

ACTIVE INTAKE SYSTEM (JAPANESE MODELS ONLY) E.1

GENERAL

Active Intake System (Japanese Models Only)

The active intake system utilizes a solenoid in the airbox which is connected to the throttle valve via a cable. The throttle valve is automatically closed by the solenoid under certain conditions to reduce engine noise.

A code 22 will set if the ECM detects that the output for the active intake control is not in agreement with the feedback circuit (minimum TP sensor voltage when actuated).

Likely causes for a code 22 are:

- Mechanical fault in the active intake solenoid, throttle valve, or cable.
- Electrical fault in the solenoid circuit.
- Electrical fault in the throttle position sensor circuit.
- When TPS reading is not between 10.4-10.9 when activated.

Diagnostic Notes

The reference numbers below correlate with the circled numbers on the Code 22 flow charts.

Using TEST CONNECTOR KIT (Part No. HD-41404), attach Brown pin probe and patch cord to [179] (1,2).

VERIFY SETTINGS

1. Prior to verifying the active intake system, check the throttle position sensor (TPS) zero and adjust if necessary. See [1.20 THROTTLE POSITION SENSOR \(TPS\)](#).
2. Leave Digital Technician attached to vehicle.
3. In Digital Technician, go to Active Intake test screen.
4. Rotate throttle grip to wide open throttle (WOT).
 - a. Check that when the throttle plate reaches WOT, TPS should read above 82°.
 - b. If not, see [WOT CHECK](#) listed below.
5. While holding the throttle wide open, activate the active intake tab on Digital Technician.
 - a. Verify that the TPS setting is between 10.4-10.9 degrees.
 - b. If settings are not correct proceed to cable adjustment procedure.

WOT CHECK

1. Remove cosmetic intake cover assembly and functional air cleaner cover. See [2.34 INTAKE COVER ASSEMBLY](#) and [1.15 AIR CLEANER FILTER](#).
2. While holding the throttle grip to the WOT position, verify that the throttle plate is fully open.

If the throttle plate does not fully open, see [CABLE ADJUSTMENT](#) this section.

CABLE ADJUSTMENT

1. Remove cosmetic intake cover assembly and functional air cleaner cover. See [2.34 INTAKE COVER ASSEMBLY](#) and [1.15 AIR CLEANER FILTER](#).
2. See [Figure E-1](#). Inspect for proper retraction freeplay in solenoid shaft:
 - a. Open the throttle to the WOT position, push solenoid shaft (1) inward to the fully retracted position.

- b. While slowly rolling off the throttle you should be able to move the solenoid shaft slightly inward until the shaft bottoms out. This slight travel will be the retraction freeplay.

NOTE

This freeplay is necessary for the solenoid to properly function. Freeplay should be 1/32 in. (0.79 mm) or greater.

- c. If you have no travel in the shaft, adjust cable housing (4) away from the solenoid bracket (3) until freeplay is achieved.

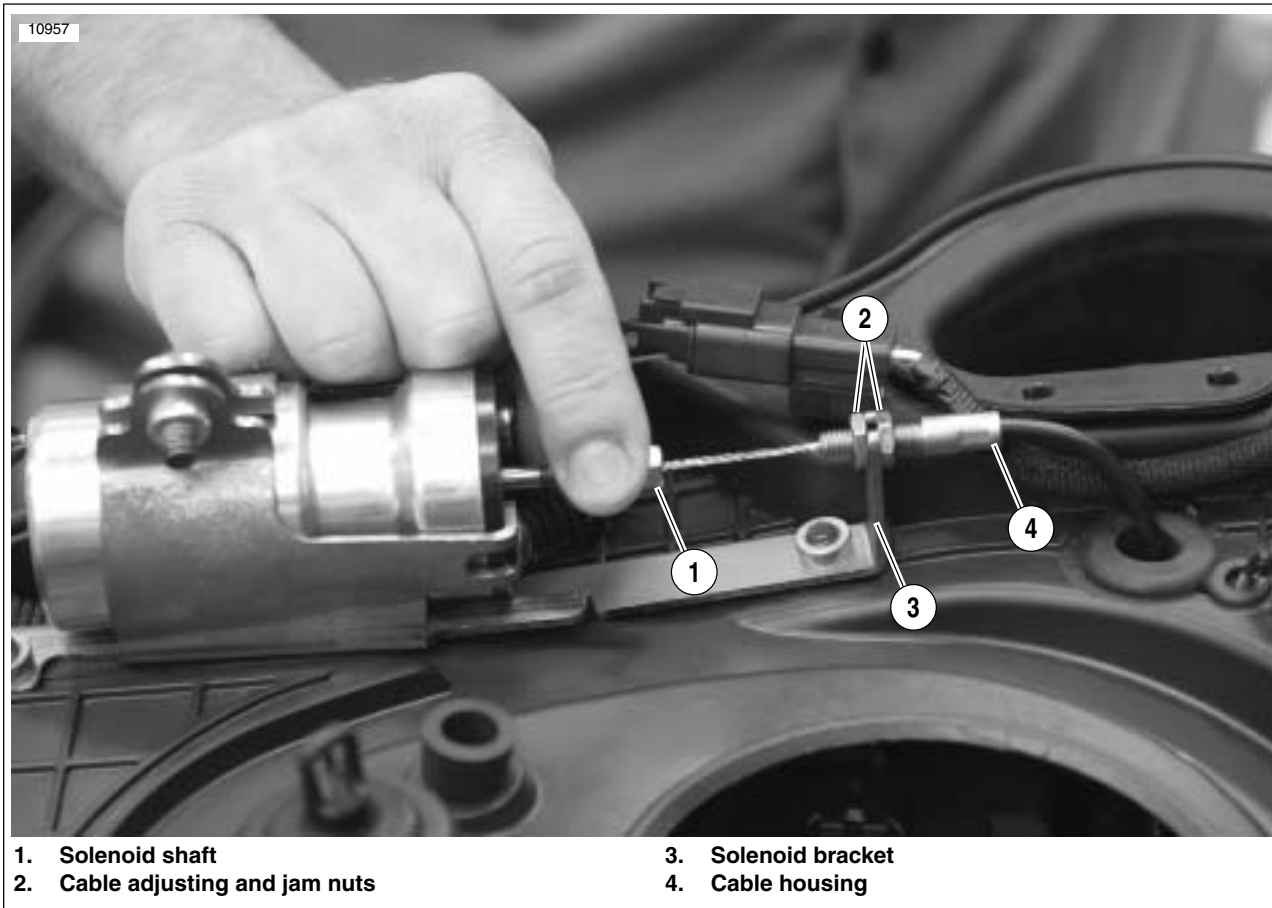


Figure E-1. Checking for Freeplay in the Solenoid Shaft in the Fully Retracted Position

3. See [Figure E-2](#). Inspect for proper extension freeplay in solenoid shaft:
 - a. Open the throttle to the WOT position.
 - b. Pull solenoid shaft (1) outward to the fully extended position.

NOTE

You should be able to move the solenoid shaft slightly outward until the shaft is fully extended. This slight travel will be the freeplay which should be 1/32 in. (0.79 mm) or greater.

- c. If you have no travel in the shaft, loosen jam nuts (2) and adjust cable housing (4) towards the solenoid bracket (3) until freeplay is achieved.
4. See [VERIFY SETTINGS](#). Once freeplay has been set, it will be necessary to verify settings and adjustments again.

If values are not between 10.4-10.9 degrees, see [Throttle Stop Screw](#) in this section.

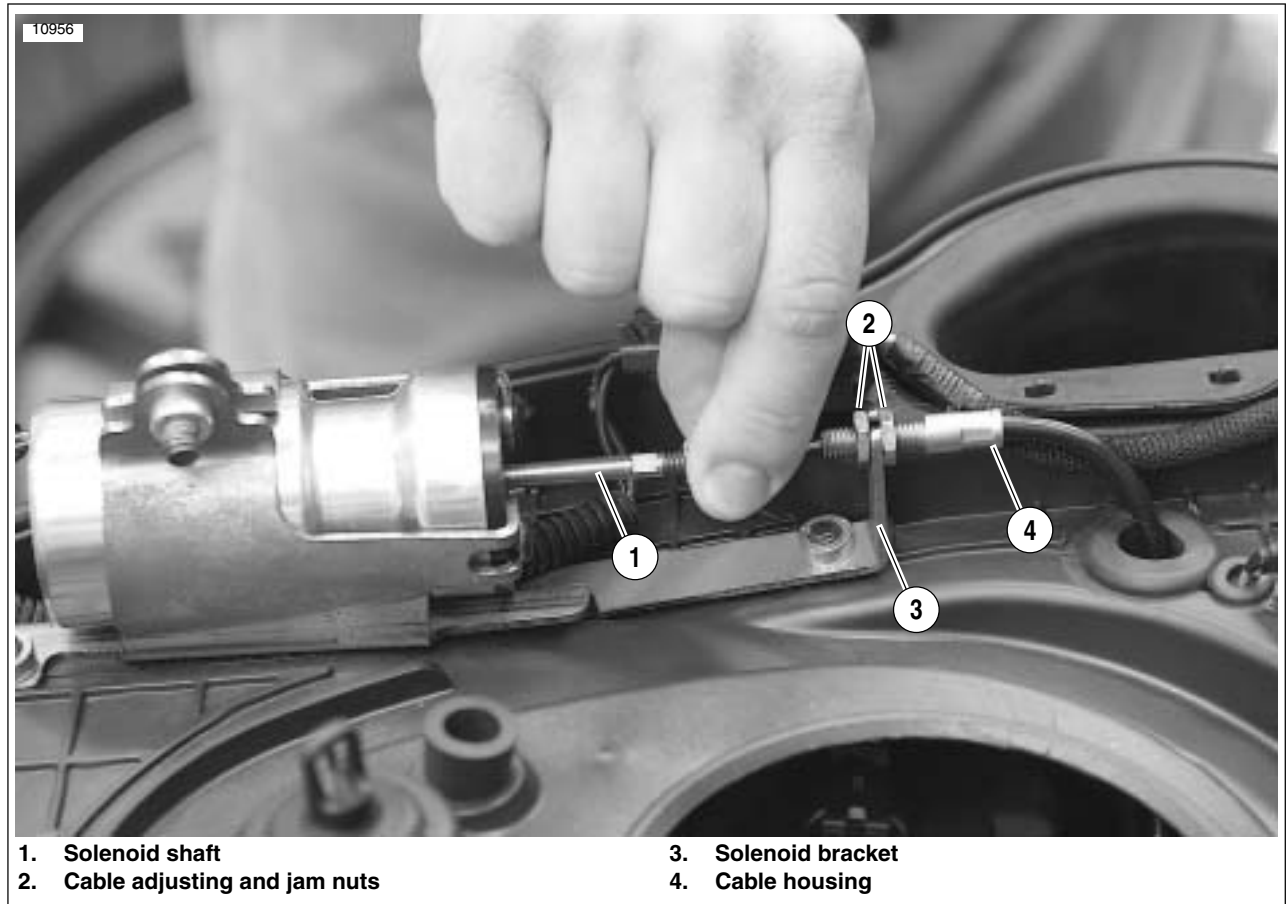


Figure E-2. Checking for Freeplay in the Solenoid Shaft in the Fully Extended Position

Throttle Stop Screw

1. Remove cosmetic intake cover assembly and functional air cleaner cover. See [2.34 INTAKE COVER ASSEMBLY](#) and [1.15 AIR CLEANER FILTER](#).
2. Hold throttle to wide open position and use cable strap to free hands.

NOTE

It is necessary to pull velocity stack out of the way to access set screw.

3. Activate Active Intake System using DIGITAL TECHNICIAN.
4. Adjust stop screw, while reading the TPS on Digital Technician, until setting is between the range of 10.4 to 10.9.

- a. If the reading is below 10.4, adjust screw clockwise.
 - b. If the reading is above 10.9, adjust screw counter-clockwise.
5. Reconfirm the TPS setting. Repeat process if needed.
 6. Adjust active intake cable assembly. See [CABLE ADJUSTMENT](#).
 7. Verify active intake TPS settings.
 8. Install cosmetic intake cover assembly and functional air cleaner cover. See [2.34 INTAKE COVER ASSEMBLY](#) and [1.15 AIR CLEANER FILTER](#).

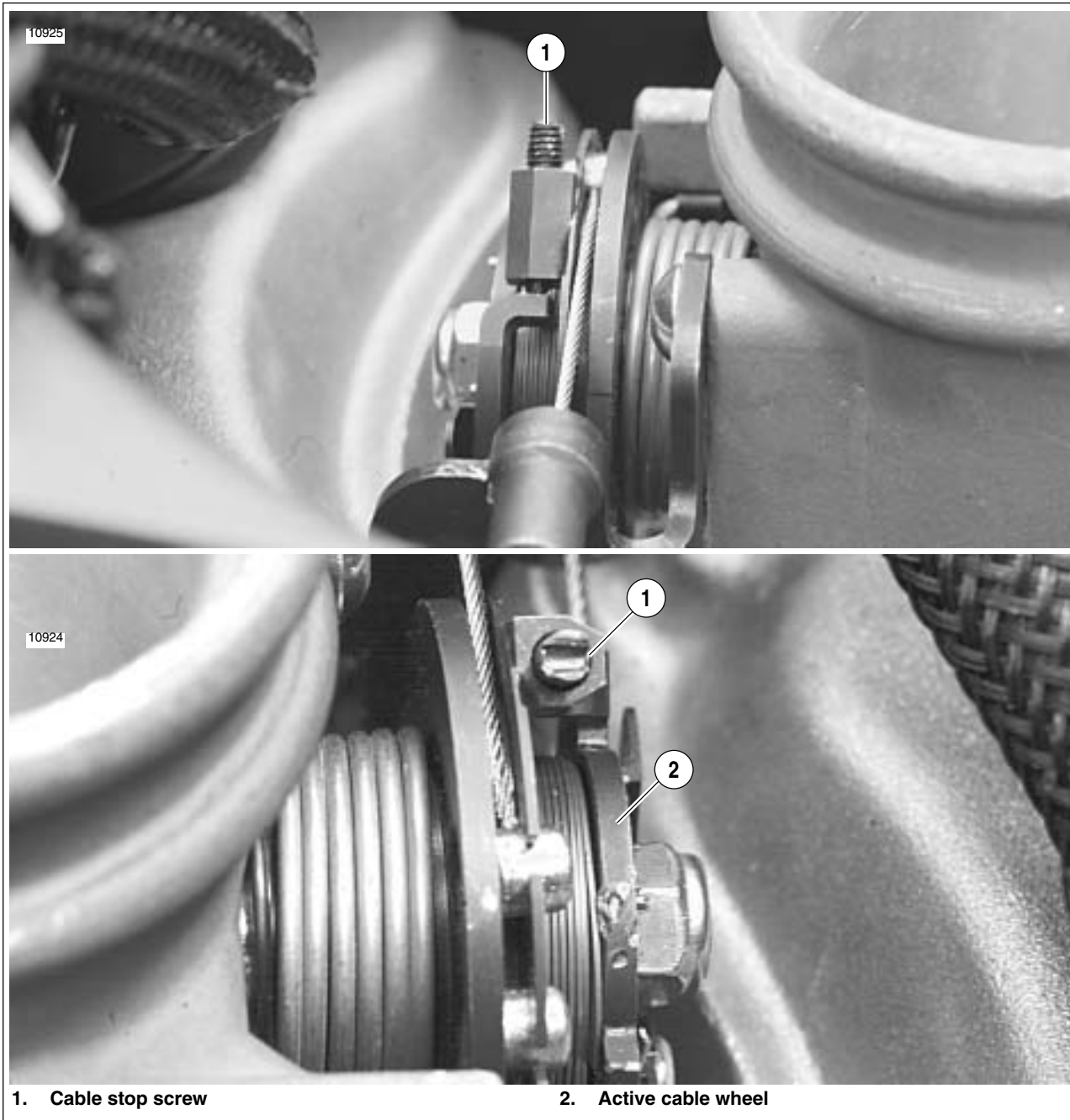


Figure E-3. Active Intake Cable Stop Screw

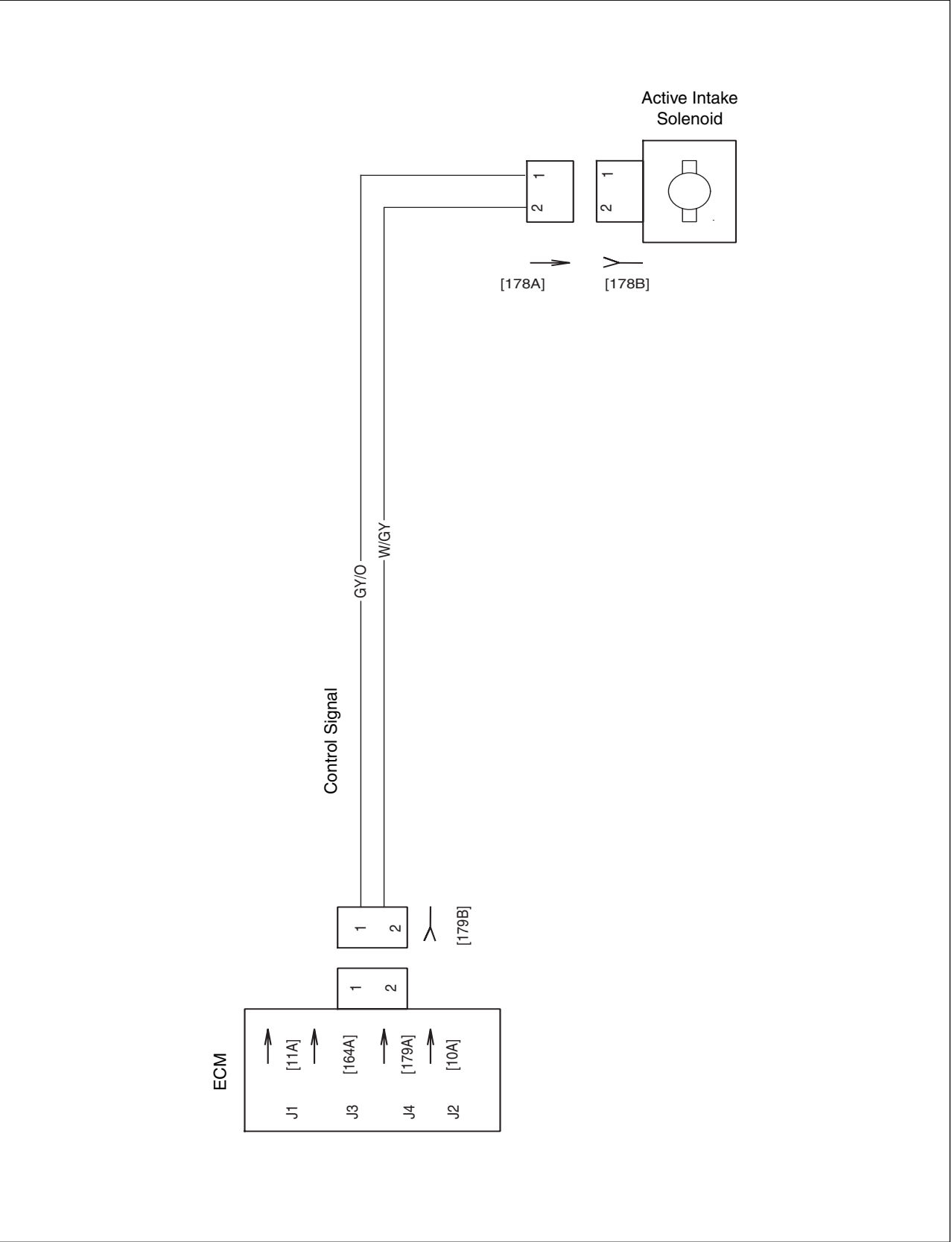
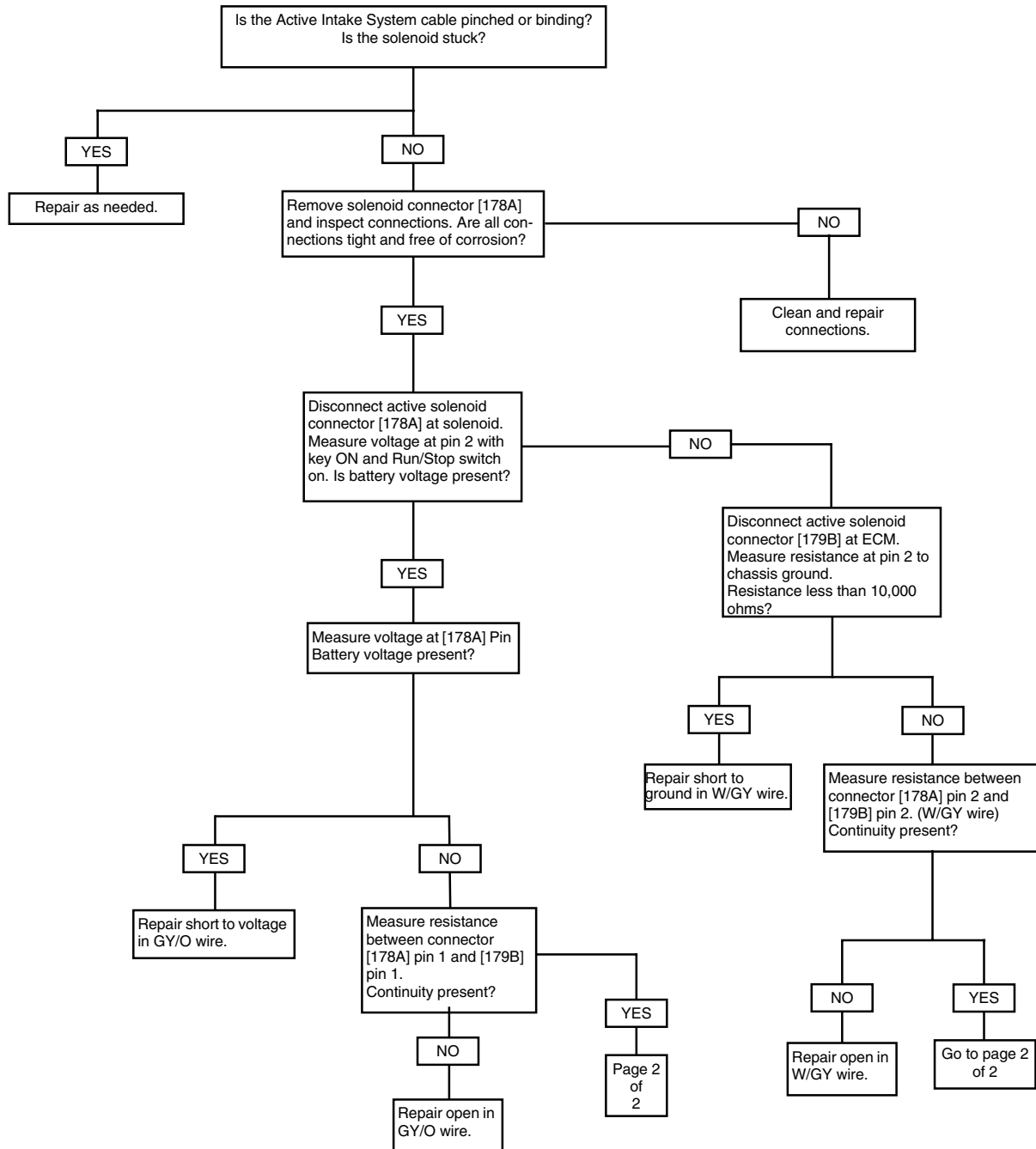
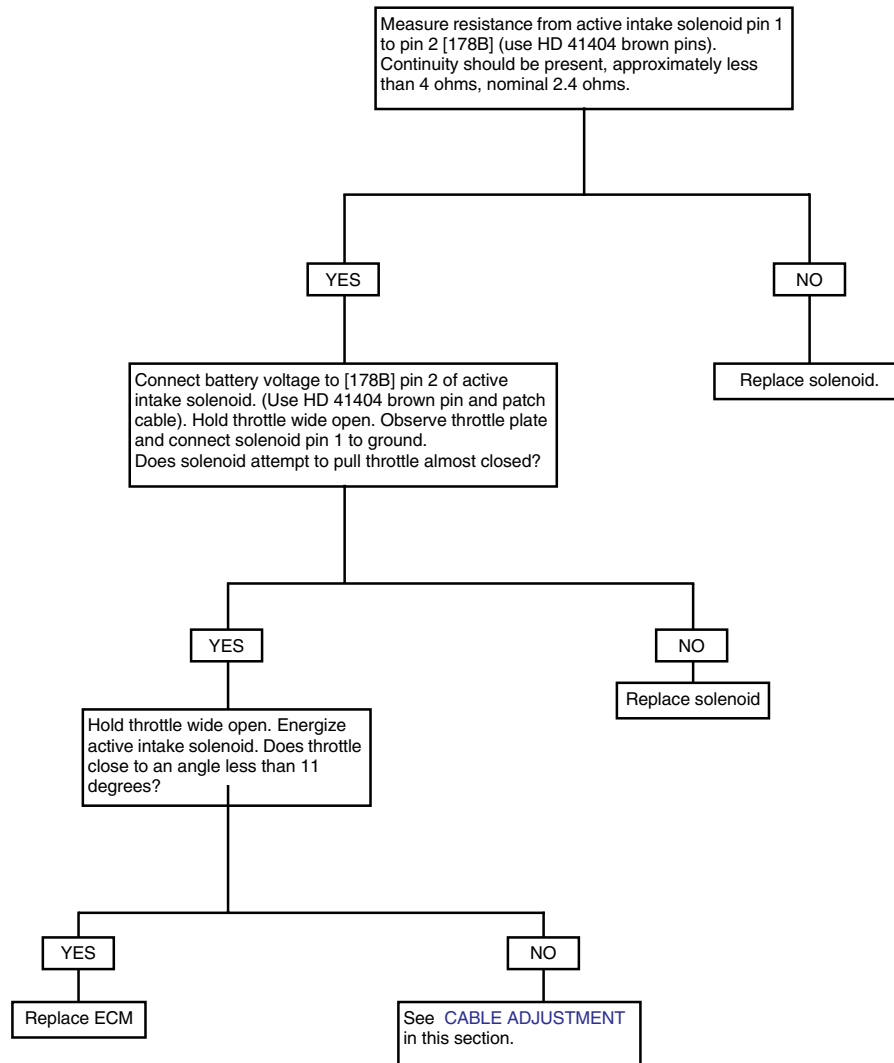


Figure E-4. Active Intake System

Code 22 Test (Page 1 of 2)

**DIAGNOSTIC NOTE**

If DTC is historic, wiggle harness while performing measurements in chart to locate intermittents.

Code 22 Test (Page 2 of 2)

REMOVAL

NOTE

If solenoid bracket needs to be replaced, remove the baseplate assembly, turn it over and remove the three fasteners securing the bracket to the baseplate.

1. See [Figure E-5](#). Disconnect electrical connector [178] (1).
2. Hold solenoid shaft by flat spot provided and break cable connector (6) loose.
3. Unthread cable connector and disconnect cable from solenoid (8).
4. Loosen jam nut (5) and disconnect active cable (2) from cable bracket (4).

NOTE

Follow next step only if solenoid is to be replaced.

5. Loosen pinch fastener on solenoid bracket (9).
6. Remove the two fasteners at the front on the solenoid bracket (9) and slide solenoid (8) out of bracket.

NOTE

When removing baseplate it will be necessary to feed the electrical connector and active cable and grommets through the baseplate.

7. Remove baseplate (10). See [4.45 AIRBOX](#).
8. See [Figure E-3](#). If the active cable needs to be replaced disconnect from cable wheel (2).

INSTALLATION

NOTE

If solenoid bracket was removed, reinstall using the three fasteners and tighten to **48-60 in-lbs** (5.4-6.7 Nm).

1. See [Figure E-5](#). When installing baseplate assembly (10) see [4.45 AIRBOX](#).

CAUTION

When installing the backing plate it is important to ensure that the active cable remains in the tower on the cable wheel on the throttle body. If the cable comes out the cable will not work properly and will not be able to be adjusted.

NOTES

- When installing baseplate be sure to feed the electrical connector (1) through hole in baseplate first and then insert active cable and then grommet.
 - Follow next step only if solenoid was removed.
2. Install solenoid (8) into bracket (9) and tighten pinch fastener to **48-60 in-lbs** (5.4-6.7 Nm) and bracket to solenoid fasteners to **20-24 in lbs** (2.3-2.7 Nm).
 3. Install active cable (2) into bracket (4) and leave jam nut (5) loose until the setting can be verified.
 4. Connect active cable (2) to solenoid shaft and tighten cable connector (6) to **20-24 in lbs** (2.3-2.7 Nm).
 5. Connect electrical connector [178].
 6. See [CABLE ADJUSTMENT](#) and verify active cable setting.
 7. Tighten jam nuts to **48-60 in-lbs** (5.4-6.7 Nm).

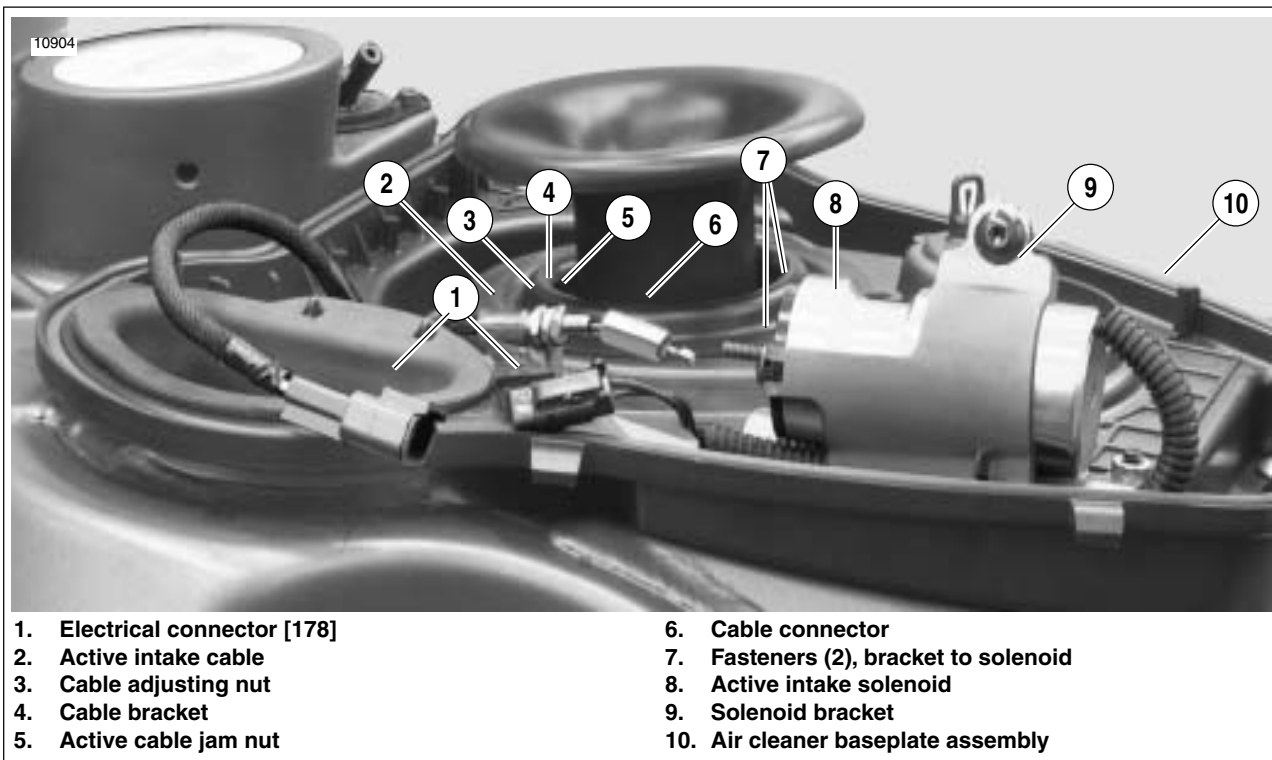


Figure E-5. Disconnecting Active Intake System