Lift and Support Points

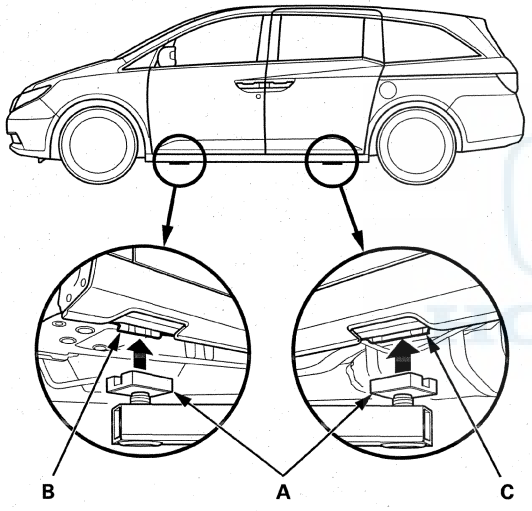
NOTE: If you are going to remove heavy components such as the suspension or the fuel tank from the rear of the vehicle, first support the front of the vehicle with tall safety stands. When substantial weight is removed from the rear of the vehicle, the center of gravity can change, causing the vehicle to tip forward on the lift.

Vehicle Lift

1. Position the lift pads (A) under the vehicle's front support points (B) and rear support points (C).

NOTICE

Be sure the lift pads are properly placed to avoid damaging the vehicle.



2. Raise the lift a few inches, and rock the vehicle gently to be sure it is firmly supported.
3. Raise the lift to its full height, and inspect the vehicle support points for solid contact with the lift pads.

Safety Stands

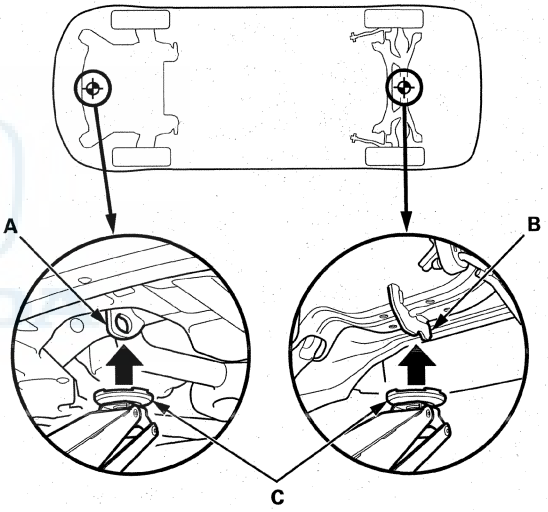
To support the vehicle on safety stands, use the same support points as for a vehicle lift. Always use safety stands when working on or under any vehicle that is supported only by a jack.

Floor Jack

1. When lifting the front of the vehicle, set the parking brake. When lifting the rear of the vehicle, put the shift lever in P.
2. Block the wheels that are not being lifted.
3. Position the floor jack under the front jacking bracket (A) or the rear jacking bracket (B). Center the jacking bracket on the jack lift platform (C), and jack up the vehicle high enough to fit the safety stands under it.

NOTICE

Be sure the floor jack is properly placed to avoid damaging the vehicle.



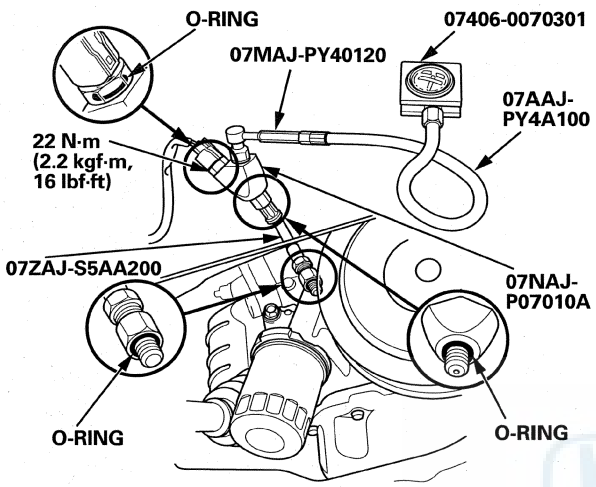
4. Position the safety stands under the support points, and adjust them so the vehicle is level side-to-side.
5. Lower the vehicle onto the stands.

Automatic Transmission and A/T Differential (6-speed) (cont'd)

Item	Measurement	Qualification	Standard or New	Service Limit
Secondary shaft	Diameter of bearing contact area	At 1st gear	31.986–31.999 mm (1.25929–1.25980 in)	When worn or damaged
		At torque converter housing bearing	32.002–32.015 mm (1.25992–1.26043 in)	When worn or damaged
		At torque converter housing (shaft end side)	28.5935–28.6065 mm (1.125726–1.126238 in)	When worn or damaged
	I.D. of gears	1st gear	38.000–38.016 mm (1.49606–1.49669 in)	When worn or damaged
		2nd gear	44.000–44.016 mm (1.73228–1.73291 in)	When worn or damaged
		5th gear	50.000–50.016 mm (1.96850–1.96913 in)	When worn or damaged
	Axial clearance of gears	1st gear	0.16–0.40 mm (0.0063–0.0157 in)	—
		2nd and 5th gear	0.05–0.12 mm (0.002–0.004 in)	—
	Diameter of gear collars at needle bearing contact area	2nd gear collar	37.975–37.991 mm (1.49508–1.49571 in)	When worn or damaged
		5th gear collar	44.962–44.978 mm (1.77015–1.77078 in)	When worn or damaged
	Thrust shim thickness (89 mm)	A	0.85 mm (0.0335 in)	When worn or damaged
		B	0.92 mm (0.0362 in)	When worn or damaged
		C	0.99 mm (0.0390 in)	When worn or damaged
		D	1.06 mm (0.0417 in)	When worn or damaged
		E	1.13 mm (0.0445 in)	When worn or damaged
		F	1.20 mm (0.0472 in)	When worn or damaged
		G	1.27 mm (0.0500 in)	When worn or damaged
		H	1.34 mm (0.0528 in)	When worn or damaged
		I	1.41 mm (0.0555 in)	When worn or damaged
		J	1.48 mm (0.0583 in)	When worn or damaged
		K	1.55 mm (0.0610 in)	When worn or damaged
		L	1.62 mm (0.0638 in)	When worn or damaged
		M	1.69 mm (0.0665 in)	When worn or damaged
		N	1.76 mm (0.0693 in)	When worn or damaged
		O	1.83 mm (0.0720 in)	When worn or damaged
		P	1.90 mm (0.0748 in)	When worn or damaged
		Q	1.97 mm (0.0776 in)	When worn or damaged
		R	2.04 mm (0.0803 in)	When worn or damaged
		S	2.11 mm (0.0831 in)	When worn or damaged
		T	2.18 mm (0.0858 in)	When worn or damaged

Symptom Troubleshooting (cont'd)

7. Install the oil pressure hose, the A/T low pressure gauge w/panel, the A/T pressure test hose, and the A/T pressure adapter as shown, then install the rocker arm oil pressure sensor to the pressure gauge adapter.



8. Allow the engine to reach operating temperature (fan comes on at least twice).
9. With the engine idling, check the oil pressure gauge.

   Does it read 69 kPa (0.70 kgf/cm2, 10.0 psi) or less?

   YES–Check the following items:■
   - Blocking of oil filter.
   - Blocking of oil strainer.
   - Inspect the oil pressure relief valve (see page 8-15).
   - Check the oil pump (see page 8-17).

   NO–Go to step 10.
10. Check the ROCKER ARM OIL PRESSURE SENSOR in the PGM-FI DATA LIST with the HDS.

    Is the 19.0 kPa (0.194 kgf/cm², 2.76 psi) or less?

    YES–Go to step 14.

    NO–Go to step 11.
11. Jump the SCS line with the HDS, then turn the ignition switch to LOCK (0).

    NOTE: This step must be done to protect the PCM from damage.
12. Disconnect PCM connector C (49P).
13. Turn the ignition switch to ON (II).

    Does the low oil pressure indicator go off?

    YES–Update the PCM if it does not have the latest software (see page 11-236), or substitute a known-good PCM (see page 11-8), then recheck. If the symptom/indication goes away with a known-good PCM, replace the original PCM (see page 11-238).■

    NO–Replace the gauge control module (see page 22-522).■
14. Check the difference between the MAP SENSOR and the BARO SENSOR in the PGM-FI DATA LIST with HDS.

    Is the difference between the sensor readings 19.9 kPa (0.203 kgf/cm², 2.89 psi) or less?

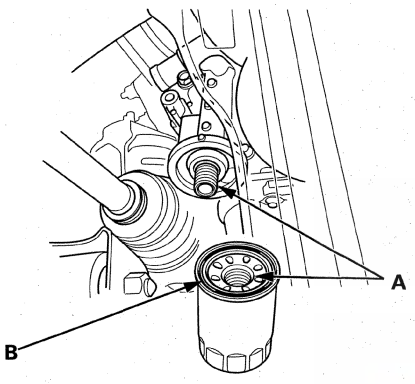
    YES–Replace the rocker arm oil pressure sensor (see page 8-9).■

    NO–Replace the PCM (see page 11-238).■

Engine Oil Filter Replacement

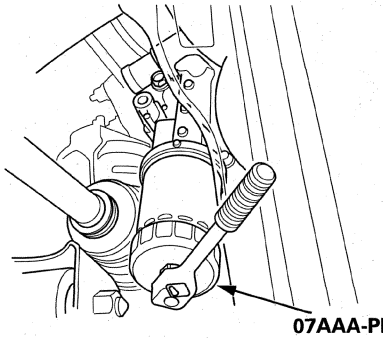
Special Tools Required
Oil Filter Wrench 07AAA-PLCA100

1. Remove the oil filter with the oil filter wrench.
2. Inspect the filter to make sure the rubber seal is not stuck to the oil filter seating surface of the engine.
3. Inspect the threads (A) and the rubber seal (B) on the new filter. Clean the seat on the oil filter base, then apply a light coat of new engine oil to the oil filter rubber seal. Use only filters with a built-in bypass system.

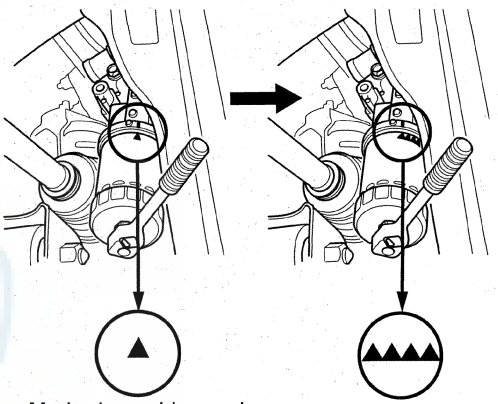


4. Install the oil filter by hand.
5. After the rubber seal seats, tighten the oil filter clockwise with the oil filter wrench.

Tighten: 3/4 Turn Clockwise
Tightening Torque: 12 N·m (1.2 kgf·m, 9 lbf·ft)



6. If four numbers or marks (1 to 4 or ▼ to ▼▼▼▼) are printed around the outside of the filter, you can use the following procedure to tighten the filter:
   - Spin the filter on until its seal lightly seats against the oil filter base, and note which number or mark is at the bottom.
   - Tighten the filter by turning it clockwise three numbers or marks from the one you noted. For example, if mark ▼ is at the bottom when the seal is lightly seated, tighten the filter until the mark ▼▼▼▼ comes around to the bottom.



Mark when rubber seal is seated.

Mark after tightening.

Number or Mark when rubber seal is seated	1 or ▼	2 or ▼▼	3 or ▼▼▼	4 or ▼▼▼▼
Number or Mark after tightening	4 or ▼▼▼▼	1 or ▼	2 or ▼▼	3 or ▼▼▼

7. After installation, fill the engine with engine oil to the specified level (see page 8-10), run the engine for more than 3 minutes, then check for oil leakage.

DTC Troubleshooting (cont'd)

8. Turn the ignition switch to ON (II).
9. Check the HO2S B1 S2 OUTPUT VOLTAGE and/or HO2S B2 S2 OUTPUT VOLTAGE* in the DATA LIST with the HDS.

   Does the voltage stay at 0.12 V or less?

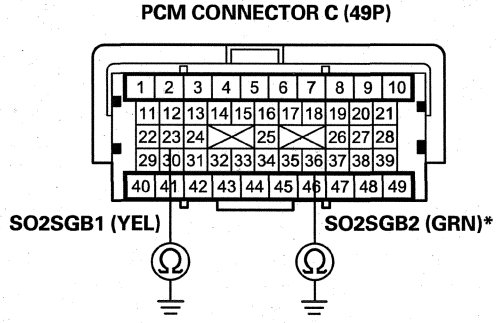
   YES–Go to step 10.

   NO–Go to step 22.
10. Turn the ignition switch to LOCK (0).
11. Remove the jumper wire from the secondary HO2S (Sensor 2) 4P connector.
12. Turn the ignition switch to ON (II).
13. Check the HO2S B1 S2 OUTPUT VOLTAGE and/or HO2S B2 S2 OUTPUT VOLTAGE* in the DATA LIST with the HDS.

   Is there about 5 V?

   YES–Go to step 14.

   NO–Go to step 18.
14. Turn the ignition switch to LOCK (0).
15. Jump the SCS line with the HDS.
16. Disconnect PCM connector C (49P).
17. Check for continuity between PCM connector terminal C23 (C36)* and body ground.

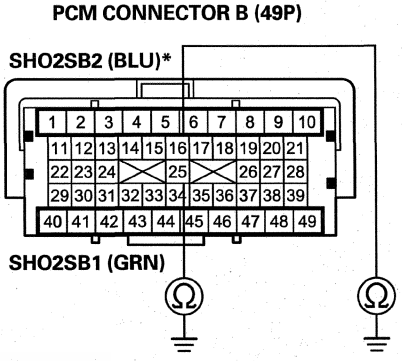


Terminal side of female terminals

   Is there continuity?

   YES–Repair a short in the wire between the PCM (C23 (C36)*) and secondary HO2S (Sensor 2), then go to step 24.

   NO–Go to step 31.
18. Turn the ignition switch to LOCK (0).
19. Jump the SCS line with the HDS.
20. Disconnect PCM connector B (49P).
21. Check for continuity between PCM connector terminal B25 (B16)* and body ground.



Terminal side of female terminals

   Is there continuity?

   YES–Repair a short in the wire between the PCM (B25 (B16)*) and secondary HO2S (Sensor 2), then go to step 24.

   NO–Go to step 31.
22. Turn the ignition switch to LOCK (0).
23. Replace secondary HO2S (Sensor 2) (see page 11-231).
24. Reconnect all connectors.
25. Turn the ignition switch to ON (II).
26. Reset the PCM with the HDS.
27. Do the PCM idle learn procedure (see page 11-313).
28. Start the engine, and let it idle without load (in P or N) until the radiator fan comes on, then let it idle.
29. Check for Pending or Confirmed DTCs with the HDS.

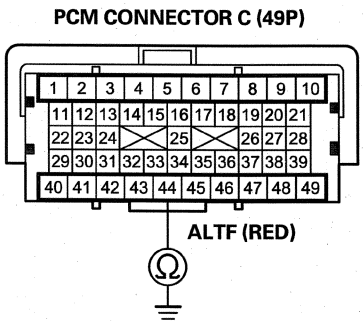
   Is DTC P0137 and/or P0157 indicated?*

   YES–Check for poor connections or loose terminals at secondary HO2S (Sensor 2) and the PCM, then go to step 1.

   NO–Go to step 30.

Alternator FR Signal Circuit Troubleshooting (cont'd)

8. Check for continuity between PCM connector terminal C44 and body ground.



Terminal side of female terminals

Is there continuity?

YES–Repair a short in the wire between the PCM (C44) and the alternator.■

NO–Update the PCM if it does not have the latest software (see page 11-236), or substitute a known-good PCM (see page 11-8), then recheck. If the symptom/indication goes away and the PCM was updated, troubleshooting is complete. If the symptom/indication goes away and the PCM was substituted, replace the original PCM (see page 11-238).■

PSP Switch Signal Circuit Troubleshooting

1. Start the engine, and let it idle.
2. Align the steering wheel straight ahead.
3. Check the PSP SWITCH in the DATA LIST with the HDS.

   Does it indicate ON?

   YES–Go to step 4.

   NO–Go to step 14.
4. Turn the steering wheel to its full lock position.
5. Check the PSP SWITCH in the DATA LIST with the HDS.

   Does it change to OFF?

   YES–The PSP switch signal circuit is OK.■

   NO–Go to step 6.
6. Turn the ignition switch to LOCK (0).
7. Disconnect the PSP switch 2P connector.
8. Start the engine.
9. Check the PSP SWITCH in the DATA LIST with the HDS.

   Does it change to OFF?

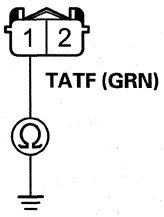
   YES–Replace the PSP switch (see page 17-53).■

   NO–Go to step 10.
10. Turn the ignition switch to LOCK (0).
11. Jump the SCS line with the HDS.
12. Disconnect PCM connector A (49P).

DTC Troubleshooting (cont'd)

10. Check for continuity between ATF temperature sensor connector terminal No. 1 and body ground.

ATF TEMPERATURE SENSOR CONNECTOR



Terminal side of female terminals

Is there continuity?

YES–Repair a short to body ground in the wire between PCM connector terminal C33 and ATF temperature sensor connector terminal No. 1, then go to step 11.

NO–Go to step 17.

11. Reconnect all connectors.
12. Turn the ignition switch to ON (II).
13. Clear the DTC with the HDS.
14. Start the engine in P, and wait for at least 20 seconds.
15. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0712 indicated?

YES–Check for an intermittent short to body ground in the wire between the ATF temperature sensor and the PCM, then go to step 1.

NO–Go to step 16.

16. Monitor the OBD STATUS for P0712 in the DTCs MENU with the HDS.

Does the HDS indicate PASSED?

YES–Troubleshooting is complete. If any other Pending or Confirmed DTCs were indicated in step 15, go to the indicated DTC's troubleshooting.■

NO–If the HDS indicates FAILED, check for an intermittent short to body ground in the wire between the ATF temperature sensor and the PCM, then go to step 1. If the HDS indicates NOT COMPLETED, go to step 14.

17. Reconnect all connectors.
18. Update the PCM if it does not have the latest software (see page 11-236), or substitute a known-good PCM (see page 11-8).
19. Start the engine in P, and wait for at least 20 seconds.
20. Check for Pending or Confirmed DTCs with the HDS.

Is DTC P0712 indicated?

YES–Check for an intermittent short to body ground in the wire between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-8), then go to step 19. If the PCM was substituted, go to step 1.

NO–Go to step 21.

21. Monitor the OBD STATUS for P0712 in the DTCs MENU with the HDS.

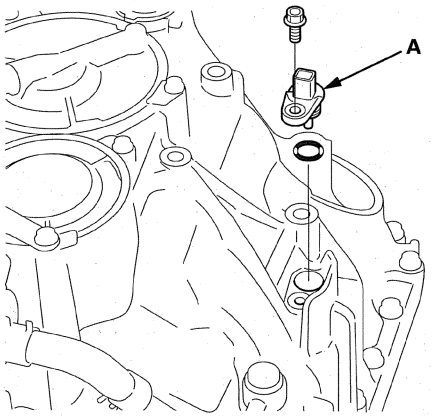
Does the HDS indicate PASSED?

YES–If the PCM was updated, troubleshooting is complete. If the PCM was substituted, replace the original PCM (see page 11-238). If any other Pending or Confirmed DTCs were indicated in step 20, go to the indicated DTC's troubleshooting.■

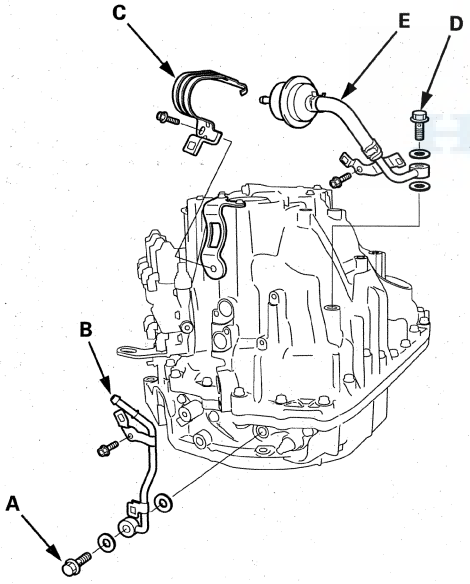
NO–If the HDS indicates FAILED, check for an intermittent short to body ground in the wire between the ATF temperature sensor and the PCM. If the PCM was updated, substitute a known-good PCM (see page 11-8), then go to step 19. If the PCM was substituted, go to step 1. If the HDS indicates NOT COMPLETED, go to step 19.

Transmission Disassembly (cont'd)

5. Remove the ATF temperature sensor (A) with the O-ring.

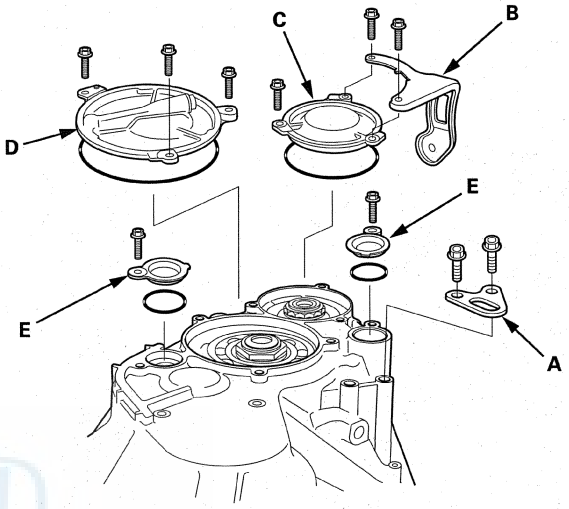


6. Remove the ATF outlet line banjo bolt (A) with the sealing washers, and remove the ATF outlet line (B).



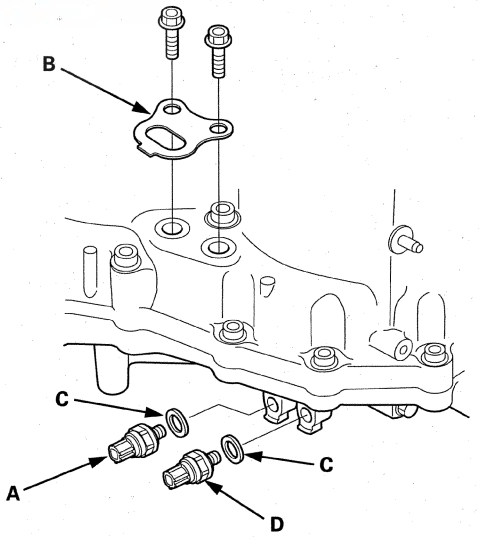
7. Remove the ATF filter holder (C) and the ATF inlet line banjo bolt (D) with the sealing washers, and remove the ATF inlet line/ATF hose/ATF filter (E).

8. Remove the ATF filter bracket (B), and remove the third shaft end cover (C), the mainshaft end cover (D), and the end covers (E) (two) with the O-rings.



9. Remove transmission hanger A.

10. Remove transmission fluid pressure switch A (2nd clutch) with the sealing washer (C).



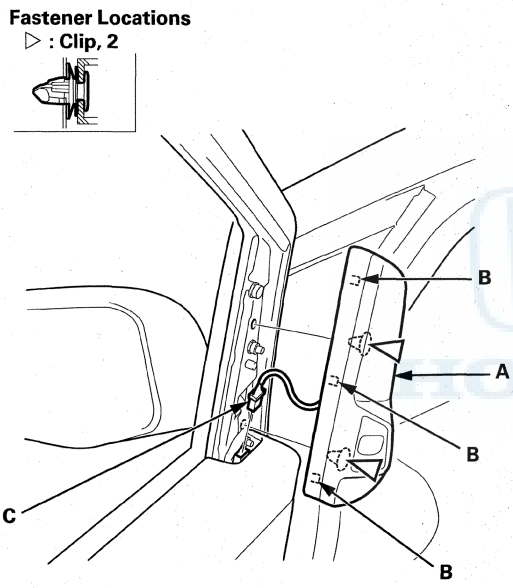
11. Remove transmission fluid pressure switch D (5th clutch) with the sealing washer (C).

12. Remove transmission hanger B.

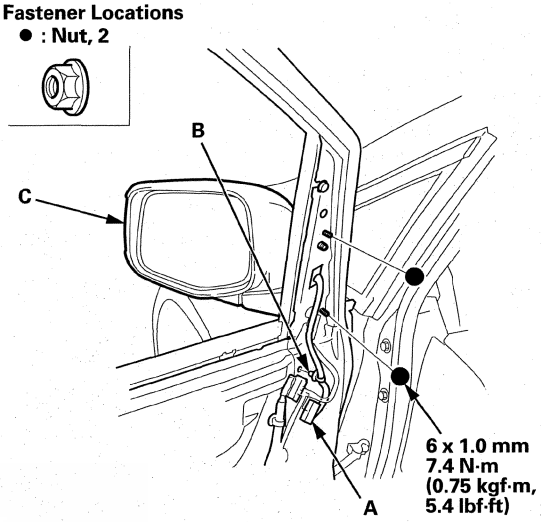
Power Mirror Replacement

NOTE: Take care not to scratch the door or the related parts.

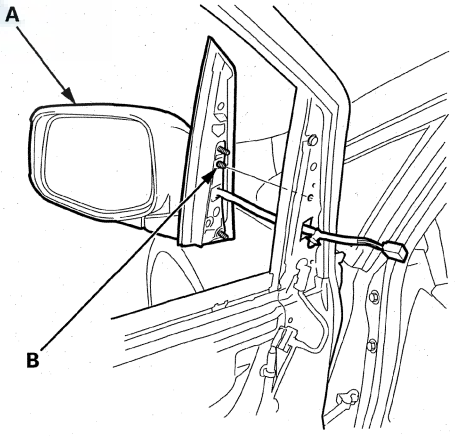
1. Lower the glass fully.
2. Remove the door mirror cover (A).
   -1. With your hand, carefully pull out the top edge of the door mirror cover to release the hooks (B) and detach the clips.
   -2. With BSI: Disconnect the BSI alert indicator connector (C).
   NOTE: Be careful when removing and installing the door mirror cover, as its lower edge can damage the door panel.



3. Remove the door panel (see page 20-8).
4. Disconnect the power mirror connector (A), and detach the harness clip (B).

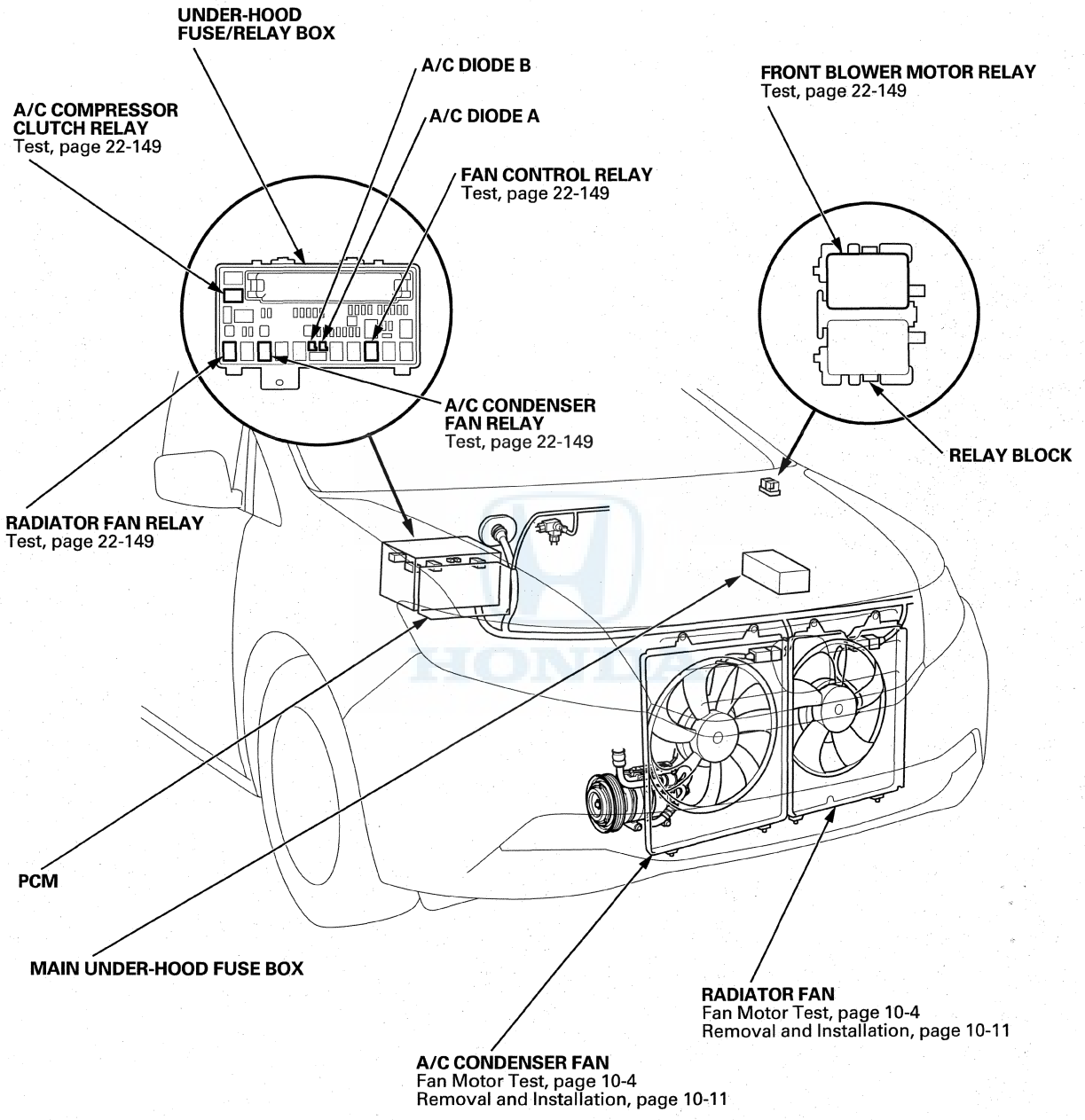


5. While holding the power mirror (C), remove the nuts securing the mirror.
6. While holding the power mirror (A), detach the clip (B), then remove the power mirror.



7. Install the mirror in the reverse order of removal, and note these items:
   - If the clips are damaged or stress-whitened, replace them with new ones.
   - Make sure each connector is plugged in properly.
   - Push the clips and the hooks into place securely.

Component Location Index (cont'd)

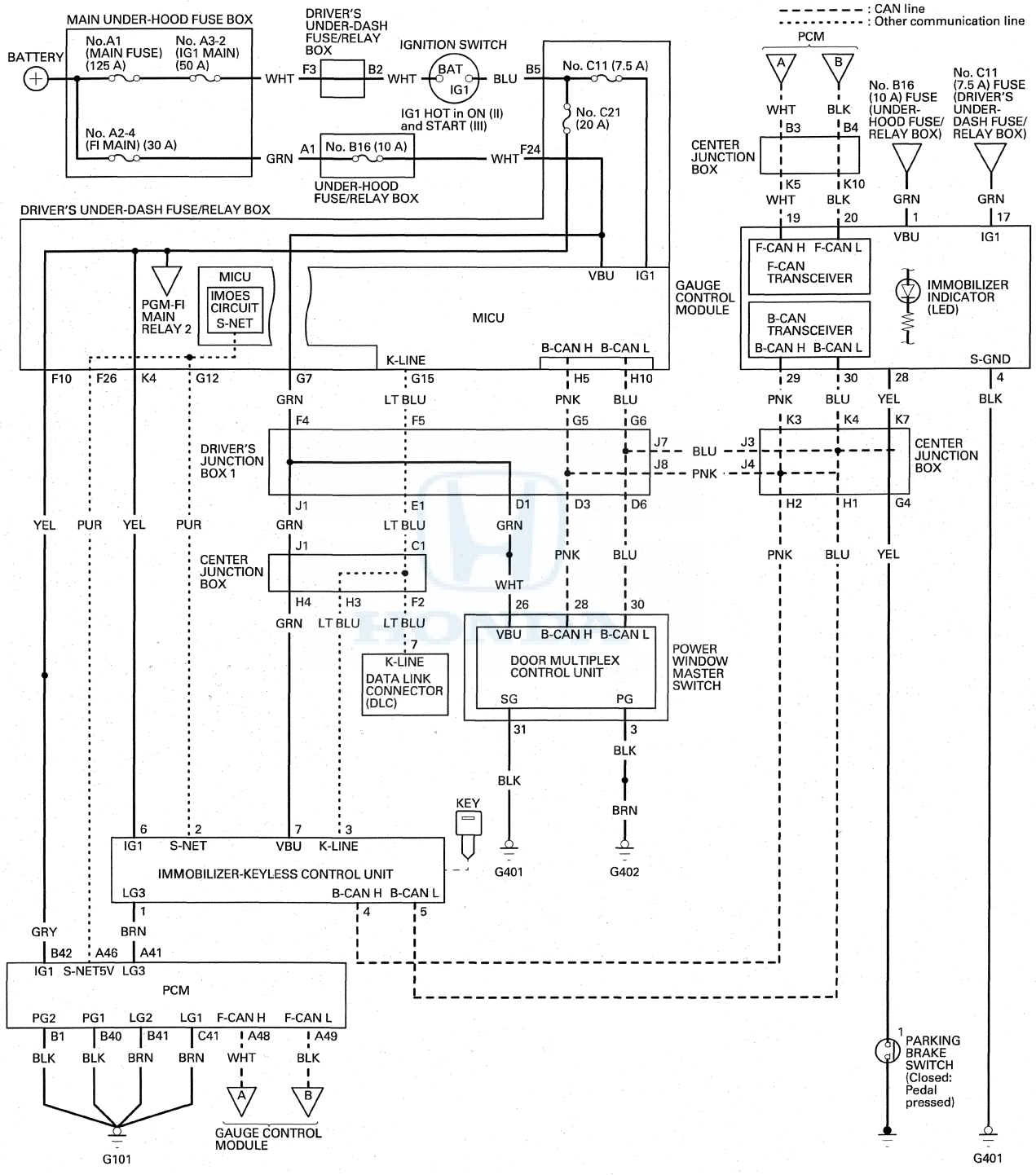


System Description (cont'd)

Function Test: (cont'd)

System Menu	HDS Description	Note
Power Sliding Doors	Left PSD Drive Motor - Open	PSD Drive motor Open direction operation It is stopped after operation by low speed for 2 seconds to an OPEN direction
	Left PSD Drive Motor - Close	PSD Drive motor Close direction operation It is stopped after operation by low speed for 2 seconds to a CLOSE direction
	Left PSD Clutch Release	PSD Drive Magnetic clutch operation Clutch is off after clutch on for 2 seconds
	Left PSD Release Actuator	Release actuator operation Stop after 1.3 second release operation
	Left PSD Closer Motor	Closer motor performs the following (Auto closer) operation
	Left PSD Buzzer	Buzzer rings. Stop after having sounded a buzzer for 1 second
	Right PSD Drive Motor - Open	PSD Drive motor Open direction operation It is stopped after operation by low speed for 2 seconds to an OPEN direction
	Right PSD Drive Motor - Close	PSD Drive motor Close direction operation It is stopped after operation by low speed for 2 seconds to a CLOSE direction
	Right PSD Clutch Release	PSD Drive Magnetic clutch operation Clutch is off after clutch on for 2 seconds
	Right PSD Release Actuator	Release actuator operation Stop after 1.3 second release operation
	Right PSD Closer Motor	Closer motor performs the following (Auto closer) operation
	Right PSD Buzzer	Buzzer rings. Stop after having sounded a buzzer for 1 second

Circuit Diagram

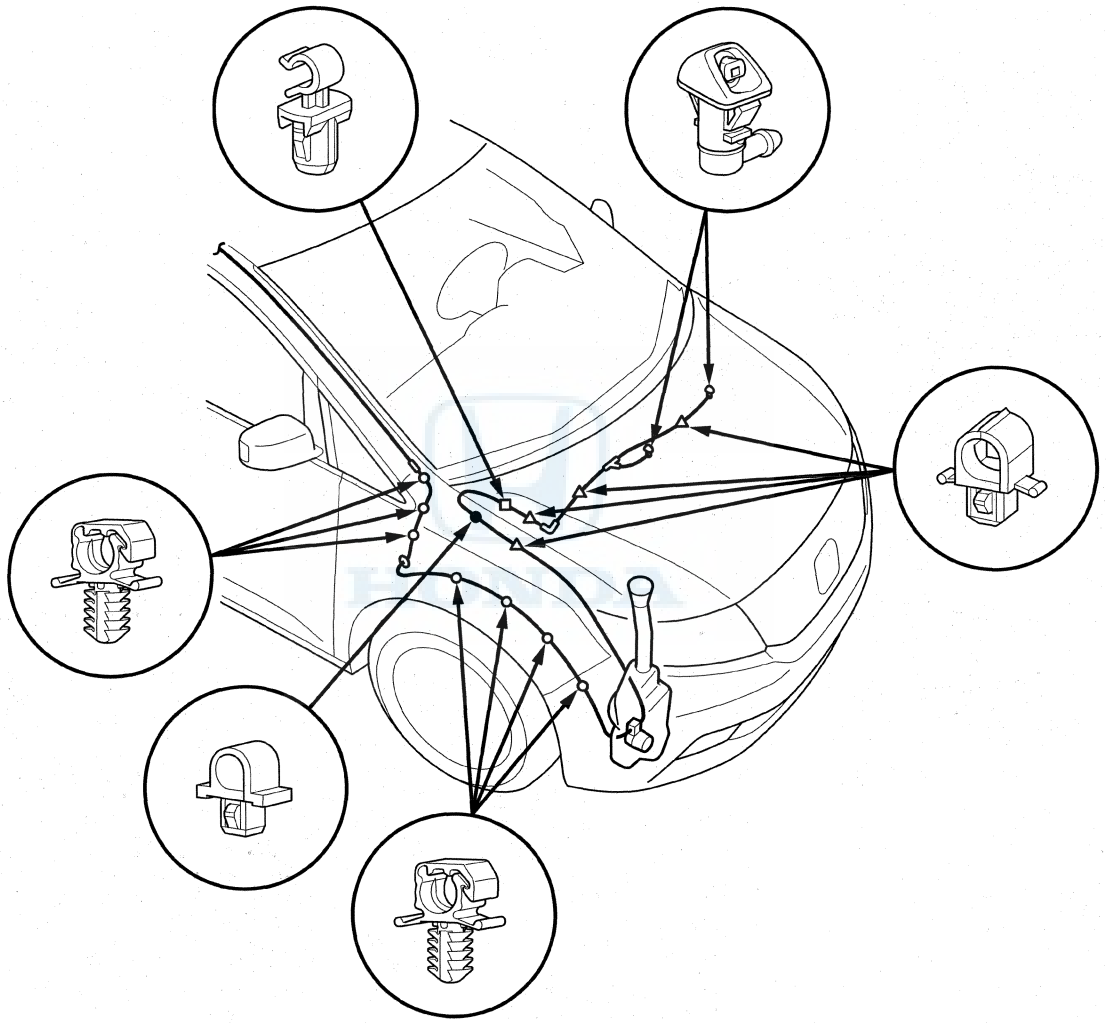


Washer Tube Replacement

Windshield and Rear Window

1. Remove the right front inner fender (see page 20-273).
2. Remove the washer nozzles and clips, then remove the washer tubes.

Front



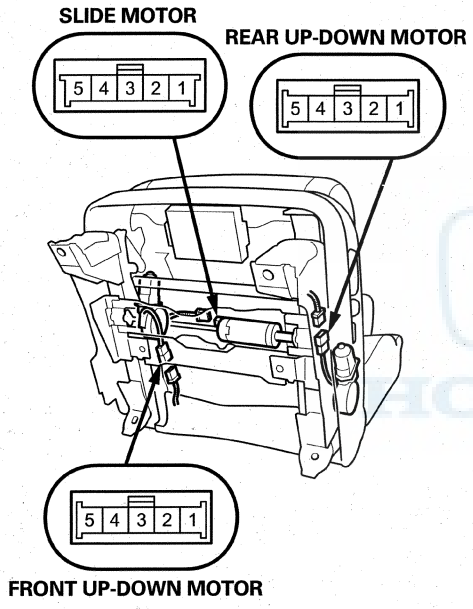
(cont'd)

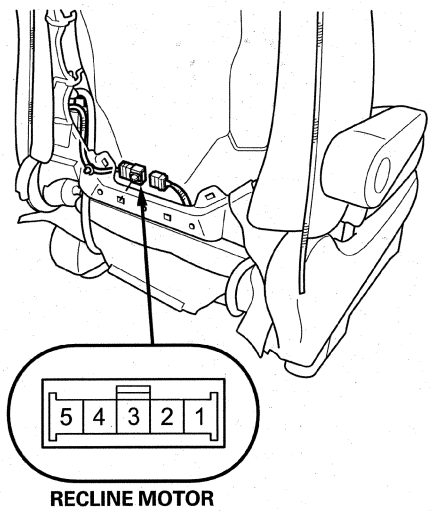
Driver's Power Seat Motor Test

NOTE: SRS components are located in this area. Review the SRS component locations (see page 24-20), and precautions and procedures (see page 24-23) before doing repairs or servicing.

1. Remove the driver's seat (see page 20-166).
2. Disconnect the 5P connector from each power seat motor.

   NOTE:
   - For the recline motor, remove the seat-back cover (see page 20-180).
   - All connectors are terminal side of male terminals.





3. Test each motor by connecting power and ground according to the table. When the motor stops running, disconnect battery power immediately.

Position \ Terminal		1	5
SLIDE MOTOR	Forward	⊖	⊕
	Backward	⊕	⊖

Position \ Terminal		4	5
RECLINE MOTOR	Forward	⊖	⊕
	Backward	⊕	⊖

Position \ Terminal		4	5
FRONT UP-DOWN MOTOR	UP	⊖	⊕
	DOWN	⊕	⊖

Position \ Terminal		4	5
REAR UP-DOWN MOTOR	UP	⊕	⊖
	DOWN	⊖	⊕

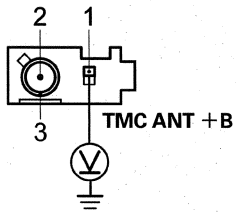
4. If the motor does not run or fails to run smoothly, replace the motor:
   - Slide motor (see page 20-173)
   - Front up-down motor/seat frame (see page 20-179)
   - Rear up-down motor/seat frame (see page 20-179)
   - Recline motor (see page 20-171)

   NOTE: Replace the front or rear up-down motors/seat frame as an assembly.

Symptom Troubleshooting (cont'd)

11. Measure the voltage between RDS-TMC antenna amplifier 3P connector terminal No. 1 and body ground.

RDS-TMC ANTENNA AMPLIFIER 3P CONNECTOR



Terminal side of female terminals

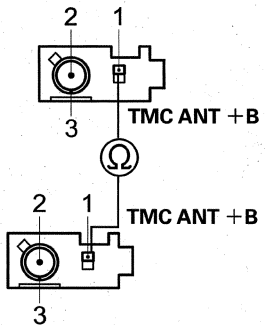
Is there battery voltage?

YES–Go to step 16.

NO–Go to step 12.

12. Turn the ignition switch to LOCK (0).
13. Disconnect audio-navigation unit connector L (3P).
14. Check for continuity between audio-navigation unit connector L (3P) terminal No. 1 and RDS-TMC antenna amplifier 3P connector terminal No. 1.

AUDIO-NAVIGATION UNIT CONNECTOR L (3P)
Terminal side of female terminals



RDS-TMC ANTENNA AMPLIFIER 3P CONNECTOR
Terminal side of female terminals

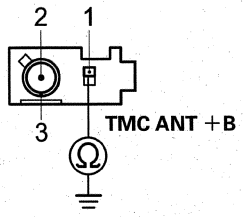
Is there continuity?

YES–Go to step 15.

NO–Repair an open in the wire between the audio-navigation unit and the RDS-TMC antenna amplifier. Also check the RDS-TMC antenna lead/sublead connector.■

15. Check for continuity between audio-navigation unit connector L (3P) terminal No. 1 and body ground.

AUDIO-NAVIGATION UNIT CONNECTOR L (3P)



Terminal side of female terminals

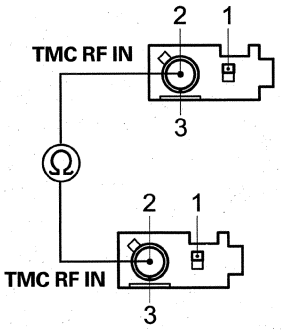
Is there continuity?

YES–Repair a short to body ground in the wire between the audio-navigation unit and the RDS-TMC antenna amplifier.■

NO–Replace the audio-navigation unit (see page 23-403).■

16. Turn the ignition switch to LOCK (0).
17. Disconnect audio-navigation unit connector L (3P).
18. Check for continuity between audio-navigation unit connector L (3P) terminal No. 2 and RDS-TMC antenna amplifier 3P connector terminal No. 2.

AUDIO-NAVIGATION UNIT CONNECTOR L (3P)
Terminal side of female terminals



RDS-TMC ANTENNA AMPLIFIER 3P CONNECTOR
Terminal side of female terminals

Is there continuity?

YES–Go to step 19.

NO–Replace the RDS-TMC antenna lead and/or the sublead.■