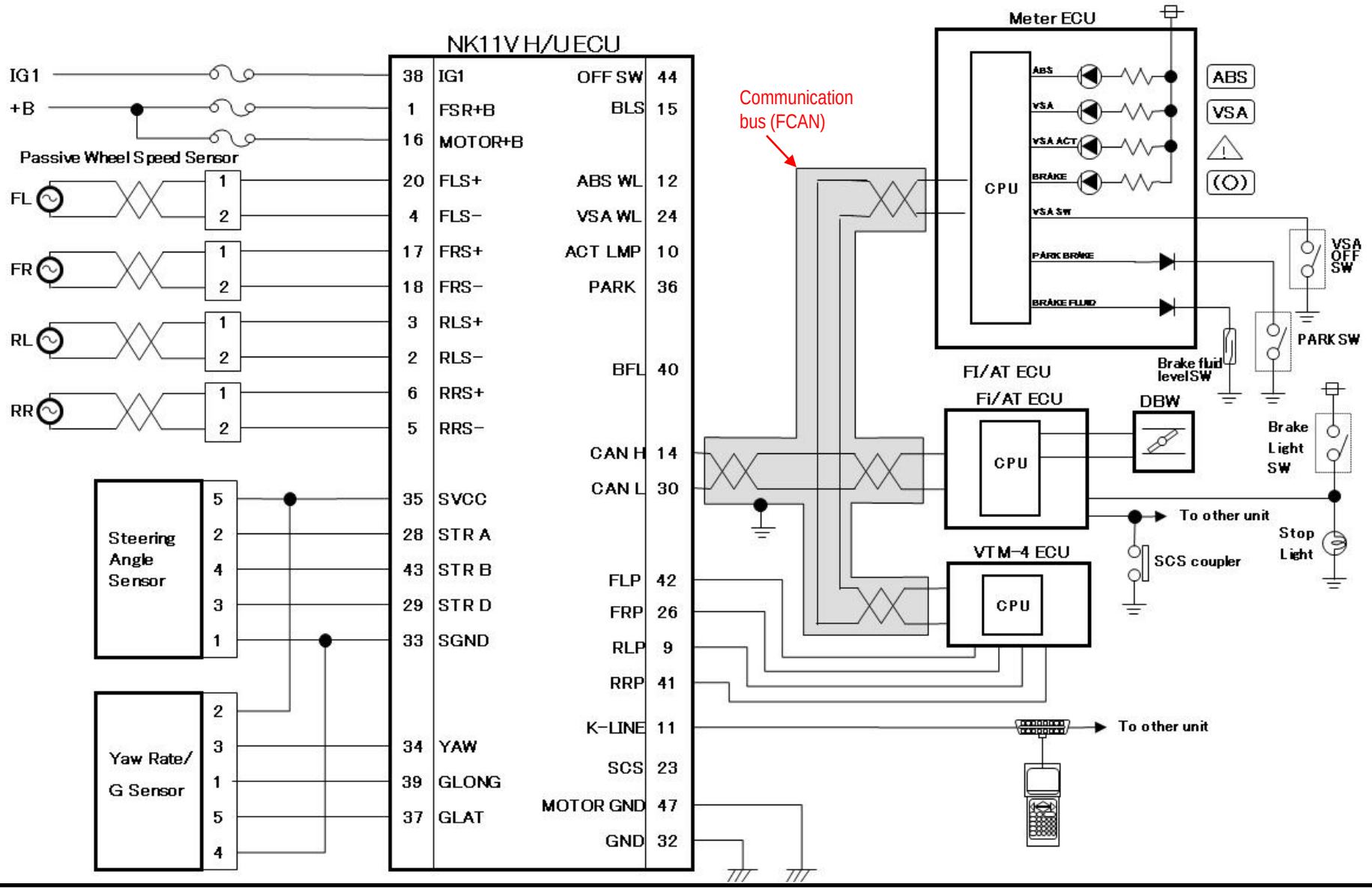


2005 Pilot NHTSA Investigation	**Request:** Brake system hydraulic diagrams for each mode of System operation;	**Item:** 13 - a - iii **Page** 4

Brake Assist System Operation



2005 Pilot NHTSA Investigation	**Request:** Block diagram of the system including communication buses;	**Item:** 13 - a - iv **Page** 5



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8-3-2012

ATTACHMENT

Q13b REDACTED English

ENTIRE PAGE CONTAINS CONFIDENTIAL INFORMATION

13. Provide the following information regarding the operation and diagnostics associated with the subject system:

b. A detailed description of the how the system controls vehicle braking and throttle, including:

i) A detailed explanation of how throttle command is calculated, communicated and controlled.

ii) The maximum braking that can be commanded by the system and a detailed explanation of how braking forces are calculated, communicated and controlled.

ENTIRE PAGE CONTAINS CONFIDENTIAL INFORMATION

13. Provide the following information regarding the operation and diagnostics associated with the subject system:

b. A detailed description of the how the system controls vehicle braking and throttle, including:

i) A detailed explanation of how throttle command is calculated, communicated and controlled.

ii) The maximum braking that can be commanded by the system and a detailed explanation of how braking forces are calculated, communicated and controlled.

ENTIRE PAGE CONTAINS CONFIDENTIAL INFORMATION

13. Provide the following information regarding the operation and diagnostics associated with the subject system:

b. A detailed description of the how the system controls vehicle braking and throttle, including:

i) A detailed explanation of how throttle command is calculated, communicated and controlled.

ii) The maximum braking that can be commanded by the system and a detailed explanation of how braking forces are calculated, communicated and controlled.

iv) The maximum duration of a VSA activation.

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ATTACHMENT

Q13b REDACTED Japanese

13. 対象システムに関連する作動と診断について以下の情報を提供すること:

ENTIRE PAGE CONTAINS CONFIDENTIAL INFORMATION

b. このシステムが以下を含む車両ブレーキとスロットルをどのように制御しているのか詳細説明:

i) スロットルコマンドはどのように算出され、伝達され、制御されているのかの詳細説明

ii) このシステムでコマンドできる最大ブレーキ制動とブレーキフォースがどのように算出され、伝達され、制御されているのか詳細説明

13. 対象システムに関連する作動と診断について以下の情報を提供する:

ENTIRE PAGE CONTAINS CONFIDENTIAL INFORMATION

b. このシステムが以下を含む車両ブレーキとスロットルをどのように制御しているのか詳細説明:

i) スロットルコマンドはどのように算出され、伝達され、制御されているのかの詳細説明

ii) このシステムでコマンドできる最大ブレーキ制動とブレーキフォースがどのように算出され、伝達され、制御されているのか詳細説明

iv) VSA作動最大時間

13. 対象システムに関連する作動と診断について以下の情報を提供すること:
b. このシステムが以下を含む車両ブレーキとスロットルをどのように制御しているのか詳細説明:
i) スロットルコマンドはどのように算出され、伝達され、制御されているのかの詳細説明
ii) このシステムでコマンドできる最大ブレーキ制動とブレーキフォースがどのように算出され、伝達され、制御されているのか詳細説明

iv) VSA作動最大時間

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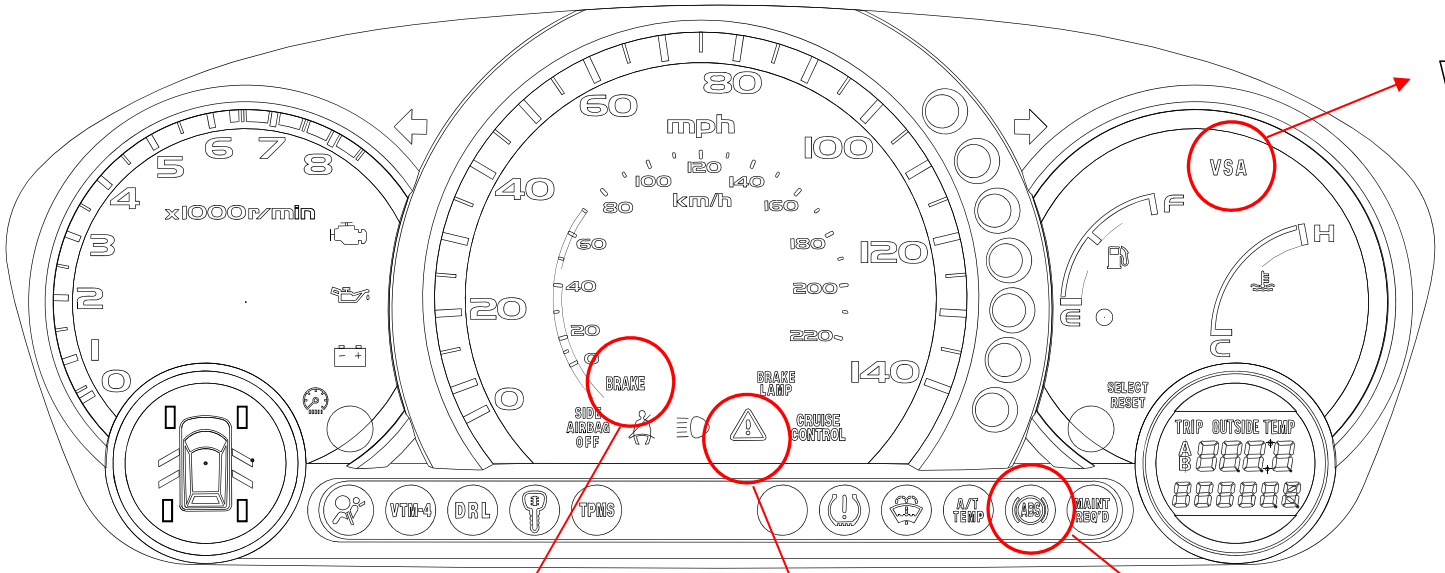
8-3-2012

ATTACHMENT

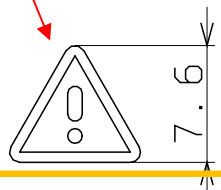
Q13c Describe all visual and audible indicators

2005 Pilot NHTSA Investigation	**Request:** Describe all visual and audible indicators available to the vehicle operator to signal VSA activation or a fault in the VSA;	**Item:** 13 - c **Page: 1 of 17**

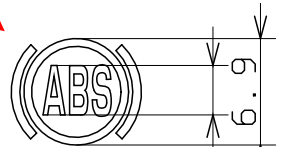


Constant Illumination when VSA System Failure

Constant Illumination when EBD System Failure



Flashes when VSA Activated
Constant Illumination when VSA is Disabled by Customer and when VSA System Failure



Constant Illumination when ABS System Failure

HONDA

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HONDA

8-3-2012

ATTACHMENT

Q13D

2005 Pilot NHTSA Investigation

Request: Provide a listing of all diagnostic trouble codes by code, description, a detailed description of the conditions that will set the code, and the effect of the code on system operation/mode;

Item: 13 - d

DTC	Code Describtion	Conditions that will Set the Code	Effect on system operation mode
11	Wheel Speed Sensor FR- Hardware	Sensor Line Open or Short	VSA System Diasabled
13	Wheel Speed Sensor FL - Hardware	Sensor Line Open or Short	VSA System Diasabled
15	Wheel Speed Sensor RR- Hardware	Sensor Line Open or Short	VSA System Diasabled
17	Wheel Speed Sensor RL - Hardware	Sensor Line Open or Short	VSA System Diasabled
12	Wheel Speed Sensor FR - Implausable	Not plausable based on F/S Model	VSA System Diasabled
14	Wheel Speed Sensor FL - Implausable	Not plausable based on F/S Model	VSA System Diasabled
16	Wheel Speed Sensor RR- Implausable	Not plausable based on F/S Model	VSA System Diasabled
18	Wheel Speed Sensor RL - Implausable	Not plausable based on F/S Model	VSA System Diasabled
21	Wheel Speed Sensor FR- Signal Noise	Not plausable based on F/S Model	VSA System Diasabled
22	Wheel Speed Sensor FL - Signal Noise	Not plausable based on F/S Model	VSA System Diasabled
23	Wheel Speed Sensor RR- Signal Noise	Not plausable based on F/S Model	VSA System Diasabled
24	Wheel Speed Sensor RL - Signal Noise	Not plausable based on F/S Model	VSA System Diasabled
25	Yaw Rate Sensor Failure	Hardware and Implausable Signal	VSA System Diasabled
26	Lateral G Sensor Failure	Hardware and Implausable Signal	VSA System Diasabled
27	Steering Angle Sensor Failure	Hardware and Implausable Signal	VSA System Diasabled
28	Longitudinal G Sensor Failure	Hardware and Implausable Signal	VSA System Diasabled
31	In Valve Solenoid-FR	Coil Line Open or Short	VSA System Diasabled
32	Out Valve Solenoid-FR	Coil Line Open or Short	VSA System Diasabled
33	In Valve Solenoid-FL	Coil Line Open or Short	VSA System Diasabled
34	Out Valve Solenoid-FL	Coil Line Open or Short	VSA System Diasabled
35	In Valve Solenoid-RR	Coil Line Open or Short	VSA System Diasabled
36	Out Valve Solenoid-RR	Coil Line Open or Short	VSA System Diasabled
37	In Valve Solenoid-RL	Coil Line Open or Short	VSA System Diasabled
38	Out Valve Solenoid-RL	Coil Line Open or Short	VSA System Diasabled

2005 Pilot NHTSA Investigation	**Request:** Provide a listing of all diagnostic trouble codes by code, description, a detailed description of the conditions that will set the code, and the effect of the code on system operation/mode;	**Item:** 13 - d **Page:** 2

DTC	Code Describtion	Conditions that will Set the Code	Effect on system operation mode
41	Wheel Lock - FR	Not plausable based on F/S Model	VSA System Diasabled
42	Wheel Lock - FL	Not plausable based on F/S Model	VSA System Diasabled
43	Wheel Lock - RR	Not plausable based on F/S Model	VSA System Diasabled
44	Wheel Lock - RL	Not plausable based on F/S Model	VSA System Diasabled
51	Motor Lock/Overheat	Motor Line Open or Short	VSA System Diasabled
52	Motor Failed OFF	No Feedback Voltage Measured	VSA System Diasabled
53	Motor Failed ON	Continous Feedback Voltage	VSA System Diasabled
54	Failsafe Relay Failure	Switch is Open or Short	VSA System Diasabled
61	Low Voltage Detected	Battery Voltage is not sufficient	VSA System Diasabled
62	High Voltage Detected	Battery Voltage is too high	VSA System Diasabled
64	Sensor Voltage is out of Range	Sensor Supply is too high or Low	VSA System Diasabled
65	Brake Fluid is too low	Brake Fluid Low Switch is triggered	VSA System Diasabled
66	Master Cylinder Pressure is abnormal	Hardware and Implausable Signal	VSA System Diasabled
68	Brake Switch failure (ON/OFF)	Signal is implausiable vs PMC	VSA System Diasabled
71	Tire Size is abnormal	Tire size exceed valid range	VSA System Diasabled
81	ECU Failure is detected	Micro/Memory/Circuit Failure	VSA System Diasabled
83	Engine Failure that effects VSA	Torque Related Failure with Engine	VSA System Diasabled
84	VSA Sensor Not calibrated	Sensor is not calibrated	VSA System Diasabled
86	CAN Communication Failure	Timeout/Checksum/Alivecnt Error	VSA System Diasabled
107	TCS Activation is implausable	TCS Control is operating too long	VSA System Diasabled
108	VSA Activation is implausable	VSA Control is operating too long	VSA System Diasabled
112	ECU Power supply Error	ECU Power Supply has failure	VSA System Diasabled
121	Regulator Valve Solenoid- FR	Coil Line Open or Short	VSA System Diasabled
122	Suction Valve Solenoid - FR	Coil Line Open or Short	VSA System Diasabled
123	Regulator Valve Solenoid- FL	Coil Line Open or Short	VSA System Diasabled
124	Suction Valve Solenoid - FL	Coil Line Open or Short	VSA System Diasabled

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8-3-2012

ATTACHMENT

Q13F

05M 06M Pilot Drawing change history (Drawing issue timing)