How to Troubleshoot the EPS

EPS Indicator

Under normal conditions, the EPS indicator comes on when the ignition switch is turned to the ON (II) position, then goes off after the engine is started. This indicates that the bulb and its circuit are operating correctly.
If there is any trouble in the system after the engine is started, the EPS indicator will stay on, and the power assist is turned off.

When EPS indicator light comes on, the control unit memorizes the DTC. In this case, the control unit will not activate the EPS system after the engine starts again, but it keeps the EPS indicator on.

When a problem is detected and the EPS indicator comes on, 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 return to normal. Even though the system is operating normally, the EPS indicator will come on under the following conditions:

- When the vehicle is barely moving, 0 km/h (0 mph) or stopped, and the engine speed is 2,500 rpm (min^{-1}) or higher for approximately 30 seconds.
- When the engine speed is 285 rpm (min^{-1}) or less, and the vehicle is traveling at a speed of 10 km/h (6.2 mph) or more for 3 seconds.

To determine the actual cause of the problem, question the customer about the conditions during which the problem occured, taking the above conditions into consideration.

Diagnostic Trouble Code (DTC)

- If the CPU cannot be activated, or it fails, the EPS indicator comes on, but the DTC is not memorized.
- The memory can hold any number of DTCs. However, when the same DTC is detected more than once, the most recent DTC is written over the prior DTC, therefore only one occurance is memorized.
- The DTCs are indicated repeatedly until the ignition switch is turned OFF.
- If the DTC is not memorized, the EPS indicator will stay on.
- The DTCs are memorized in the EEPROM (non-volatile memory) therefore the memorized DTCs cannot be erased by disconnecting the battery. Perform the specified procedures to clear DTCs.

Self-diagnosis

Self-diagnosis can be classified into two categories:
- Initial diagnosis: performed right after the engine starts and until the EPS indicator goes off.
- Regular diagnosis: performed right after the initial diagnosis until the ignition switch is turned OFF.

The EPS control unit performs the following functions when a problem is detected by self-diagnosis:

1. Turns on the EPS indicator.

2. Memorizes the DTC.

3. Stops power assist and manual steering operation begins.

   NOTE:

Restriction on Power Assist Operation

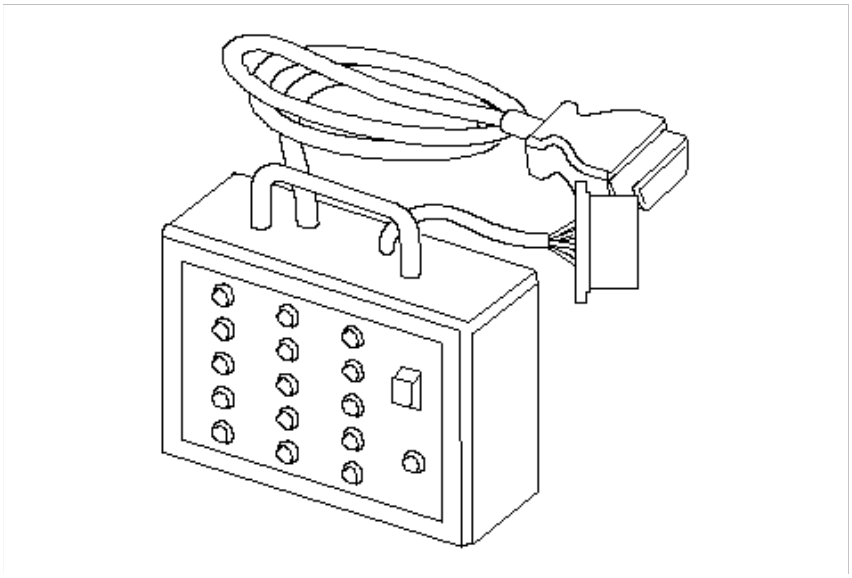
Repeated extreme steering force, such as turning the steering wheel continuously back-and-forth with the vehicle stopped, causes an increase of power consumption in the EPS motor. The increase of electric current causes the motor to heat up. Because this heat adversely affects the system, the control unit monitors the electric current of the motor.

When the control unit detects heat build-up in the motor, it reduces the electric current to the motor gradually to protect the system, and it restricts the power assist operation. The EPS indicator does not come on during this function.

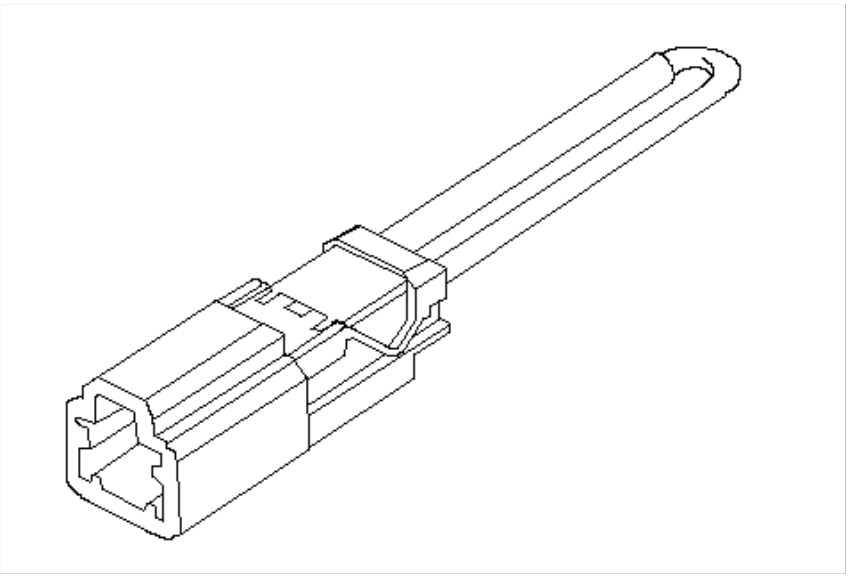
When steering torque is not applied to the steering wheel, or when the ignition is turned off, the control unit will restore the power assist gradually until it's fully restored (after approximately 20 seconds maximum).

How to Troubleshoot EPS DTCs

Special Tools Required
DLC pin box (07WAJ-0010100)



SCS short connector (07PAZ-0010100)



The troubleshooting flowchart procedures assume that the cause of the problem is still present and the EPS indicator is still on. Following the flowchart when the EPS 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 EPS indicator came on, such as while turning, after turning, when the vehicle was at a certain speed, etc.

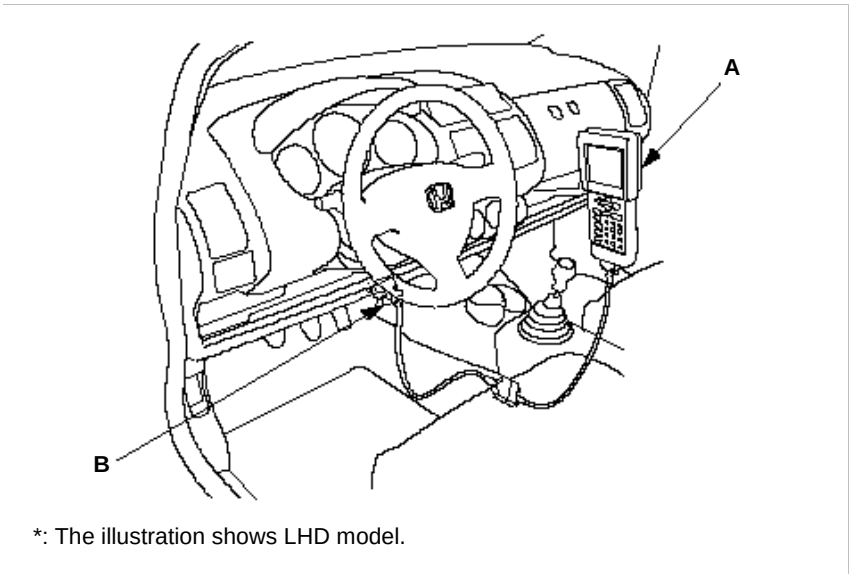
2. When the EPS indicator does not come on during the test drive, but troubleshooting is done based on the DTC, check for loose connectors, poor terminal contact, etc., before you start troubleshooting.

3. After troubleshooting, clear the DTC and test-drive the vehicle. Be sure the EPS indicator does not come on.

How to Retrieve EPS DTCs

Honda PGM Tester Method:

1. With the ignition switch OFF, connect the Honda PGM Tester (A) to the 16P Data Link Connector (DLC) (B) located under the dash on the driver's side of the vehicle.



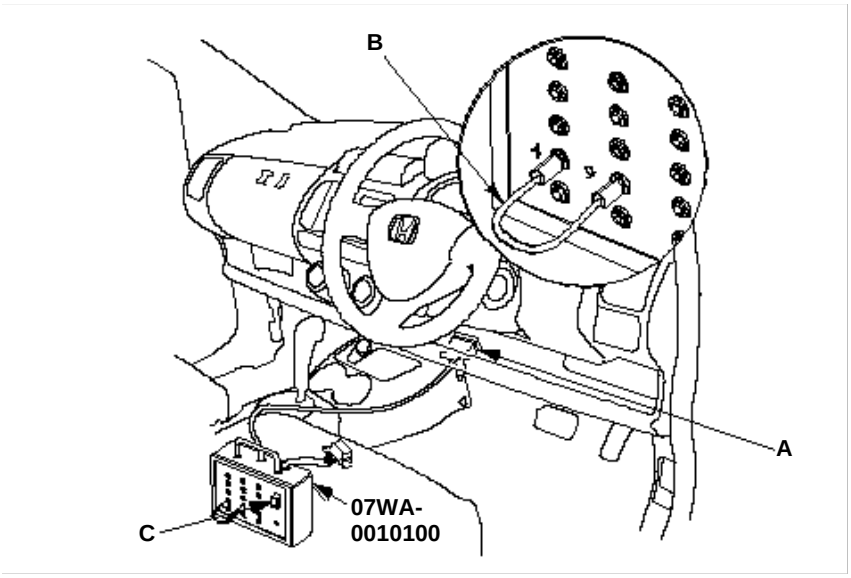
*: The illustration shows LHD model.

2. Turn the ignition ON (II), and follow the prompts on the PGM Tester to display the DTC(s) on the screen. After determining the DTC, refer to the DTC Troubleshooting Index.
   NOTE: See the Honda PGM Tester user's manual for specific instructions.

Service Check Signal Circuit Method:

Except KG, KE, KR models:

1. With the ignition switch OFF, connect the DLC pin box to the Data Link Connector (DLC) (A) located under the dash on the driver's side of the dashboard.

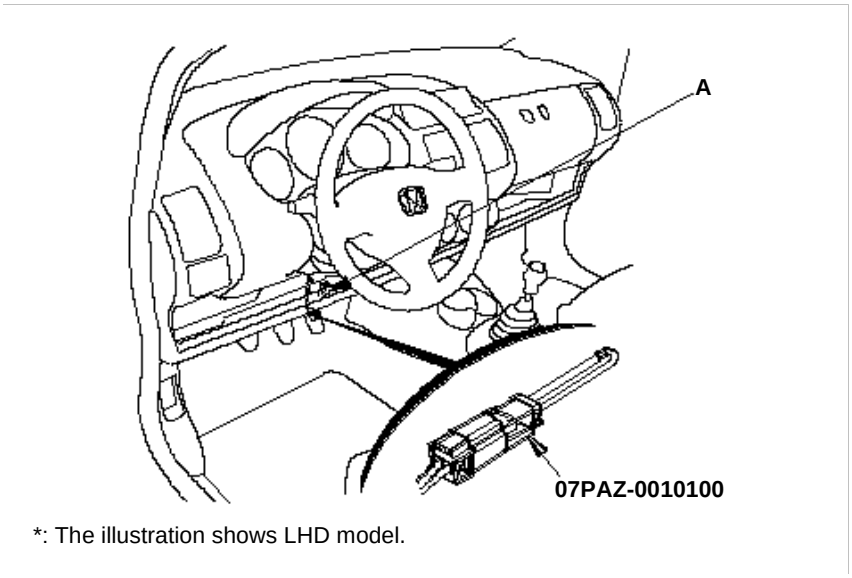


2. Connect the DLC pin box terminals No. 4 and No. 9 with a jumper wire (B), then push the switch (C).

3. Turn the ignition switch ON (II).

KG, KE, KR models:

4. With the ignition switch OFF, connect the SCS short connector to the service check connector (2P) (A) located under the dash on the driver's side of the dashboard.



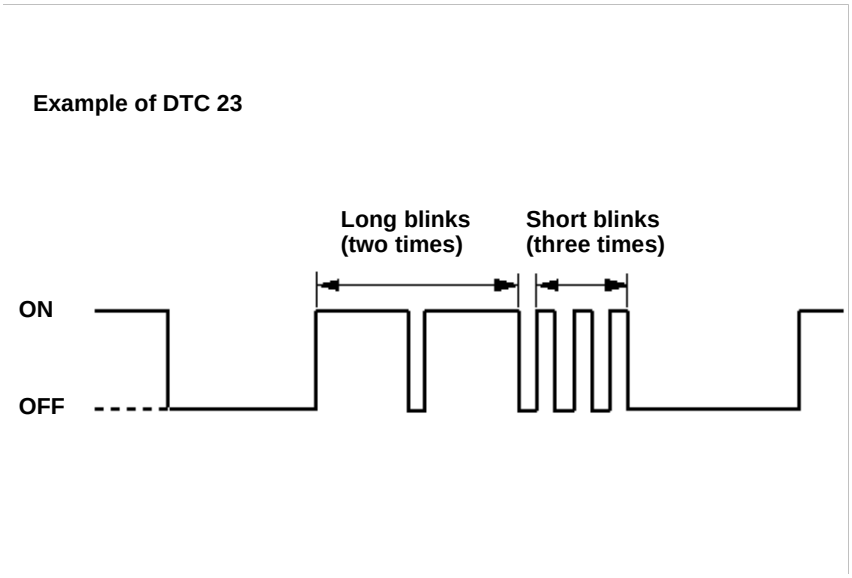
*: The illustration shows LHD model.

5. Turn the ignition switch ON (II).

All models:

6. The blinking frenquency indicates the DTC. DTCs are indicated by a series of long and short blinks. Add the long and short blinks together to determine the DTC. After determining the DTC, refer to the DTC Troubleshooting Index.

   The system will not indicate the DTC unless these conditions are met:
   - Set the front wheels in the straight ahead driving position.
   - The ignition switch is turned ON (II).
   - The engine is stopped.
   - The SCS circuit is shorted to body ground before the ignition switch is turned ON (II).



Except KG, KE, KR models:

7. Turn the ignition switch OFF.

8. Disconnect the DLC pin box from the DLC.

KG, KE, KR models:

9. Turn the ignition switch OFF, and remove the SCS short connector.

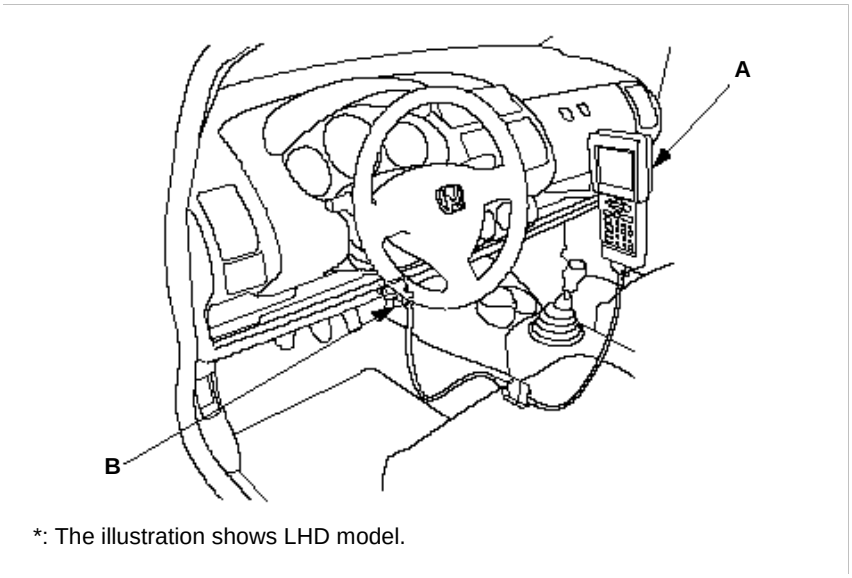
10. Perform the DTC erasure.

    NOTE:
    - The Malfunction Indicator Lamp (MIL) will stay on after the engine is started if the SCS short connector (DLC terminal box terminals No. 4 and No. 9) is connected.
    - If the EPS indicator does not come on, always check for an open or a short to ground in the SCS circuit befor troubleshooting the system.

How to Clear EPS DTCs

Honda PGM Tester Method:

1. With the ignition switch OFF, connect the Honda PGM Tester (A) to the 16P Data Link Connector (DLC) (B) located under the dash on the driver's side of the vehicle.



*: The illustration shows LHD model.

2. Turn the ignition switch ON (II), and clear the DTC(s) by following the screen prompts on the PGM Tester.

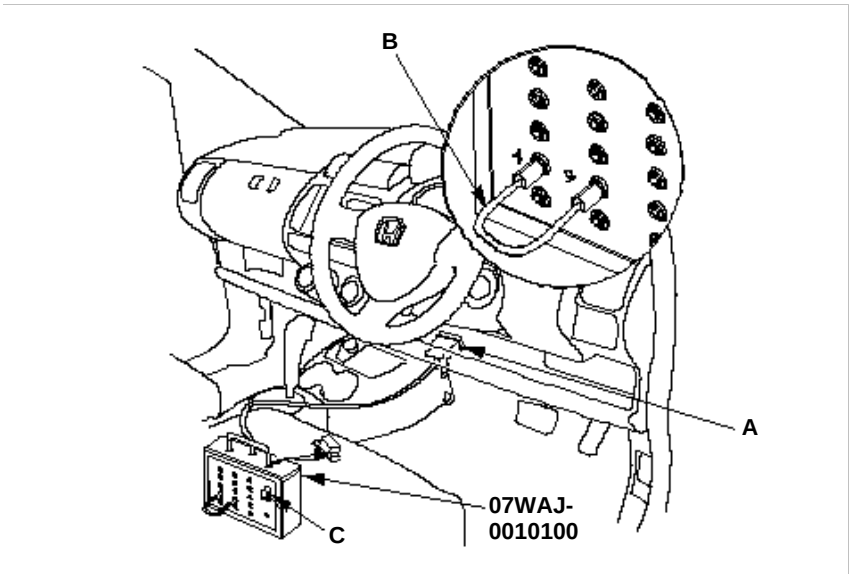
   NOTE: See the Honda PGM Tester user's manual for specific instructions.

Service Check Signal Circuit Method:

Except KG, KE, KR models:

NOTE: Use this procedure when the PGM Tester software does not match the year/model vehicle you are working on.

1. With the ignition switch OFF, connect the DLC pin box to the 16P Data Link Connector (DLC) (A) located under the dash on the driver's side of the dashboard.

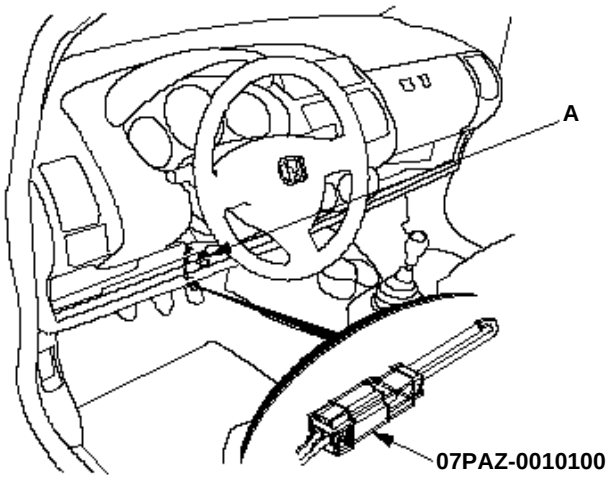


2. With the vehicle on the ground, set the front wheels in the straight ahead driving position.

3. Connect the DLC pin box terminals No. 4 and No. 9 with a jumper wire (B), then push the switch (C).

KG, KE, KR models:

4. With the ignition switch OFF, connect the SCS short connector to the service check connector (2P) (A) located under the dash on the driver's side of the vehicle.



*: The illustration shows LHD model.

5. With the vehicle on the ground, set the front wheels in the straight ahead driving position.

All model:

6. Turn the steering wheel 45 degrees to the left from the straight ahead driving position, and hold the steering wheel in that position.

7. Turn the ignition switch ON (II). The EPS indicator comes on, then it goes off after 4 seconds.

8. Within 4 seconds after the EPS indicator goes off, return the steering wheel to the straight ahead driving position and release the steering wheel.
   The EPS indicator comes on again 4 seconds after releasing the steering wheel.

9. Within 4 seconds after the EPS indicator comes on, turn the steering wheel 45 degrees to the left again and hold it in that position.
   The EPS indicator goes off after 4 seconds.

10. Within 4 seconds after the EPS indicator goes off, return the steering wheel to the straight ahead driving position again and release the steering wheel. The EPS indicator blinks twice 4 seconds after releasing the steering wheel, indicating that the DTC was erased.

    NOTE: If the EPS indicator does not blink twice, an error was made in the procedure and the DTC was not erased. Turn the ignition switch OFF, and repeat the operation from the step 3.

11. Turn the ignition switch OFF after the EPS indicator blinks twice.

12. Disconnect the DLC pin box or SCS short connector from the DLC.

13. Perform the DTC code output operation, and be sure that the code has been erased.