

2007 Honda Element EX

2007-08 ENGINE PERFORMANCE Intake Air System - Element

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Intake Air System - Element

COMPONENT LOCATION INDEX

2007 Honda Element EX

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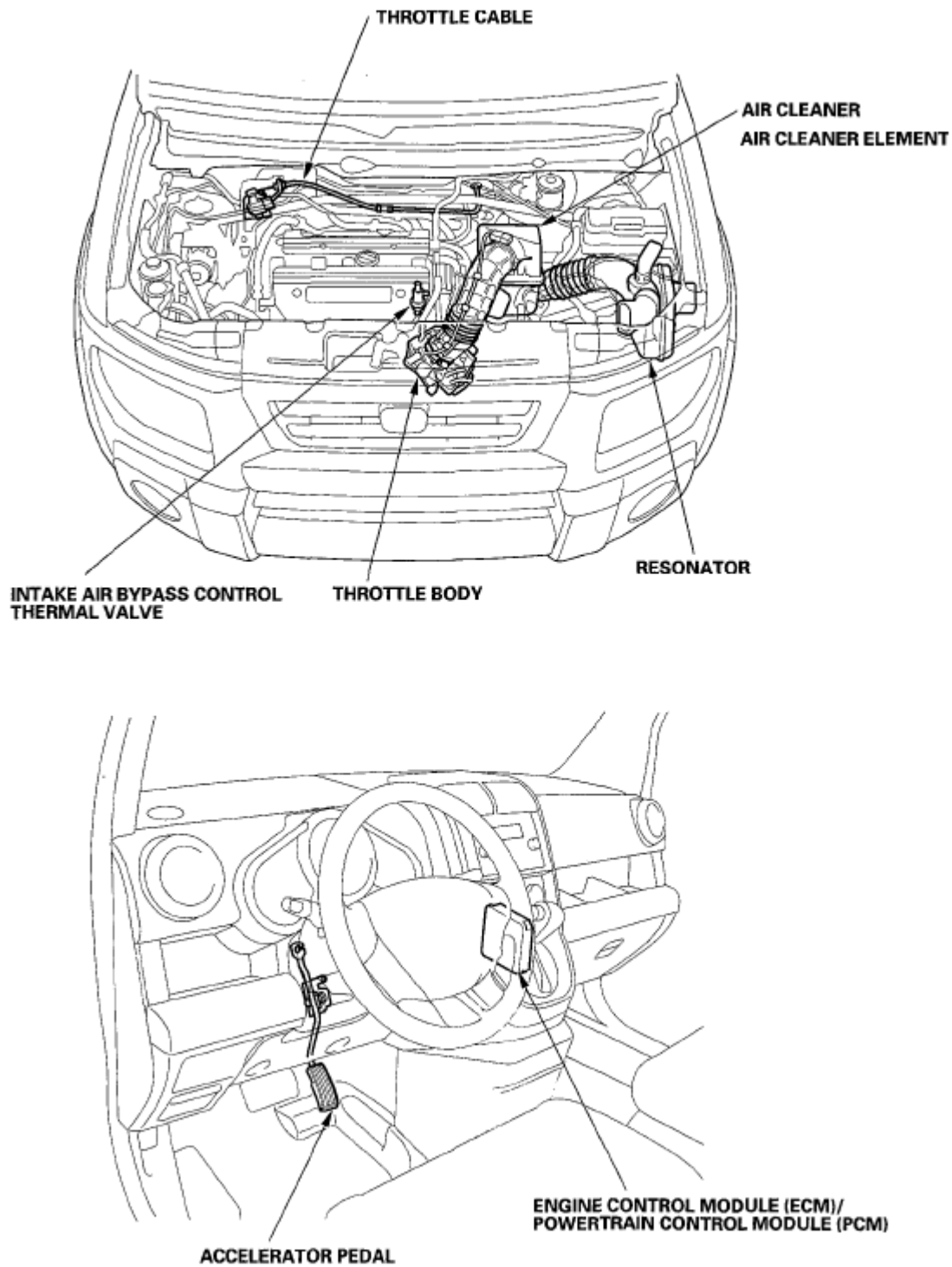


Fig. 1: Identifying Intake Air System Component Location
Courtesy of AMERICAN HONDA MOTOR CO., INC.

THROTTLE BODY TEST

CARBON ACCUMULATION CHECK

NOTE: If the malfunction indicator lamp (MIL) has been reported on, check for diagnostic trouble codes (DTCs).

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

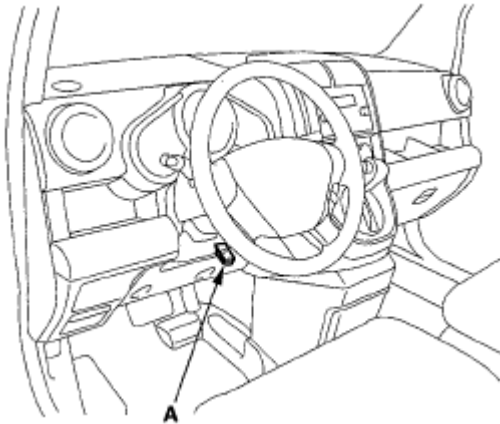


Fig. 2: Connecting HDS To Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
5. Check the REL TP SENSOR in the DATA LIST with the HDS. The reading should be below 2.46 deg. If it is not, clean the throttle body (see **THROTTLE BODY CLEANING**).

THROTTLE POSITION LEARNING CHECK

NOTE: If the malfunction indicator lamp (MIL) has been reported on, check for diagnostic trouble codes (DTCs).

1. Connect the HDS to the data link connector (DLC) (A) located under the driver's side of the dashboard.

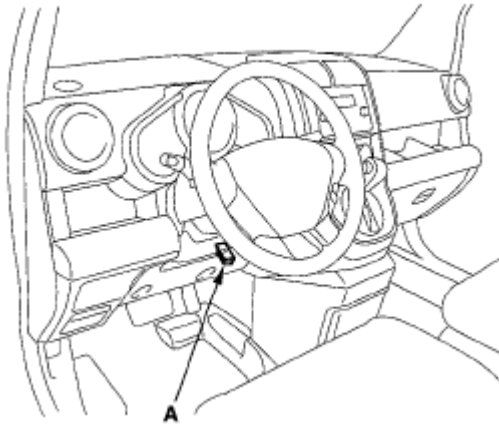


Fig. 3: Connecting HDS To Data Link Connector (DLC)
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Turn the ignition switch ON (II).
3. Make sure the HDS communicates with the ECM/PCM. If it doesn't, go to the DLC circuit troubleshooting (see **DLC CIRCUIT TROUBLESHOOTING**).
4. Select the INSPECTION MENU with the HDS.
5. Do the TP LEARNING CHECK in the ETCS TEST. If needed, clean the throttle body (see **THROTTLE BODY CLEANING**).

THROTTLE BODY CLEANING

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch ON (II) or while the ignition switch is ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

1. Check for damage to the air cleaner. If the air cleaner is damaged, replace it (see **AIR CLEANER REMOVAL/INSTALLATION**).
2. Remove the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
3. Clean off the carbon from the throttle valve and inside the throttle body with a paper towel soaked in throttle plate and induction cleaner.

NOTE:

- Remove the throttle body to clean it.
- Be careful not to pinch your fingers.
- To avoid removing the molybdenum coating, do not clean the bearing area of the throttle shaft (A).
- Do not spray throttle plate and induction cleaner directly on the throttle body.
- Use Honda genuine throttle plate and induction cleaner.

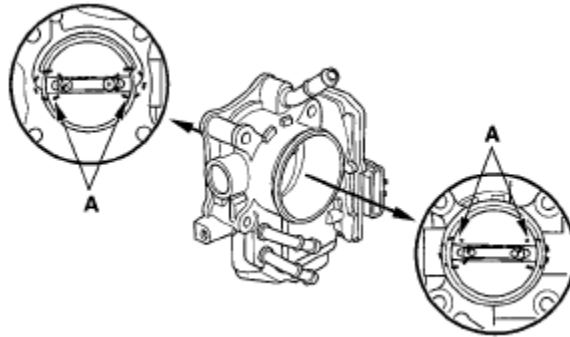


Fig. 4: Identifying Throttle Shaft
Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Install the throttle body (see **THROTTLE BODY REMOVAL/INSTALLATION**).
5. Reset the ECM/PCM with the HDS (see **ECM/PCM RESET**).
6. Turn the ignition switch ON (II), and wait 2 seconds.
7. Do the ECM/PCM idle learn procedure (see **ECM/PCM IDLE LEARN PROCEDURE**).

INTAKE AIR BYPASS CONTROL THERMAL VALVE TEST

Special Tools Required

Vacuum pump/gauge, 0-30 in.Hg, Snap-on YA4000A or equivalent, commercially available

1. Start the engine, and let it idle.

NOTE: The engine coolant temperature must be below 131°F (55°C).

2. Remove the vacuum hose (A) from the intake air duct, and connect a vacuum pump/gauge, 0-30 in.Hg, to the hose.

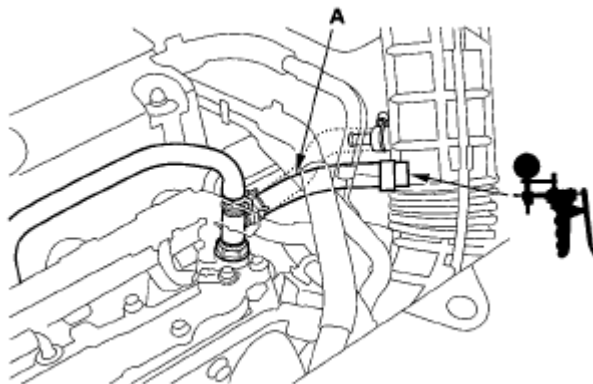


Fig. 5: Identifying Vacuum Hose Of Intake Air Duct
Courtesy of AMERICAN HONDA MOTOR CO., INC.

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3. Raise and lower the engine speed, making sure the vacuum gauge reading changes as the engine speed changes.

If the vacuum reading does not change, check for these problems:

- Misrouted, leaking, broken, or clogged intake air bypass control system vacuum lines.
 - A cracked or damaged intake air bypass control thermal valve. Replace the valve if needed (see **RESONATOR REMOVAL/INSTALLATION**).
4. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
 5. Raise and lower the engine speed, making sure the vacuum pump/gauge reading does not indicate any vacuum as the rpm changes.

If there is a vacuum reading, check for these problems:

- Misrouted, leaking, broken, or clogged intake air bypass control system vacuum lines.
- A cracked or damaged intake air bypass control thermal valve. Replace the valve if needed (see **RESONATOR REMOVAL/INSTALLATION**).

THROTTLE BODY REMOVAL/INSTALLATION

CAUTION: Do not insert your fingers into the installed throttle body when you turn the ignition switch ON (II) or while the ignition switch is ON (II). If you do, you will seriously injure your fingers if the throttle valve is activated.

NOTE: If you are replacing or cleaning the throttle body, start at step 1. If you are removing the throttle body, start at step 4.

1. Connect the HDS to the DLC while the engine is stopped.
2. Select the INSPECTION MENU on the HDS.
3. Do the TP POSITION CHECK in the ETCS TEST.
4. Turn the ignition switch OFF.
5. Remove the intake air duct (A).

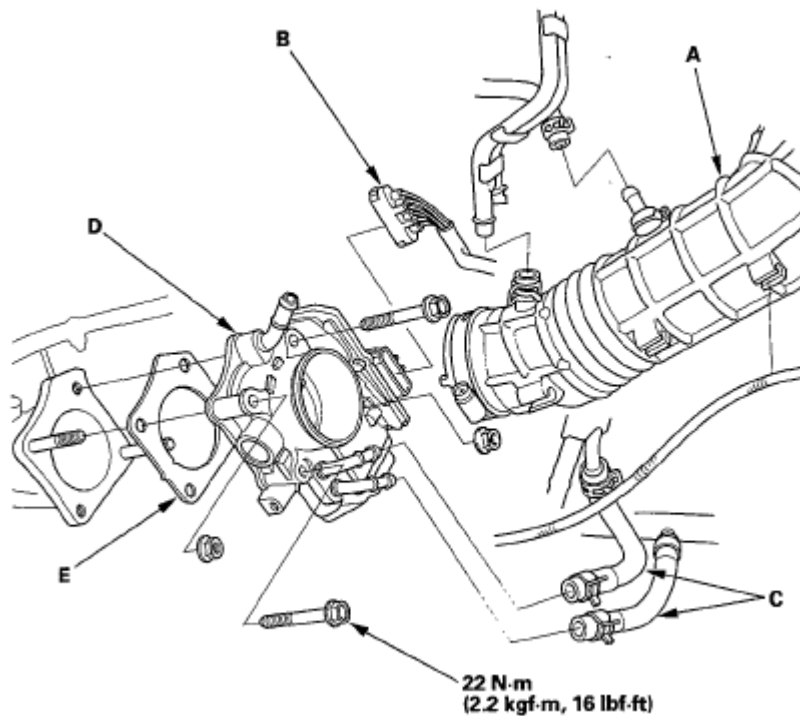


Fig. 6: Identifying Intake Air Duct With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

6. Disconnect the throttle body connector (B).
7. Disconnect and plug the water bypass hoses (C).
8. Remove the throttle body (D).
9. Install the parts in the reverse order of removal with a new gasket (E).

NOTE:

- Do the ECM/PCM idle learn procedure (see ECM/PCM IDLE LEARN PROCEDURE) after the throttle body has been replaced.
- Refill the radiator with engine coolant (see COOLANT CHECK).

ACCELERATOR PEDAL REPLACEMENT

1. Remove the throttle cable (A) from the accelerator pedal (B) (see THROTTLE CABLE REMOVAL/INSTALLATION).

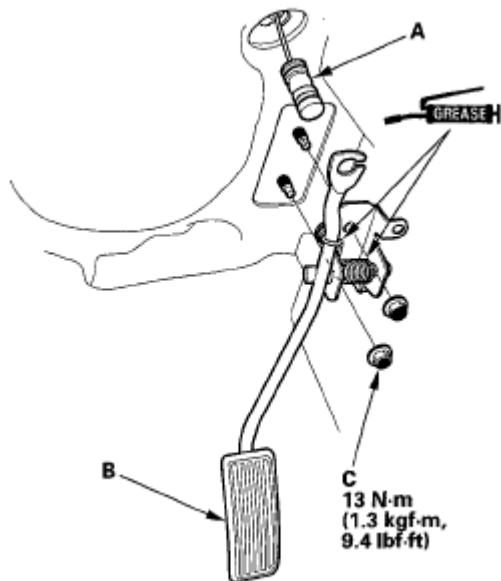


Fig. 7: Identifying Throttle Cable And Accelerator Pedal With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the nuts (C) and the accelerator pedal.
3. Install the parts in the reverse order of removal.

THROTTLE CABLE REMOVAL/INSTALLATION

1. Remove the throttle cable cover (see **THROTTLE CABLE ADJUSTMENT**).
2. Fully open the throttle link, then remove the throttle cable (A) from the throttle link (B).

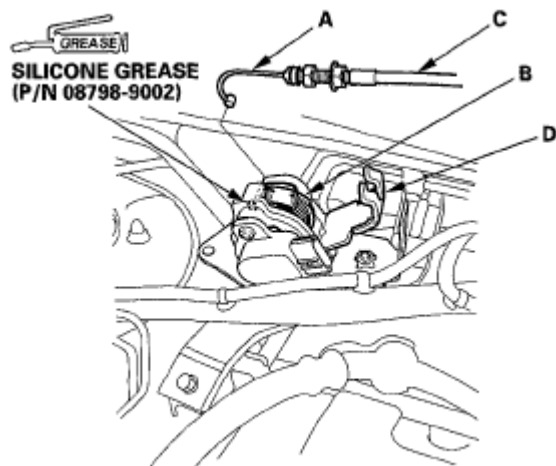


Fig. 8: Identifying Throttle Cable Of Throttle Link
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the cable housing (C) from the cable bracket (D).

- Remove the throttle cable (A) from the accelerator pedal (B).

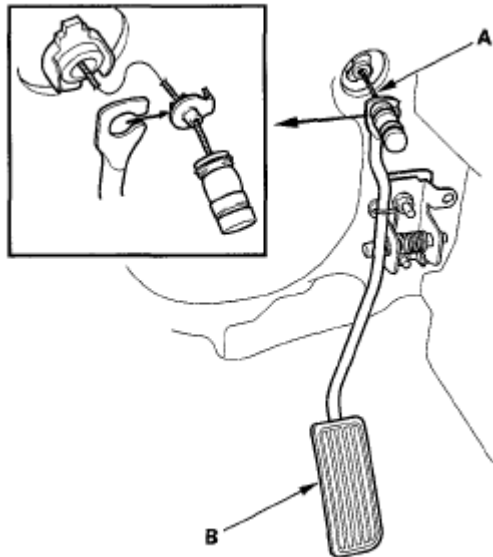


Fig. 9: Identifying Throttle Cable And Accelerator Pedal
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

- Install the parts in the reverse order of removal.
- Start the engine. Hold the engine speed at 3,000 rpm without load (in Park or neutral) until the radiator fan comes on, then let it idle.
- Hold the cable, removing all slack from it.
- Set the cable on the bracket (A).

Adjust the adjusting nut (B) so that its free play is 0 mm.

- Position the adjusting nut on the other side of the bracket, then tighten the locknut (C).

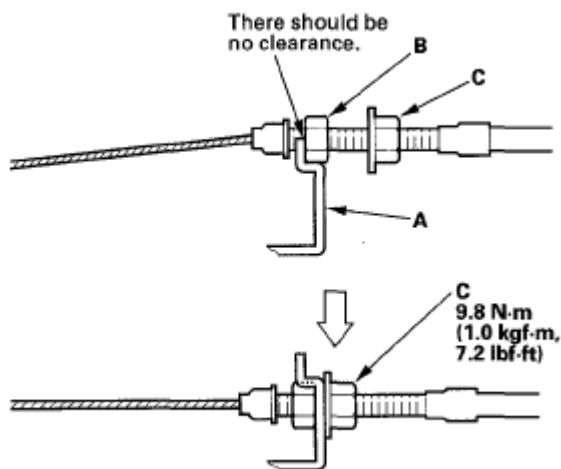


Fig. 10: Tightening Locknut With Torque Specification
Courtesy of AMERICAN HONDA MOTOR CO., INC.

10. Check the throttle cable free play (see step 2 on **Throttle Cable Adjustment**).
11. With the cable properly adjusted, check the throttle link to be sure it opens fully when you push the accelerator pedal to the floor. Also check the throttle link to be sure it returns whenever you release the accelerator pedal.

THROTTLE CABLE ADJUSTMENT

1. Remove the throttle cable cover (A).

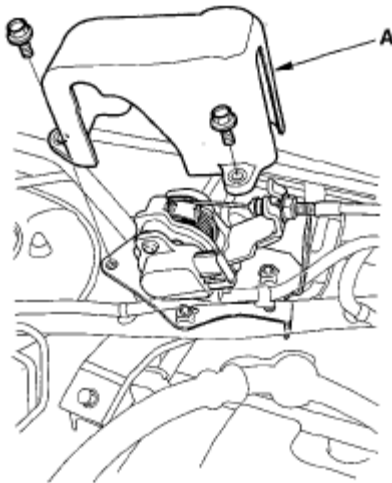


Fig. 11: Identifying Throttle Cable Cover
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Check cable free play at the throttle linkage. Cable free play (A) should be 10-12 mm (0.39-0.47 in.).

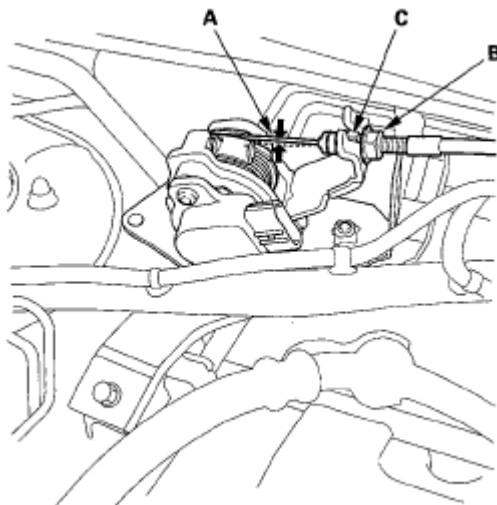


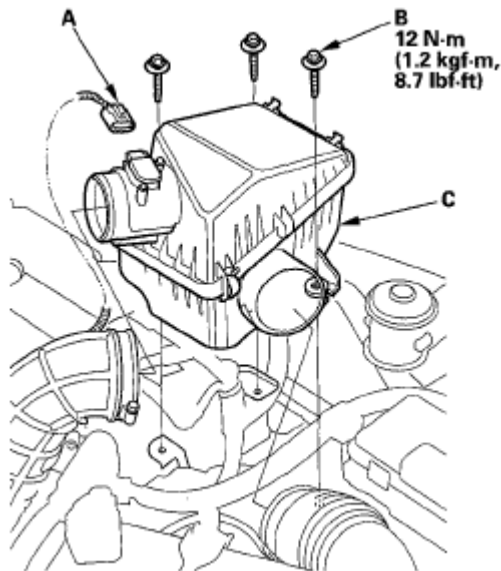
Fig. 12: Checking Cable Free Play

Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. If the free play (A) is not within spec (10-12 mm, 0.39-0.47 in.), loosen the locknut (B), turn the adjusting nut (C) until the free play is as specified, then retighten the locknut.
4. With the cable properly adjusted, check the throttle link to be sure it opens fully when you push the accelerator pedal to the floor. Also check the throttle link to be sure it returns to the idle position whenever you release the accelerator pedal.

AIR CLEANER REMOVAL/INSTALLATION

1. Disconnect the MAF sensor/IAT sensor 5P connector (A).

**Fig. 13: Identifying MAF Sensor/IAT Sensor 5P Connector With Torque Specification**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the bolts (B).
3. Remove the air cleaner (C).
4. Install the parts in the reverse order of removal.

AIR CLEANER ELEMENT INSPECTION/REPLACEMENT

1. Open the air cleaner housing cover (A).

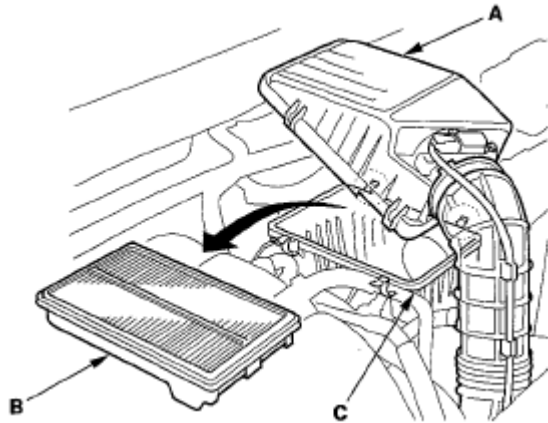


Fig. 14: Removing Air Cleaner Housing And Air Cleaner Element
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Remove the air cleaner element (B) from the air cleaner housing (C).
3. Check the air cleaner element for damage or clogging. If the element is damaged or clogged, replace it.

NOTE: Do not use compressed air to clean the air cleaner element.

4. Clean and remove any debris from inside the air cleaner housing.
5. Install the parts in the reverse order of removal.

NOTE: If the maintenance minder indicated the air cleaner element required replacement, check for other items that may also be displayed in the maintenance minder main items (see MAINTENANCE MAIN ITEMS) and the sub items (see MAINTENANCE SUB ITEMS) before resetting the maintenance minder.

RESONATOR REMOVAL/INSTALLATION

1. Make sure you have the anti-theft code for the audio system.
2. Remove the battery.
3. Remove the air cleaner (see AIR CLEANER REMOVAL/INSTALLATION).
4. Remove the bolts (A).

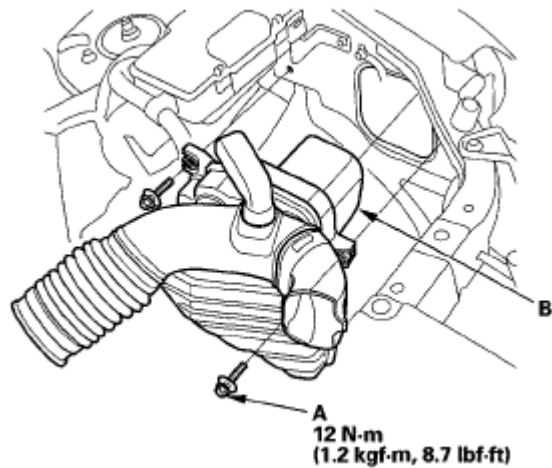


Fig. 15: Identifying Resonator And Bolts With Torque Specification
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Remove the resonator (B).
6. Install the parts in the reverse order of removal.
7. Enter the anti-theft code for the audio system.
8. Set the clock.

INTAKE AIR BYPASS CONTROL THERMAL VALVE REPLACEMENT

1. Remove the engine cover (see step 3 on **REMOVAL**).
2. Disconnect the hoses (A).

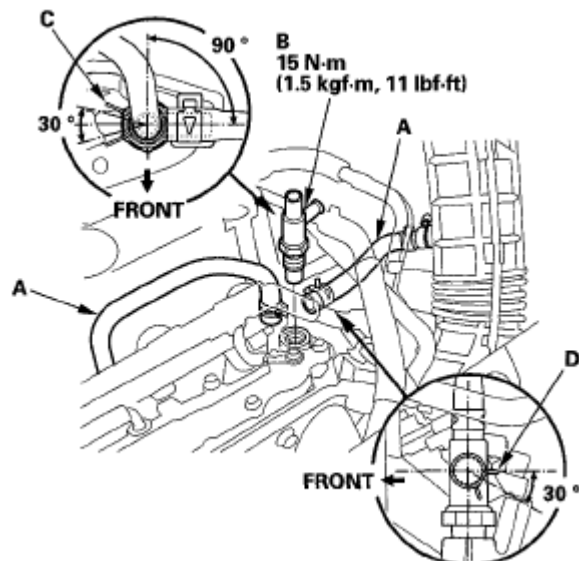


Fig. 16: Identifying Intake Air Bypass Control Thermal Valve Parts Location With Torque Specification

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Courtesy of AMERICAN HONDA MOTOR CO., INC.

3. Remove the intake air bypass control thermal valve (B).
4. Make sure the items below are correctly positioned, then install the parts in the reverse order of removal.
 - Position the valve (B) and the clamp (C) angle as shown.
 - Make sure that the clamp (D) is in the position within the lever end of it the range shown.