

Troubleshooting

DTC 1-2: Pump Motor

The ABS control unit checks the conditions at the pump motor relay drive (PMR) terminal and motor check (MCK) terminal during the initial diagnosis and regular diagnosis. When the ABS control unit detects the following conditions during the diagnosis, it keeps the ABS indicator light on. When the following conditions are detected after the ABS indicator light goes off, the ABS control unit turns the ABS indicator light on again.

- Battery voltage at the MCK terminal with an OFF signal at the PMR terminal
- 0 V at the MCK terminal with an ON signal at the PMR terminal

Possible causes:

- Open circuit or short to body ground between the R/C MIRROR (7.5 A) fuse and under-hood fuse/relay box
- Open circuit or short to body ground in the PMR circuit inside the under-hood fuse/relay box
- Faulty pump motor relay
- Open circuit or short to body ground in the PMR circuit between the under-hood fuse/relay box and ABS control unit
- Open circuit between the battery and under-hood fuse/relay box
- Blown ABS MOTOR (40 A) fuse
- Blown ABS UNIT (7.5 A) fuse
- Open circuit or short to body ground in the motor drive circuit and MCK circuit inside the under-hood fuse/relay box
- Open circuit or short to body ground in the MCK circuit between the under-hood fuse/relay box and ABS control unit
- Open circuit or short to body ground between the under-hood fuse/relay box and pump motor
- Faulty pump motor
- Open circuit between the pump motor and body ground or poor ground
- Faulty ABS control unit

- With engine running, ABS indicator light is ON.
- With the SCS service connector connected (see page 19-40), DTC 1-2 is indicated.

Check the ABS MOTOR (40 A) fuse in the under-hood fuse/relay box.

Is the fuse OK?

NO

Replace the fuse and recheck.

NOTE: Reinstall the fuse if it is OK.

YES

Check the ABS UNIT (7.5 A) fuse in the under-hood fuse/relay box.

Is the fuse OK?

NO

Replace the fuse and recheck.

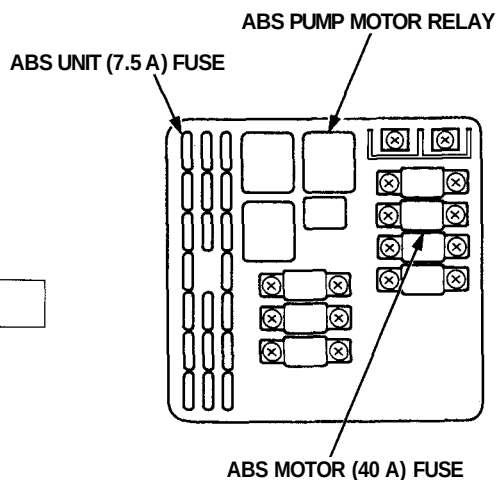
YES

NOTE: Reinstall the fuse if it is OK.

NOTE: Relieve system pressure from the modulator unit bleed screw, then start the engine and recheck the fuse. If the fuse is blown, check for a short to body ground in the MCK circuit.

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UNDER-HOOD FUSE/RELAY BOX



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Remove the ABS pump motor relay and check it (see [section 23](#)).

Is the relay OK?

NO

Replace the ABS pump motor relay.

YES

Check the ABS pump motor operation:

1. Relieve system pressure (see page 19-97).
2. Connect the ABS pump relay connector +B and MOTOR terminals with a jumper wire for 1 second.

NOTE: If the relay is stuck ON, the motor may be damaged. Check the pump motor operation.

NOTE: Use a jumper wire with a diameter larger than 2 mm (0.08 in).

Does the pump motor run?

NO

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To check for an open in the pump motor drive circuit

YES

Check the MCK (motor check) circuit:

1. Remove the jumper wire.
2. Disconnect the under-hood fuse/relay box 3P connector.
3. Turn the ignition switch ON (II).
4. Measure the voltage between the ABS pump motor relay connector motor terminal and body ground.

Is there about 10V?

NO

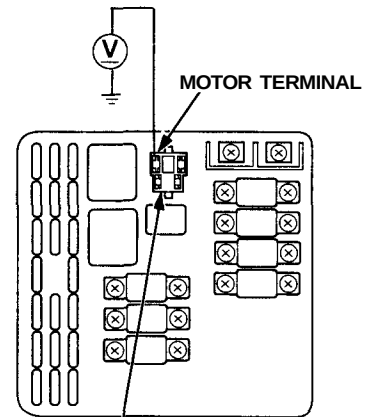
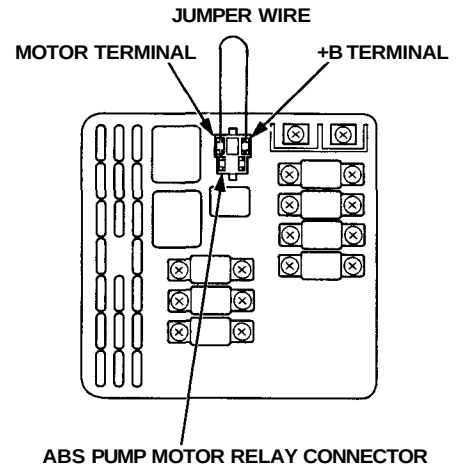
(To page 19-54)

To check for an open in the MCK circuit

YES

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UNDER-HOOD FUSE/RELAY BOX



(cont'd)

Troubleshooting

DTC 1-2: Pump Motor (cont'd)

(From page 19-51)

Check for an open in the IG2 circuit:

Measure the voltage between the under-hood fuse/relay box 5P connector terminal No. 2 and body ground.

NOTE: The ABS pump motor relay coil circuit is checked beginning with this step.

Is there battery voltage?

NO

Repair open in the wire between the R/C MIRROR (7.5 A) fuse in the under-dash fuse/relay box and the under-hood fuse/relay box.

YES

Check the ABS pump motor relay operation:

1. Connect the under-hood fuse/relay box 3P connector.
2. Install the ABS pump motor relay.

Does the ABS pump motor relay operate?

YES

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To check for a short to body ground in the ABS pump motor relay coil circuit

NO

Check for an open in the under-hood fuse/relay box:

Measure the voltage between the under-hood fuse/relay box 5P connector terminal No. 1 and body ground.

NOTE: The ABS pump motor relay coil circuit is checked for an open beginning with this step.

Is there battery voltage?

NO

Replace the under-hood fuse/relay box.
(Open circuit inside the box)

YES

Check for an open in the PMR circuit:

Measure the voltage between the ABS control unit 22P connector terminal No. 21 and body ground.

Is there battery voltage?

NO

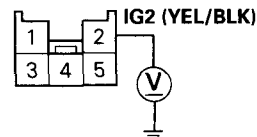
Repair open in the wire between the under-hood fuse/relay box and ABS control unit.

YES

Reconnect the connectors properly, relieve system pressure and start the engine. If DTC 1-2 is stored again, replace the ABS control unit.

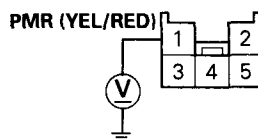
NOTE: Add brake fluid if the fluid level is lower than the MIN line.

UNDER-HOOD FUSE/RELAY BOX 5P CONNECTOR



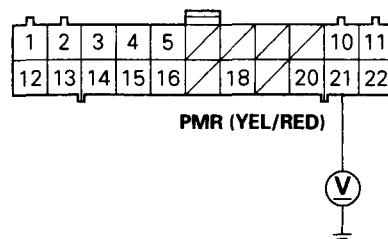
Wire side of female terminals

UNDER-HOOD FUSE/RELAY BOX 5P CONNECTOR



Wire side of female terminals

ABS CONTROL UNIT 22P CONNECTOR



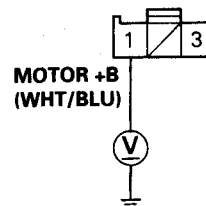
Wire side of female terminals

(From page 19-51)

Check for an open in the under-hood fuse/relay box:

1. Connect the ABS pump motor relay connector +B and MOTOR terminals with a jumper wire.
2. Measure the voltage between the under-hood fuse/relay box 3P connector terminal No. 1 and body ground.

NOTE: The ABS pump motor drive circuit is checked beginning with this step.

UNDER-HOOD FUSE/RELAY BOX 3P CONNECTOR

Wire side of female terminals

Is there battery voltage?

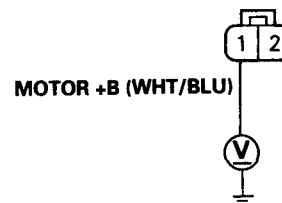
NO

Replace the under hood fuse/relay box.

YES

Check for an open in the MOTOR +B circuit:

1. Disconnect the ABS pump motor 2P connector.
2. Measure the voltage between the terminal No. 1 and body ground.

ABS PUMP MOTOR 2P CONNECTOR

Wire side of female terminals

Is there battery voltage?

NO

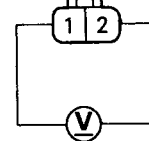
Repair open in the wire between the under-hood fuse/relay box and ABS pump motor.

YES

Check for an open in the MOTOR GND circuit:

Measure the voltage between the ABS pump motor 2P connector terminals No. 1 and No. 2.

MOTOR +B (WHT/BLU) GND (BLK)



Is there battery voltage?

NO

- Repair open in the wire between the ABS pump motor and body ground.
- Repair poor ground (G251)

YES

Replace the ABS pump motor.

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Troubleshooting

DTC 1-2: Pump Motor (cont'd)

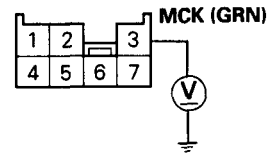
(From page 19-51)

Check for an open in the under-hood fuse/relay box:

1. Disconnect the under-hood fuse/relay box 7P connector.
2. Measure the voltage between terminal No. 3 and body ground.

NOTE: The MCK (motor check) circuit is checked beginning with this step.

UNDER-HOOD FUSE/RELAY BOX
7P CONNECTOR



Wire side of female terminals

Is there about 10 V?

YES

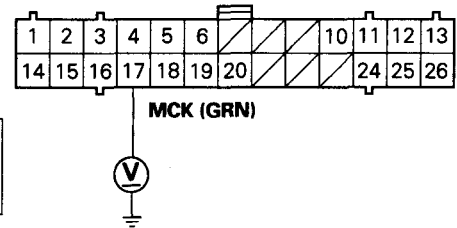
Replace the under-hood fuse/relay box.
(Open circuit inside the box)

NO

Check for an open in the MCK circuit:

Measure the voltage between the ABS control unit 26P connector terminal No. 17 and body ground.

ABS CONTROL UNIT 26P CONNECTOR



Wire side of female terminals

Is there about 10V?

YES

Repair open in the wire between the under-hood fuse/relay box and ABS control unit.

NO

Check for loose ABS control unit connectors. If necessary, substitute a known-good ABS control unit and recheck.

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Check for a short in the under-hood fuse/relay box:

1. Remove the ABS pump motor relay.
2. Disconnect the under-hood fuse/relay box 5P connector.
3. Check for continuity between the ABS pump motor relay connector PMR terminal and body ground.

NOTE:

- Short to body ground in the ABS pump motor relay coil circuit is checked beginning with this step.
- If the motor relay coil is shorted to body ground, the motor may be damaged. Check the pump motor operation.

Is there continuity?

YES

Replace the under-hood fuse/relay box.
(Short circuit inside the box)

NO

Check for a short in the PMR circuit:

1. Disconnect the ABS control unit 22P connector.
2. Check for continuity between terminal No. 21 and body ground.

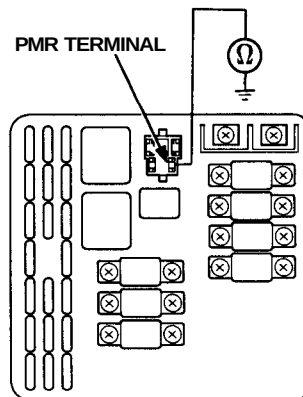
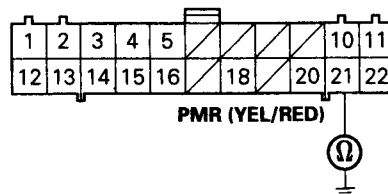
Is there continuity?

YES

Repair short to body ground in the wire between the under-hood fuse/relay box and ABS control unit.

NO

Check for loose ABS control unit connectors. If necessary, substitute a known-good ABS control unit and recheck.

UNDER-HOOD FUSE/RELAY BOX**ABS CONTROL UNIT 22P CONNECTOR**

Wire side of female terminals