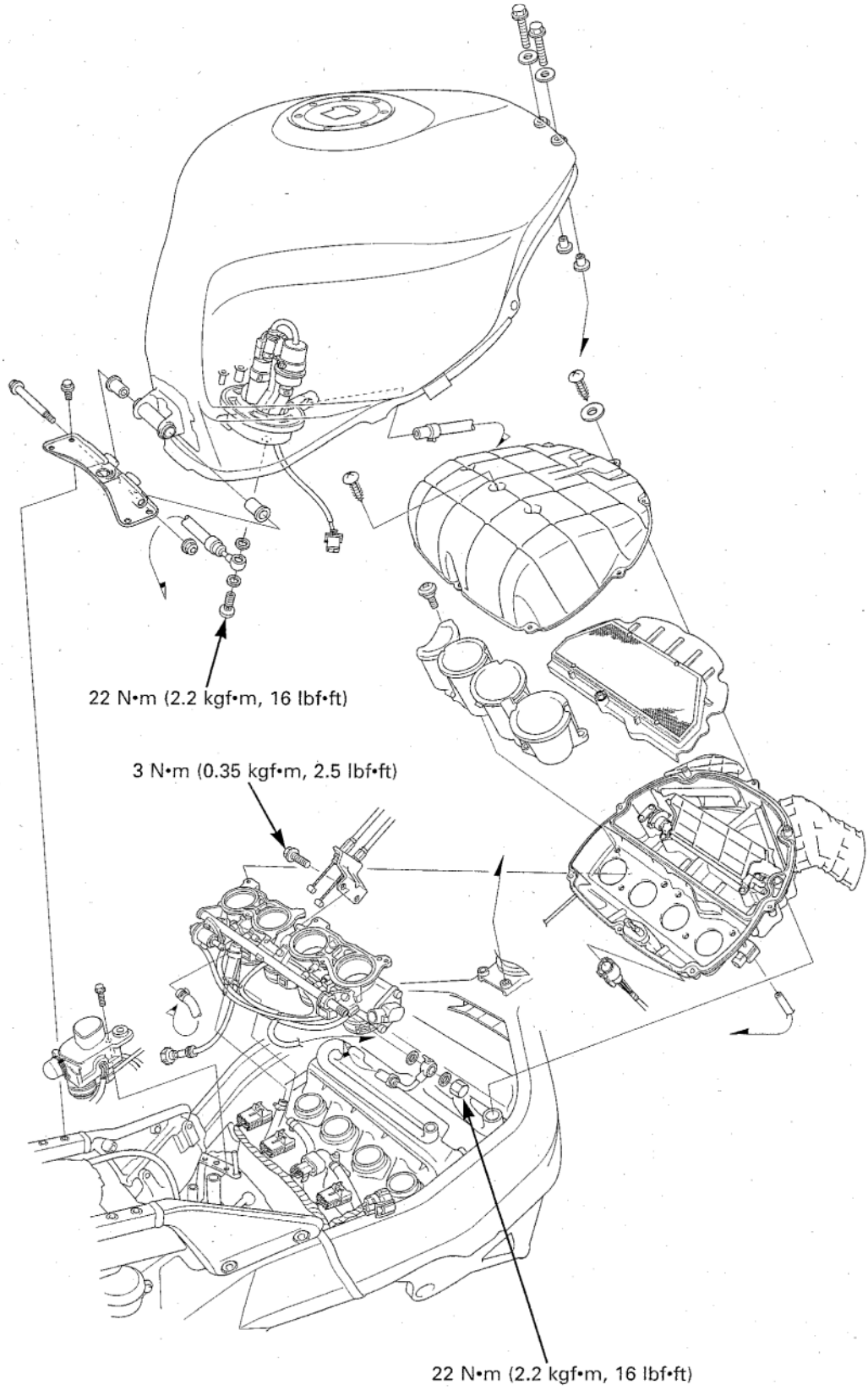

22 N•m (2.2 kgf•m, 16 lbf•ft)
3 N•m (0.35 kgf•m, 2.5 lbf•ft)
22 N•m (2.2 kgf•m, 16 lbf•ft)

5. FUEL SYSTEM (Programmed Fuel Injection)

5

SERVICE INFORMATION

GENERAL

- Be sure to relieve the fuel pressure while the engine is turned to "OFF".
- Bending or twisting the control cables will impair smooth operation and could cause the cables to stick or bind, resulting in loss of vehicle control.
- Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.

- Do not apply commercially available carburetor cleaners to the inside of the throttle bore, which is coated with molybdenum.
- Do not snap the throttle valve from full open to full closed after the throttle cable has been removed. It may cause incorrect idle operation.
- Seal the cylinder head intake ports with tape or a clean cloth to keep dirt and debris from entering the intake ports after the throttle body has been removed.
- Do not apply excessive force to the fuel pipe on the throttle body while removing or installing the throttle body.
- Do not damage the throttle body. It may cause incorrect throttle and idle valve synchronization.
- Prevent dirt and debris from entering the throttle bore, fuel hose and return hose, clean them using compressed air.
- The throttle body is factory pre-set. Do not disassemble the throttle body in a way other than shown in this manual.
- Do not loosen or tighten the white painted bolts and screws of the throttle body. Loosening or tightening them can cause throttle and idle valve synchronization failure.
- Do not push the fuel pump base under the fuel tank when the fuel tank is stored.
- Always replace the packing when the fuel pump is removed.
- The programmed fuel injection system is equipped with the Self-Diagnostic System described on page 5-6. If the malfunction indicator lamp (MIL) blinks, follow the Self-Diagnostic Procedures to remedy the problem.
- When checking the PGM-FI, always follow the steps in the troubleshooting flow chart (page 5-12 through 5-53).
- The PGM-FI system is provided with a fail-safe function to secure a minimum running capability even when there is no trouble in the system. When any abnormality is detected by the self-diagnosis function, running capability is secured by making use of the numerical values of a situation preset in advance in the simulated program map. It must be remembered, however, that when any abnormality is detected in the four injectors and/or the ignition and cam pulse generator, the fail safe function stops the engine to protect it from damage.
- For PGM-FI system location, see page 5-4.
- A faulty PGM-FI system is often related to poorly connected or corroded connectors. Check those connections before proceeding.
- For fuel reserve sensor inspection, see section 19.
- The vehicle speed sensor sends digital pulse signals to the ECM (PGM-FI unit) for computation. For vehicle speed sensor inspection, see section 19.
- When disassembling the programmed fuel injection parts, note the location of the O-rings. Replace them with new ones upon reassembly.
- Before disconnecting the fuel hose, release the fuel pressure by loosening the fuel hose banjo bolt at the fuel tank.
- Always replace the sealing washers when the fuel hose banjo bolt is removed or loosened.
- Use a digital tester for PGM-FI system inspection.
- EGCV is the abbreviation of Exhaust Gas Control Valve.

SPECIFICATIONS

ITEM		SPECIFICATIONS
Throttle body identification number	Except California type	GQ44C
	California type	GQ44B
Starter valve vacuum difference		20 mm Hg
Base throttle valve for synchronization		No.1
Idle speed		1,200 ± 100 rpm
Throttle grip free play		2 – 6 mm (1/16 – 1/4 in)
Intake air temperature sensor resistance (at 20°C/68°F)		1 – 4 kΩ
Engine coolant temperature sensor resistance (at 20°C/68°F)		2.3 – 2.6 kΩ
Fuel injector resistance (at 20°C/68°F)		10.5 – 14.5 Ω
PAIR solenoid valve resistance (at 20°C/68°F)		20 – 24 Ω
Cam pulse generator peak voltage (at 20°C/68°F)		0.7 V minimum
Ignition pulse generator peak voltage (at 20°C/68°F)		0.7 V minimum
Manifold absolute pressure at idle		150 – 250 mm Hn
Fuel pressure at idle		343 kPa (3.5 kgf/cm², 50 psi)

TORQUE VALUES

ECT (Engine Coolant Temperature)/thermo sensor	23 N•m (2.3 kgf-m, 17 lbf•ft)	
Throttle body insulator band screw	See page 1-14	
Throttle cable bracket mounting screw	3 N•m (0.35 kgf•m, 2.5 lbf•ft)	
Fuel pipe mounting bolt	10 N•m (1.0 kgf•m, 7 lbf•ft)	
Pressure regulator mounting bolt	10 N•m (1.0 kgf•m, 7 lbf•ft)	
Starter valve synchronization plate screw	1 N•m (0.09 kgf-m, 0.7 lbf•ft)	
Fast idle wax unit link plate screw	1 N•m (0.09 kgf•m, 0.7 lbf•ft)	
Fast idle wax unit mounting screw	5 N•m (0.6 kgf•m, 3.6 lbf•ft)	
Starter valve lock nut	2 N•m (0.18 kgf-m, 1.3 lbf•ft)	
Fuel filler cap bolt	2 N•m (0.2 kgf-m, 1.4 lbf•ft)	
Fuel hose banjo bolt (fuel tank side)	22 N•m (2.2 kgf•m, 16 lbf•ft)	
Fuel hose sealing nut (throttle body side)	22 N•m (2.2 kgf•m, 16 lbf•ft)	
Fuel pump mounting nut	12 N•m (1.2 kgf•m, 9 lbf•ft)	See page 5-58 for tightening sequence.
O_2 sensor (California type only)	25 N•m (2.6 kgf•m, 19 lbf•ft)	
EGCV mounting bolt (front)	14 N•m (1.4 kgf•m, 10 lbf•ft)	
(rear)	14 N•m (1.4 kgf•m, 10 lbf•ft)	
EGCV cover mounting bolt	12 N•m (1.2 kgf•m, 9 lbf•ft)	
EGCV pulley nut	12 N•m (1.2 kgf•m, 9 lbf•ft)	
EGCV pulley cover mounting bolt (lower)	12 N•m (1.2 kgf•m, 9 lbf•ft)	

TOOLS

Fuel pressure gauge	07406-0040003 or 07406-004000A (U.S.A. only)
IgnitionMate peak voltage tester (U.S.A. only) or Peak voltage adaptor	07HGJ-0020100 (not available in U.S.A.) with commercially available digital multimeter (impedance 10 MΩ/DCV minimum)
ECM test harness, 26P	070MZ-0010100 (two required)
Vacuum gauge set	07LMJ-001000A
Installer shaft guide	07YMF-MCJ0100 or 07YMF-MCJA100 (U.S.A. only)
Installer shaft	07YMF-MCJ0200 or 07YMF-MCJA200 (U.S.A. only)
Installer shaft, 14 x 30 mm	07YMF-MCJ0300 or 07YMF-MCJA300 (U.S.A. only)
Remover, 14 x 16 mm	07YMF-MCJ0400 or 07YMF-MCJA400 (U.S.A. only)

TROUBLESHOOTING

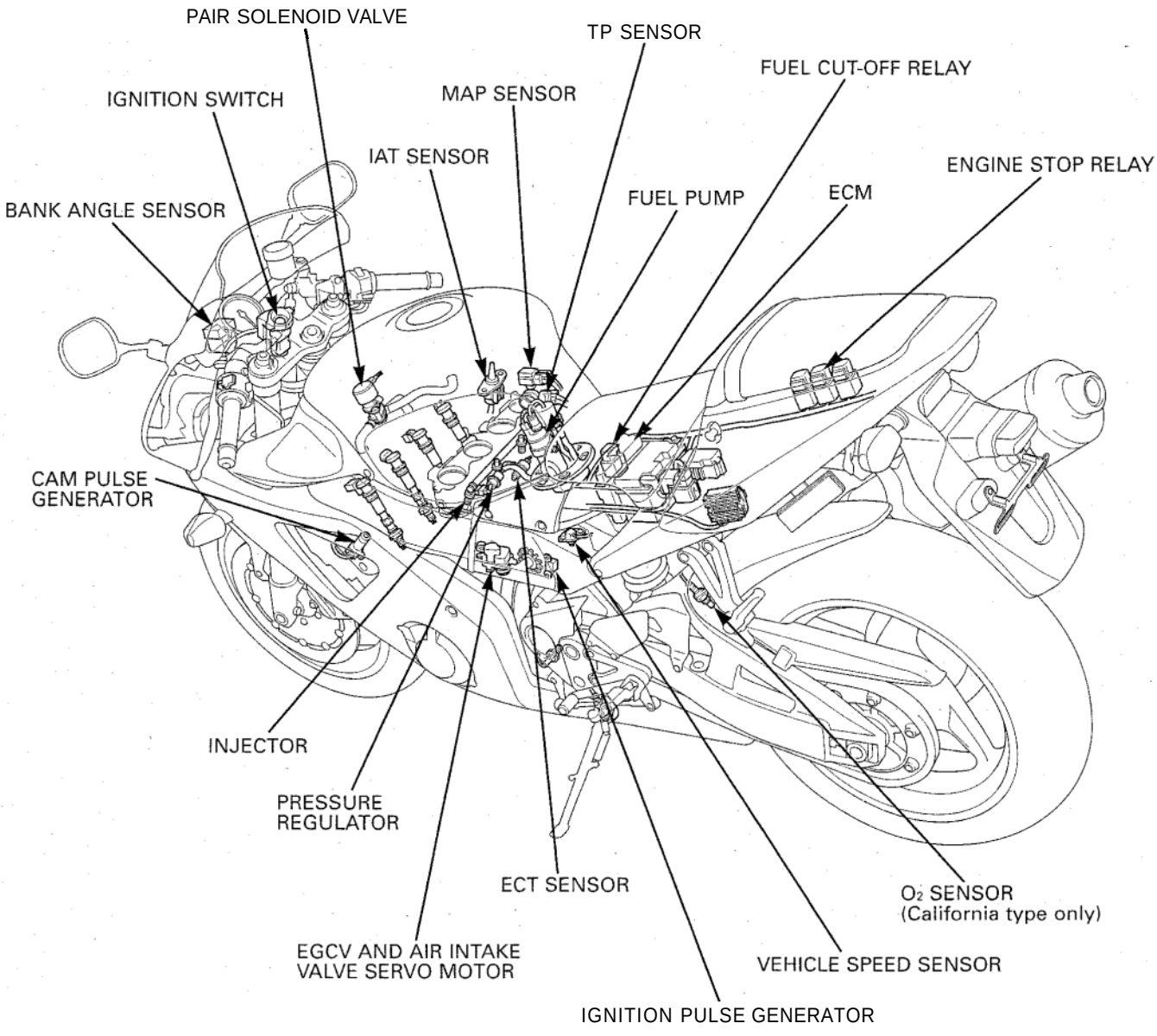
Engine won't to start
- Intake air leak
- Fuel contaminated/deteriorated
- Pinched or clogged fuel hose
- Faulty fuel pump
- Clogged fuel filter
- Clogged fuel injector filter
- Sticking fuel injector needle
- Faulty fuel pump operating system
- Faulty pressure regulator

Engine stall, hard to start, rough idling
- Intake air leak
- Fuel contaminated/deteriorated
- Pinched or clogged fuel hose
- Idle speed misadjusted
- Starter valve synchronization misadjusted
- Faulty pressure regulator

Backfiring or misfiring during acceleration
- Ignition system malfunction

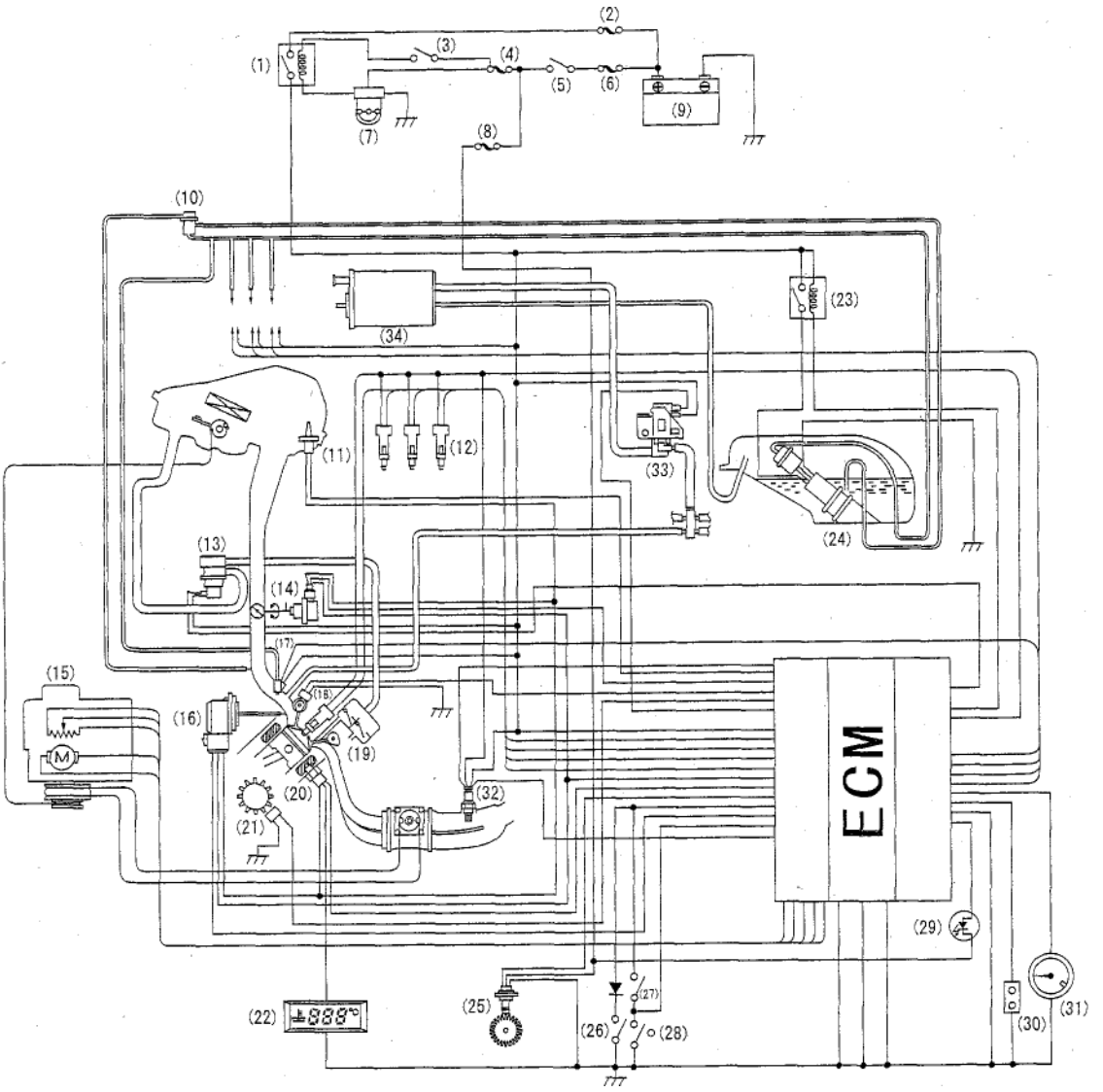
Poor performance (driveability) and poor fuel economy
- Pinched or clogged fuel hose
- Faulty pressure regulator

SYSTEM LOCATION



FULL NAME	ABBREVIATIONS
Manifold absolute pressure sensor	MAP sensor
Throttle position sensor	TP sensor
Intake air temperature sensor	IAT sensor
Engine coolant temperature sensor	ECT sensor
Engine control module	ECM

SYSTEM DIAGRAM



(1)	Engine stop relay
(2)	Main fuse B (20A)
(3)	Engine stop switch
(4)	Sub-fuse (10A)
(5)	Ignition switch
(6)	Main fuse A (30A)
(7)	Bank angle sensor
(8)	Sub-fuse (10A)
(9)	Battery
(10)	Pressure regulator
(11)	IAT sensor
(12)	Direct ignition coil/spark plug
(13)	PAIR solenoid valve
(14)	TP sensor
(15)	EGCV and air intake valve servo motor
(16)	MAP sensor
(17)	Injectors

(18)	Cam pulse generator
(19)	PAIR check valve
(20)	ECT sensor
(21)	Ignition pulse generator
(22)	Water temperature LCD
(23)	Fuel cut-off relay
(24)	Fuel pump
(25)	Vehicle speed sensor
(26)	Neutral switch
(27)	Clutch switch
(28)	Side stand switch
(29)	Malfunction indicator
(30)	Service check connector
(31)	Tachometer
(32)	O_2 sensor (California type only)
(33)	EVAP purge control solenoid valve (California type only)
(34)	EVAP canister (California type only)

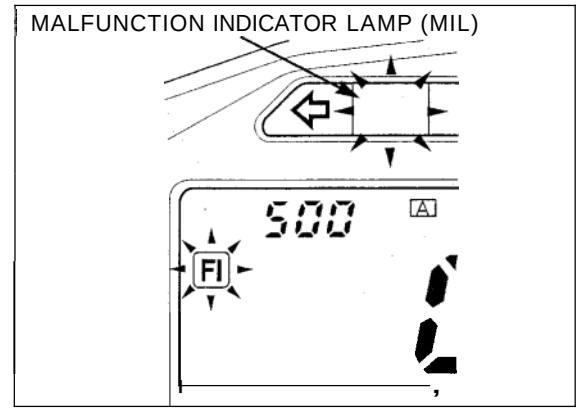
PGM-FI (PROGRAMMED FUEL INJECTION) SYSTEM

SELF-DIAGNOSTIC PROCEDURES

Place the motorcycle on its side stand.
Start the engine and let it idle.

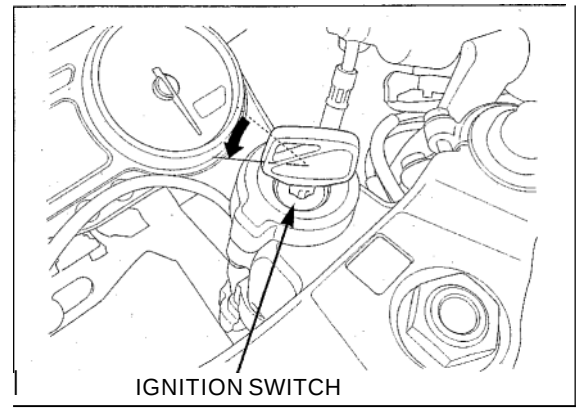
The malfunction indicator lamp (MIL) will start blinking only with the side stand down and with the engine off (engine stop switch in RUN) or engine revs are below 5,000 rpm In any other conditions, the MIL will illuminate and stay on

If the malfunction indicator lamp (MIL) does not light or blink, the system has no memory of problem data. If the malfunction indicator blinks, note how many times the MIL blinks, and determine the cause of the problem (page 5-10 through 5-53).



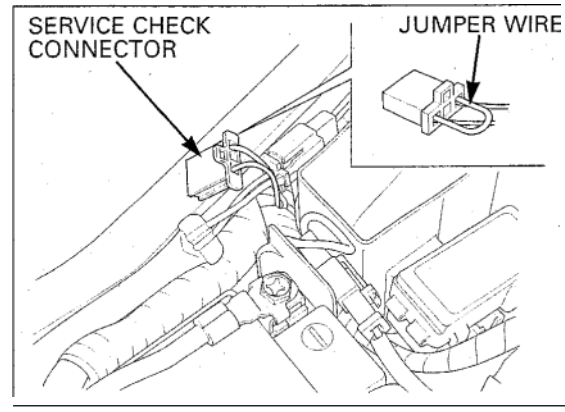
If you wish to read the PGM-FI memory for trouble data, perform the following:

Turn the ignition switch to "OFF".



Remove the seat (page 2-2).

Short the PGM-FI system service check connector terminals using a jumper wire.



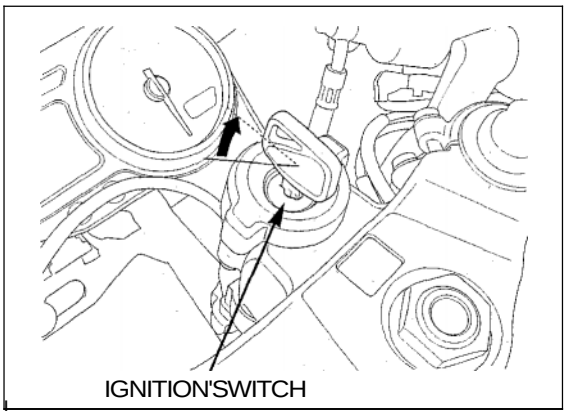
Turn the ignition switch to "ON" and engine stop switch to "RUN".

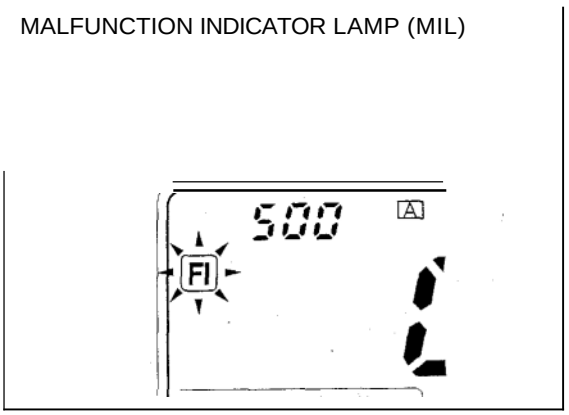
If the ECM has no self diagnosis memory data, the MIL will illuminate, when you turn the ignition switch to "ON".

If the ECM has self diagnosis memory data, the MIL will start blinking, when you turn the ignition switch to "ON".

Note how many times the malfunction indicator blinks, and determine the cause of the problem (page 5-10 through 5-53).

Even if the PGM-FI has memory data, the MIL does not blink when the engine running.



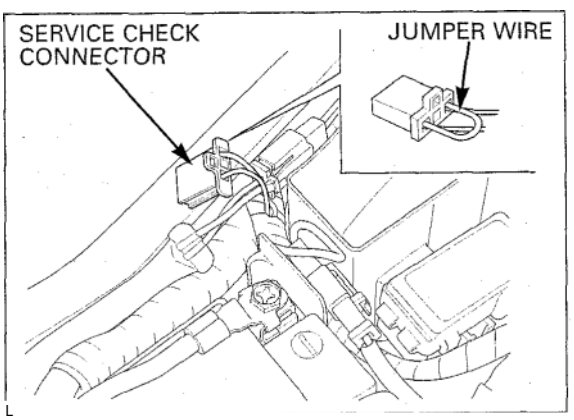


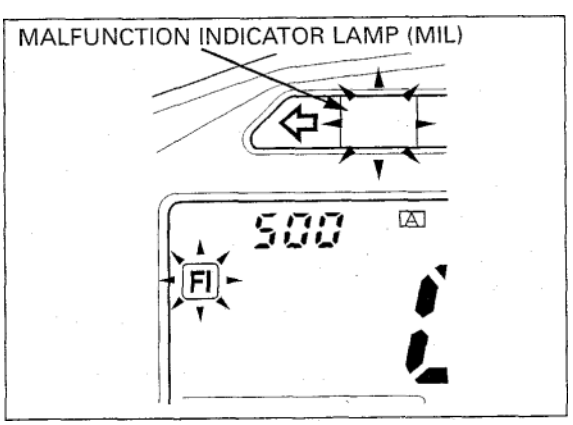
SELF-DIAGNOSIS RESET PROCEDURE

1. Turn the engine stop switch to "RUN" and ignition switch to "OFF".
2. Short the service check connector of the PGM-FI system using a jumper wire.
3. Turn the ignition switch to "ON".
4. Remove the jumper wire from the service check connector.
5. The MIL lights about 5 seconds. While the indicator lights, short the service check connector again with the jumper wire.
   Self diagnosis memory data is erased if the MIL turns off and starts blinking.

- The service check connector must be jumped while the indicator lights. If not, the MIL will not start blinking.
- Note that the self diagnosis memory data cannot be erased if you turn off the ignition switch before the MIL starts blinking.

If the MIL blinks 20 times, the data has not been erased, so try again.





PEAK VOLTAGE INSPECTION PROCEDURE

- Use this procedure for the ignition pulse generator and cam pulse generator inspection.
- Check all system connections before inspection. If the system is disconnected, incorrect peak voltage might be measured.
- Check cylinder compression and check that all the spark plugs are installed correctly.
- Use the recommended digital muitimeter or a commercially available digital multimeter with an impedance of 10 MΩ/DCV minimum.
- The display value differs depending upon the internal impedance of the multimeter.
- Disconnect the fuel pump connector before checking the peak voltage.

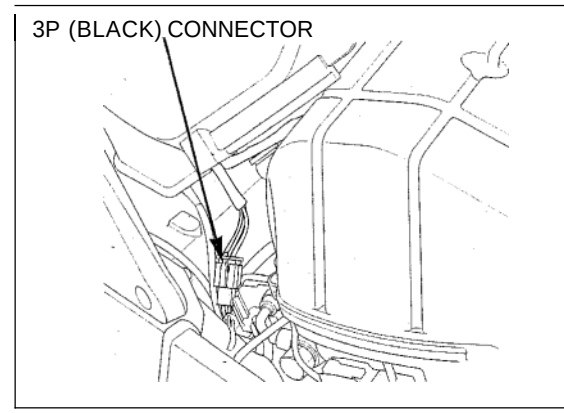
Open and support the front end of the fuel tank (page 3-4).

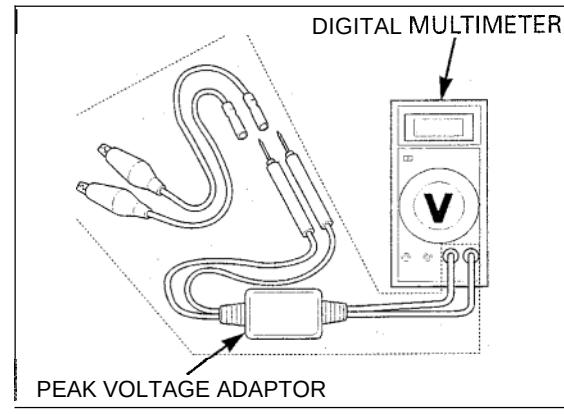
Disconnect the fuel pump 3P (Black) connector.

Avoid touching the tester probes to prevent electric shock

Connect the peak voltage adaptor to the digital multimeter.

TOOLS:
IgnitionMate peak voltage tester (U.S.A. only) or
Peak voltage adaptor 07HGJ-0020100 (not available in U.S.A.)
with commercially available digital multimeter (impedance 10 MΩ/DCV minimum)

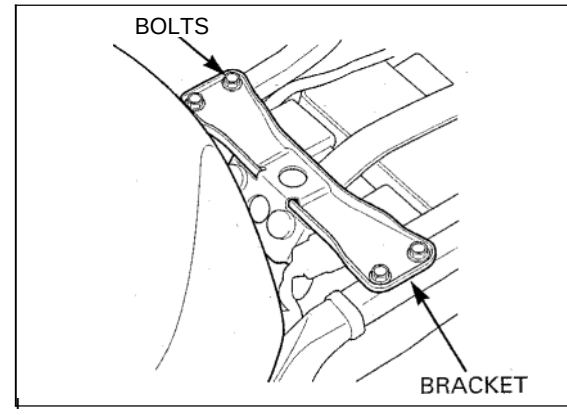




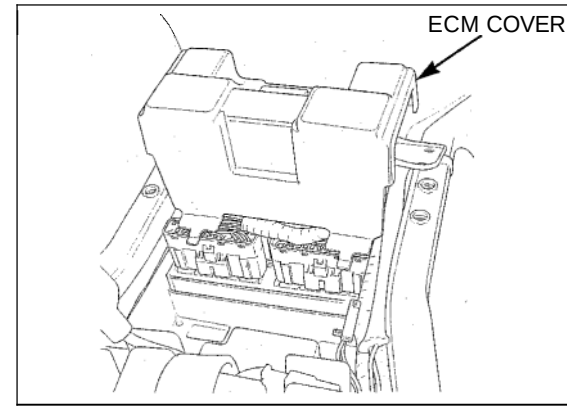
TEST HARNESS CONNECTION

Remove the seat (page 2-2).
Remove the battery (page 16-4).

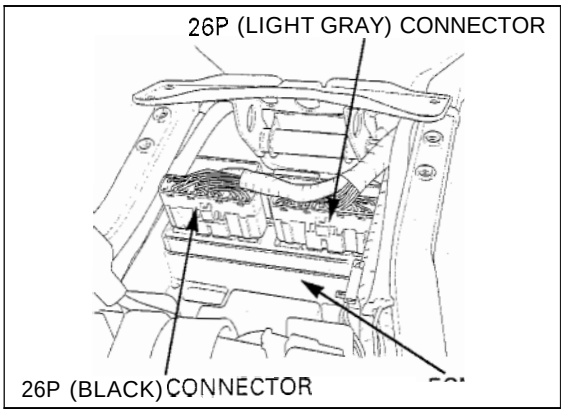
Remove the fuel tank rear bracket mounting bolts and pull up the bracket.



Remove the ECM cover.

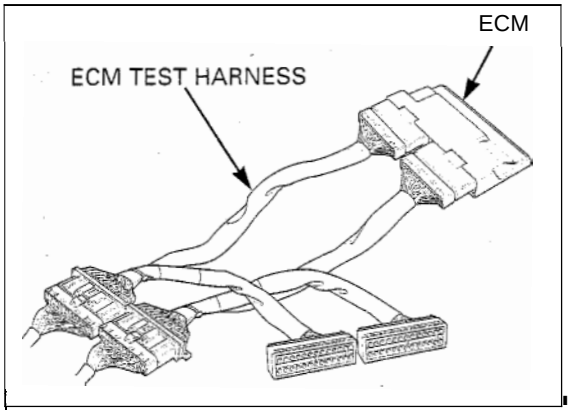


Disconnect the ECM 26P (Black) and 26P (Light gray) connectors from the unit.



Connect the ECM test harnesses between the main wire harness and the ECM.

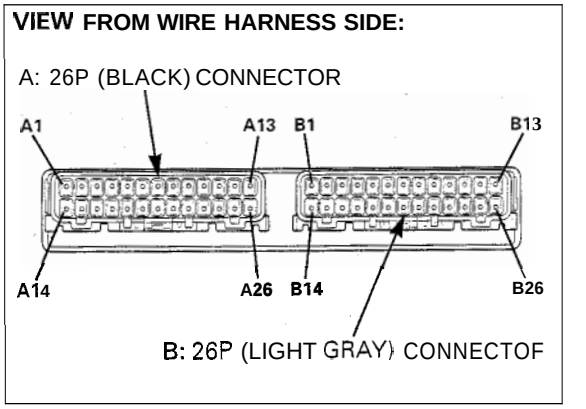
TOOL:
ECM test harness, 26P **070MZ–0010100**
(two required)



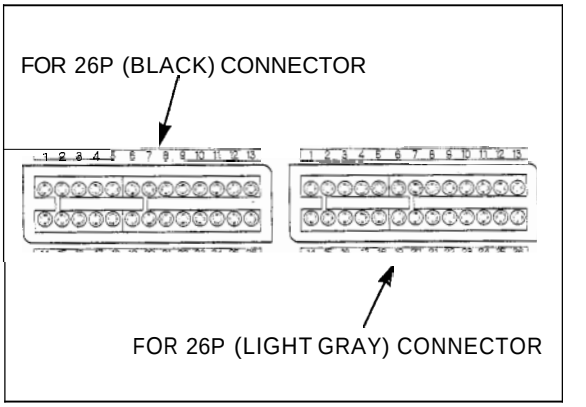
Install the battery and connect the positive terminal, then connect the negative terminal.

TEST HARNESS TERMINAL LAYOUT

The ECM connector terminals are numbered as shown in the illustration.



The test harness terminals are same layout as for the ECM connector terminals as shown.



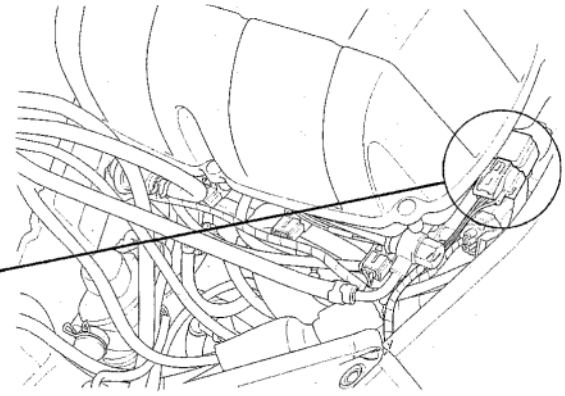
PGM-FI SELF-DIAGNOSIS MALFUNCTION INDICATOR LAMP (MIL) FAILURE CODES

- The PGM-FI malfunction indicator lamp (MIL) denotes the failure codes (the number of blinks from 0 to 35). The MIL has two types of blinks, a long blink and short blink. The long blink lasts for 1.3 seconds, the short blink lasts for 0.5 seconds. When two long blinks occur, and one short blink, that problem code is 21 (two long blinks = 20 blinks, one short blink = 1 blink). Then, go to the flow chart and see problem code 21.
- When the Engine Control Module (ECM) stores some failure codes, the MIL shows the failure codes in the order from the lowest number to highest number. For example, when the MIL blinks once, then blinks seven times, two failures have occurred. Follow the flow chart for failure codes 1 and 7.

Number of PGM-FI MIL blinks		Causes	Symptoms (Fail-safe contents)	Refer to page
0	No blinks	• Open circuit at the power input wire of the ECM • Faulty bank angle sensor • Open circuit in bank angle sensor related circuit • Faulty engine stop relay • Open circuit in engine stop relay related wires • Faulty engine stop switch • Open circuit in engine stop switch related wires • Faulty ignition switch • Faulty ECM • Blown PGM-FI fuse (20 A) • Open circuit in engine stop switch ground • Blown sub-fuse (10 A) (Starter/ignition)	• Engine does not start	—
	No blinks	• Open or short circuit in malfunction indica wire • Faulty ECM	• Engine operates normally	—
	Stays lit	• Short circuit in service check connector • Faulty ECM • Short circuit in service check connector wi	• Engine operates normally	
1	Blinks	• Loose or poor contacts on MAP sensor connector • Open or short circuit in MAP sensor wire • Faulty MAP sensor • Wrong connection between the MAP sens and TP sensor connectors	• Engine operates normally	5-12
2	Blinks	• Loose or poor connection of the MAP sen: vacuum hose • Faulty MAP sensor	• Engine operates normally	5-14
7	Blinks	• Loose or poor contact on ECT sensor • Open or short circuit in ECT sensor wire • Faulty ECT sensor	• Hard start at a low temperature (Simulate using numerical values: 90°C/194°F)	5-16
8	Blinks	• Loose or poor contact on TP sensor connector • Open or short circuit in TP sensor wire • Faulty TP sensor	• Poor engine response when operating the throttle quickly (Simulate using numerical values: Throttle opens 0°)	5-18
9	Blinks	• Loose or poor contact on IAT sensor • Open or short circuit in IAT sensor wire • Faulty IAT sensor	• Engine operates normally (Simulate using numerical values; 25°C/77°F)	5-22

Number of PGM-FI MIL blinks	Causes	Symptoms (Fail-safe contents)	Refer to page
11 Blinks	• Loose or poor contact on vehicle speed sensor connector • Open or short circuit in vehicle speed sensor connector • Faulty vehicle speed sensor	• Engine operates normally	5-24
Blinks	• Loose or poor contact on No.1 injector connector • Open or short circuit in No.1 injector wire • Faulty No.1 injector	• Engine does not start	5-26
13 Blinks	• Loose or poor contact on No.2 injector connector • Open or short circuit in No.2 injector wire • Faulty No.2 injector	• Engine does not start	**5-29**
14 Blinks	• Loose or poor contact on No.3 injector connector • Open or short circuit in No.3 injector wire • Faulty No.3 injector	• Engine does not start	5-32
15 Blinks	• Loose or poor contact on No.4 injector connector • Open or short circuit in No.4 injector wire • Faulty No.4 injector	• Engine does not start	
18 Blinks	• Loose or poor contact on cam pulse generator • Open or short circuit in cam pulse generator • Faulty cam pulse generator	• Engine does not start	5-38
19 Blinks	• Loose or poor contact on ignition pulse generator connector • Open or short circuit in ignition pulse generator • Faulty ignition pulse generator	• Engine does not start	5-40
21 Blinks	• Faulty O_2 sensor	• Engine operates normally	5-42
23 Blinks	• Faulty O_2 sensor heater	• Engine operates normally	5-44
33 Blinks	• Faulty E^2-PROM in ECM	• Engine operates normally • Does not hold the self-diagnosis data	5-48
34 Blinks	• Faulty EGCV and air intake valve servo motor voltage	• Engine operates normally	5-50
35 Blinks	• Faulty EGCV and air intake valve servo motor	• Engine operates normally	5-52

PGM-FI MIL 1 BLINK (MAP SENSOR)



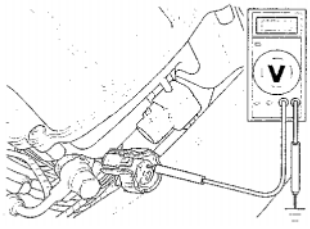
Connect the MAP sensor connector.
Place the motorcycle on its side stand.
Start the engine and check that the MIL blinks.

Does not blink → • Loose or poor contact on the MAP sensor connector

1 blink

Turn the ignition switch to "OFF".

Disconnect the MAP sensor 3P connector.
Turn the ignition switch to **"ON"**.
Measure the voltage at the wire harness side connector.

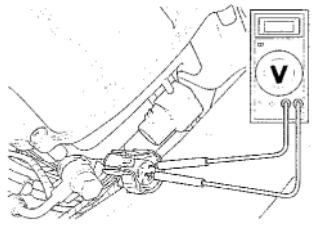


Connection: Yellow/Red (+) **– Ground (–)**
Standard: 4.75 – 5.25 V

Out of range → • Open or short circuit in Yellow/Red wire
• Loose or poor contact on the ECM connectors

Voltage exists

Measure the voltage between the connector terminals of the wire harness side.

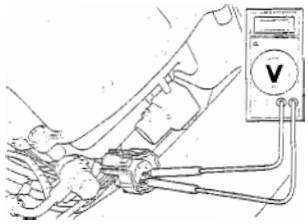


Connection: Yellow/Red (+) **– Green/Orange (–)**
Standard: 4.75 – 5.25 V

Out of range → • Open or short circuit in Green/Orange wire
• Loose or poor contact on the ECM connectors

Voltage exists

Measure the voltage between the terminals of the wire harness side.



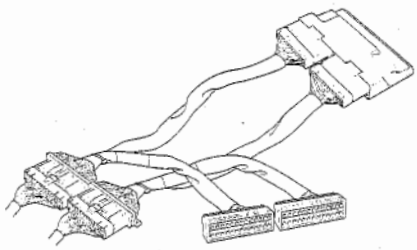
Connection:
Light green/Yellow (+) – Green/Orange (–)
Standard: 4.75 – 5.25 V

Out of range →
- Open or short circuit in Light green/Yellow wire
- Loose or poor contact on the ECM connectors

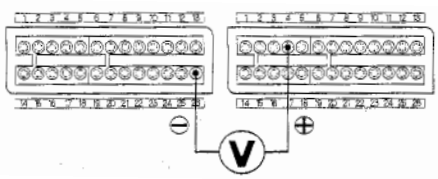
Voltage exists ↓

Turn the ignition switch to "OFF".
Connect the MAP sensor 3P connector.

Disconnect the ECM connectors.
Connect the test harness to ECM connectors.
Turn the ignition switch to "ON".



Measure the voltage at the test harness terminals (page 5-9).



Connection: B4 (+) – A26 (–)
Standard: 2.7 – 3.1 V (760 mm Hg/1,013 kPa)

→ • Faulty MAP sensor

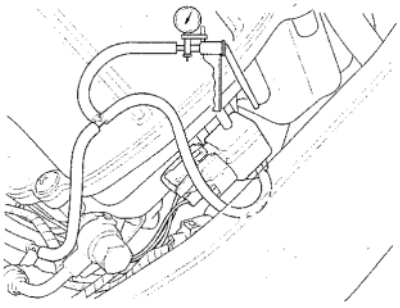
Voltage exists →
- Replace the ECM with a new one, and inspect it again

PGM-FI MIL 2 BLINKS (MAP SENSOR)

Turn the ignition switch to "OFF".

↓

Disconnect the vacuum hose from the MAP sensor.
Connect the vacuum gauge between the throttle body and the MAP sensor using a 3-way joint.
Start the engine and measure the manifold absolute pressure at idle speed.

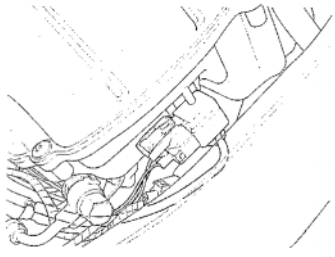


Standard: 150 – 250 mm Hg

Out of range → • Check the hose installation

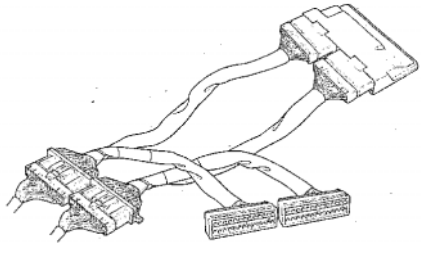
↓

Disconnect the vacuum gauge and connect the hose to the MAP sensor.

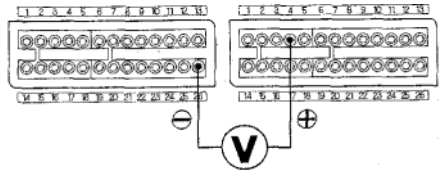


↓

Disconnect the ECM connectors.
Connect the test harness to the ECM connector.



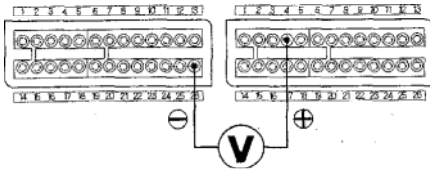
Turn the ignition switch *to* **"ON".**
Measure the voltage at the test harness terminals (page 5-9).



Out of range → ▪ Faulty MAP sensor

Voltage exists

Measure the voltage at the test harness terminals (page 5-9).



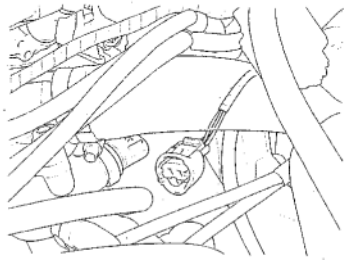
Connection: B4 (+) – A26 (–)
Standard: 2.7 V maximum

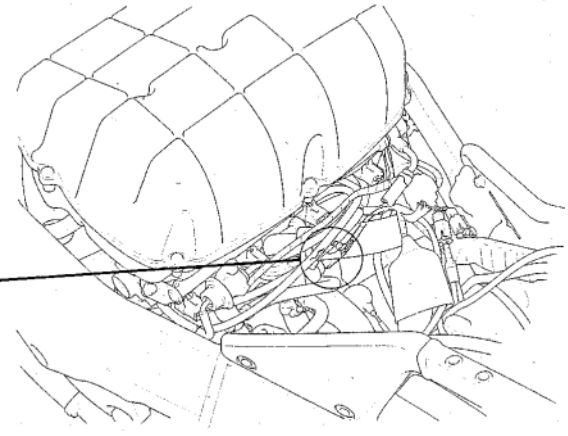
Voltage exists → ▪ Replace the ECM with a new one, and inspect it again

PGM-FI MIL 7 BLINKS (ECT SENSOR)

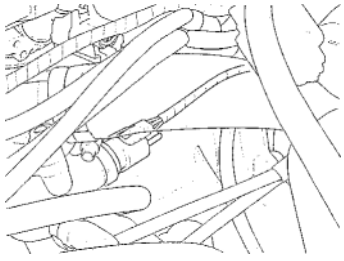
Turn the ignition switch to "OFF".

Disconnect the ECT sensor 3P connector.
Check for loose or poor contact on the ECT sensor connector.





Connect the ECT sensor connector.
Place the motorcycle on its side stand.
Turn the ignition switch to **"ON"**.

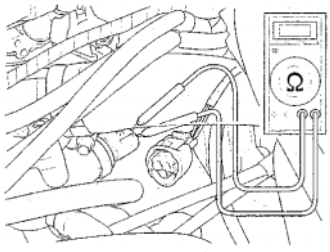


Check that the MIL blinks.

Does not blink → • Loose or poor contact on the ECT sensor connector

7 blinks

Turn the ignition switch to "OFF".
Disconnect the ECT sensor connector.
Measure the resistance at the ECT sensor terminals.

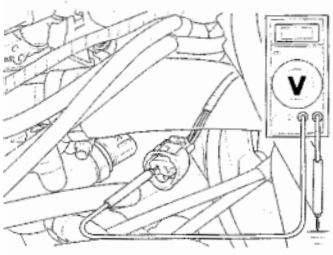


Connection: Pink/White (+) – Green/Orange (–) (sensor side terminals)
Standard: 2.3 – 2.6 kΩ (20°C/68°F)

Abnormal → • Faulty ECT sensor

Normal

Turn the ignition switch to "ON".
Measure the voltage between the ECT sensor connector terminal of the wire harness side and ground.

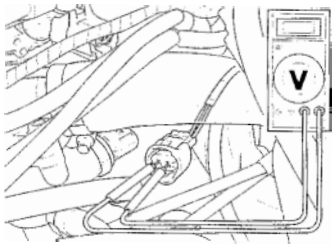


Connection: **Pink/White** (+) – Ground (–)
Standard: ***4.75 – 5.25*** **V**

Out of range
- Open or short circuit in Pink and Pink/White wire
- Loose or poor contacts on the ECM connector

Voltage exists

Measure the voltage at the ECT sensor connector of the wire harness side.



Connection: **Pink/White** (+) – **Green/Orange** (–)
Standard: ***4.75 – 5.25*** **V**

Out of range
- Open or short circuit in Green/Orange wire
- Loose or poor contacts on the ECM connector

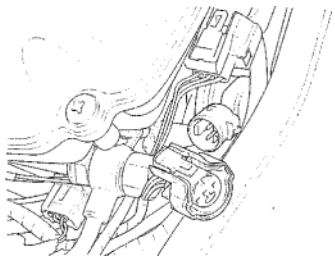
Voltage exists
- Replace the ECM with a new one, and inspect it again

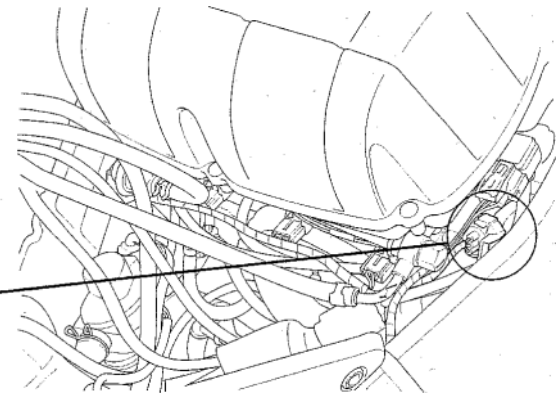
PGM-FI MIL 8 BLINKS (TP SENSOR)

Turn the ignition switch to "OFF".

↓

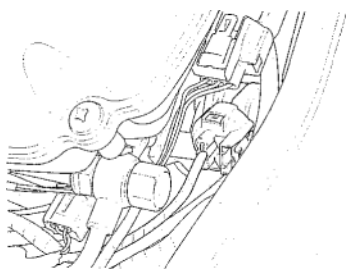
Disconnect the TP sensor 3P connector.
Check for loose or poor contact on the TP sensor connector.





nector.

Place the motorcycle on its side stand.
Start the engine and check that the MIL blinks.

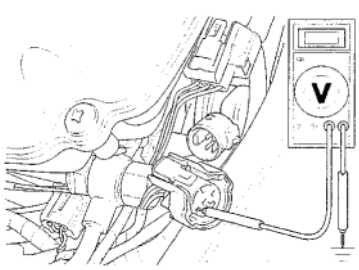


↓ 8 blinks

Turn the ignition switch to "OFF".

↓

Disconnect the TP sensor 3P connector.
Turn the ignition switch to **"ON"**.
Measure the voltage between the wire harness side connector terminal and ground.

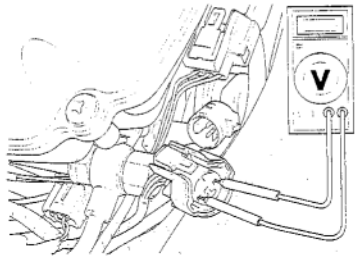


Connection: Yellow/Red (+) − Ground (–)
Standard: 4.75 − 5.25 V

Out of range →
- Open or short circuit in the Yellow/Red wire
- Loose or poor contact on the ECM connector

↓ Voltage exists

Measure the voltage at the TP sensor terminals of the wire harness side.

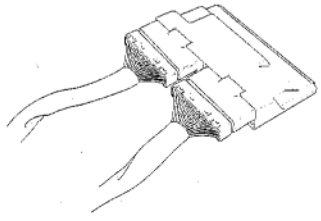


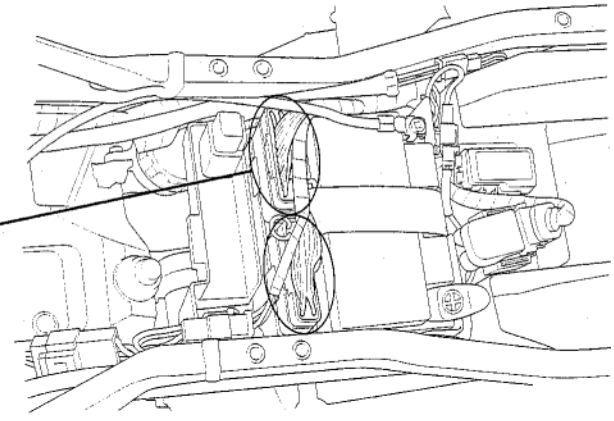
Connection: Yellow/Red (+) – Green/Orange (–)
Standard: 4.75 – 5.25 V

Out of range →
- Open or short circuit in Green/Orange wire
- Loose or poor contact on the ECM connectors

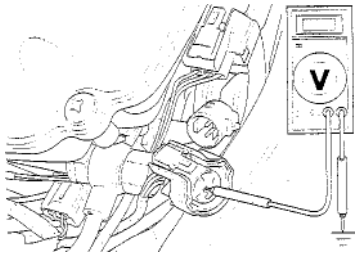
Voltage exists ↓

Turn the ignition switch to "OFF".
Disconnect the ECM **26P** connectors.





Check for continuity between the TP sensor connector terminal of the wire harness side and ground.

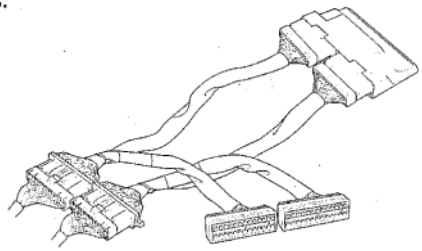


Connection: Red/Yellow (+) – Ground (–)
Standard: No continuity

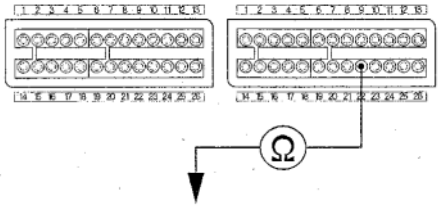
Continuity →
- Short circuit in Red/Yellow wire

No continuity ↓

Connect the test harness to the ECM connectors.



Check for continuity between the test harness terminal and the TP sensor connector terminal.

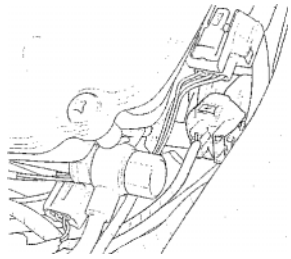


Connection: Red/Yellow − B22
Standard: Continuity

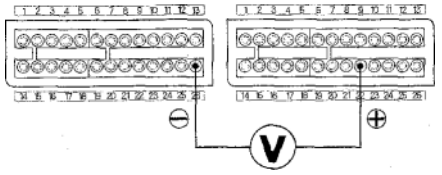
- Open or short circuit in Red/Yellow wire

Continuity

Connect the TP sensor **3P** connector.



Turn the ignition switch to "ON".
Measure the voltage at the test harness terminals.



Connection: B22 (+) **– A26** (–)
Standard: *0.4 – 0.6 V (throttle fully closed)
***4.2 – 4.8 V (throttle fully open)**

Normal → • Replace the ECM with a new one, and inspect it again

A voltage marked * refers to the value when the voltage reading at the TP sensor 3P connector (page 5-19) shows 5 V. When the reading shows other than 5 V, derive a voltage at the test harness as follows:

In the case of a voltage of 4.75 V at the TP sensor 3P connector:

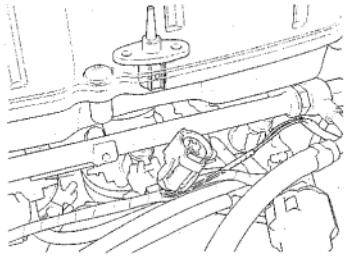
0.4 X 4.75/5.0 = 0.38 V
0.6 X 4.75/5.0 = 0.57 V

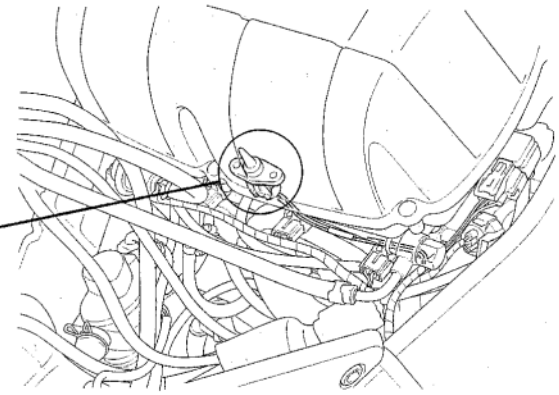
Thus, the solution is "0.38 – 0.57 V" with the throttle fully closed.
Replace 0.4 and 0.6 with 4.2 and 4.8 respectively, in the above equations to determine the throttle fully open range.

PGM-FI MIL 9 BLINKS (IAT SENSOR)

Turn the ignition switch to "OFF"

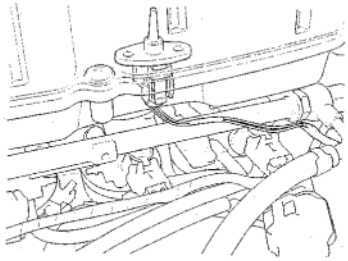
Disconnect the IAT sensor 2P connector.
Check for loose or poor contact on the IAT sensor connector.





Connect the IAT sensor 2P connector.
Place the motorcycle on its side stand.
Turn the ignition switch to "ON".
Check that the MIL blinks.

Does not blink → • Loose or poor contact on the IAT sensor connector

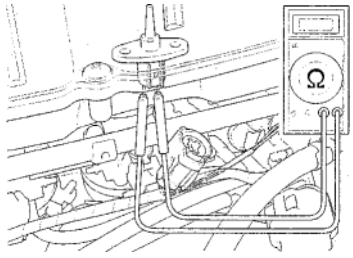


9 blinks

Turn the ignition switch to "OFF".

Disconnect the IAT sensor 2P connector.
Measure the resistance at the IAT sensor (at 20 – 30 °C/68 – 86 °F).

Abnormal → • Faulty IAT sensor

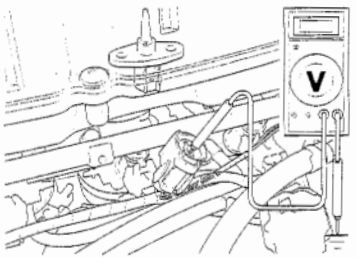


Standard: 1 – 4 kΩ

Normal

Turn the ignition switch to "ON".

Measure the voltage between the terminals of the wire harness side.

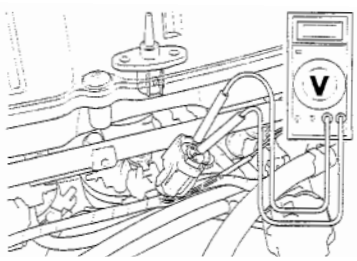


Connection:
Gray/Blue (+) – **Ground** (–)
Standard: 4.75 – 5.25 V

Out of range → • Open or short circuit in Gray/Blue wire
• Loose or poor contact on the ECM connectors

Voltage exists

Measure the voltage between the terminals of the wire harness side.



Connection:
Gray/Blue (+) – Green/Orange (–)
Standard: 4.75 – 5.25 V

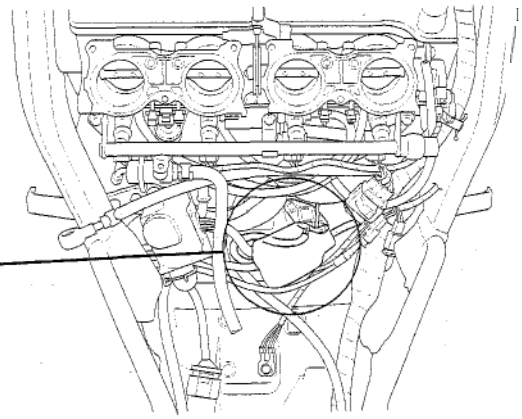
Out of range → • Open or short circuit in Green/Orange wire
• Loose or poor contact on the ECM connectors

Voltage exists → • Replace the ECM with a new one, and inspect it again

PGM-FI MIL 11 BLINKS (VEHICLE SPEED SENSOR)

Turn the ignition switch to "OFF".

Disconnect the vehicle speed sensor 3P connector.
Check for loose or poor contact on the vehicle speed sensor connector.



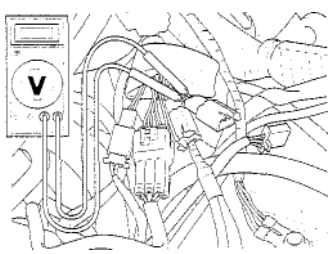
Connect the vehicle speed sensor 3P connector.
Start the engine.
With the side stand UP and keep the engine rev more than 5,000 rpm about 20 seconds or more.
Check that the MIL blinks.

Does not blink → • Loose or poor contact on the vehicle speed sensor connector

11 blinks

Turn the ignition switch to "OFF"

Disconnect the vehicle speed sensor 3P connector.
Turn the ignition switch to "ON".
Measure the voltage at the wire harness side connector.

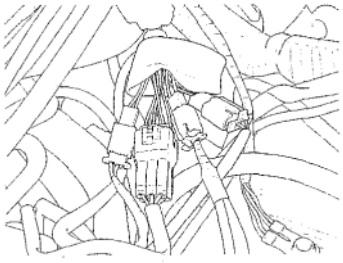


Connection: Black/Brown (+) – Green/Black (–)
Standard: 12 V

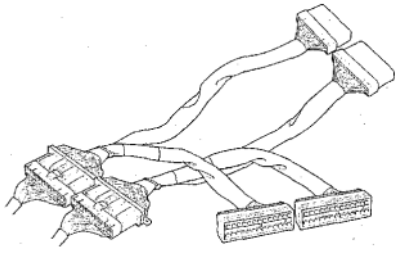
Out of range → • Open or short circuit in Black/Brown wire

Voltage exists

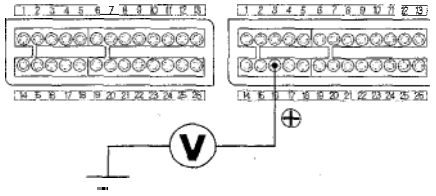
Connect the vehicle speed sensor **3P** connector.



Disconnect the ECM connectors.
Connect the test harness to the wire harness connectors.



Support the motorcycle securely and place the rear wheel off the ground.
Shift the transmission into gear.
Measure the voltage at the test harness terminals with the ignition switch turned to "ON" while slowly turning the rear wheel by hand.



CONNECTION: B16 (+) – Ground (–)
STANDARD: Repeat 0 to 5V

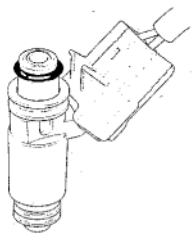
Abnormal → • Open or short circuit in Pink/Green wire

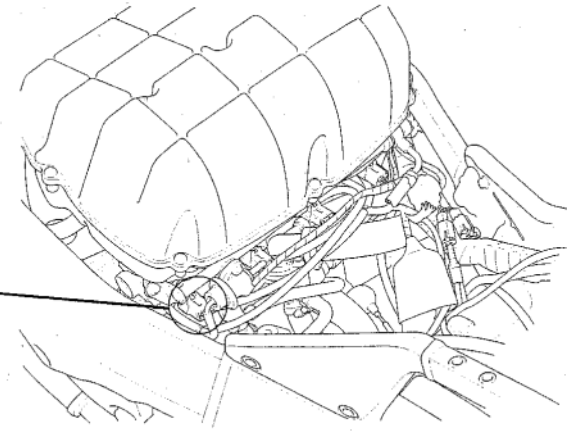
Normal

PGM-FI MIL 12 BLINKS (No.1 INJECTOR)

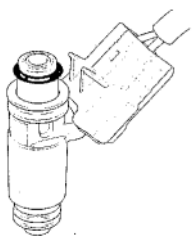
Turn the ignition switch to "OFF".

Disconnect the No.1 injector 2P connector.
Check for loose or poor contact on the No.1 injector 2P connector.





Connect the No.1 injector 2P connector.
Place the motorcycle on its side stand.
Turn the ignition switch to "ON".
Check that the MIL blinks.



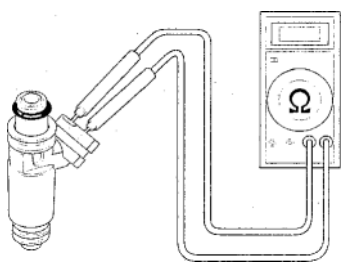
- Loose or poor contact on the No.1 injector connector

12 blinks

Turn the ignition switch to "OFF".
Disconnect the No.1 injector 2P connector and measure the resistance of the No.1 injector.

Abnormal

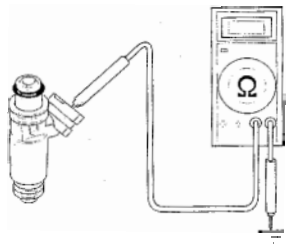
- Faulty No.1 injector



Connection:
Black/White (+) – Pink/Yellow (–)
Standard: 10.5 – 14.5 Ω (20°C/68°F)

Normal

Check for continuity between the No.1 injector and ground.

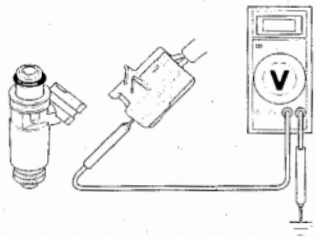


Connection:
Black/White (+) – **Ground (–)**
Standard: No continuity

Continuity → • Faulty No.1 injector

No continuity ↓

Turn the ignition switch to "ON".
Measure the voltage between the No.1 injector connector of the wire harness side and ground.

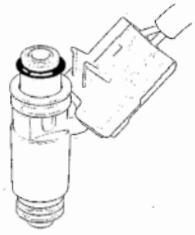


Connection:
Black/White (+) – **Ground (–)**
Standard: Battery voltage

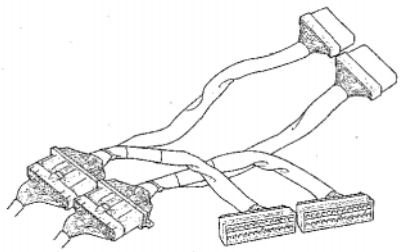
Out of range → Open or short circuit in Black/White wire

Voltage exists ↓

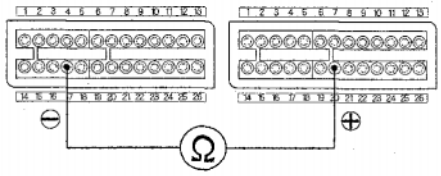
Turn the ignition switch to "OFF".
Connect the No.1 injector connector.



Disconnect the ECM connectors.
Connect the test harness to the wire harness connectors.



Measure the resistance at the test harness terminals.

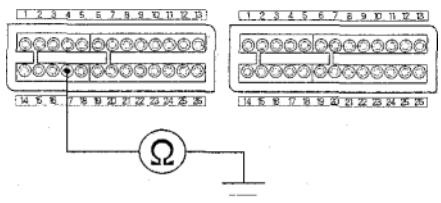


Connection: A17 (–) – B20 (+)
Standard: 9 – 15 Ω (20°C/68°F)

Out of range → • Open circuit in Black/White and/or Pink/Yellow wire

Normal

Check for continuity between the test harness terminal and ground.



Connection: A17 – Ground
Standard: No continuity

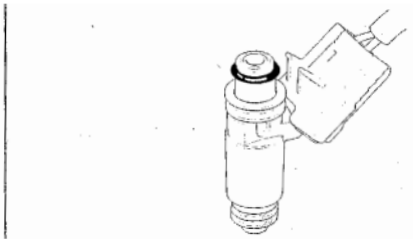
Continuity → • Short circuit in Pink/Yellow wire

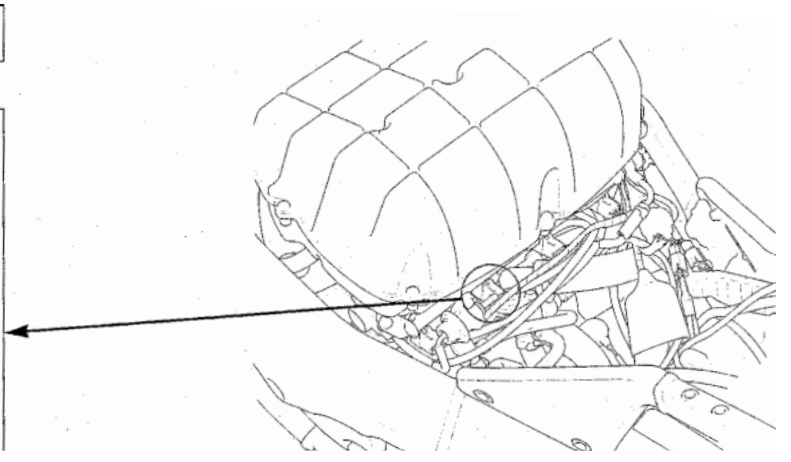
No continuity → • Replace the ECM with a new one, and inspect it again

PGM-FI MIL 13 BLINKS (No.2 INJECTOR)

Turn the ignition switch to "OFF".

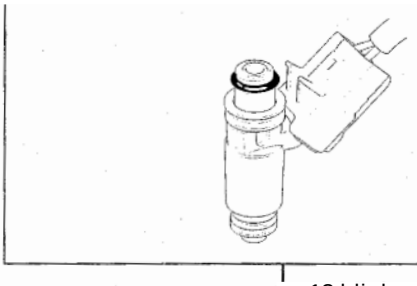
Disconnect the No.2 injector 2P connector.
Check for loose or poor contact on the No.2 injector 2P connector.





Connect the No.2 injector 2P connector.
Place the motorcycle on its side stand.
Turn the ignition switch to "ON".
Check that the MIL blinks.

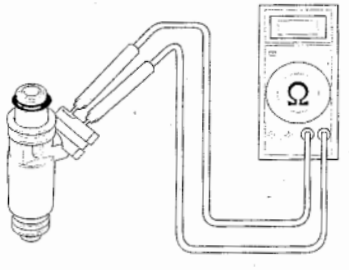
Does not blink → ▪ Loose or poor contact on the No.2 injector connector



13 blinks

Turn the ignition switch to "OFF".
Disconnect the No.2 injector 2P connector and measure the resistance of the No.2 injector.

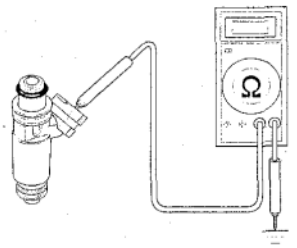
Abnormal → • Faulty No.2 injector



Connection:
Black/White (+) – Pink/Blue (–)
Standard: 10.5 – 14.5 Ω (20°C/68°F)

Normal

Check for continuity between the No.2 injector and ground.

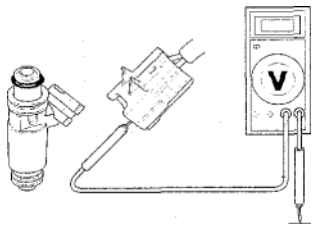


Connection:
Black/White (+) – Ground (–)
Standard: No continuity

Continuity → • Faulty No.2 injector

No continuity

Turn the ignition switch to "ON".
Measure the voltage between the No.2 injector connector of the wire harness side and ground.

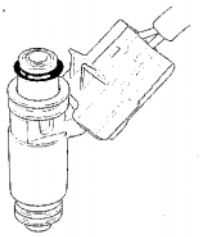


Connection:
Black/White (+) – Ground (–)
Standard: Battery voltage

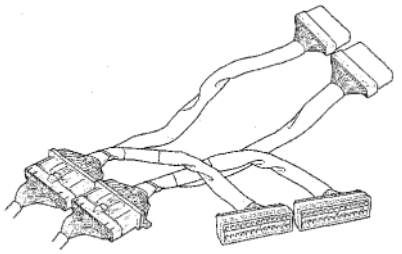
Out of range → • Open or short circuit in Black/White wire

Voltage exists

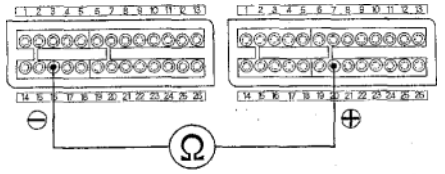
Turn the ignition switch to "OFF".
Connect the No.2 injector connector.



Disconnect the ECM connectors.
Connect the test harness to the wire harness connectors.



Measure the resistance at the test harness terminals.

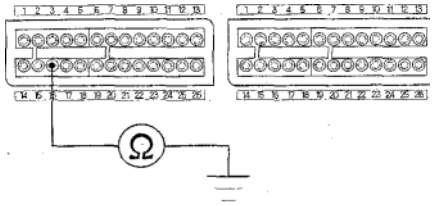


Connection: A16 (–) – B20 (+)
Standard: 9 – 15 Ω (20°C/68°F)

Out of range → • Open circuit in Black/White and/or Pink/Blue wire

Normal

Check for continuity between the test harness terminal and ground.



Connection: A16 – Ground
Standard: No continuity

Continuity → • Short circuit in Pink/Blue wire

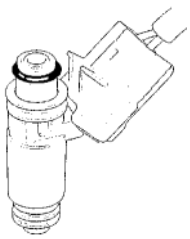
No continuity

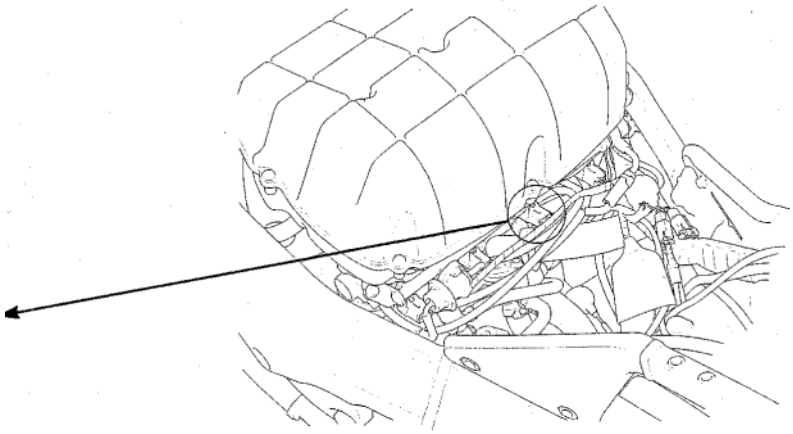
PGM-FI MIL 14 BLINKS (No.3 INJECTOR)

Turn the ignition switch to "OFF".

↓

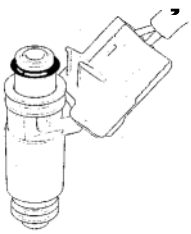
Disconnect the No.3 injector 2P connector.
Check for loose or poor contact on the No.3 injector 2P connector.





tor

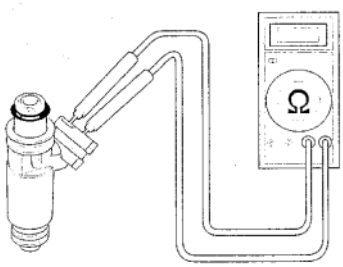
Place the motorcycle on its side stand.
Turn the ignition switch to "ON".
Check that the MIL blinks.



↓ 14 blinks

Turn the ignition switch to "OFF".
Disconnect the No.3 injector 2P connector and measure the resistance of the No.3 injector.

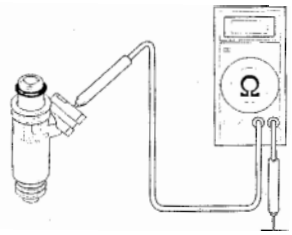
Abnormal → • Faulty No.3 injector



Connection:
Black/White (+) – Pink/Green (–)
Standard: 10.5 – 14.5 Ω (20°C/68°F)

Normal

Check for continuity between the No.3 injector and ground.

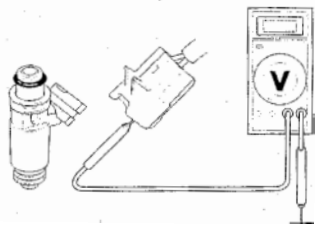


Connection:
Black/White (+) – Ground (–)
Standard: No continuity

Continuity → • Faulty No.3 injector

No continuity

Turn the ignition switch to "ON".
Measure the voltage between the No.3 injector connector of the wire harness side and ground.

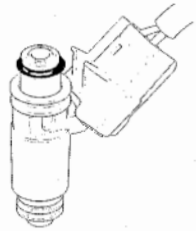


Connection:
Black/White (+) – Ground (–)
Standard: Battery voltage

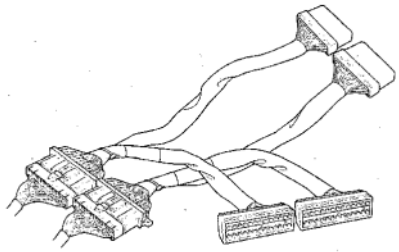
Out of range → • Open or short circuit in Black/White wire

Voltage exists

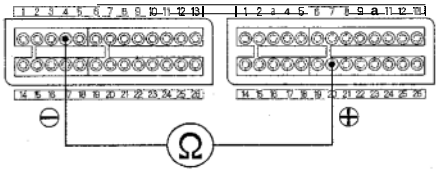
Turn the ignition switch to "ON".
Connect the No.3 injector connector.



Disconnect the ECM connectors.
Connect the test harness to the wire harness connectors.



Measure the resistance at the test harness terminals.

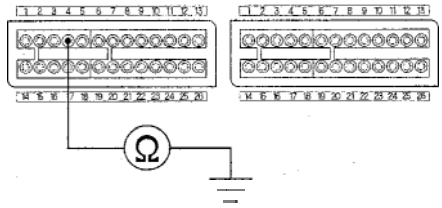


Connection: A4 (–) – B20 (+)
Standard: 9 – 15 Ω (20°C/68°F)

Out of range → • Open circuit in Black/White and/or Pink/Green wire

Normal

Check for continuity between the test harness terminal and ground.



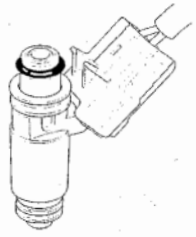
Connection: A4 – Ground
Standard: No continuity

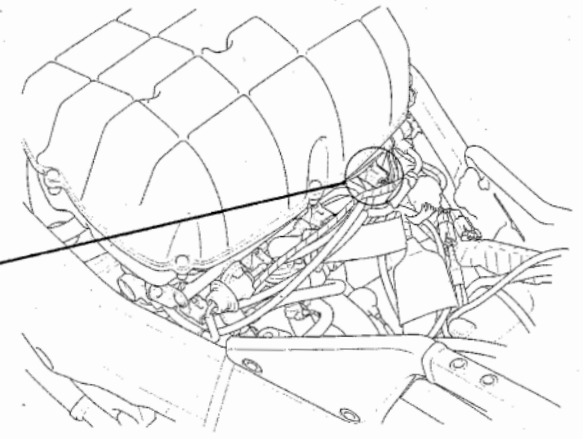
Continuity → • Short circuit in Pink/Green wire

PGM-FI MIL 15 BLINKS (No.4 INJECTOR)

Turn the ignition switch to "OFF".

Disconnect the No.4 injector 2P connector.
Check for loose or poor contact on the No.4 injector 2P connector.



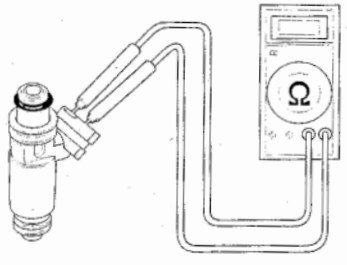


Connect the No.4 injector 2P connector.
Place the motorcycle on its side stand.
Turn the ignition switch to "ON".
Check that the MIL blinks.

Does not blink → • Loose or poor contact on the No.4 injector connector

15 blinks

Turn the ignition switch to "OFF".
Disconnect the No.4 injector 2P connector and measure the resistance of the No.4 injector.

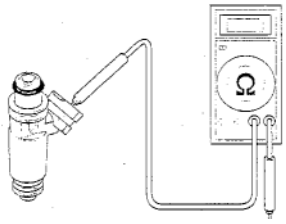


Abnormal → • Faulty No.4 injector

Connection:
Black/White (+) – Pink/Black (–)
Standard: 10.5 – 14.5 Ω (20°C/68°F)

Normal

Check for continuity between the No.4 injector and ground.

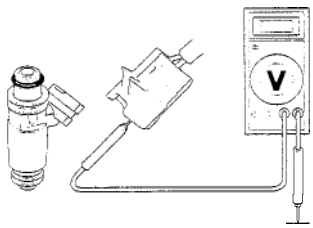


Connection:
Black/White (+) – Ground (–)
Standard: No continuity

Continuity → • Faulty No.4 injector

No continuity ↓

Turn the ignition switch to "ON".
Measure the voltage between the No.4 injector connector of the wire harness side and ground.

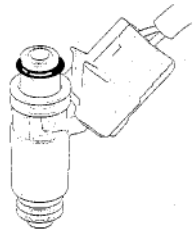


Connection:
Black/White (+) – Ground (–)
Standard: Battery voltage

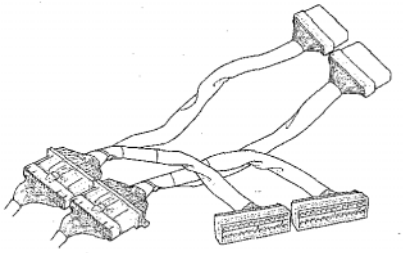
Out of range → • Open or short circuit in Black/White wire

Voltage exists ↓

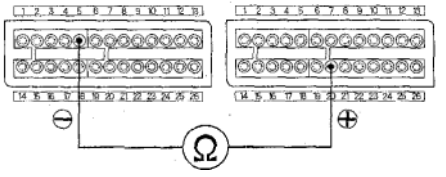
Turn the ignition switch to "OFF".
Connect the No.4 injector connector.



Disconnect the ECM connectors.
Connect the test harness to the wire harness connectors.



Measure the resistance at the test harness terminals.

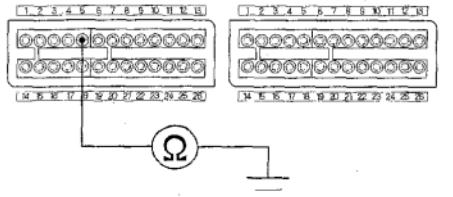


Connection: A5 (–) – B20 (+)
Standard: 9 – 15 Ω (20°C/68°F)

Out of range → • Open circuit in Black/White and/or Pink/Black wire

Normal ↓

Check for continuity between the test harness terminal and ground.



Connection: A5 – Ground
Standard: No continuity

Continuity → • Short circuit in Pink/Black wire

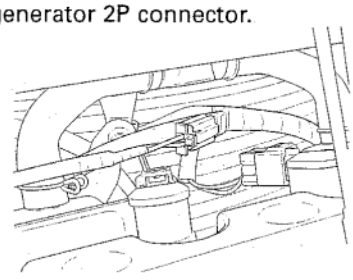
No continuity → • Replace the ECM with a new one, and inspect it again

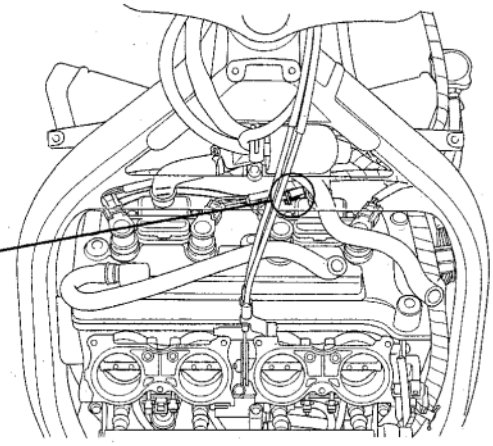
PGM-FI MIL 18 BLINKS (CAM PULSE GENERATOR)

Turn the ignition switch to "OFF".

↓

Disconnect the cam pulse generator 2P connector.
Check for loose or poor contact on the cam pulse generator 2P connector.





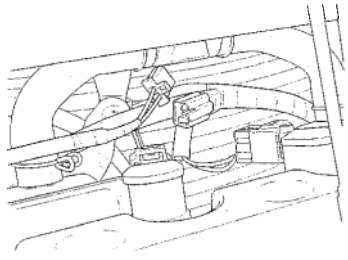
↓

Connect the cam pulse generator 2P connector.
Place the motorcycle on its side stand.
Turn the ignition switch to "ON" and check that the MIL blinks.

Does not blink → • Loose or poor contact on the cam pulse generator 2P connector

↓ 18 blinks

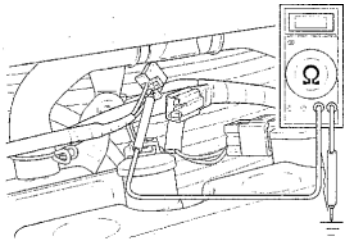
Turn the ignition switch to "OFF" and the engine stop switch to "OFF".
Disconnect the cam pulse generator 2P connector.



↓

Turn the ignition switch to "OFF".
Check the continuity between the cam pulse generator connector terminal and ground.

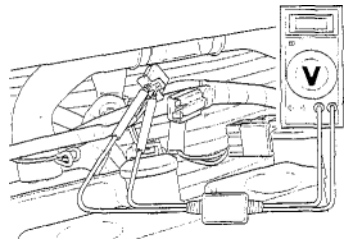
Continuity → • Faulty cam pulse generator



Connection: Gray – Ground
Black – Ground
Standard: No continuity

↓ No continuity

Crank the engine with the starter motor, and measure the cam pulse generator peak voltage at the cam pulse generator **2P** connector.

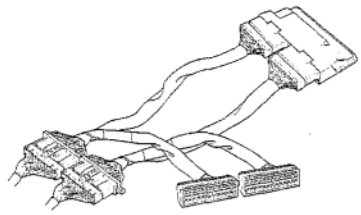


Connection: Gray (+) – Black (–)
Standard: 0.7 V minimum (20°C/68°F)

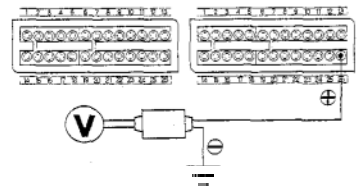
Out of range → • Faulty cam pulse generator

Normal

Connect the cam pulse generator 2P connector.
Disconnect the ECM connectors.
Connect the test harness to ECM connectors.



Crank the engine with the starter motor, and measure the cam pulse generator peak voltage at the test harness terminals.

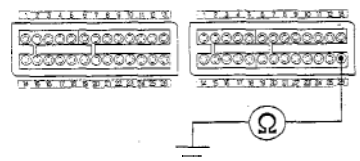


Connection: B26 (+) – Ground (–)
Standard: 0.7 V minimum (20°C/68°F)

Out of range → • Open circuit in White/Yellow and/or Gray wire

Normal

Check for continuity between the test harness terminal and ground.



Connection: B26 – Ground
Standard: No continuity

→ • Short circuit in Gray wire

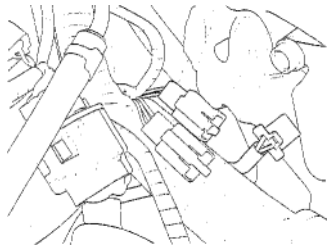
No continuity → • Replace the ECM with a new one, and inspect it again.

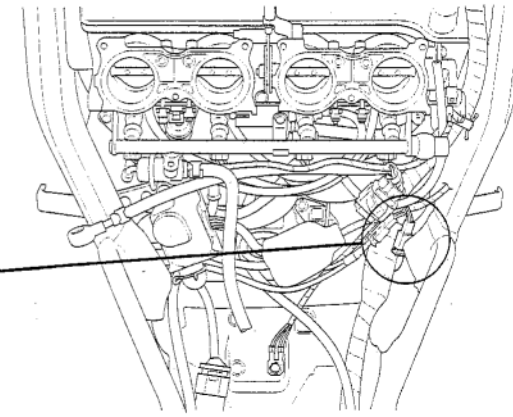
PGM-FI MIL 19 BLINKS (IGNITION PULSE GENERATOR)

Turn the ignition switch to "OFF".

↓

Disconnect the ignition pulse generator 2P connector.
Check for loose or poor contact on the ignition pulse generator 2P connector.





↓

Connect the ignition pulse generator 2P connector.
Place the motorcycle on its side stand.
Turn the ignition switch to "ON" and check that the MIL blinks.

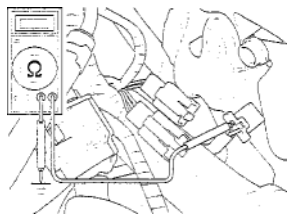
Does not blink → • Loose or poor contact on the ignition pulse generator 2P connector

↓ 19 blinks

Turn the ignition switch to "OFF" and the engine stop switch to "OFF".
Disconnect the ignition pulse generator 2P connector.

↓

Turn the ignition switch to "OFF".
Check the continuity between the ignition pulse generator connector terminal and ground.

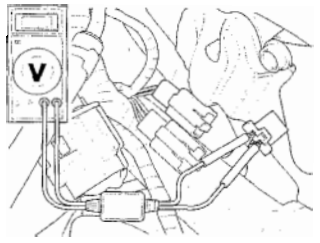


Connection: Yellow − Ground
White/Yellow − Ground
Standard: No continuity

Abnormal → • Faulty ignition pulse generator

↓ No continuity

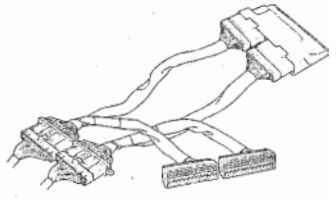
Crank the engine with the starter motor, and measure the ignition pulse generator peak voltage at the ignition pulse generator 2P connec-



Connection: Yellow (+) – **White/Yellow** (–)
Standard: 0.7 V minimum (20°C/68°F)

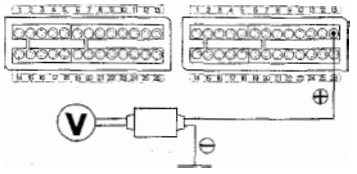
Normal

Connect the ignition pulse generator 2P connector.
Disconnect the ECM connectors.
Connect the test harness to ECM connectors.



Crank the engine with the starter motor, and measure the ignition pulse generator peak voltage at the test harness terminals.

- Open circuit in White/Yellow wire
- Open circuit in Yellow wire



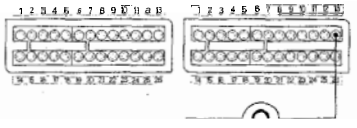
Connection: B13 (+) – **Ground** (–)
Standard: 0.7 V minimum (20°C/68°F)

Normal

Check for continuity between the test harness terminal and ground.

Continuity

- Short circuit in Yellow wire



Connection: B13 – Ground
Standard: No continuity

No continuity

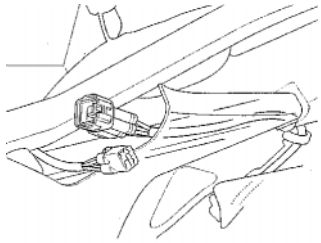
- Replace the ECM with a new one, and inspect it again

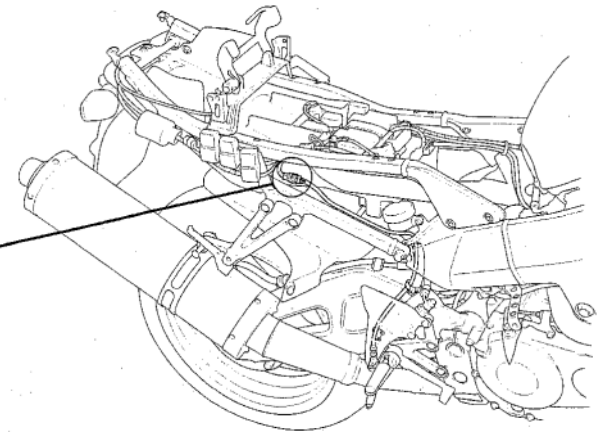
PGM-FI MIL 21 BLINKS (O_2 SENSOR/CALIFORNIA TYPE ONLY)

Turn the ignition switch to "OFF".

↓

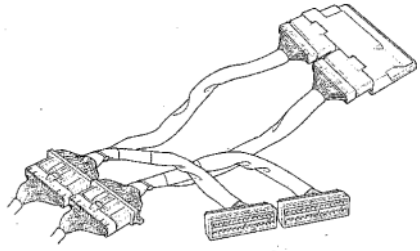
Disconnect the O_2 sensor connector.
Check for loose or poor contact on the O_2 sensor connector.





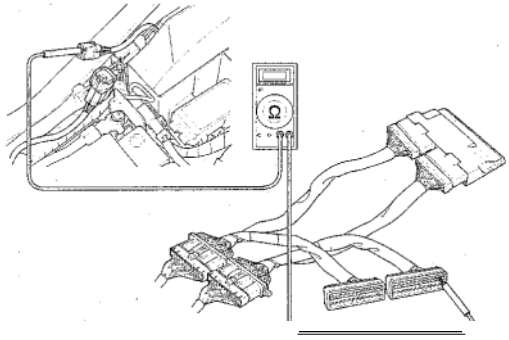
↓

Disconnect the ECM connectors..
Connect the test harness to ECM connectors.



↓

Check the continuity between the test harness terminal and O_2 sensor connector terminal.

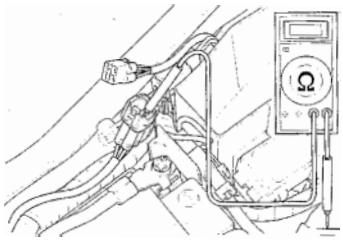


Connection: Orange/White – B12
Standard: Continuity

No continuity → • Open circuit in O_2 sensor Orange/White wire

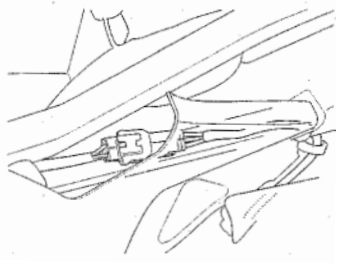
Continuity

Check the continuity between the O_2 sensor connector terminal and ground.



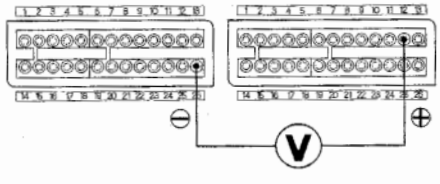
Continuity → • Short circuit in O_2 sensor Orange/White wire

Connect the O_2 sensor connector.
Turn the ignition switch to "ON" and warm up the engine until the coolant temperature is 80°C (176°F).



Operate the throttle grip and snap the engine speed from idle to 5,000 rpm.

Check the voltage between the test harness terminals.



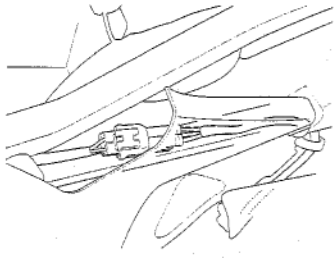
Out of range → • Faulty O_2 sensor

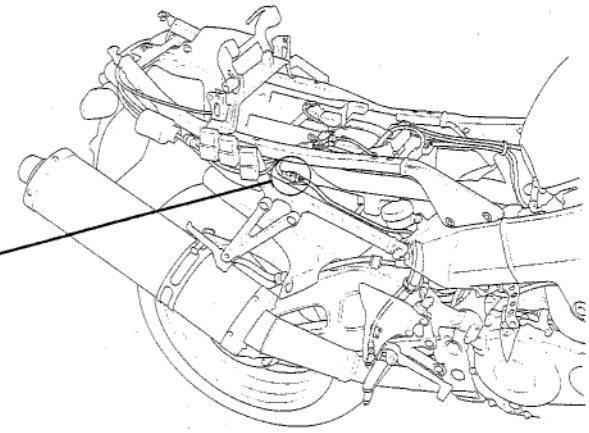
Connection: B1Z (+) – A26 (–)
Standard:
With the throttle fully open:
0.6 V minimum
With the throttle quickly closed:
0.4 V maximum

PGM-FI MIL 23 BLINKS (O_2 SENSOR HEATER/CALIFORNIA TYPE ONLY)

Turn the ignition switch to "OFF".

Disconnect the O_2 sensor connectors.
Check for loose or poor contact on the O_2 sensor connector.





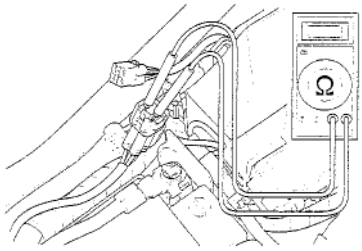
Connect the O_2 sensor connector.
Short the service check connector (page 5-6).
Start the engine and check that the MIL blinks.

Does not blink → • Loose or poor contact on the O_2 sensor connector

23 blinks

Turn the ignition switch to "OFF".

Disconnect the O_2 sensor 4P connector.
Measure the resistance at the sensor side connector White terminals.



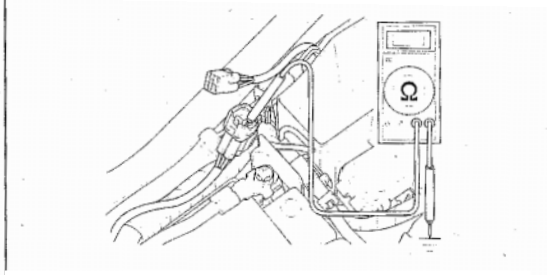
Connection: White – White
Standard: 10 – 40 Ω

Out of range → • Faulty O_2 sensor

Normal

Check for continuity White terminal and ground.

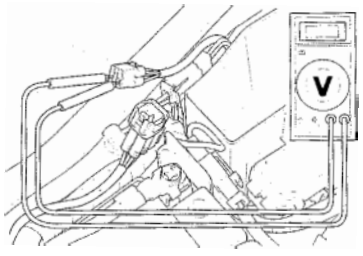
Continuity → • Faulty O_2 sensor



Connection: White – Ground
Standard: No continuity

No continuity ↓

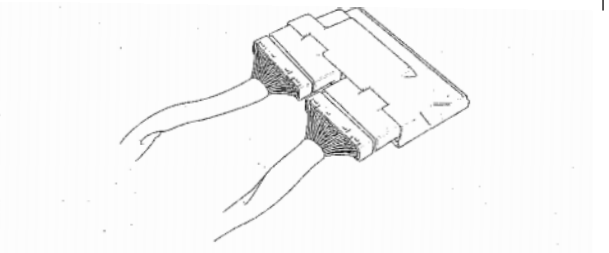
Turn the ignition switch to "ON".
Measure the voltage at the O_2 sensor wire harness side connector terminals.



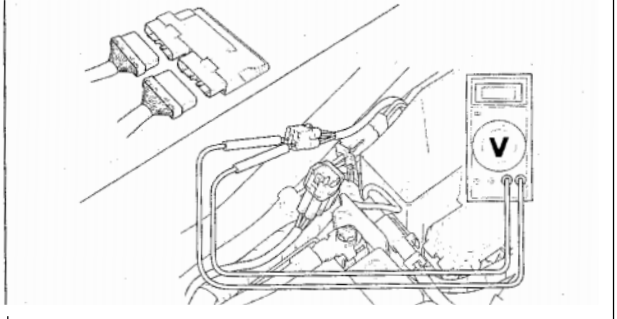
Connection: Black/White (+) – Black/Green (–)
Standard: Battery voltage

Normal →

Turn the ignition switch to "OFF".
Disconnect the ECM 26P connector.



Turn the ignition switch to "ON".
Measure the voltage at the O_2 sensor wire harness side connector terminals.



Connection: Black/White (+) – Black/Green (–)
Standard: Battery voltage

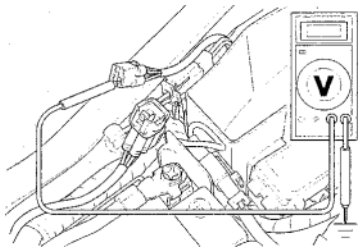
Battery voltage ↓

• Open circuit in O_2 sensor Black/Green wires

No voltage ↓

• Replace the ECM and inspect again

Measure the voltage at the O_2 sensor wire harness side connector terminal and ground.



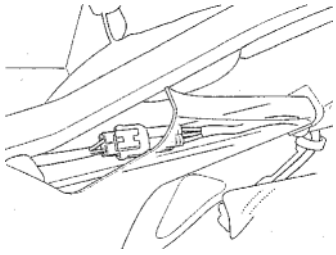
Connection: Black/White (+) − Ground (–)
Standard: Battery voltage

No voltage → • Open circuit in Black/White wire between the O_2 sensor and engine stop relay

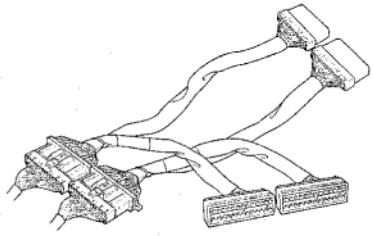
Battery voltage ↓

Turn the ignition switch to "OFF".

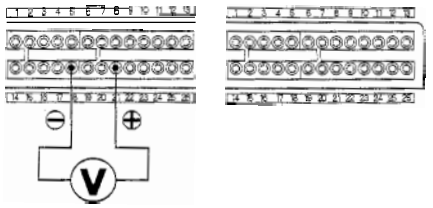
Connect the O_2 sensor **4P** connectors.



Disconnect the ECM connectors.
Connect the test harness to the wire harness connectors.



Turn the ignition switch to "ON".
Measure the voltage at the test harness terminals.



Connection: B20 (+) – A18 (–)
Standard: Battery voltage

No voltage → • Open circuit in Black/Green wire between the ECM connector and O_2 sensor 4P connector

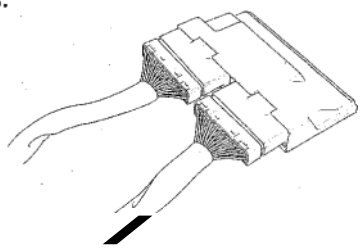
Battery voltage → • Replace the ECM and inspect again

PGM-FI MIL 33 BLINKS (E^2-PROM)

Turn the ignition switch to "OFF".

↓

Disconnect the ECM connectors.
Check for loose or poor contact of the ECM connectors.



↓

Connect the ECM connectors.
Short the service check connector with a jumper wire (page 5-6).
Turn the ignition switch to "ON" and check that the MIL blinks.

33 blinks → Reset the self-diagnosis memory data (page 5-7).
Turn the ignition switch to "ON" and check that the MIL blinks.

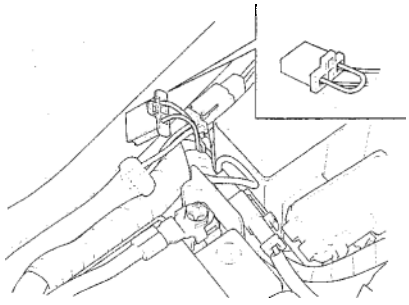
33 blinks ↓

• Replace the ECM

↓ Except 33 blinks

Does not blink 33 times →

Remove the jumper wire from the service check connector.

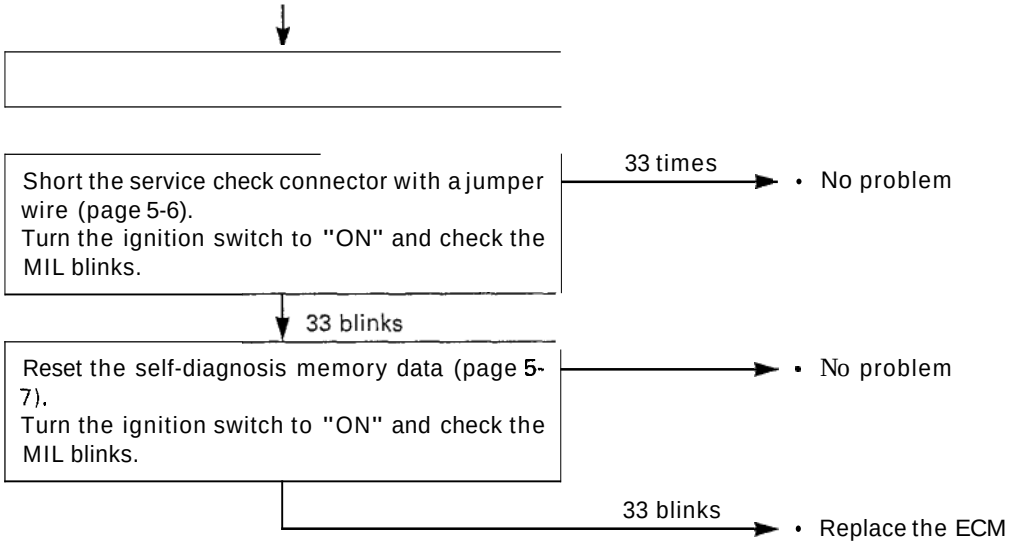


↓

Turn the ignition switch to "ON" and check that the MIL blinks.

Does not blink 33 times → • No problem

↓ 33 blinks

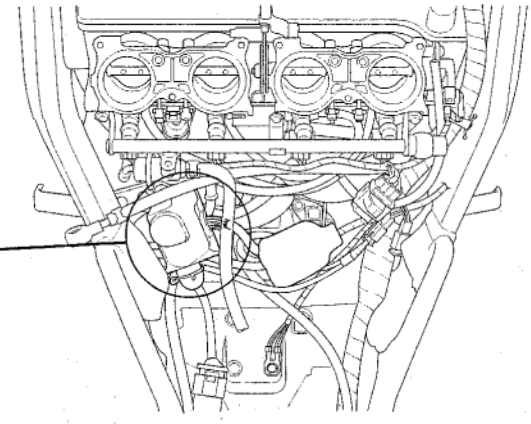

Short the service check connector with a jumper wire (page 5-6).
Turn the ignition switch to "ON" and check the MIL blinks.
33 times
• No problem
33 blinks
Reset the self-diagnosis memory data (page 5-7).
Turn the ignition switch to "ON" and check the MIL blinks.
• No problem
33 blinks
• Replace the ECM

PGM-FI MIL 34 BLINKS (EGCV AND AIR INTAKE VALVE SERVO MOTOR VOLTAGE)

Turn the ignition switch to "OFF".

↓

Disconnect the servo motor 6P connector.
Check for loose or poor contact on the servo motor 6P connector.



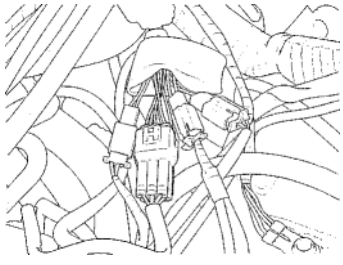
↓

Connect the servo motor 6P connector.
Place the motorcycle on its side stand.
Turn the ignition switch to "ON" and check that the MIL blinks.

Does not blink → • Loose or poor contact on the servo motor 6P connector

↓ 34 blinks

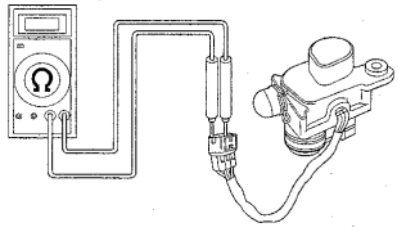
Turn the ignition switch to "OFF" and the engine stop switch to "OFF".
Disconnect the servo motor 6P connector.



↓

Measure the resistance at the servo motor 6P connector terminals.

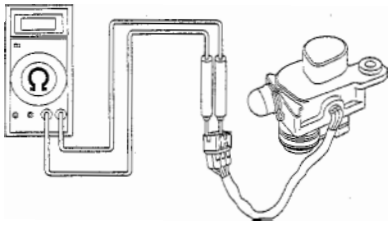
Abnormal → • Faulty servo motor



Connection: Yellow/Red (+) – Green/Orange (–)
Standard: 5 kΩ (20°C/68°F)

↓ Normal

Measure the resistance at the servo motor 6P connector terminals.

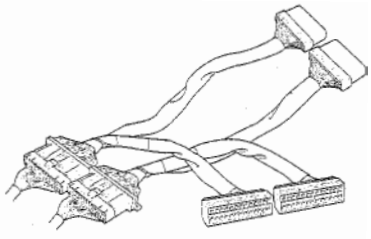


Connection: Light green/Pink (+) – Green/Orange (–)
Standard: 0 – 5 kΩ (20°C/68°F)

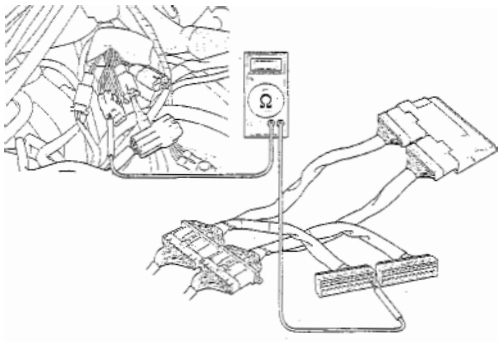
Abnormal → • Faulty servo motor

Normal ↓

Disconnect the ECM connectors.
Connect the test harness to the wire harness connectors.



Check for continuity between the test harness terminal and servo motor 6P connector terminals.



Connection: A15 – Red
A3 – Blue
A26 – Green/Orange
B15 – Yellow/Red
B9 – Light green/Pink
Standard: Continuity

No continuity → • Short circuit in related wire

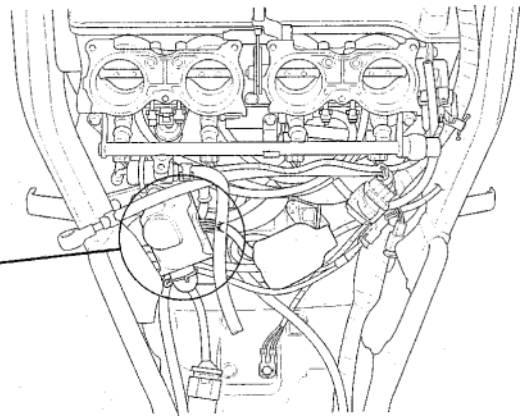
Continuity → • Replace the ECM with a new one, and inspect it again.

PGM-FI MIL 35 BLINKS (EGCV AND AIR INTAKE VALVE SERVO MOTOR)

Turn the ignition switch to "OFF".

↓

Disconnect the servo motor 6P connector.
Check for loose or poor contact on the servo motor 6P connector.



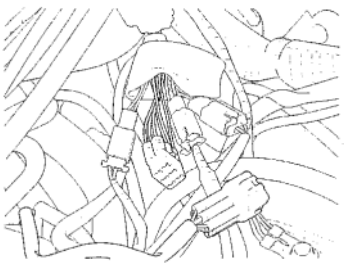
↓

Connect the servo motor 6P connector.
Place the motorcycle on its side stand.
Turn the ignition switch to "ON" and check that the MIL blinks.

Does not blink → • Loose or poor contact on the servo motor 6P connector

↓ 35 blinks

Turn the ignition switch to "OFF" and the engine stop switch to "OFF".
Disconnect the servo motor 6P connector.



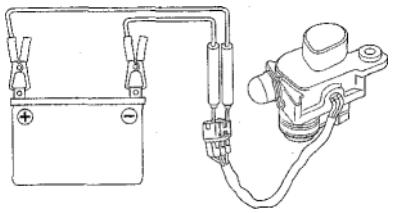
↓

Disconnect the control cables from the servo motor.
Turn the ignition switch to "ON" and check that the MIL blinks.

No blinks → • Check the EGCV, air intake valve and cables.

↓ 35 blinks

Remove the servo motor (page 5-95).
Connect the 12 V battery to the servo motor connector terminals and check the servo motor function.

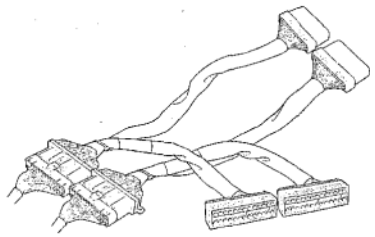


Connection: Red (+) – Blue (–)

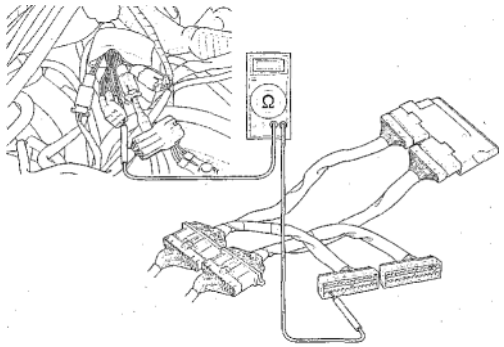
Abnormal → • Faulty servo motor

↓ Normal

Disconnect the ECM connectors.
Connect the test harness to the wire harness connectors.



Check for continuity between the test harness terminal and servo motor 6P connector terminals.



Connection: A15 – Red
A3 – Blue
Standard: Continuity

No continuity → • Short circuit in related wire

Continuity → • Replace the ECM with a new one, and inspect it again.

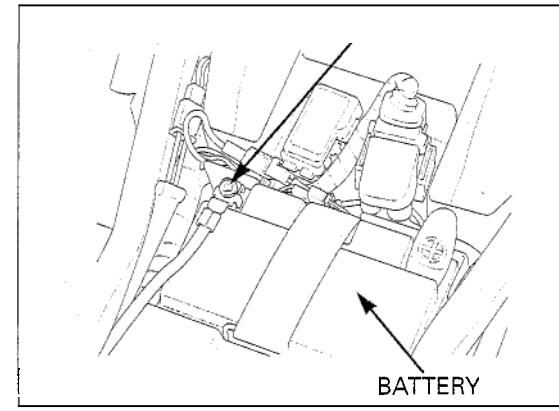
FUEL PRESSURE INSPECTION

NOTICE

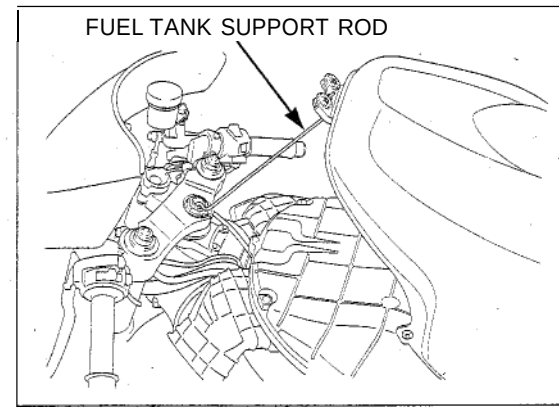
- *Before disconnecting fuel hoses, release the fuel pressure by loosening the fuel hose banjo bolt at the fuel tank.*
- *Always replace the sealing washers when the fuel hose banjo bolt is removed or loosened.*

Remove the seat (page 2-2).

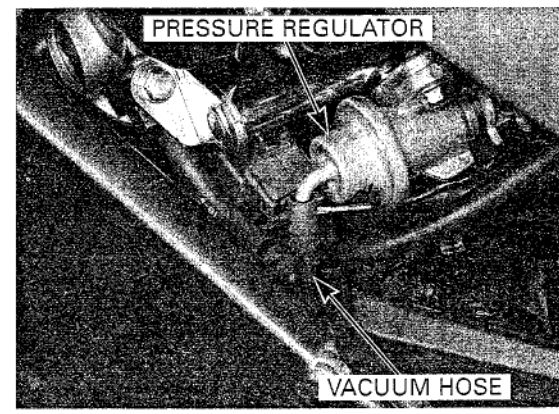
Disconnect the battery negative cable from the battery terminal.



Open and support the front end of the fuel tank (page 3-4).

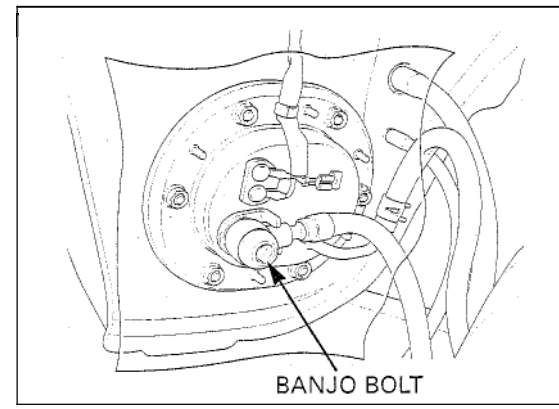


Disconnect the pressure regulator vacuum hose and plug the vacuum hose.



Cover the fuel hose banjo bolt with a rag or shop towel.

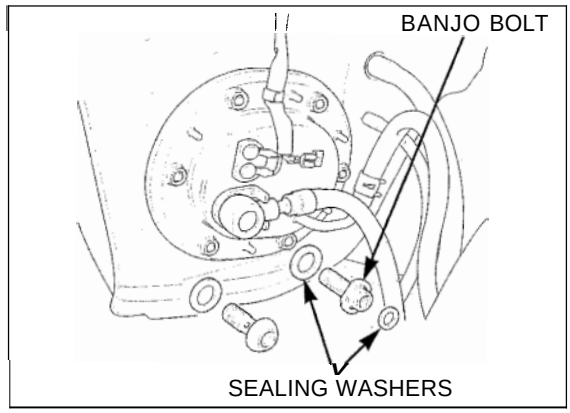
Slowly loosen the fuel hose banjo bolt and catch the remaining fuel using a approved gasoline container.



Remove the fuel hose banjo bolt and attach the fuel pressure gauge with the following Honda genuine parts.

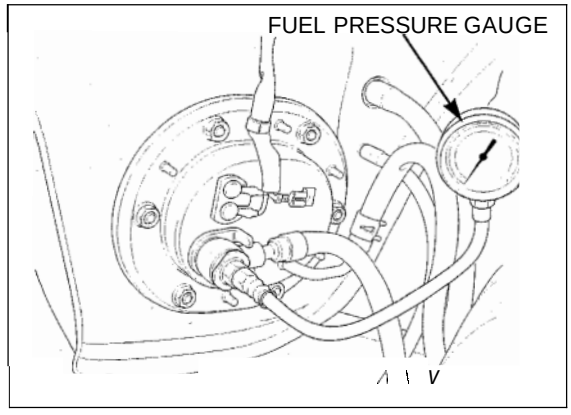
Banjo bolt, 12 mm
Parts No. 90008–PD6–010
Sealing washer, 12 mm
Parts No. 90428–PD6–003
Sealing washer, 6 mm
Parts No. 90430–PD6-003

TOOL:
Fuel pressure gauge **07406–0040003 or 07406–004000A (U.S.A. only)**



Connect the battery negative cable.
Start the engine.
Read the fuel pressure at idle speed.

IDLE SPEED: 1,200 ± 100 rpm
STANDARD: 343 kPa (3.5 kgf/cm², 50 psi)

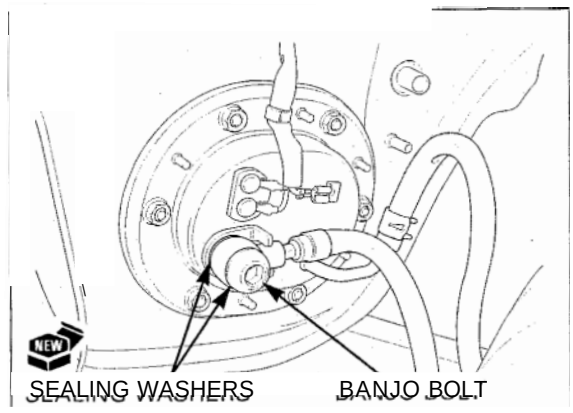


If the fuel pressure is higher than specified, inspect the following:
– Pinched or clogged fuel return hose
– Pressure regulator
– Fuel pump (page 5-57)

If the fuel pressure is lower than specified, inspect the following:
– Fuel line leaking
– Clogged fuel filter
– Pressure regulator
– Fuel pump (page 5-57)

After inspection, remove the fuel hose banjo bolt and reinstall and tighten the original fuel hose banjo bolt using the new sealing washers.

TORQUE: 22 N·m (2.2 kgf·m, 16 lbf·ft)

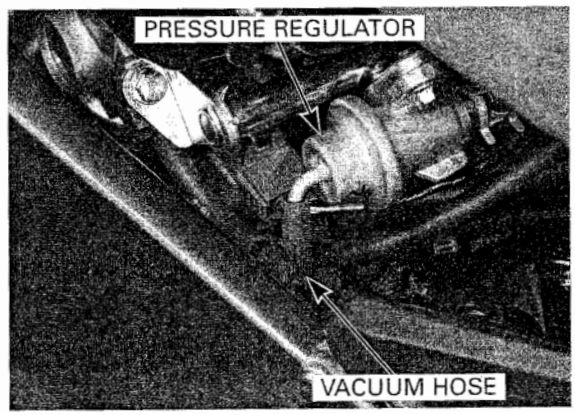


NOTICE

Always replace the sealing washers when the fuel hose banjo bolt is removed or loosened.

Connect the pressure regulator vacuum hose.

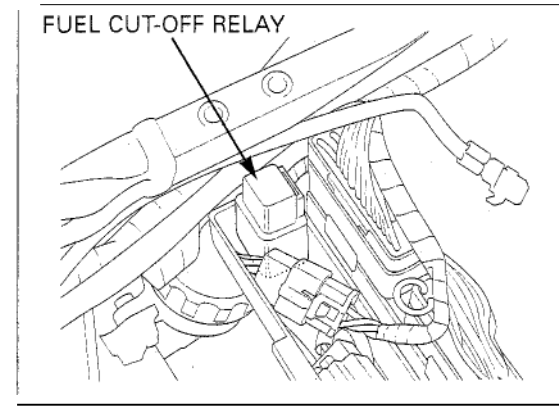
Install the removed parts in the reverse order of removal.



FUEL FLOW INSPECTION

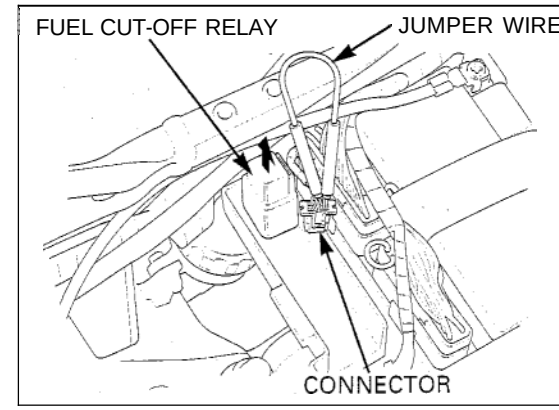
Remove the seat (page 2-2).
Open and support the front end of the fuel tank (page 3-4).

Remove the ECM cover and disconnect the fuel cut-off relay connector.



Jump the Brown and Black/White wire terminals of the wire harness side using a jumper wire.

- When the fuel return hose is disconnected, gasoline will spill out of the hose. Place an approved gasoline container under the hose and drain the gasoline.
- Wipe off any spilled out gasoline.

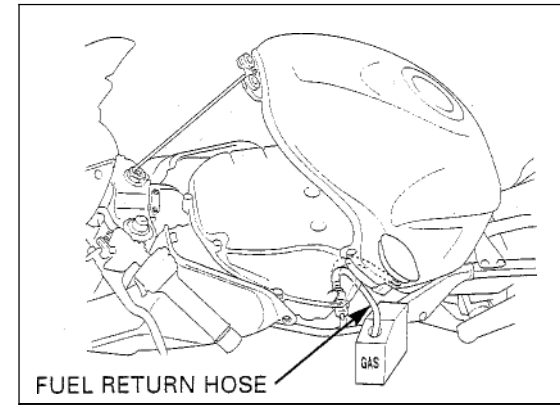


Disconnect the fuel return hose at the pressure regulator, plug the pressure regulator inlet joint.

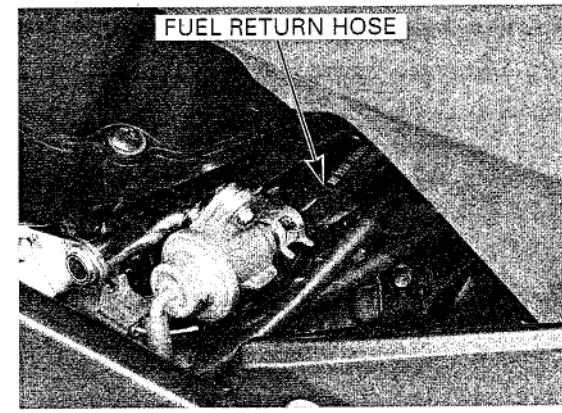
Turn the ignition switch to "ON" for 10 seconds.
Measure the amount of fuel flow.

Amount of fuel flow:
188 cm³ (6.4 US oz, 6.6 Imp oz) minimum/ 10 seconds

If the fuel flow is less than specified, inspect the following:
- Pinched or clogged fuel hose and fuel return hose
- Clogged fuel filter
- Pressure regulator
- Fuel pump (page 5-57)



After inspection, connect the fuel return hose.
Start the engine and check for leak.



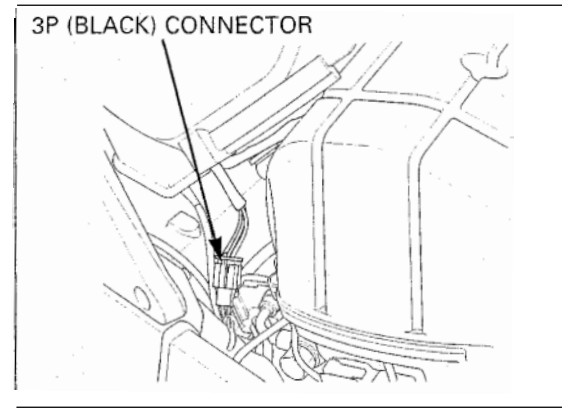
FUEL PUMP

INSPECTION

Turn the ignition switch to "ON" and confirm that the fuel pump operates for a few seconds.
If the fuel pump does not operate, inspect as follows:

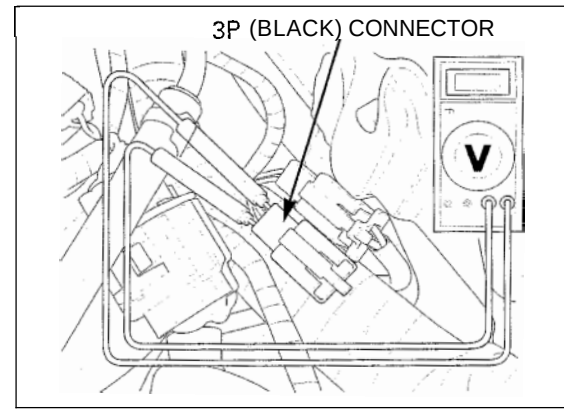
Open and support the front end of the fuel tank (page 3-4).

Disconnect the fuel pump 3P (Black) connector.



Turn the ignition switch to "ON" and measure the voltage between the terminals.

Connection: Brown (+) **– Green** (–)



There should be battery voltage for a few seconds.

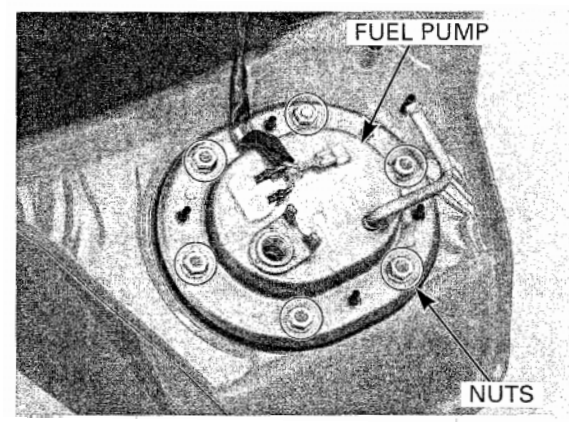
If there is battery voltage, replace the fuel pump.
If there is no battery voltage, inspect the following:
- Main fuel 30A
- Sub fuse 10A, 20A
- Engine stop switch (page 19-17)
- Fuel cut-off relay (page 5-58)
- Bank angle sensor (page 5-85)
- Engine stop relay (page 5-86)
- ECM (page 5-88)

REMOVAL

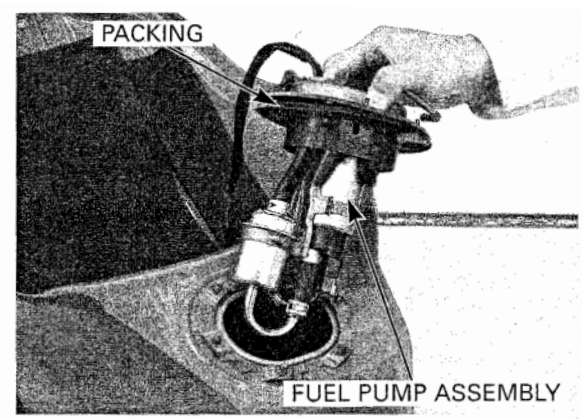
Before disconnecting the fuel hose, release the fuel pressure by loosening the fuel hose banjo bolt at the fuel tank.
Always replace the sealing washers when the fuel hose banjo bolt is removed or loosened.

Remove the fuel tank (page 5-59).

Remove the fuel pump mounting nuts.



Remove the fuel pump assembly and packing

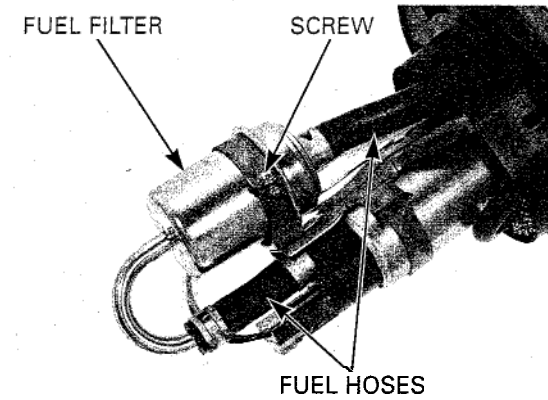


FUEL FILTER REPLACEMENT

Disconnect the fuel hoses from the fuel filter.
Remove the screws and fuel filter.

Note the direction of the fuel filter.

Install the fuel filter in the reverse order of removal.

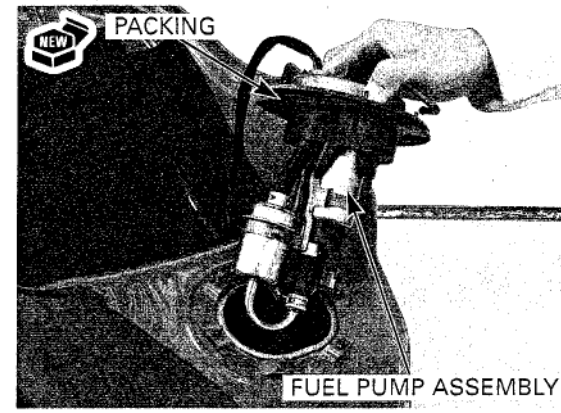


INSTALLATION

Always replace packing with a new one

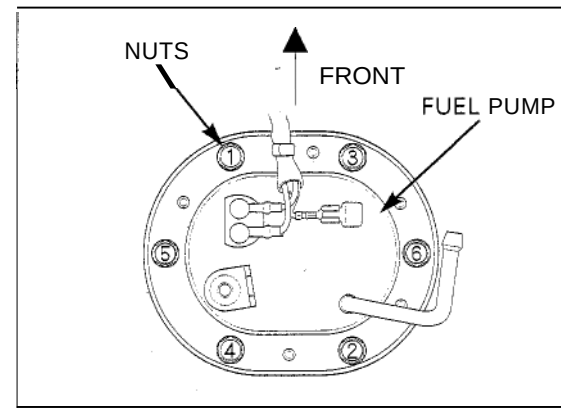
Place a new packing onto the fuel pump.

Install the fuel pump being careful not to damage the fuel pump wire.



Install and tighten the fuel pump mounting nuts in the sequence shown.

TORQUE: 12 N•m (1.2 kgf•m, 9 lbf•ft)

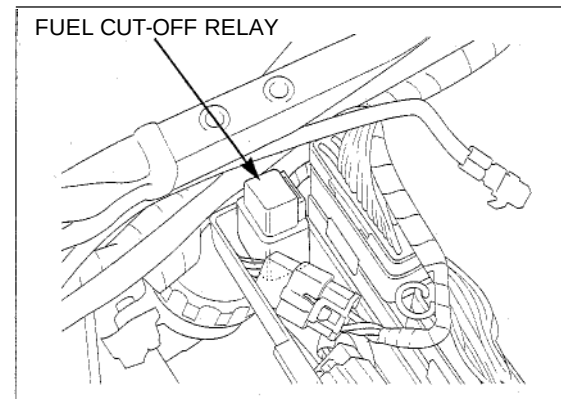


FUEL CUT-OFF RELAY

INSPECTION

Remove the ECM cover (page 5-87).

Disconnect the fuel cut-off relay 4P connector, remove the fuel cut-off relay.



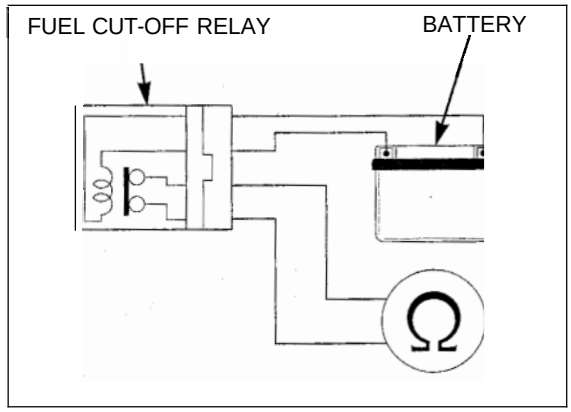
Connect the ohmmeter to the fuel cut-off relay connector terminals.

CONNECTION: Black/White – Brown

Connect the 12V battery to the following fuel cut-off relay connector terminals.

CONNECTION: Brown/Black – Black/White

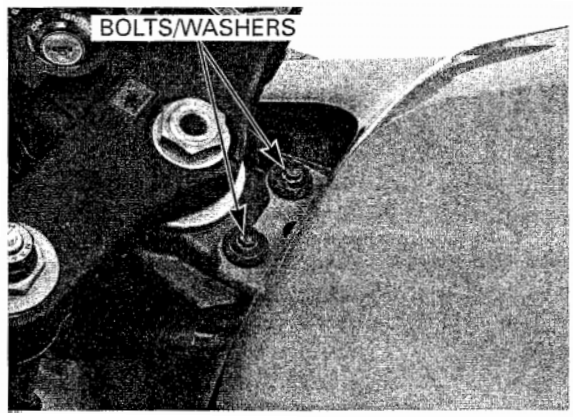
There should be continuity only when the 12V battery is connected.
If there is no continuity when the 12V battery is connected, replace the fuel cut-off relay.



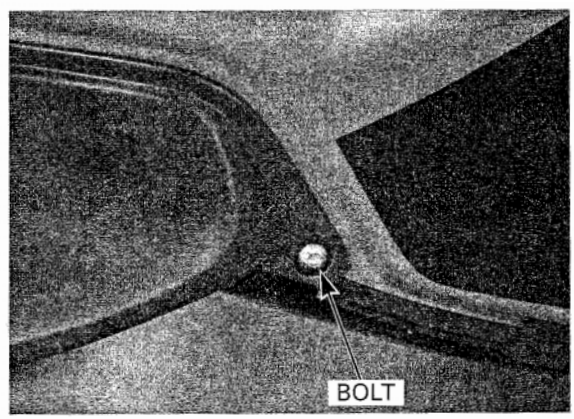
FUEL TANK

REMOVAL

Remove the seat (page 2-2).
Remove the fuel tank front mounting bolts and washers.

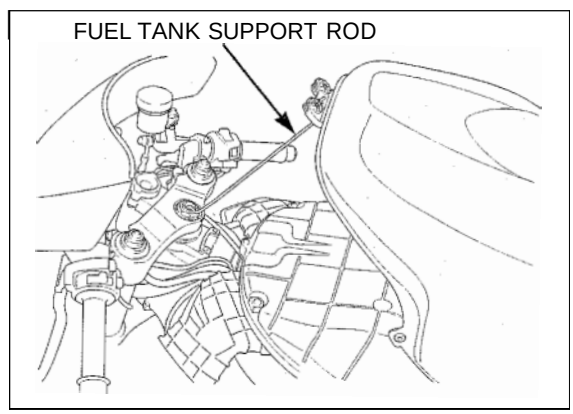


Remove the right and left duct cover mounting bolts.

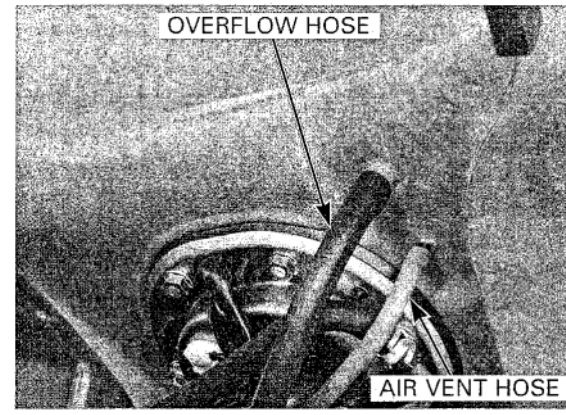


Open and support the front end of the fuel tank (page 3-4).

Release the fuel pressure (page 5-54).



Disconnect the fuel tank air vent hose and overflow hose.

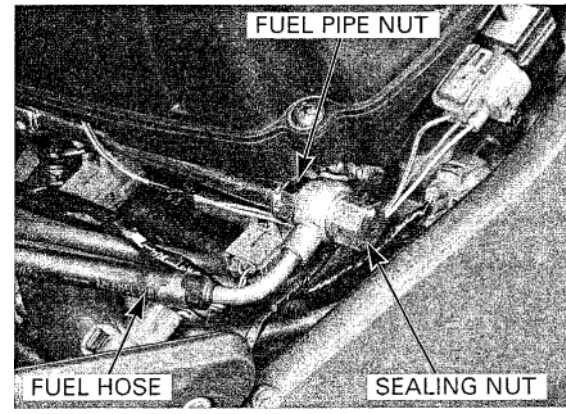


Hold the fuel pipe nut and remove the fuel hose sealing nut and sealing washers, then disconnect the fuel hose.

NOTICE

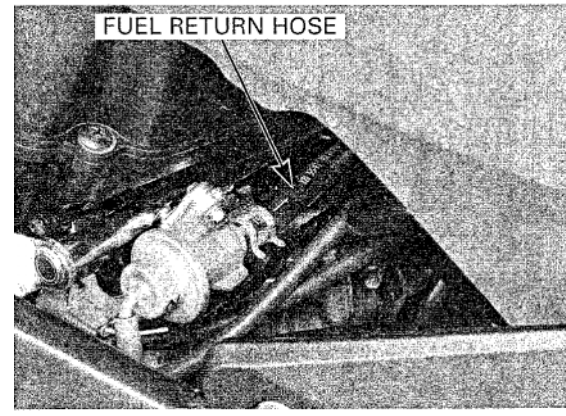
Do not apply excessive force to the fuel pipe.

- Always hold the fuel pipe nut while removing the fuel hose sealing nut.
- Do not disconnect the fuel hose and fuel return hose on the fuel tank side; they must be disconnected on the throttle body side.

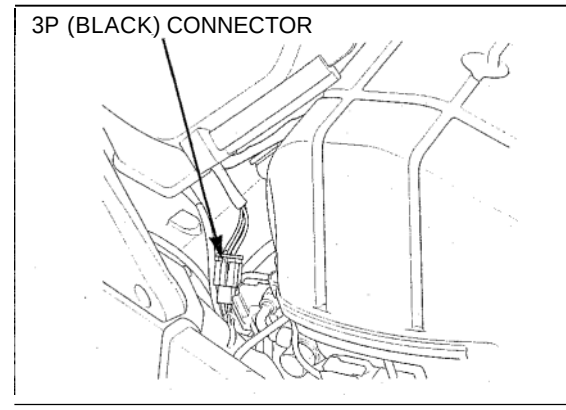


Temporarily install the 12 x 30 mm bolt (pitch 1.25) and sealing washers to the fuel hose banjo, then tighten the sealing nut.

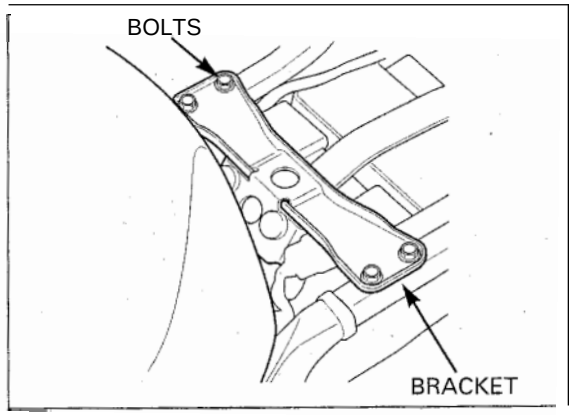
Disconnect the fuel return hose at the pressure regulator.



Disconnect the fuel pump/reserve sensor 3P (Black) connector.



Remove the fuel tank bracket bolts and then remove the fuel tank from the frame.



Be careful not to damage the fuel tank.

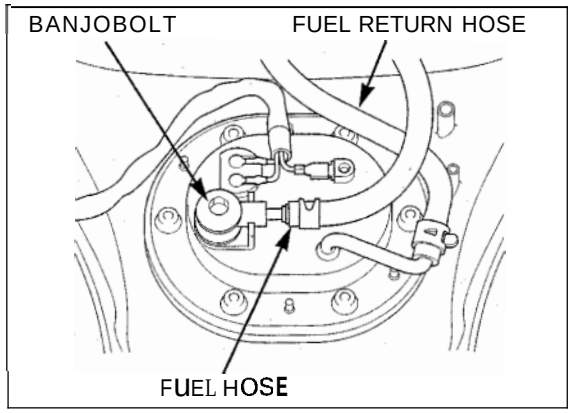
Place the fuel tank upside down.

Remove the fuel hose banjo bolt and sealing washers, then remove the fuel hose from the fuel pump.

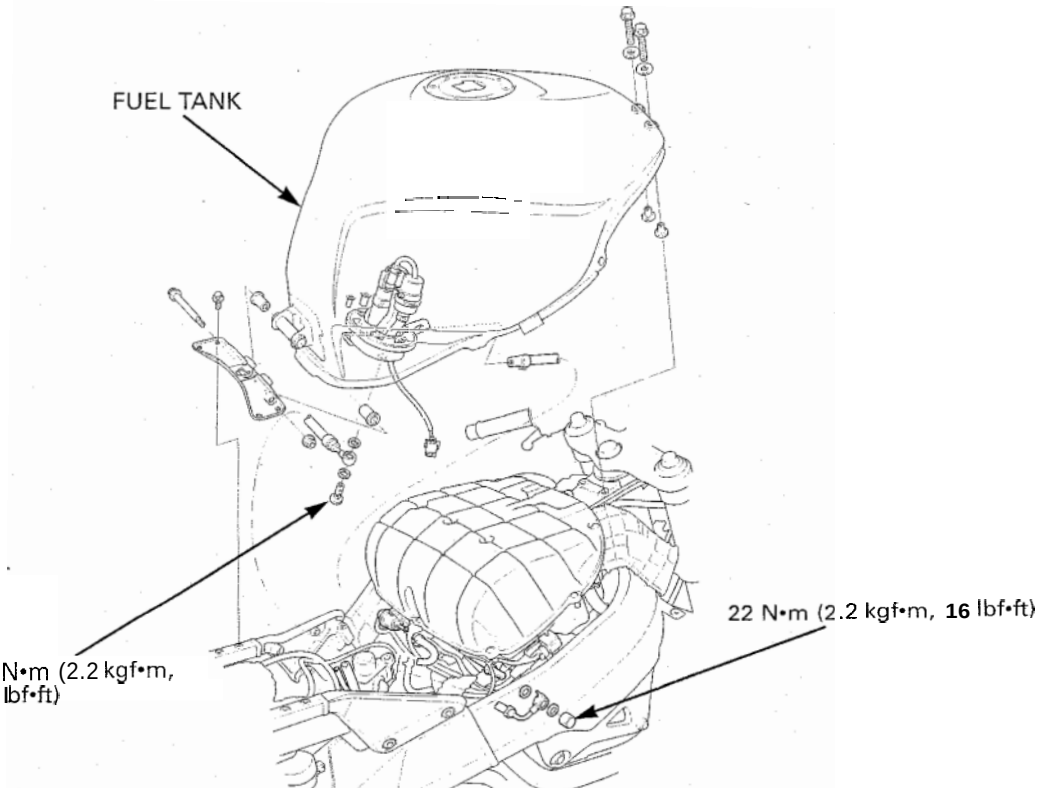
Disconnect the fuel return hose while supporting the return pipe by hand.

Disconnect the fuel return hose from the fuel pump.

Refer to page 5-57 for fuel pump removal.



INSTALLATION



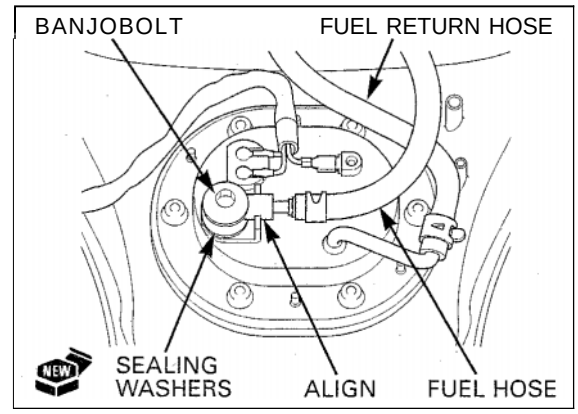
Align the fuel hose eyelet joint with the stopper on the fuel pump

Connect the fuel hose to the fuel pump with new sealing washers.

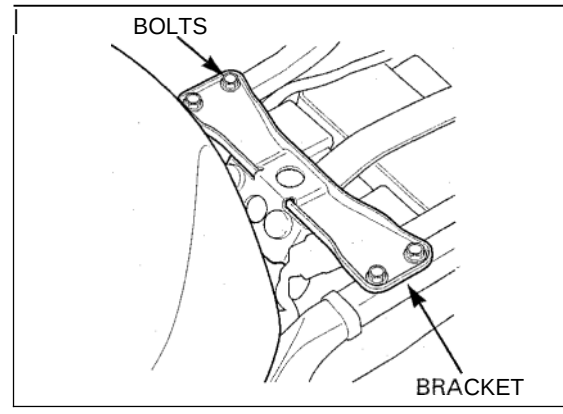
Install and tighten the fuel hose banjo bolt to the specified torque.

TORQUE: 22 N·m (2.2 kgf·m, 16 lbf·ft)

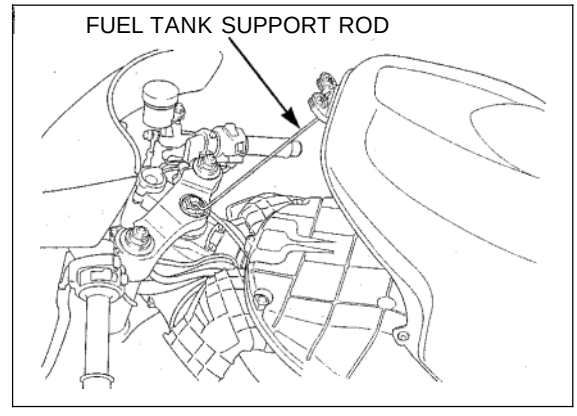
Connect the fuel return hose to the fuel pump.



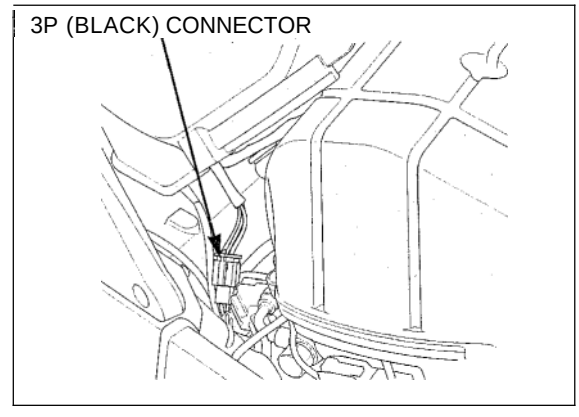
Install the fuel tank onto the frame, temporarily install the fuel tank rear mounting bolt.



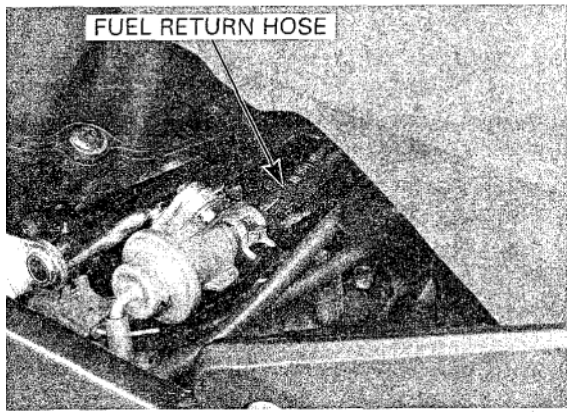
Support the front end of the fuel tank (page 3-4).



Connect the fuel pump/reserve sensor 3P (Black) connector.



Connect the fuel return hose to the pressure regulator.

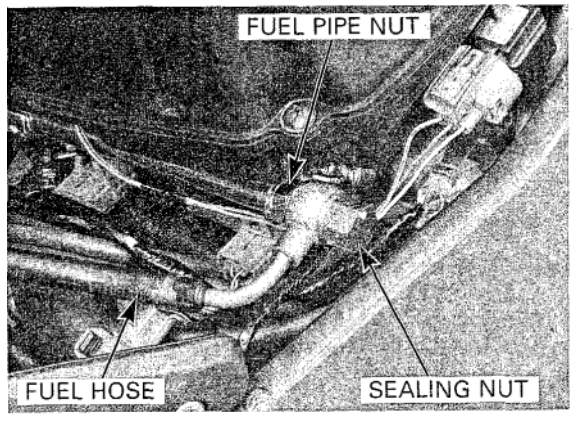


Connect the fuel hose banjo to the throttle body with new sealing washers.
While pushing the fuel hose banjo stopper to the throttle body, install and tighten the sealing nut to the specified torque.

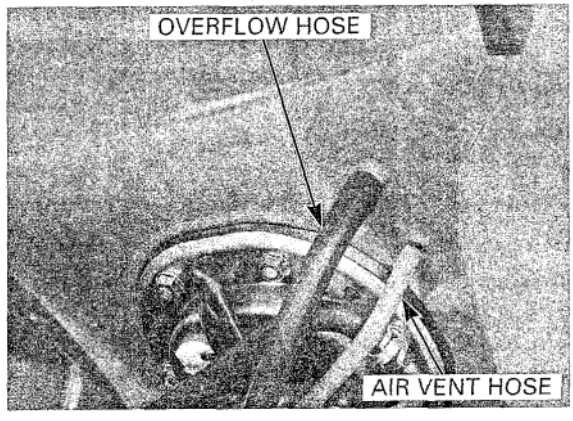
NOTICE

- *Do* not apply excessive force to the fuel pipe.
- Always *hold* the fuel pipe nut while tightening the fuel *hose* sealing nut.

TORQUE: 22 N·m (2.2 kgf·m, 16 lbf·ft)



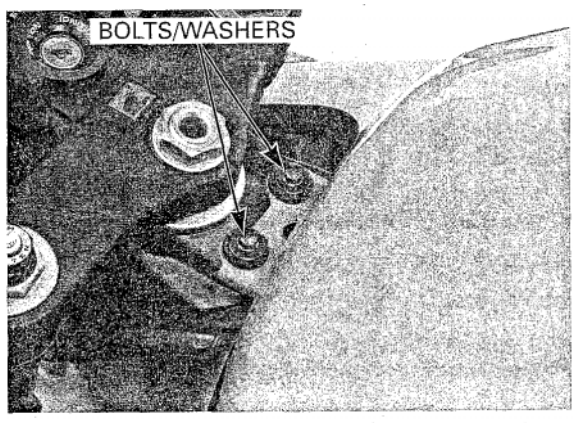
Connect the fuel tank air vent hose and overflow hose to the fuel tank.



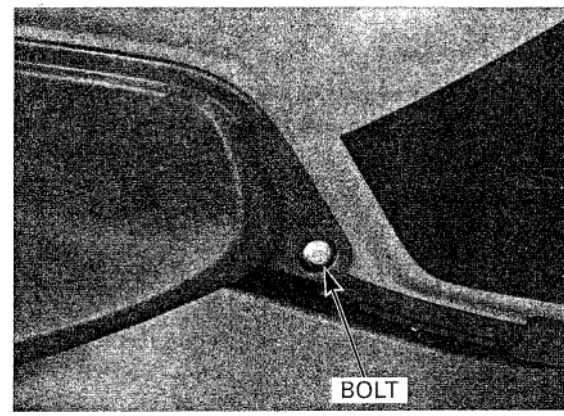
Install the fuel tank support rod into the seat properly (page 3-4)

Remove the support rod and close the fuel tank.

Install the fuel tank front mounting bolts and washers, then tighten the front and rear fuel tank mounting bolts.



Install and tighten the duct cover-to-fuel tank bolts.

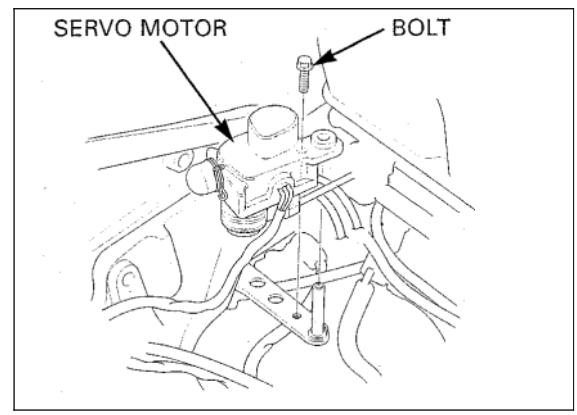


AIR CLEANER HOUSING

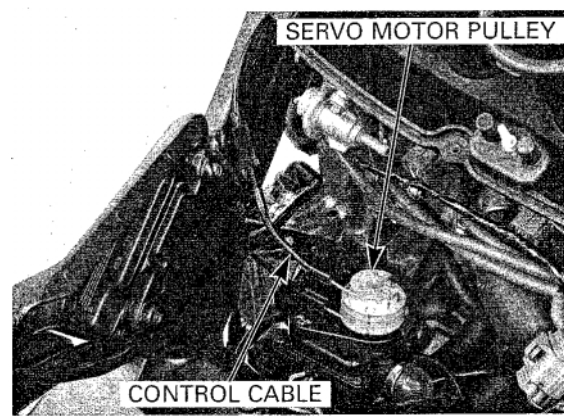
REMOVAL

Remove the air cleaner element (page 3-6).

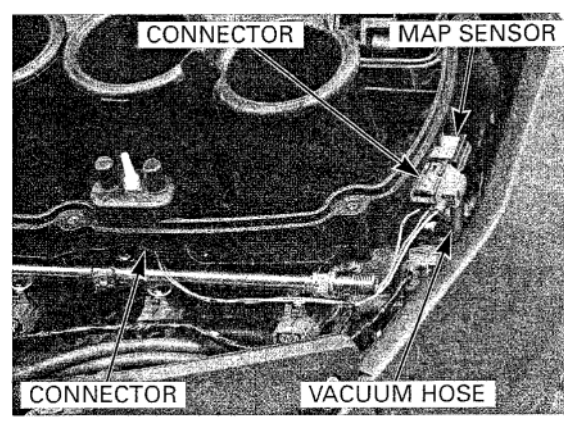
Remove the EGCV and air intake valve servo motor mounting bolt.



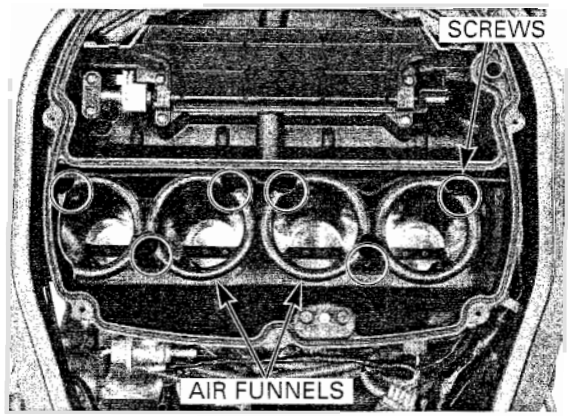
Remove the servo motor assembly from the bracket and disconnect the intake valve control cable from the servo motor pulley.



Disconnect the MAP sensor connector and vacuum hose.
Disconnect the IAT sensor connector.



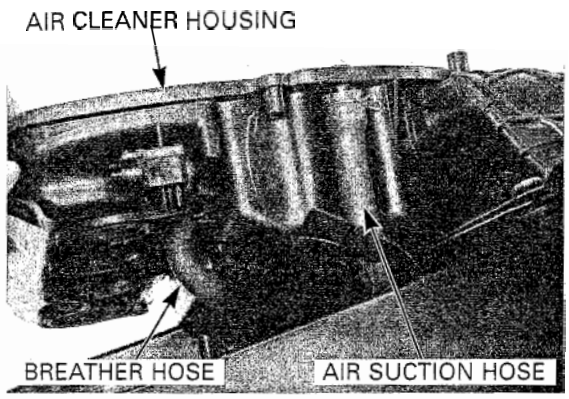
Remove the air funnel/air cleaner housing mounting screws, then remove the air funnels.



Disconnect the crankcase breather hose and PAIR control valve air suction hose from the air cleaner housing.

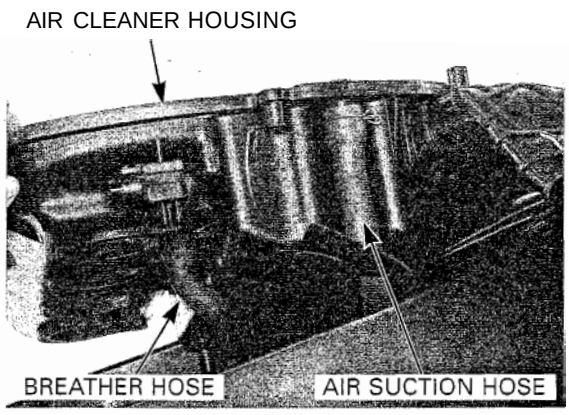
Remove the air cleaner housing.

See page 5-104 and 105 for intake air control valve disassembly/assembly.

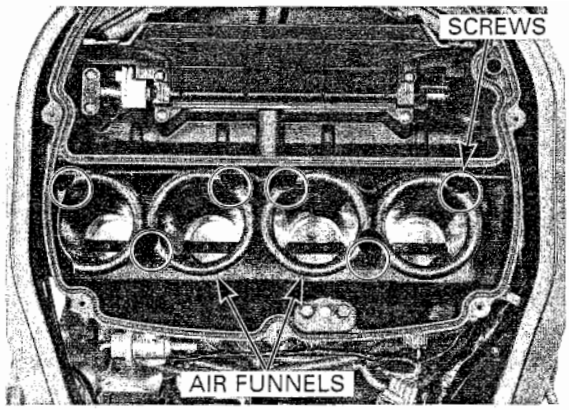


INSTALLATIQN

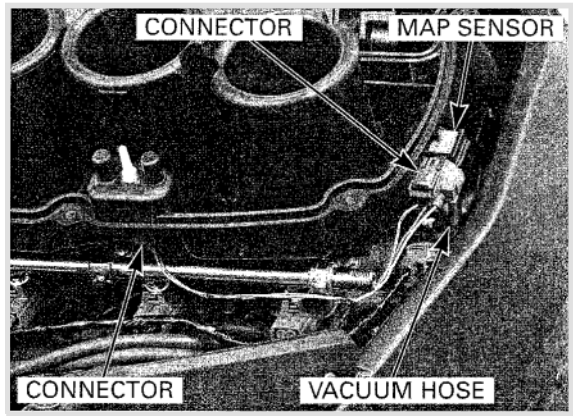
Route the variable intake air control valve wire properly, then install the air cleaner housing onto the throttle body.
Connect the crankcase breather hose and PAIR control valve air suction hose to the air cleaner housing.



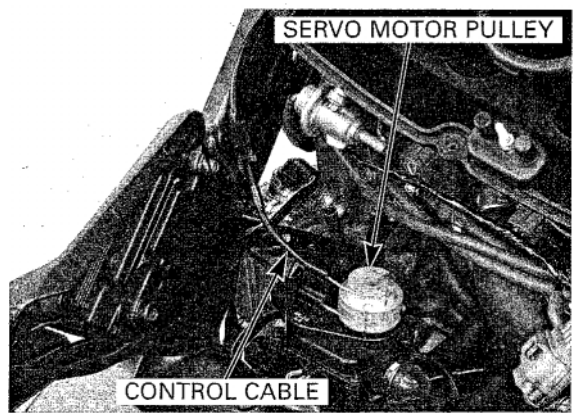
Install the air funnels in their proper locations.
Install and tighten the air funnel/air cleaner housing mounting screws.



Connect the MAP sensor connector and vacuum hose.
Connect the IAT sensor connector.

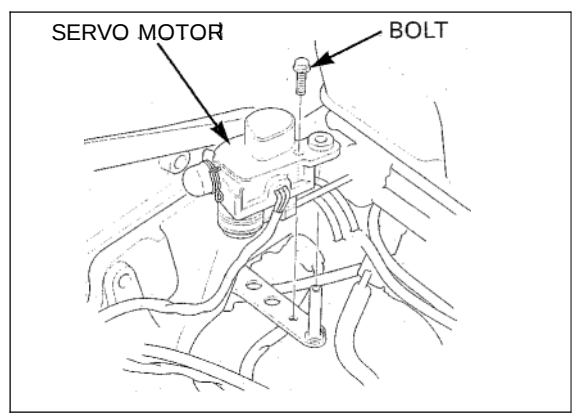


Connect the variable air intake control cable to the serve motor pulley.



Install the servo motor onto the bracket, tighten the bolt securely.

Install the air cleaner element (page 3-6).



THROTTLE BODY

REMOVAL

Do not snap the throttle valve from full open to full close after the throttle cable has been removed. It may cause incorrect idle operation

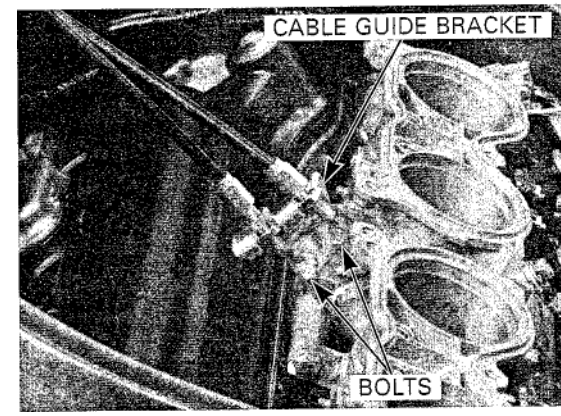
NOTICE

- *Before disconnecting the fuel hose, release the fuel pressure by loosening the fuel hose banjo bolt.*
- *Always replace the sealing washers when the fuel hose banjo bolt is removed or loosened.*

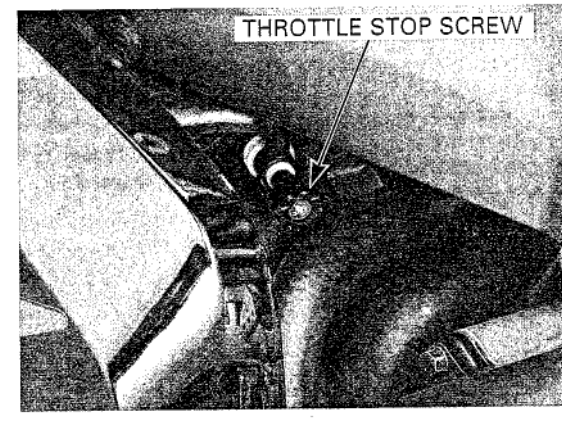
Drain the coolant from the cooling system (page 6-4).

Remove the following:
- Fuel tank (page 5-59)
- Air cleaner housing (page 5-64)

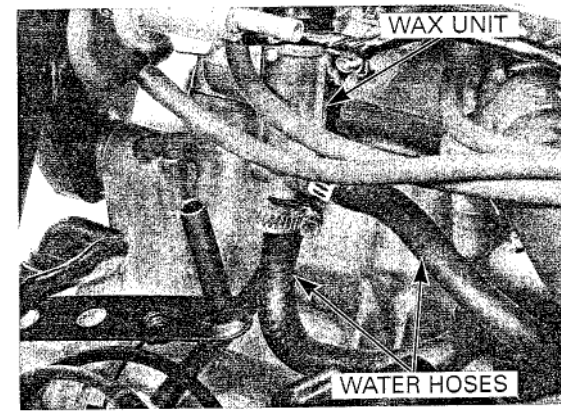
Remove the throttle cable guide bracket mounting bolts.
Disconnect the throttle cable ends from the throttle drum.



Remove the throttle stop screw knob from the bracket.

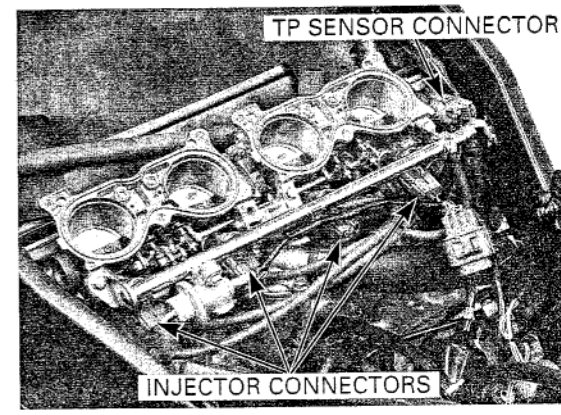


Loosen the hose band screws and disconnect the fast idle wax unit water hoses from the wax unit.



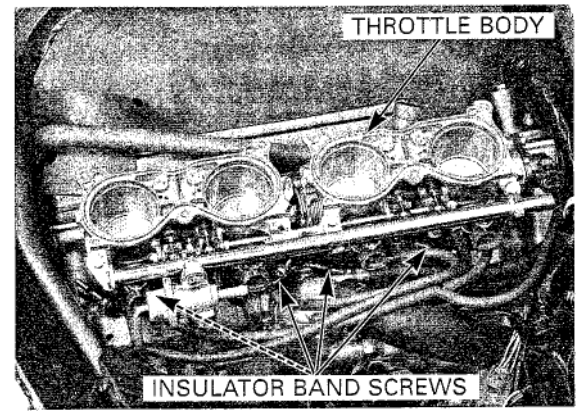
Disconnect the TP sensor connector and fuel injector connectors.

If you will not be disassembling the throttle body, disconnect the throttle body sub-harness multi-connector.



Loosen the engine side insulator band screws.

Remove the throttle body from the cylinder head.

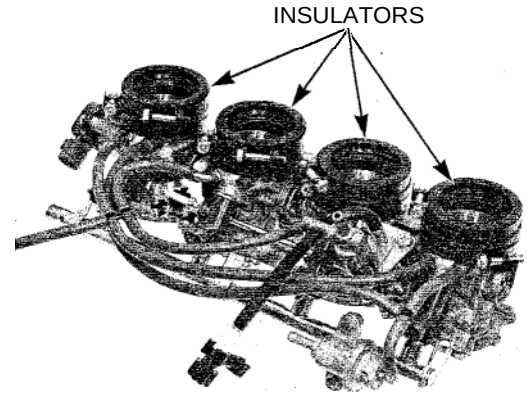


NOTICE

Do not hold the fuel pipe on the throttle body while removing the throttle body.

Do not snap the throttle valve from fuii open to fuii ciose after the throttle cable has been removed It may cause incorrect idle operation

Remove the insulators from the throttle body.



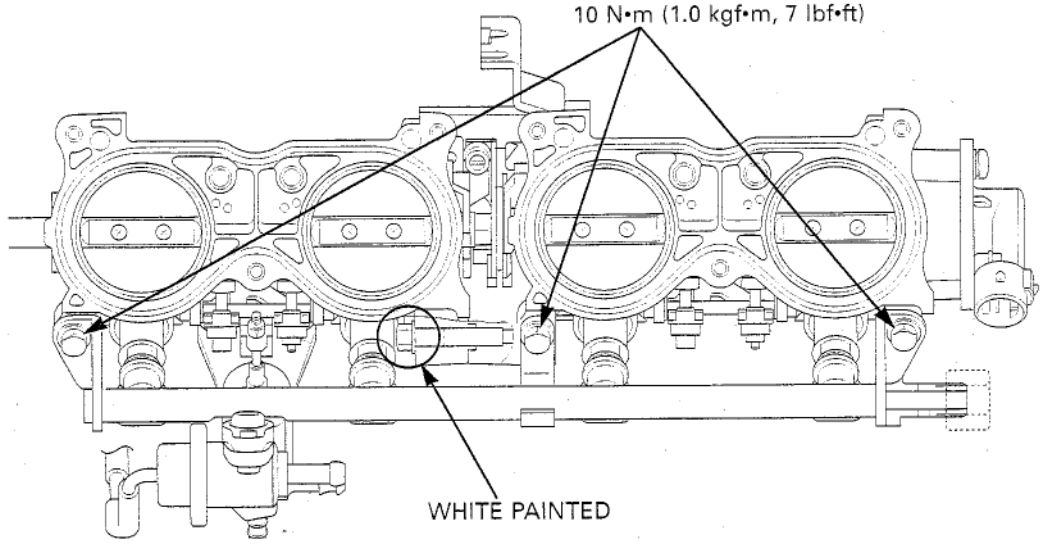
NOTICE

Seal the cylinder head intake ports with tape or a clean cloth to keep dirt and debris from entering the intake ports after the throttle body has been removed.

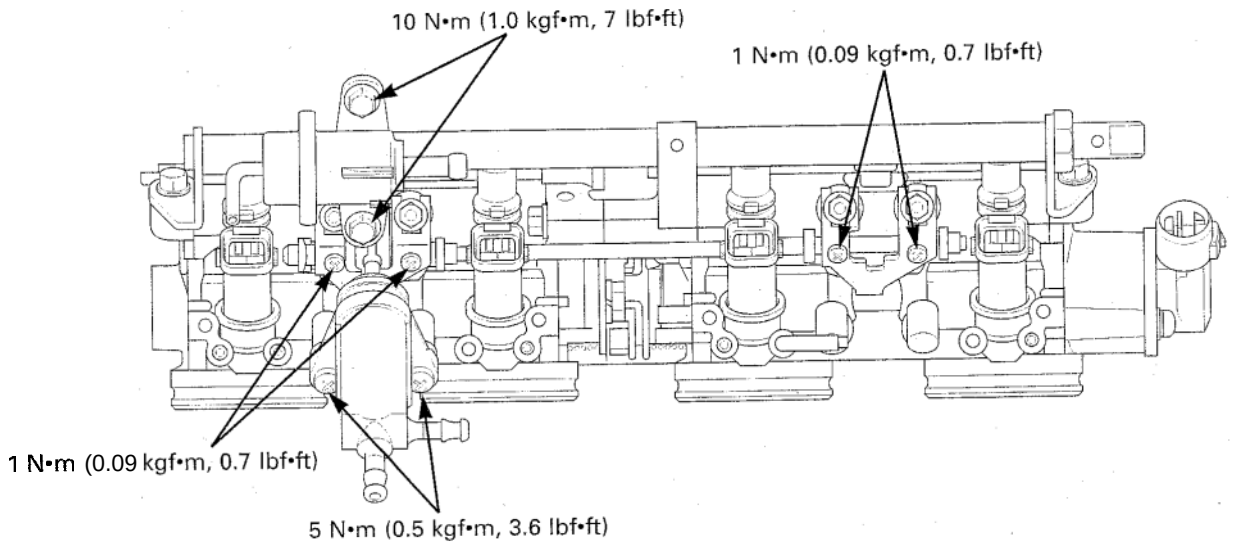
NOTICE

- *Do not damage the throttle body. It may cause incorrect throttle and idle valve synchronization.*
- *The throttle body is factory pre-set. Do not disassemble in a way other than shown in this manual.*
- *Do not loosen or tighten the white painted bolts and screws of the throttle body. Loosening or tightening them can cause throttle and idle valve synchronization failure.*

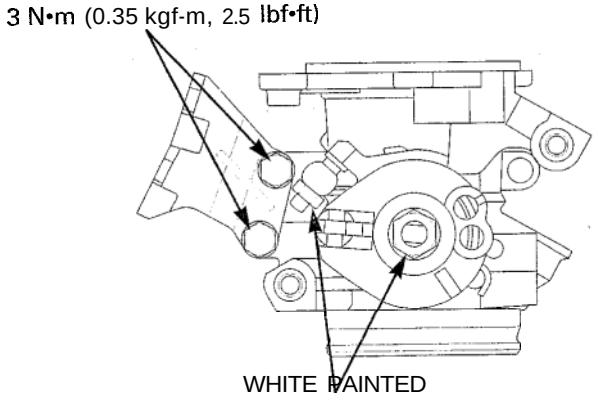
TOP VIEW:



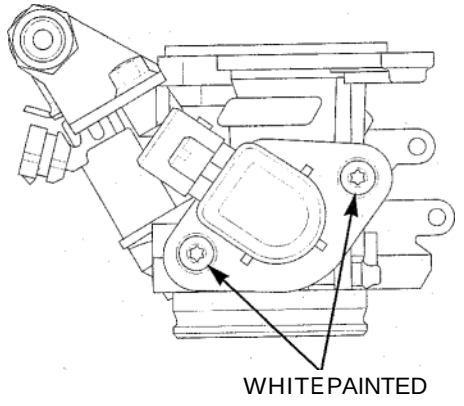
REAR VIEW:



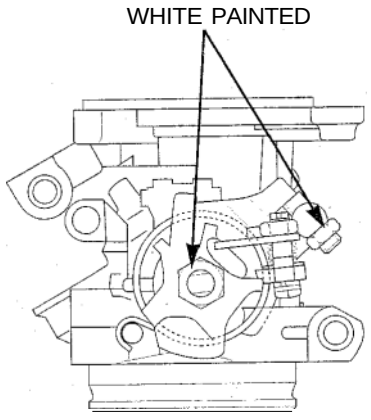
THROTTLE DRUM VIEW:



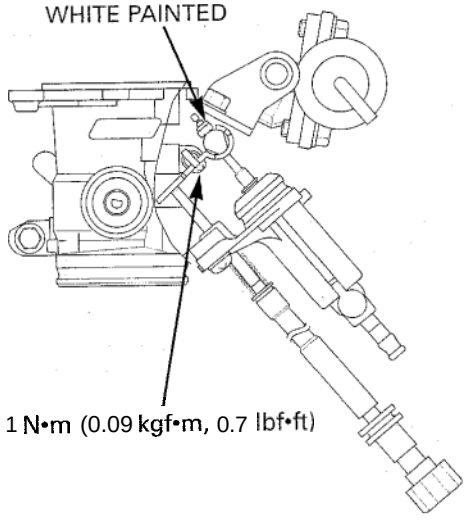
RIGHT SIDE VIEW:



THROTTLE LINK VIEW:

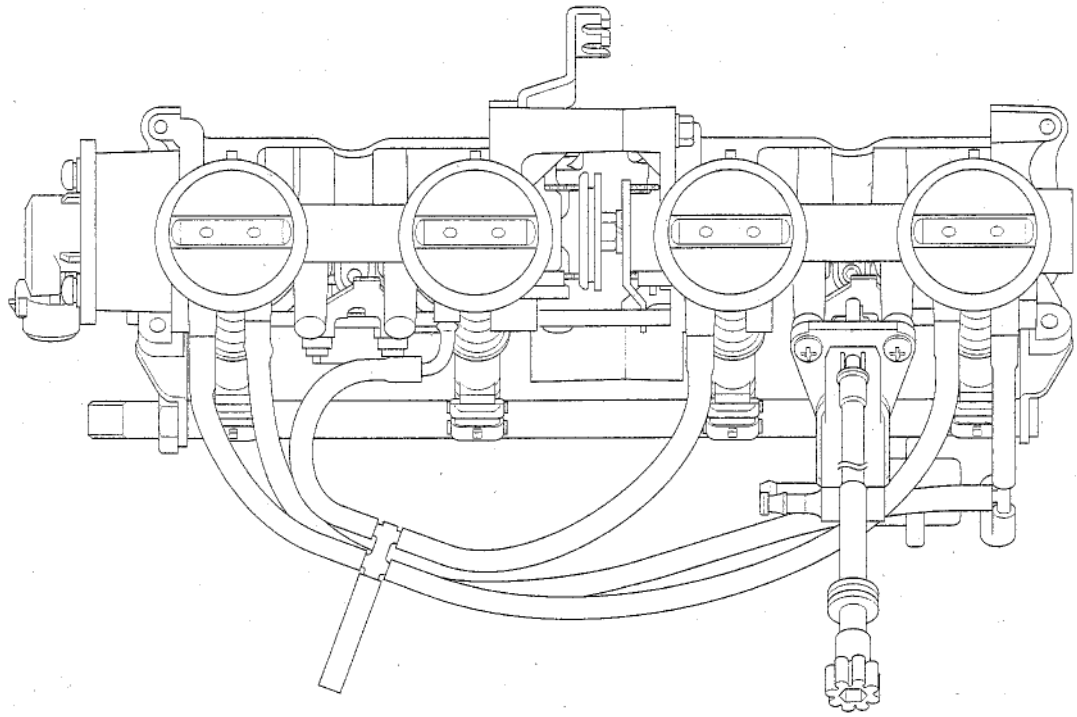


STARTER VALVE LINK VIEW:

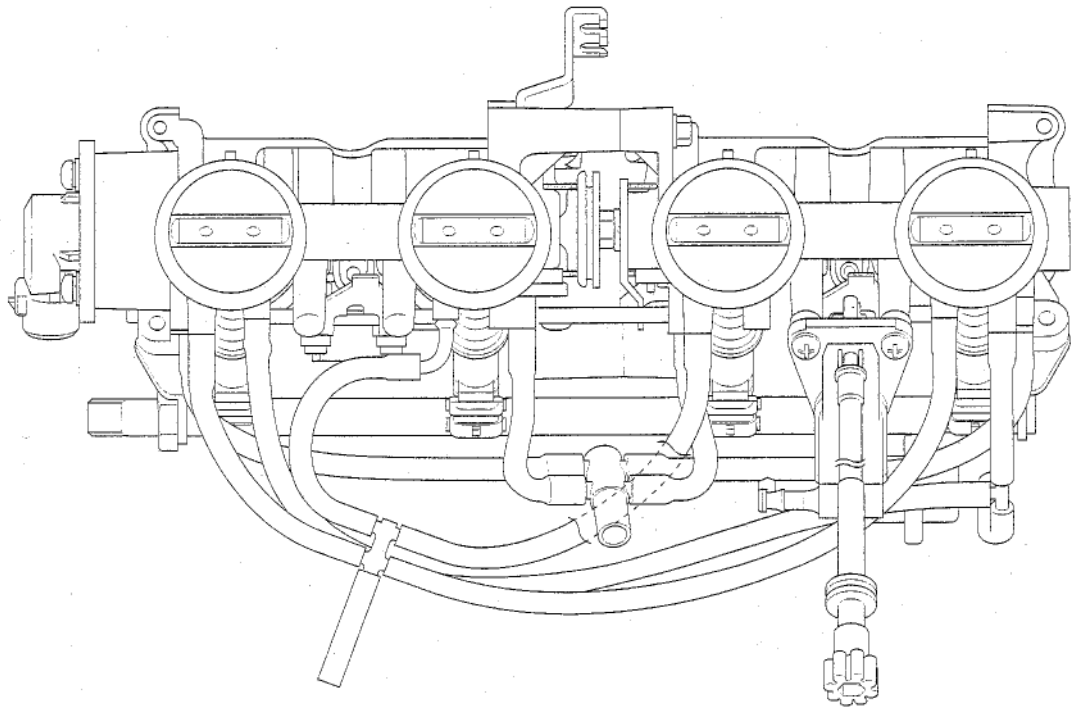


THROTTLE BODY VACUUM HOSE ROUTING

Non-California type:

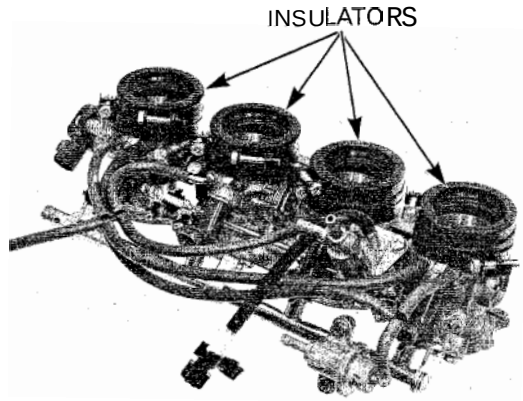


California type:



INSTALLATION

Check the insulator band angle.

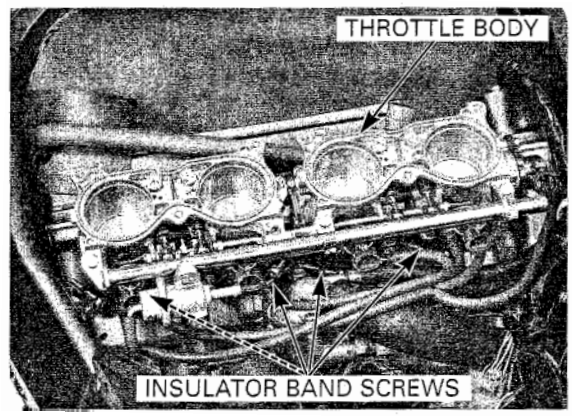


Apply oil to the insulator inside surfaces for ease of throttle body installation.

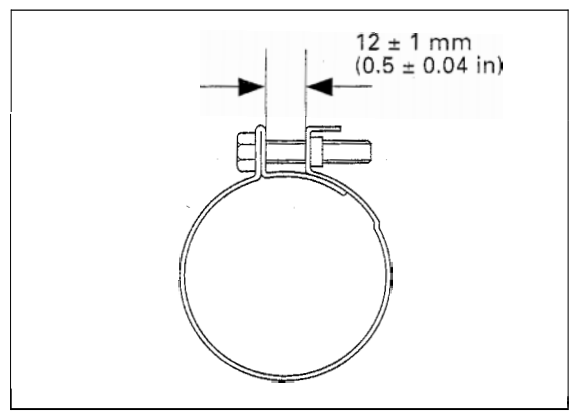
Install the throttle body onto the cylinder head.

NOTICE

Do not hold the fuel pipe on the throttle body while installing the throttle body.

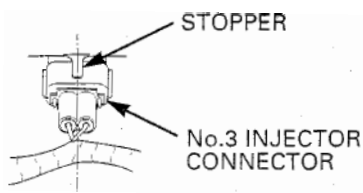


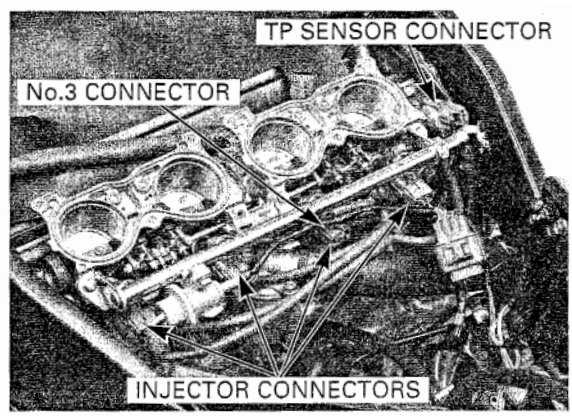
Tighten the insulator band so that the insulator band distance is 12 ± 1 mm (0.5 ± 0.04 in).



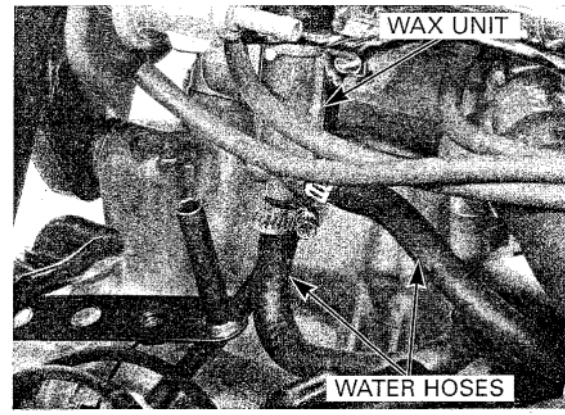
Do not confuse the TP sensor connector and MAP sensor connector; the throttle sensor connector wire is identified by the label "TPS"

Route the injector sub-harness referring the wiring diagram (page 1-27).
Connect the fuel injector connectors and TP sensor connector.
Connect the No.3 injector connector pallarel to the connector stopper.





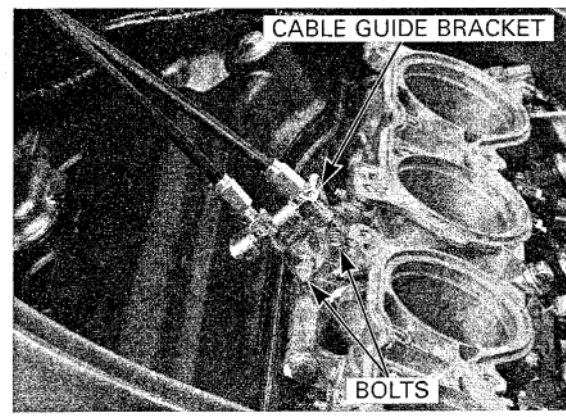
Connect the fast idle wax unit water hoses to the unit, then tighten the hose bands securely.



Connect the throttle cable ends to the throttle drum. Install the throttle cable guide bracket to the throttle body, then tighten the bolts to the specified torque.

TORQUE: 3 N•m (0.35 kgf•m, 2.5 lbf•ft)

Install the removed parts in the reverse order of removal.

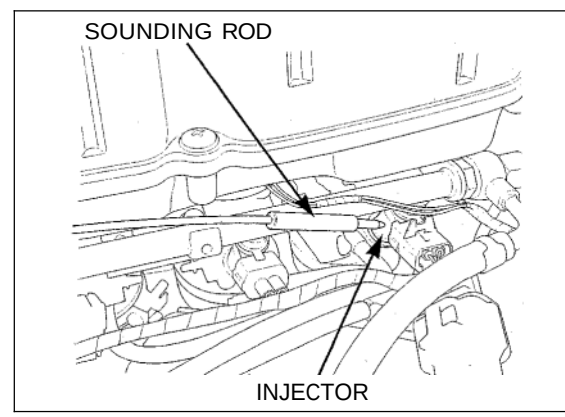


INJECTORS

INSPECTION

Start the engine and let it idle.
Confirm the injector operating sounds with a sounding rod or stethoscope.

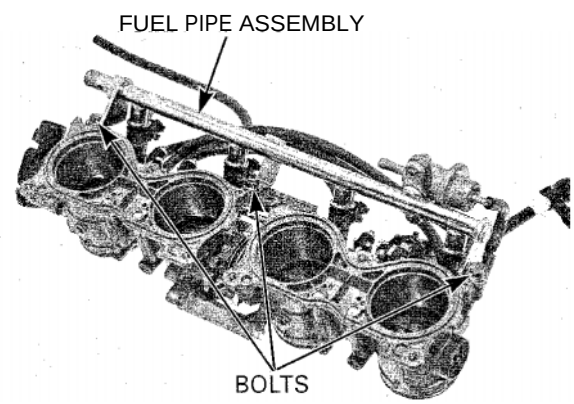
If the injector does not operate, replace it.



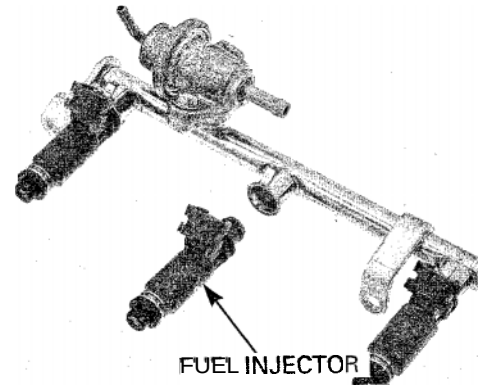
REMOVAL

Remove the throttle body (page 5-67).

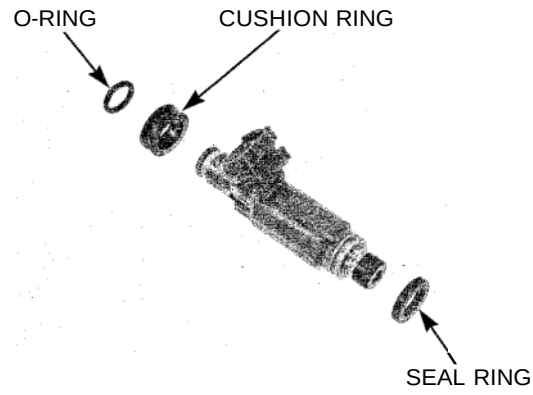
Remove the bolts and fuel pipe assembly.



Remove the injectors from the fuel pipe.



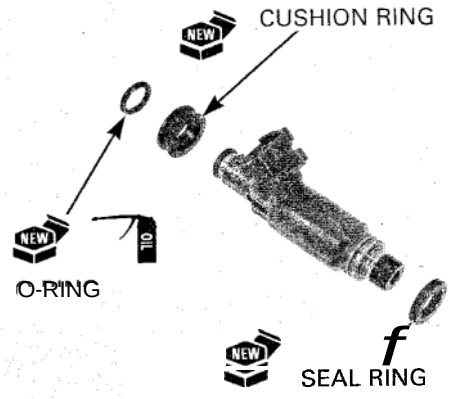
Remove the seal ring, O-ring and cushion ring.



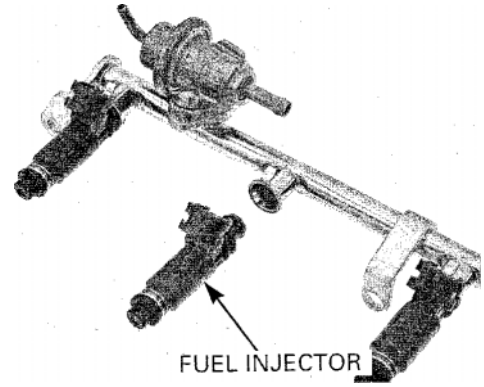
INSTALLATION

Replace the seal ring, cushion ring and O-ring with new ones as a set

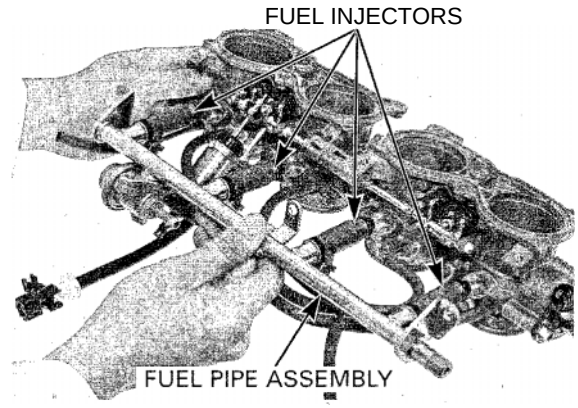
Apply oil to the new O-ring.
Install the new seal ring, cushion ring and O-ring, being careful not to damage the O-ring.



Install the fuel injectors into the fuel pipe, being careful not to damage the O-ring and cushion ring.



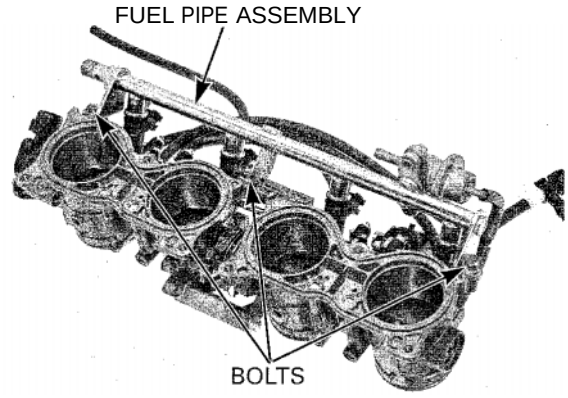
Install the fuel pipe assembly onto the throttle body, being careful not to damage the seal rings.



Install and tighten the fuel pipe mounting bolts to the specified torque.

TORQUE: 10 N•m (1.0 kgf•m, 7 lbf•ft)

Install the throttle body (page 5-71).



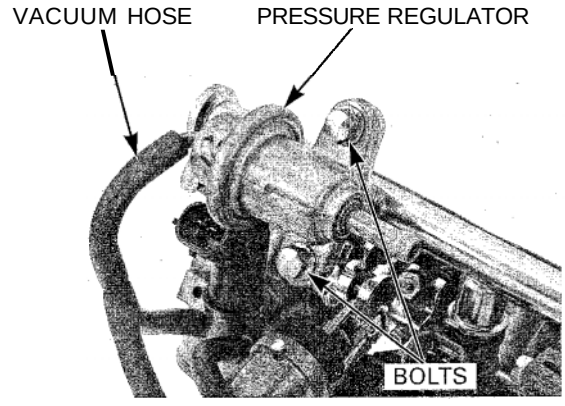
PRESSURE REGULATOR

REMOVAL/INSTALLATION

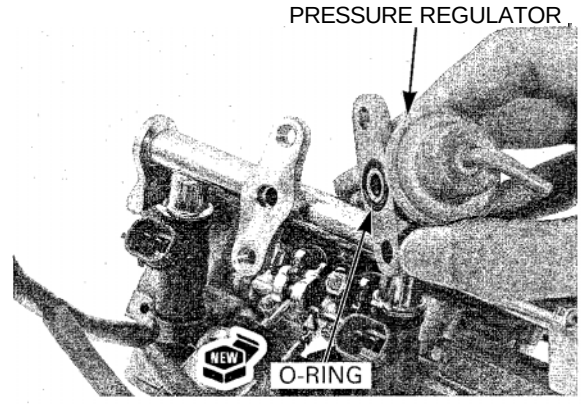
NOTICE

Do not apply excessive force to the fuel pipe.

Disconnect the vacuum hose from the pressure regulator.
Hold the fuel pipe securely, remove the pressure regulator mounting bolts, then remove the pressure regulator.



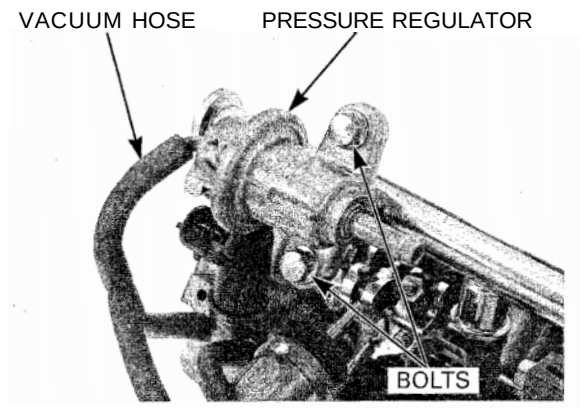
Install a new O-ring into the pressure regulator body.
Install the pressure regulator onto the fuel pipe.



Hold the fuel pipe securely, tighten the pressure regulator mounting bolts to the specified torque.

TORQUE: 10 N•m (1.0 kgf•m, 7 lbf•ft)

Connect the vacuum hose to the pressure regulator

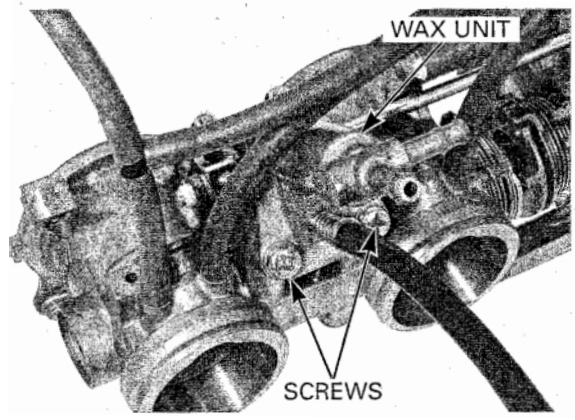


FAST IDLE WAX UNIT

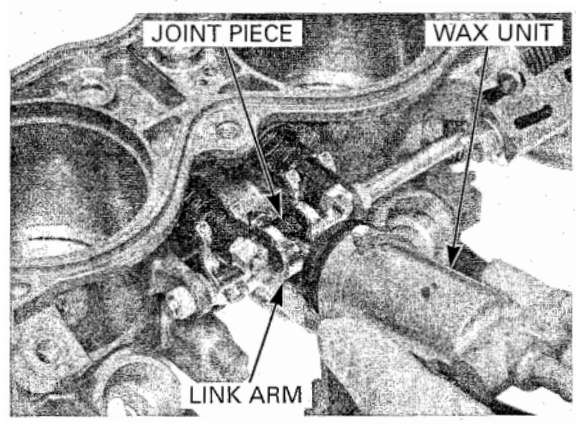
Do not ioosen or remove the wax unit shaft lock nut and adjusting nut

REMOVAL

Remove the wax unit mounting screws.



Release the wax unit shaft joint piece from the wax unit link arm, then remove the wax unit assembly.

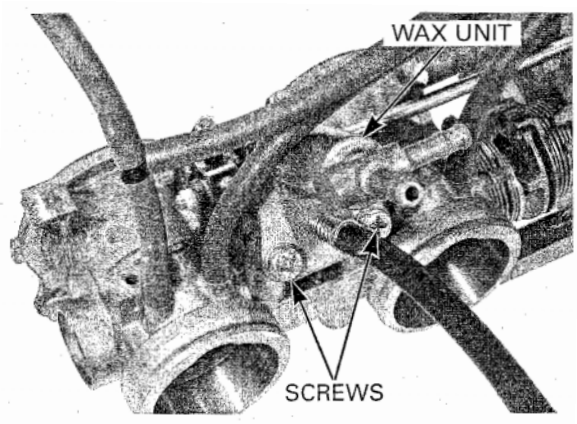


INSTALLATION

Install the wax unit shaft joint piece to the wax unit link arm.

Install and tighten the wax unit mounting screws to the specified torque.

TORQUE: 5 N•m (0.5 kgf•m, 3.6 lbf•ft)

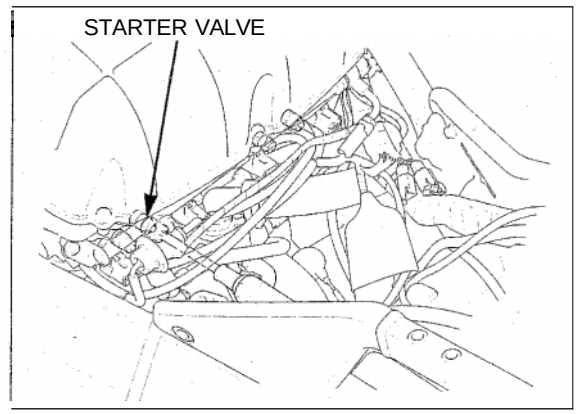


STARTER VALVE

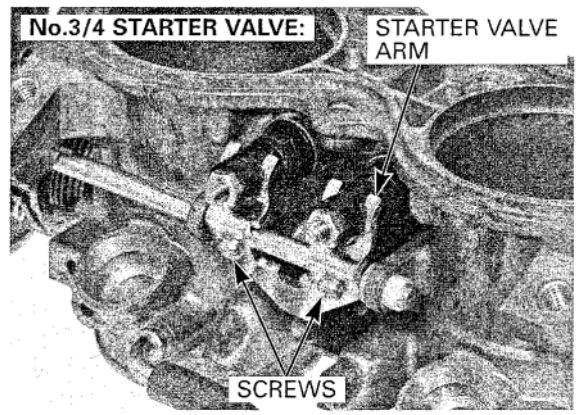
DISASSEMBLY

Turn each starter valve adjusting screw in, counting the number of turns until it seats lightly.
Record the number of turns.

Remove the fuel pipe and injectors (page 5-72).

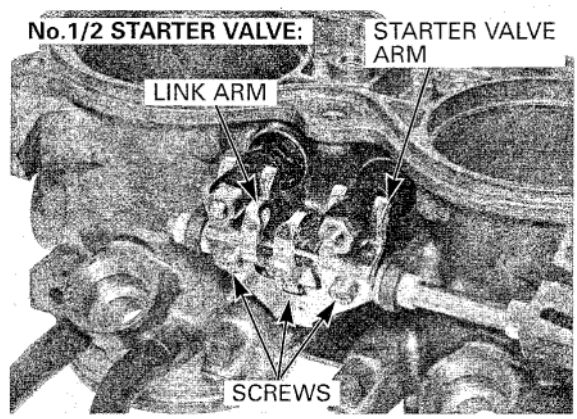


No.3/4 starter valve:
Remove the starter valve arm screws and starter valve arm.

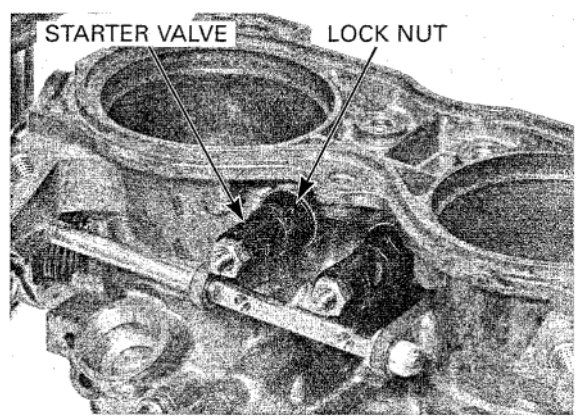


No.1/2 starter valve:
Remove the fast idle wax unit (page 5-75).

Remove the starter valve arm screws and starter valve arms.
Remove the screw and fast idle wax unit link arm.

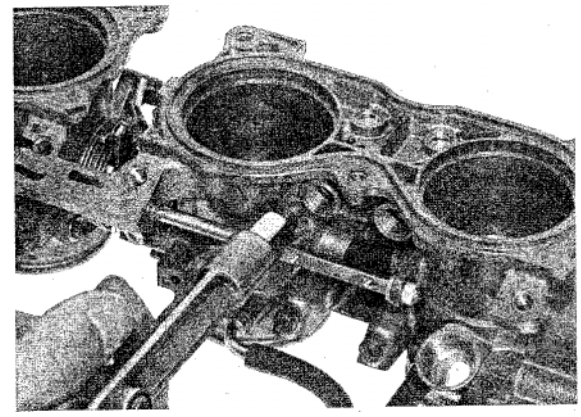


Loosen the lock nut and remove the starter valve assembly.

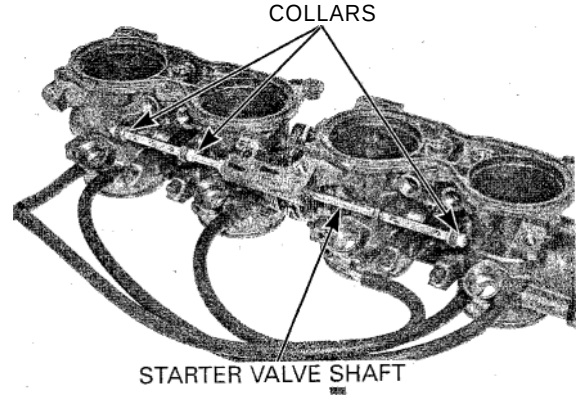


Do not apply commercially available carburetor cleaners to the inside of the throttle bore, which is coated with molybdenum

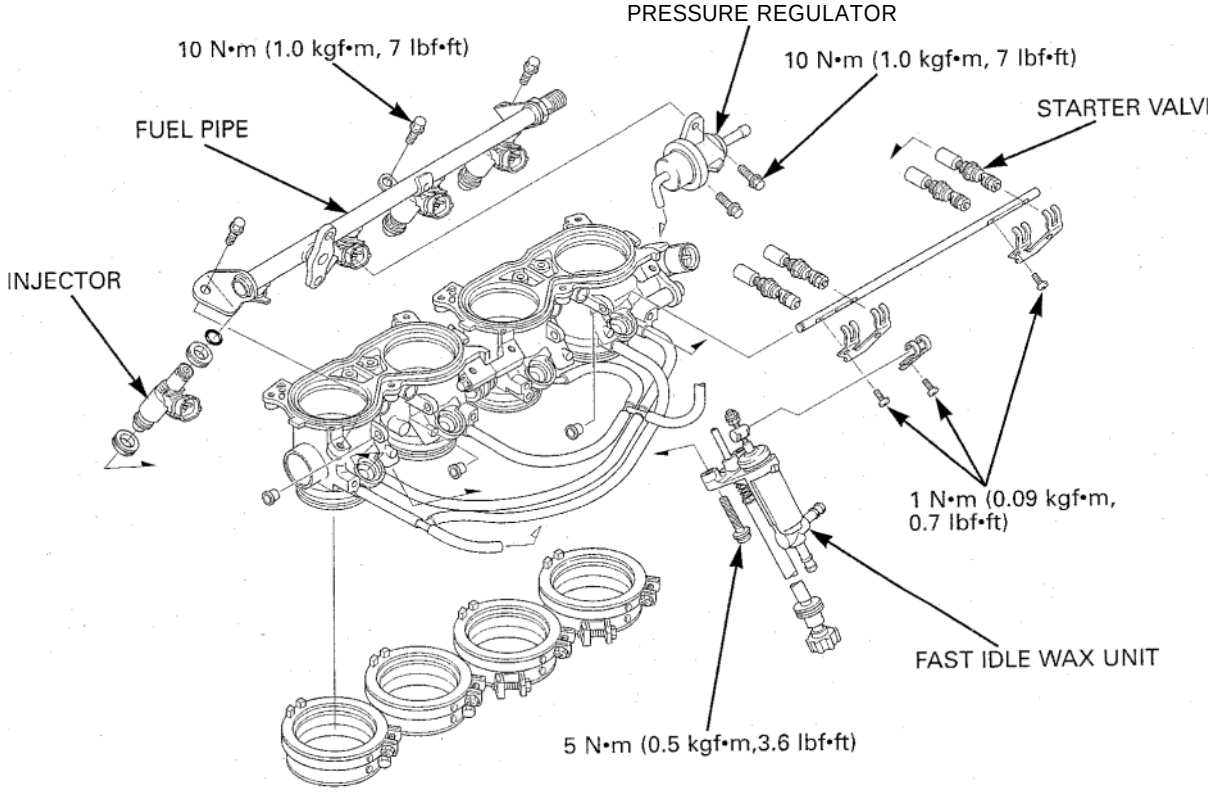
Clean the starter valve bypass using compressed air.



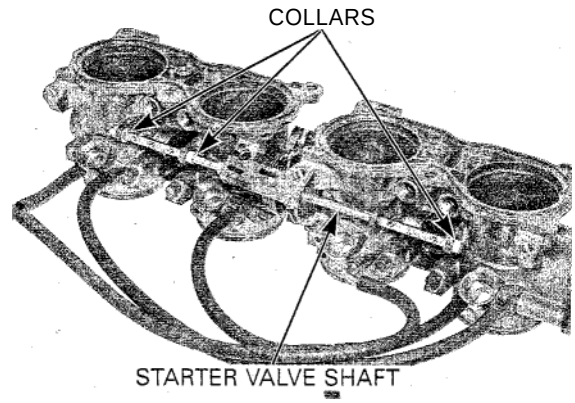
Remove the starter valve shaft and three' collars.



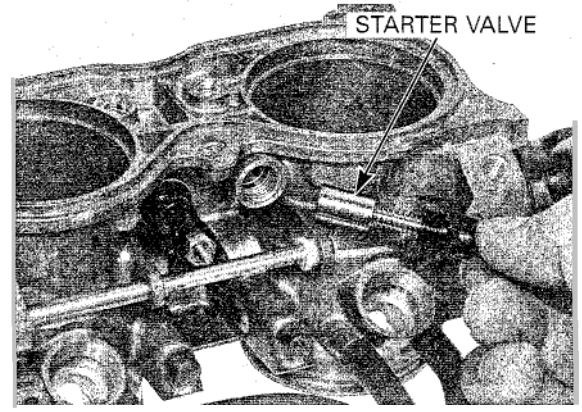
ASSEMBLY



Install the three collars and starter valve shaft.

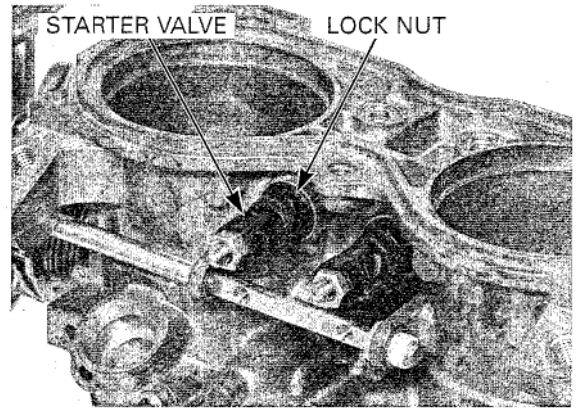


Install the starter valve assembly into the valve hole



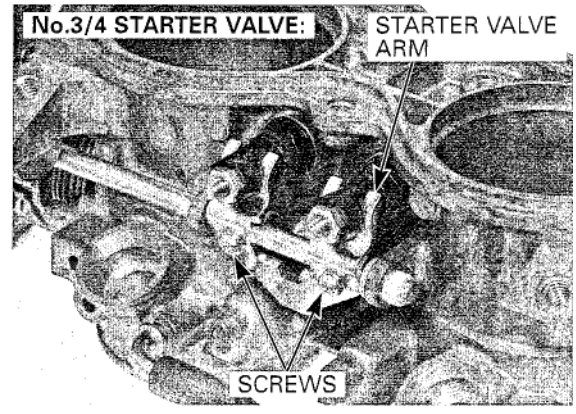
Tighten the starter valve lock nut to the specified torque.

TORQUE: 2 N•m (0.18 kgf•m, 1.3 lbf•ft)



No.3/4 starter valve:
Compress the thrust spring and install the No.3/4 starter valve arm onto the starter valves.
Install and tighten the starter valve arm mounting screws to the specified torque.

TORQUE: 1 N•m (0.09 kgf•m, 0.7 lbf•ft)



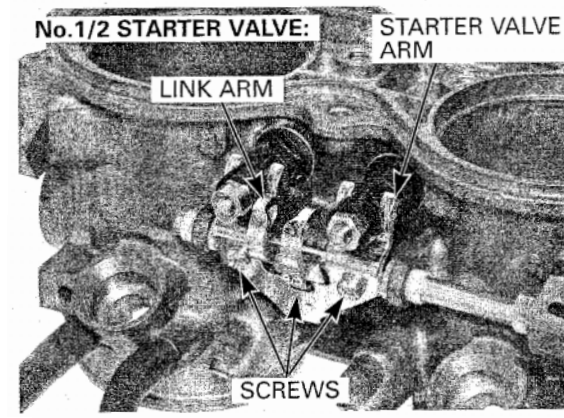
No.1/2 starter valve:
Install the No.1/2 starter valve arm to the starter valves.
Install and tighten the starter valve arm mounting screws to the specified torque.

TORQUE: 1 N•m (0.09 kgf•m, 0.7 lbf•ft)

Install the fast idle wax unit link arm and tighten the screw to the specified torque.

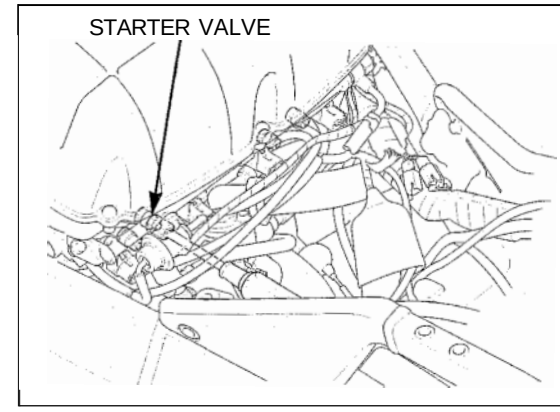
TORQUE: 1 N•m (0.09 kgf•m, 0.7 lbf•ft)

Install the fast idle wax unit (page 5-75).



Turn the starter valve screw until it seats lightly, then back it out as noted during removal.

Install the throttle body (page 5-71).

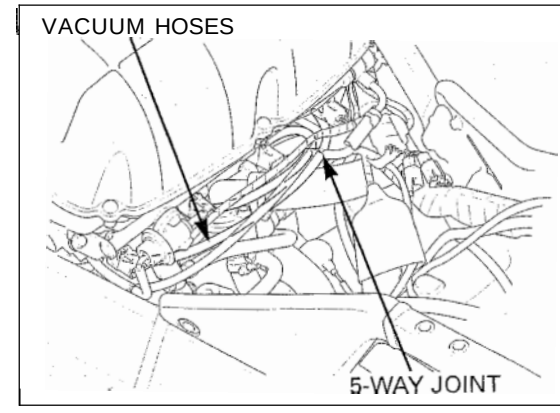


STARTER VALVE SYNCHRONIZATION

- Synchronize the starter valve with the engine at the normal operating temperature and with the transmission in neutral.
- Use a tachometer with graduations of 50 rpm or smaller that will accurately indicate 50 rpm change.

Open and support the front end of the fuel tank (page 3-4).

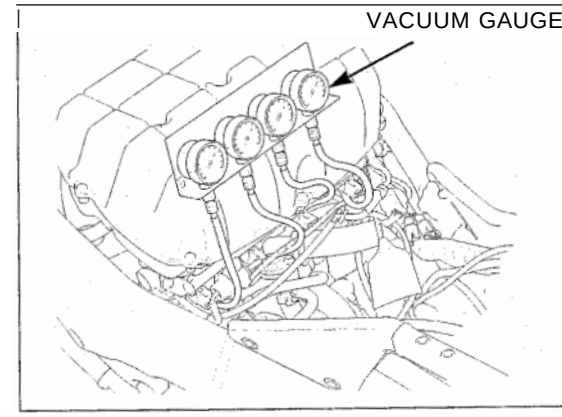
Disconnect the each cylinder vacuum hose from the 5-way joint.



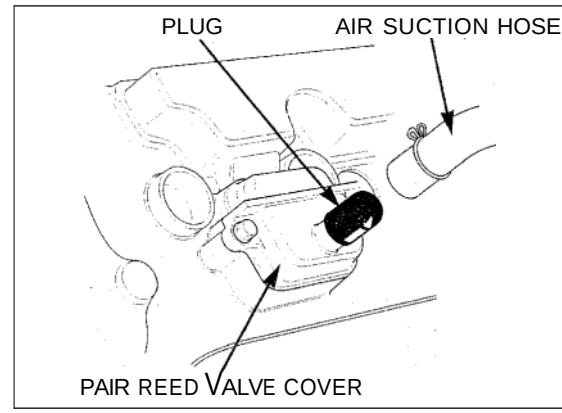
Connect the vacuum gauge adaptors to the vacuum joints, then connect the hoses to the vacuum gauge.

TOOL:
Vacuum gauge set **07LMJ–001000A**

Connect the tachometer.

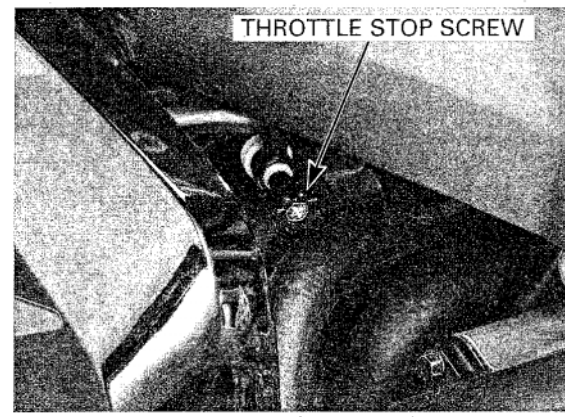


Disconnect the PAIR air suction hoses from the reed valve covers and plug the cover.



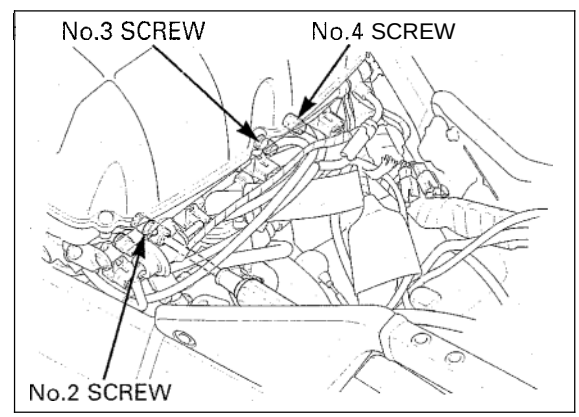
Start the engine and adjust the idle speed.

IDLE SPEED: 1,200 ± 100 rpm

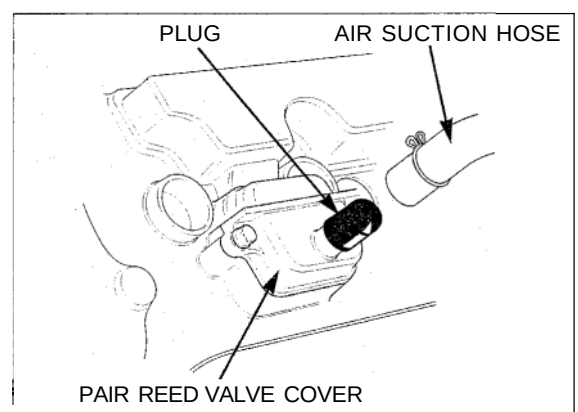


The No 1 starter valve cannot be adjusted, it is the base starter valve

Adjust each intake vacuum pressure with the No.1 cylinder.

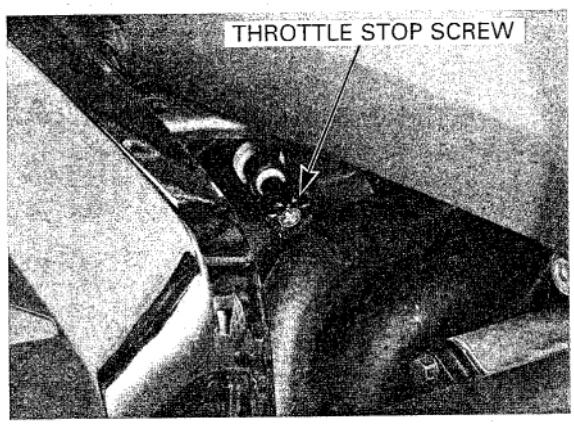


Remove the plugs and connect the PAIR air suction hoses to the reed valve covers.



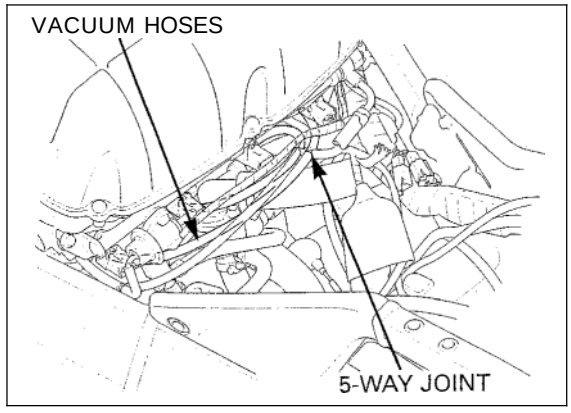
Adjust the idle speed if the idle speed differs from the specified speed.

IDLE SPEED: 1,200 ± 100 rpm



Remove the vacuum gauge from the vacuum hoses. Connect the each cylinder vacuum hose to the 5-way joint.

Reset the PGM-FI self-diagnosis system (page 5-7).



MAP SENSOR

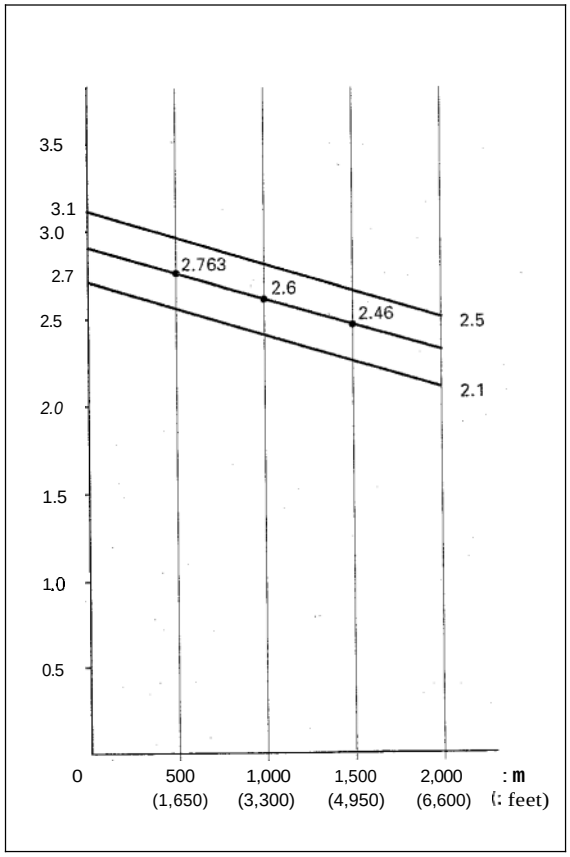
OUTPUT VOLTAGE INSPECTION

Connect the test harness to the ECM (page 5-8).

Measure the voltage at the test harness terminals (page 5-9).

CONNECTION: B4 (+) – A26 (–)
STANDARD: 2.7 – 3.1 V

The MAP sensor output voltage (above) is measured under the standard atmosphere (1 atm = 1,030 hPa).
The MAP sensor output voltage is affected by the distance above sea level, because the output voltage is changed by atmosphere.
Check the sea level measurement and be sure that the measured voltage falls within the specified value.

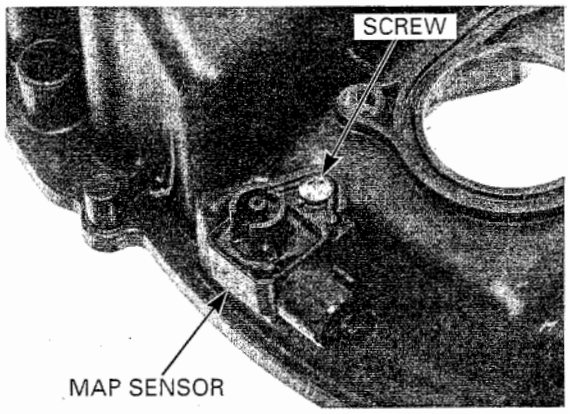


MAP SENSOR REMOVAL/INSTALLATION

Remove the air cleaner housing (page 5-64).

Remove the screw and MAP sensor from the air cleaner housing.

Installation is in the reverse order of removal.



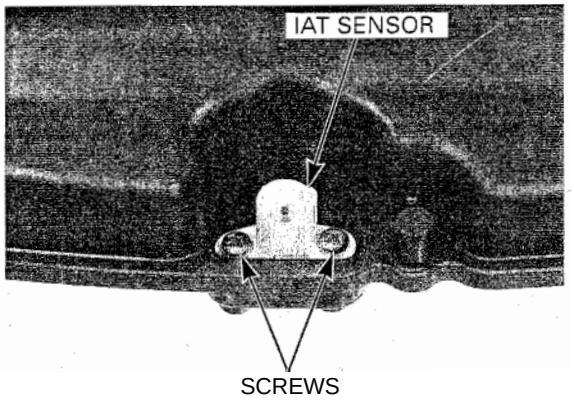
IAT SENSOR

REMOVAL/INSTALLATION

Remove the air cleaner housing (page 5-64).

Remove the screws and IAT sensor from the air cleaner housing cover.

Installation is in the reverse order of removal.



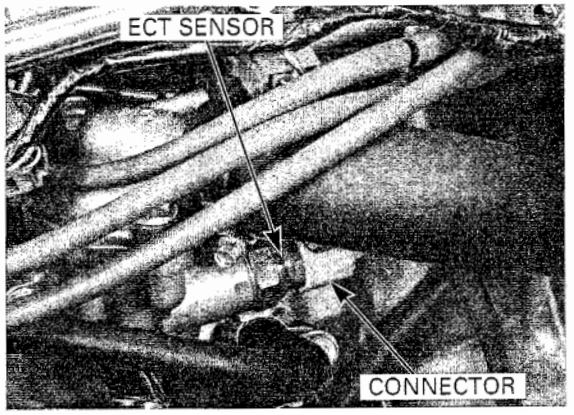
ECT SENSOR

Replace the ECT sensor while the engine is cold

REMOVAL/INSTALLATION

Drain the coolant from the system (page 6-4).
Open and support the front end of the fuel tank (page 3-4).

Disconnect the ECT sensor connector from the sensor.
Remove the ECT sensor and sealing washer.



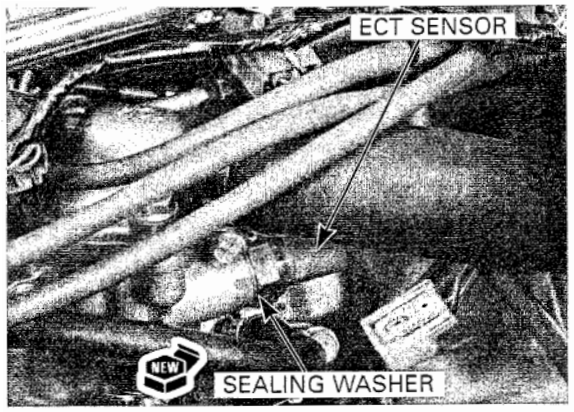
Always replace a sealing washer with a new one

Install the new sealing washer and ECT sensor.
Tighten the ECT sensor to the specified torque.

TORQUE: 23 N•m (2.3 kgf•m, 17 lbf•ft)

Connect the ECT sensor connector.

Fill the cooling system with recommended coolant (page 6-5).

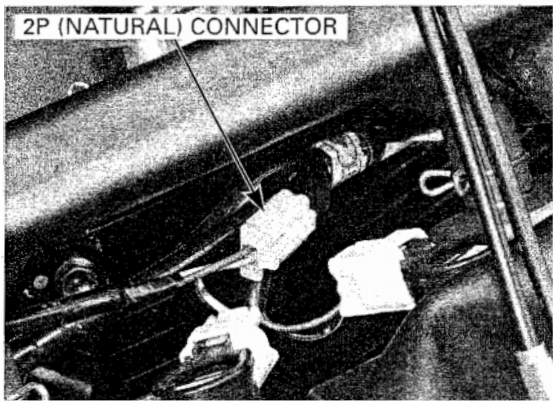


CAM PULSE GENERATOR

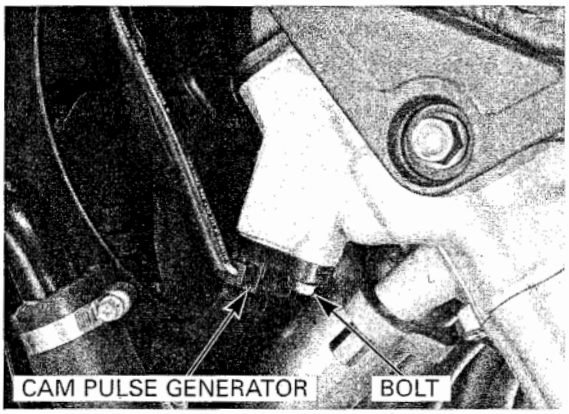
REMOVAL/INSTALLATION

Remove the air cleaner housing (page 5-64).

Disconnect the cam pulse generator 2P (Natural) connector.

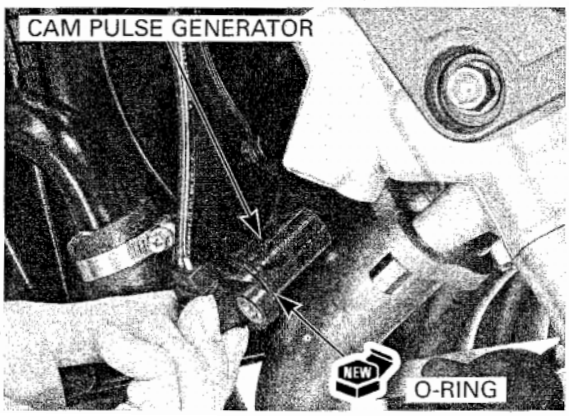


Remove the bolt and cam pulse generator from the cylinder head.



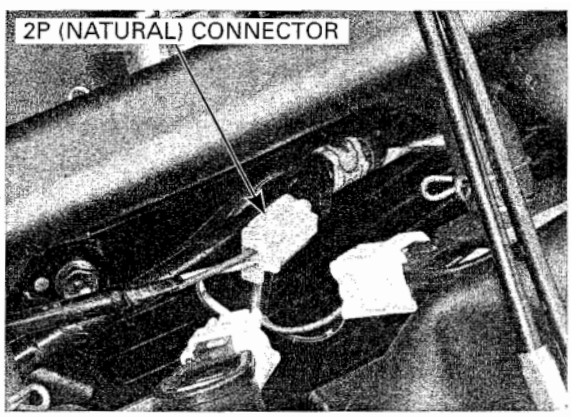
Install the new O-ring onto the cam pulse generator.
Install the cam pulse generator into the cylinder head.

Install and tighten the mounting bolt securely.



Route the cam pulse generator wire properly, connect the 2P (Natural) connector.

Install the removed parts in the reverse order of removal.



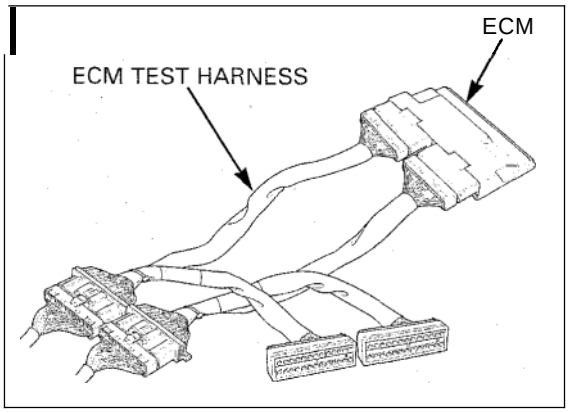
TP SENSOR

INSPECTION

Remove the ECM cover (page 5-87).

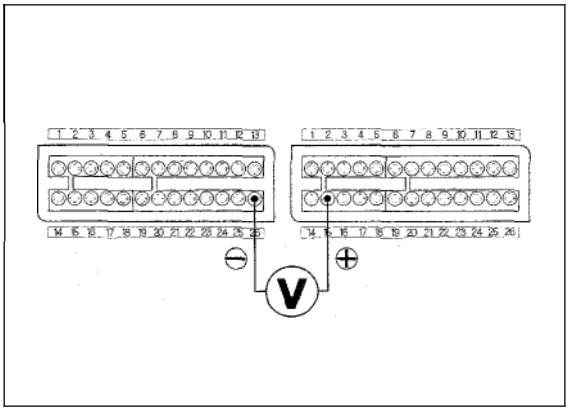
Disconnect the ECM 26P (Black) and 26P (Light gray) connectors.
Check the connector for loose or corroded terminals.
Connect the ECM test harness between the ECM and main wire harness.

TOOL:
ECM test harness, 26P **070MZ–0010100**
(two required)



1. INPUT VOLTAGE INSPECTION
Turn the ignition switch to "ON" and measure and record the input voltage at the test harness terminals using a digital multimeter.

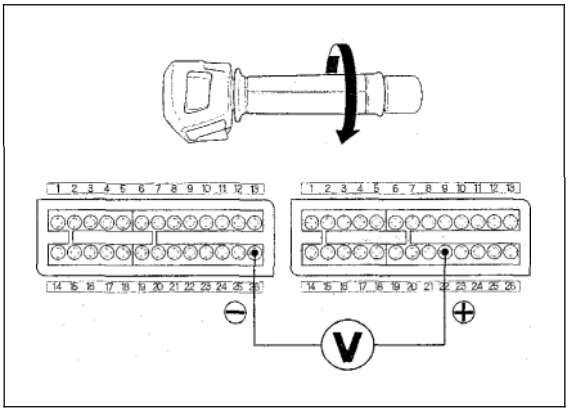
CONNECTION:
B15 (+) **– A26** (–)
Standard: 4.5 – 5.5V



If the measurement is out of specification, check the following:
– Loose connection of the ECM multi-connector
– Open circuit in wire harness

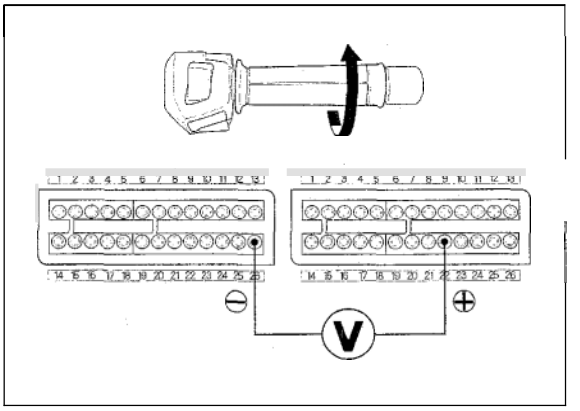
2. OUTPUT VOLTAGE INSPECTION WITH THROTTLE FULLY OPEN
Turn the ignition switch to "ON" and measure and record the output voltage at the test harness terminals.

CONNECTION:
B22 (+) **– A26** (–)
MEASURING CONDITION:
At throttle fully open



3. OUTPUT VOLTAGE INSPECTION WITH THROTTLE FULLY CLOSED
Turn the ignition switch to **"ON"** and measure and record the output voltage with the throttle fully closed.

CONNECTION:
B22 (+) **– A26** (–)
MEASURING CONDITION:
At throttle fully closed



4. CALCULATE RESULT COMPARISON
Compare the measurement to the result of the following calculation.

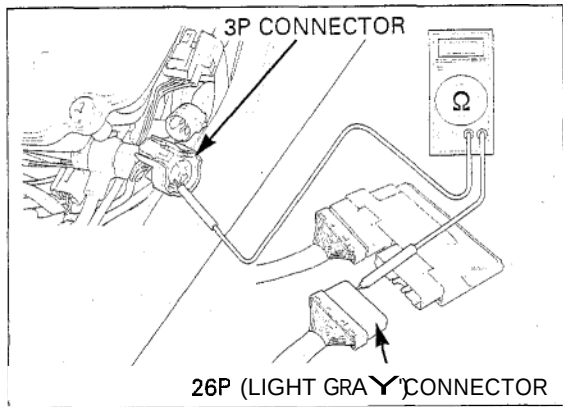
With the throttle fully open:
Measured input voltage X 0.824 □ Vo

The sensor is normal if the measurement output voltage measured in step 2 is within 10% of Vo.

With the throttle fully closed:
Measured input voltage X 0.1 = Vc

The sensor is normal if the throttle closed output voltage measured in step 3 is within 10% of Vc.

Using an analog meter, check that the needle of the voltmeter swings slowly when the throttle is opened gradually.



CONTINUITY INSPECTION
Open and support the front end of the fuel tank (page 3-4).

Disconnect the ECM 26P (Light gray) connector and the TP sensor 3P connector.
Check for continuity between the ECM and TP sensor.

If there is no continuity, check the open or short circuit in wire harness.

BANK ANGLE SENSOR

INSPECTION

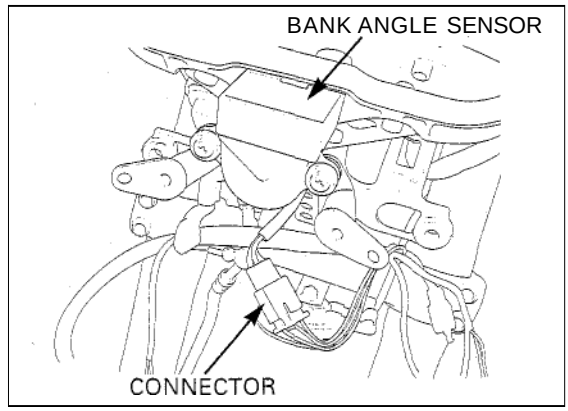
Support the motorcycle level surface.
Open and support the front end of the fuel tank (page 3-4).

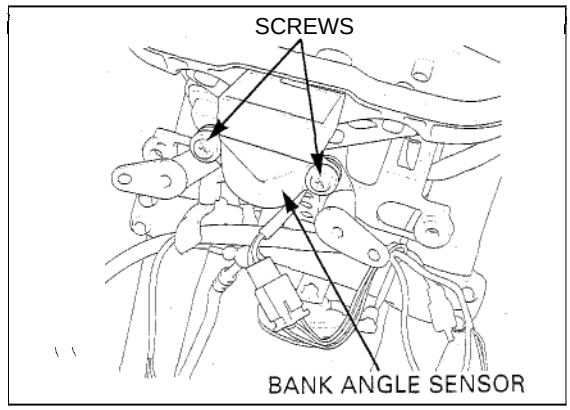
Do not disconnect the bank angle sensor connector during inspection

Turn the ignition switch to "ON" and measure the voltage between the following terminals of the bank angle sensor connector with the connector connected.

TERMINAL	STANDARD
White (+) – Green (–)	Battery voltage
Red/White (+) – Green (–)	0 – 1 v

Turn the ignition switch to "OFF".
Remove the screws and bank angle sensor.



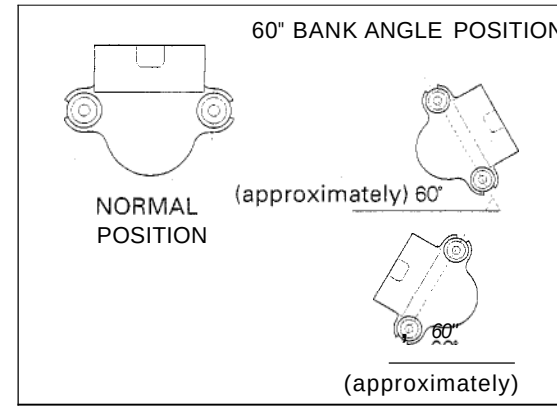


Connect the bank angle sensor 3P (Green) connector and place the bank angle sensor horizontal as shown, and ignition switch to "ON".

The bank angle sensor is normal if the engine stop relay clicks and power supply is closed.

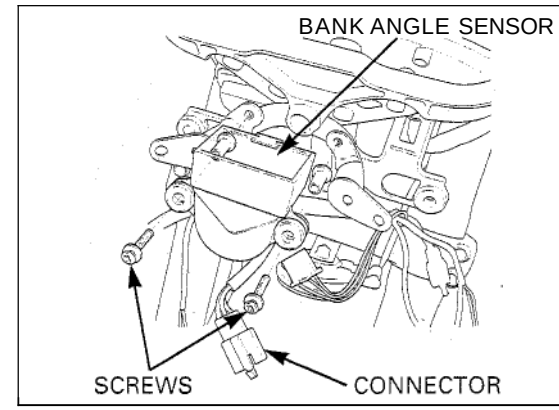
Incline the bank angle sensor approximately 60 degrees to the left or right with the ignition switch turned to "ON".
The bank angle sensor is normal if the engine slop relay clicks and power supply is open.

If you repeat this test, first turn the ignition switch-to "OFF", then turn the ignition switch to "ON".



REMOVAL/INSTALLATION

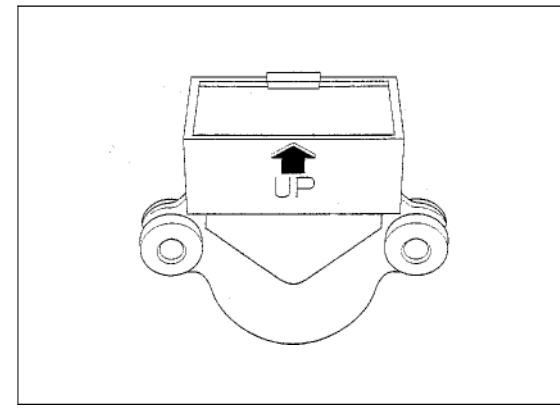
Disconnect the bank angle sensor 3P (Green) connector.
Remove the two screws, nuts and bank angle sensor.



install the bank angle sensor with its "UP" mark facing up

Installation is in the reverse order of removal.

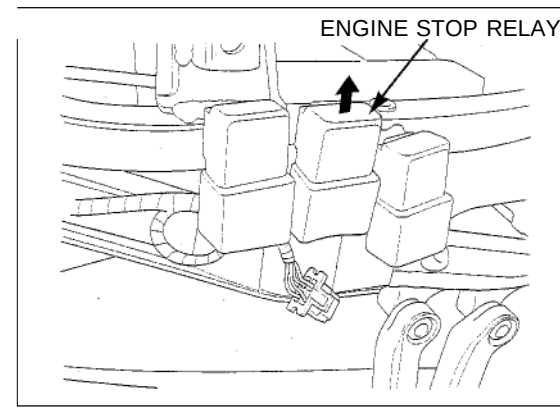
Tighten the mounting screws securely.



ENGINE STOP RELAY

INSPECTION

Disconnect the engine stop relay 4P connector, remove the engine stop relay.



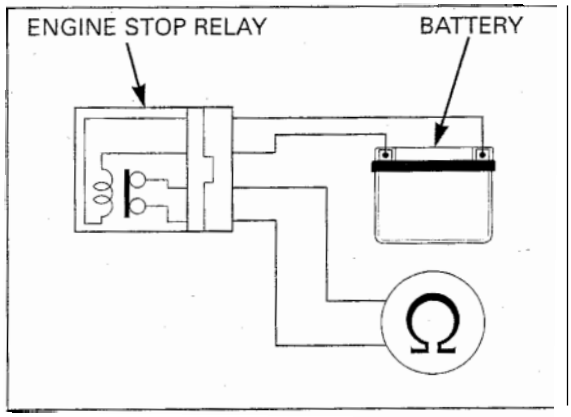
Connect the ohmmeter to the engine stop relay connector terminals.

CONNECTION: Red/White – Black/White

Connect the 12 V battery to the following engine stop relay connector terminals.

CONNECTION: Red/Orange – Black

There should be continuity only when the 12 V battery is connected.
If there is no continuity when the 12 V battery is connected, replace the engine stop relay.

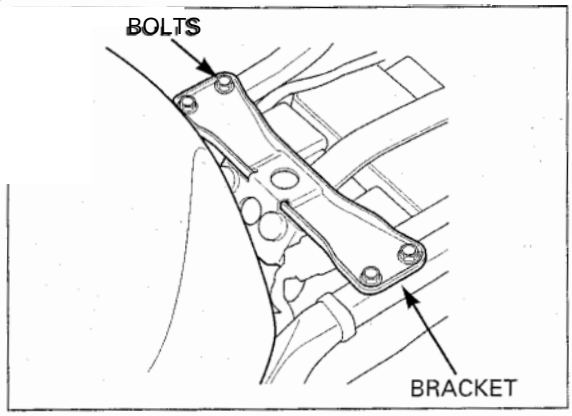


ECM (ENGINE CONTROL MODULE)

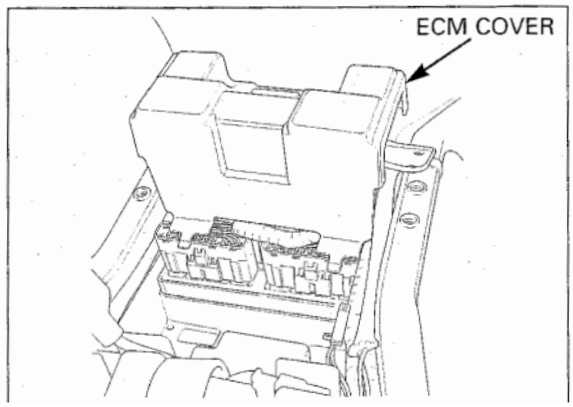
REMOVAL/INSTALLATION

Remove the seat (page 2-2).
Remove the fuel tank rear bracket bolts and pull up the bracket.

Remove the battery (page 16-4).

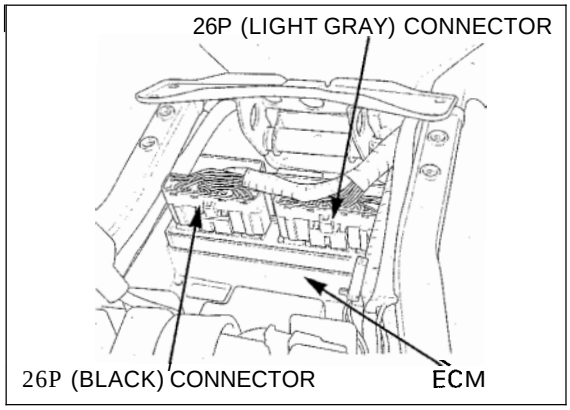


Remove the ECM cover.



Disconnect the ECM 26P (Black) and 26P (Light gray) connectors, then remove the ECM.

Installation is in the reverse order of removal.

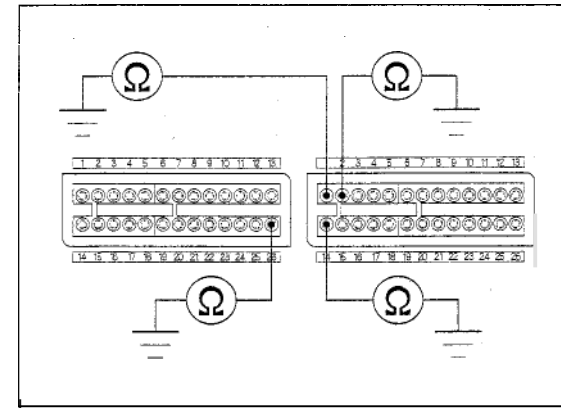


POWER/GROUND LINE INSPECTION

Connect the test harness between the main wire harness and ECM (page 5-8).

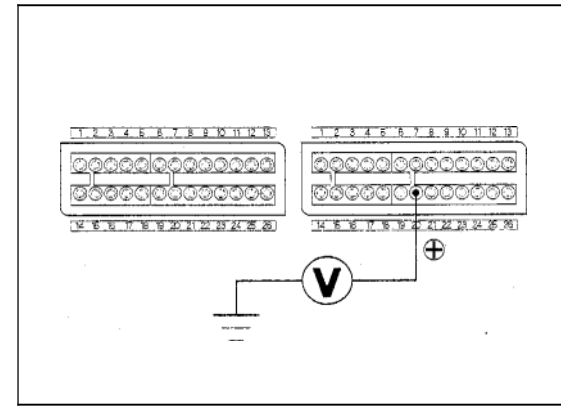
TOOL:

ECM test harness, 26P	**070MZ-0010100 (two required)**



GROUND LINE

Check for continuity between the ECM test harness connector B1 terminal and ground, between the B14 terminal and ground, between the A26 terminal and ground, and between the B2 terminal and ground.
There should be continuity at all times.
If there is no continuity, check for an open circuit in the Green/Pink wire and Green wire.



POWER INPUT LINE

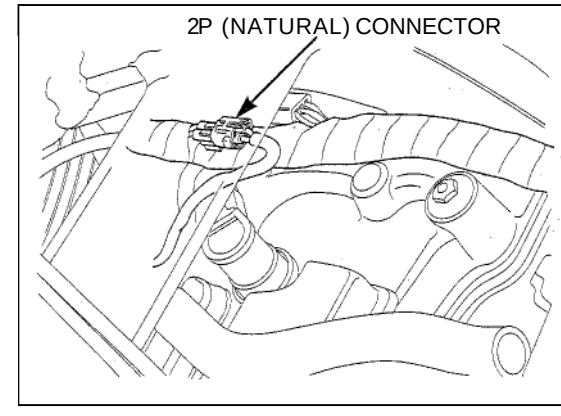
Turn the ignition switch to "ON" with the engine stop switch in the " ⎔ " position.
Measure the voltage between the ECM test harness connector B20 terminal (+) and ground.
There should be battery voltage.
If there is no voltage, check for open circuit in Black/White wire between the ECM and bank angle sensor/relay.
If the wire is OK, check for the bank angle sensor/engine stop relay (page 5-85, 86).

PAIR SOLENOID VALVE

REMOVAL/INSTALLATION

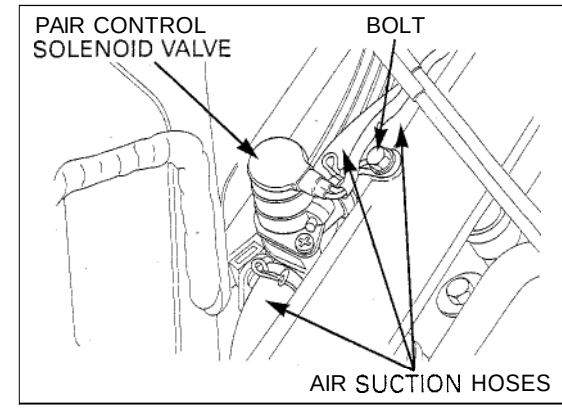
Remove the air cleaner housing (page 5-64).

Disconnect the PAIR solenoid valve 2P (Natural) connector.



Disconnect the PAIR air suction hoses.
Remove the bolt and PAIR solenoid valve.

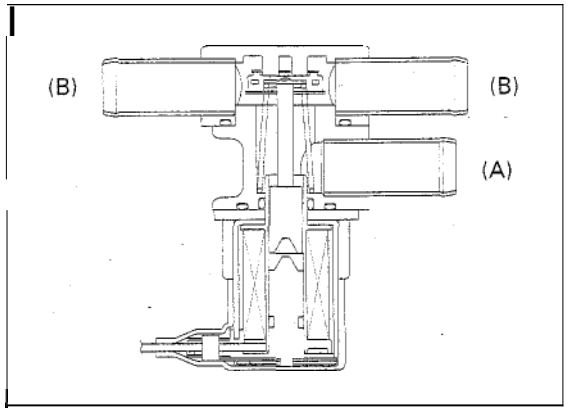
Installation is in the reverse order of removal.



INSPECTION

Remove the PAIR solenoid valve.

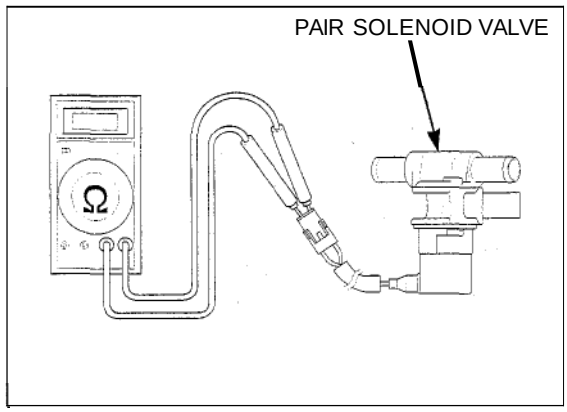
Check that the air should not flow (A) to (B), only when the 12 V battery is connected to the PAIR solenoid valve terminals.



Check the resistance between the terminals of the PAIR solenoid valve.

STANDARD: 20 – 24 Ω (20˚C/68˚F)

If the resistance is out of specification, replace the PAIR solenoid valve.



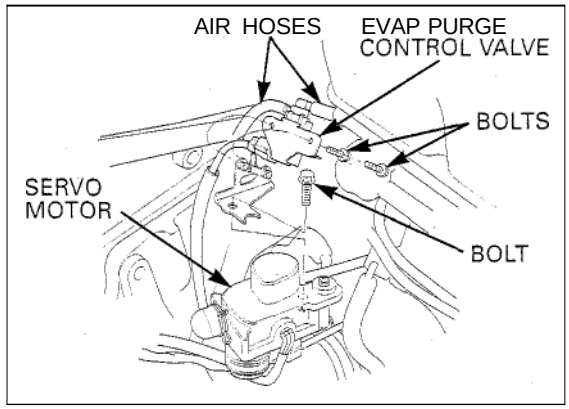
EVAP PURGE CONTROL SOLENOID VALVE (California type only)

REMOVAL/INSTALLATION

Remove the fuel tank (page 5-59).

Remove the bolt, then remove the EGCV/air intake valve servo motor and bracket from the frame.

Disconnect the EVAP purge control valve 2P connector. Disconnect the air hoses from the EVAP purge control valve.

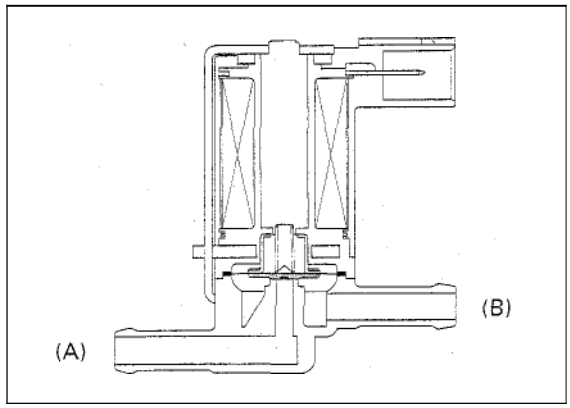


Installation is in the reverse order of removal

INSPECTION

Remove the EVAP purge control valve.

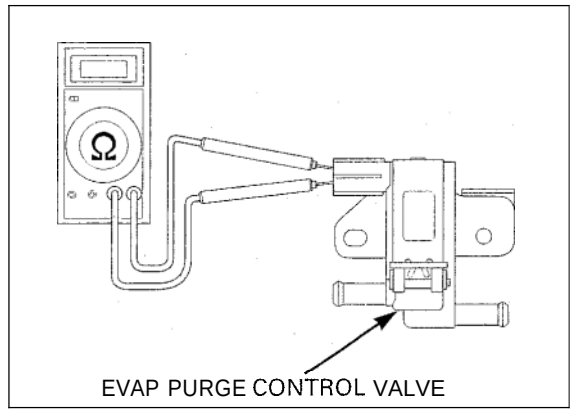
Check that the air should not flow (A) to (B), only when the 12 V battery is connected to the EVAP purge control valve terminals.



Check the resistance between the terminals of the EVAP purge control valve.

STANDARD: 30 – 40 kΩ (20°C/68°F)

If the resistance is out of specification, replace the EVAP purge control valve.



O_2 SENSOR (California type only)

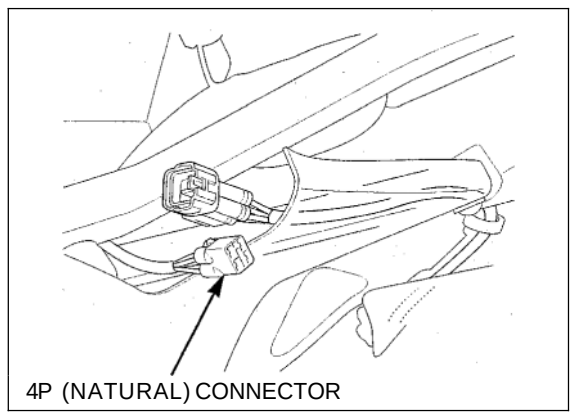
Do not service the O_2 sensor while it is hot

REMOVAL

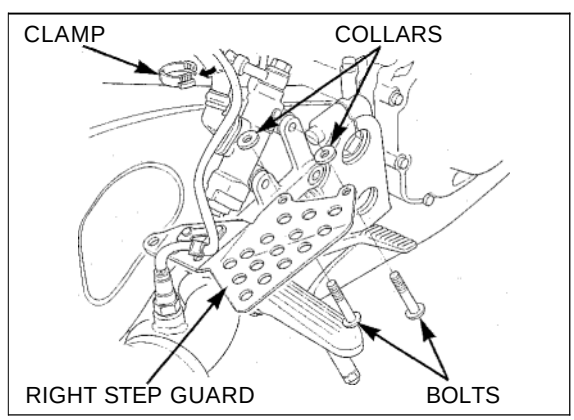
NOTE:
- Handle the O_2 sensor with care.
- Do not get grease, oil or other materials in the O_2 sensor air hole.

Remove the seat (page 2-2).

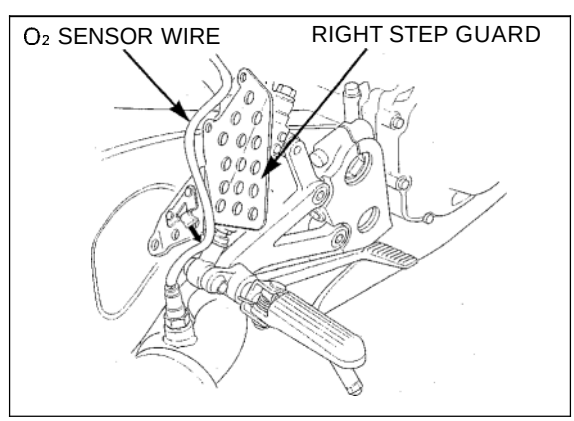
Disconnect the O_2 sensor 4P (Natural) connector.



Remove the O_2 sensor wire clamp.
Remove the right step guard mounting bolts and collars.



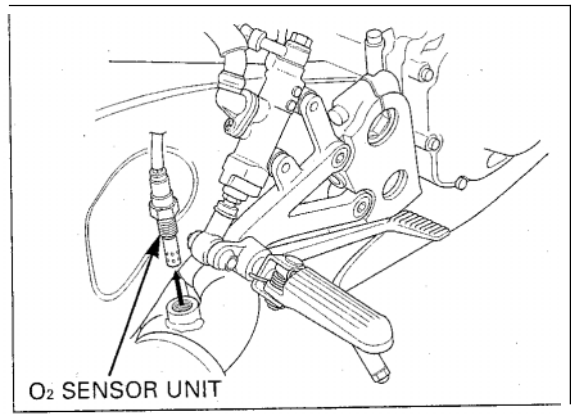
Release the O_2 sensor wire from the right step guard.



Remove the O_2 sensor unit.

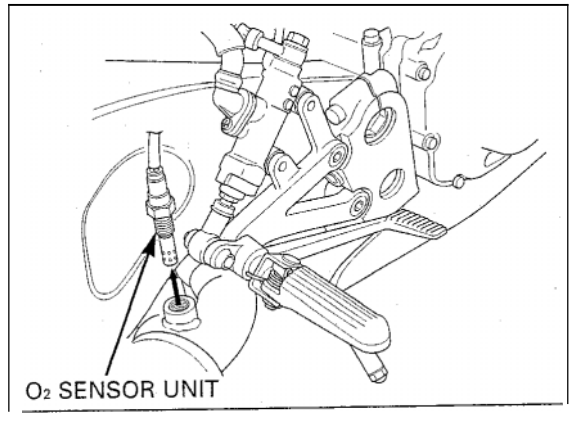
NOTICE

- *Be careful not to damage the sensor wire.*
- *Do not use an impact wrench to remove or install the O_2 sensor.*

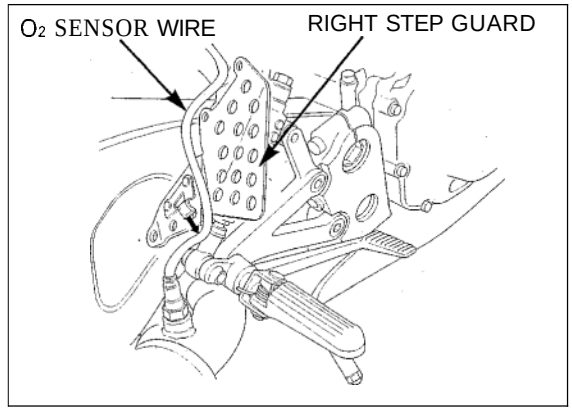


Install the O_2 sensor unit.
Tighten the unit to the specified torque.

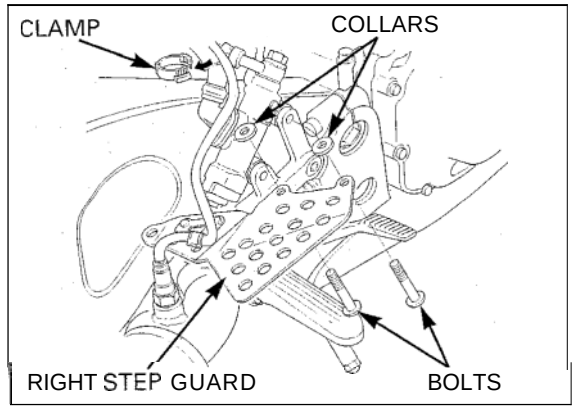
TORQUE: 25 N·m (2.6 kgf·m, 19 lbf·ft)



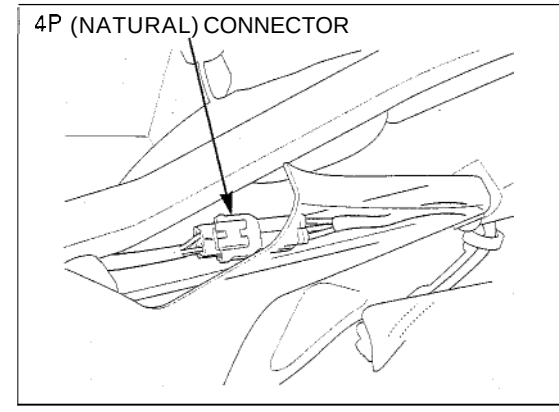
Clamp the O_2 sensor wire to the right step guard.



Install the rear master cylinder, collars and right step guard, then tighten the mounting bolts.
Clamp the O_2 sensor wire with the rear brake reservoir hose using the hose clamp.



Route the O_2 sensor wire into the frame.
Connect the O_2 sensor 4P (Natural) connector.

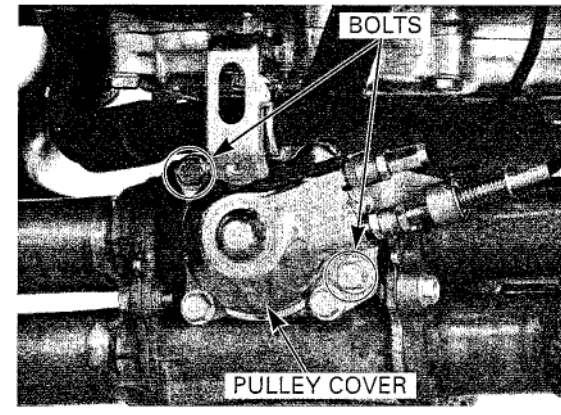


EGCV AND AIR INTAKE VALVE INSPECTION

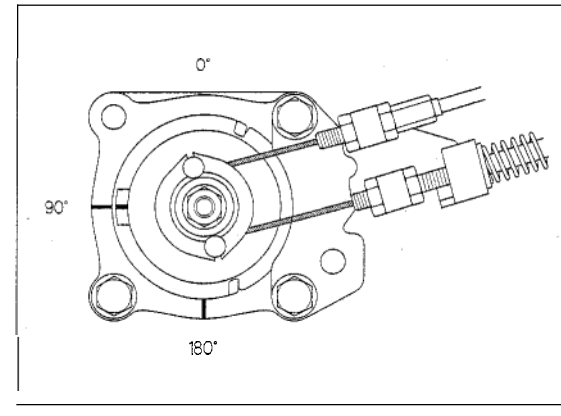
Before operating inspection, check that the PGM-FI MIL does not indicate an EGCV failure.

Remove the lower cowl (page 2-7).
Remove the air cleaner element (page 3-6).

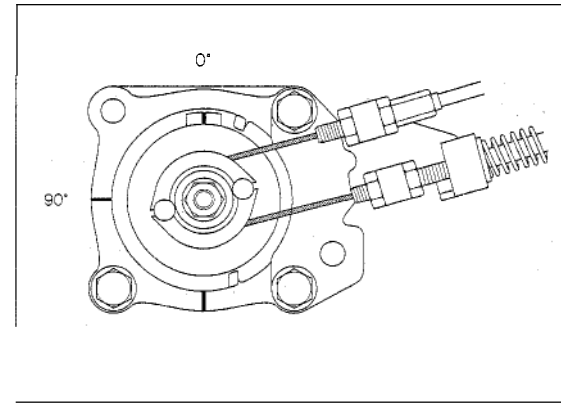
Remove the bolts and EGCV pulley cover.



Turn the ignition switch to "ON" and check for EGCV cable guide pulley position.
Make sure the pulley index line is positioned 90° (facing forward) as shown.

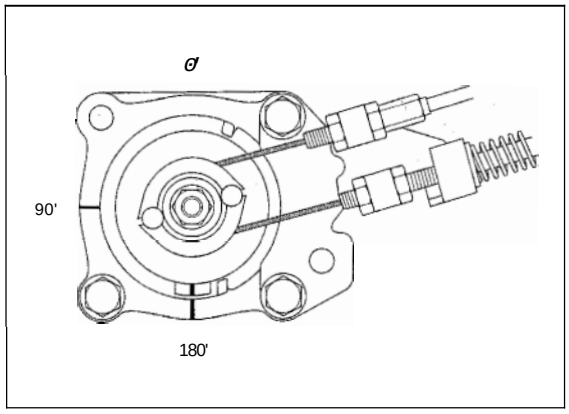


Start the engine, and warm it up to operating temperature.
Gradually increase the engine rev up.
Make sure the EGCV cable pulley is moved to 0° (pulley index line facing up) at about 3,000 rpm as shown.



Check that the EGCV cable pulley is moved to 180° (pulley index line facing down) at about 8,000 rpm.
Also check that the intake flap valve is opened at the same time.

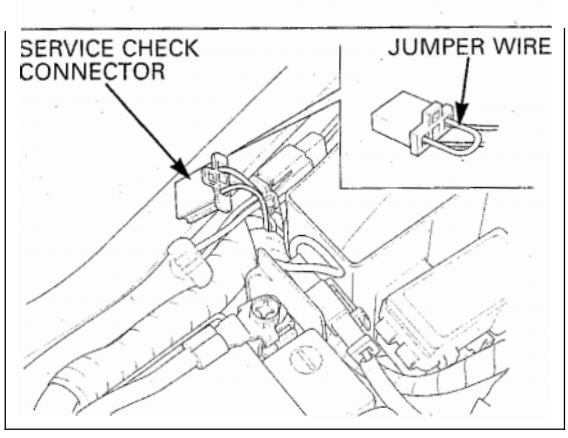
If the intake and EGCV position is incorrect, adjust the cables (see below).
If the intake and EGCV operation is incorrect, check for each related parts.



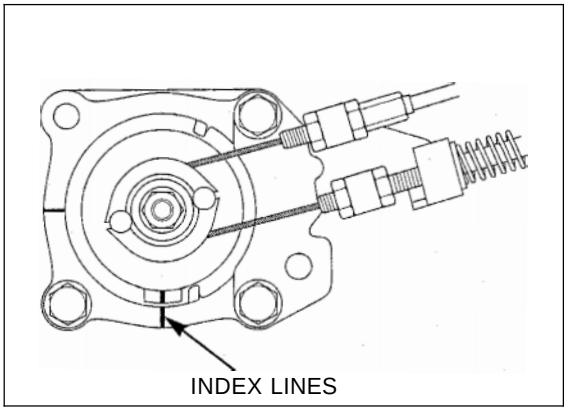
CABLE ADJUSTMENT

Remove the seat (page 2-2).

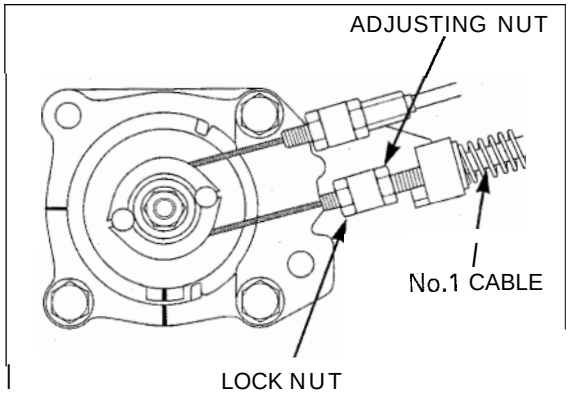
Turn the ignition switch to "ON".
Short the service check connector with a jumper wire.



EGCV CONTROL CABLE ADJUSTMENT
Make sure that the EGCV cable guide pulley index line is aligned with the EGCV cover index line.
If the index lines do not align, adjust the EGCV control cables.

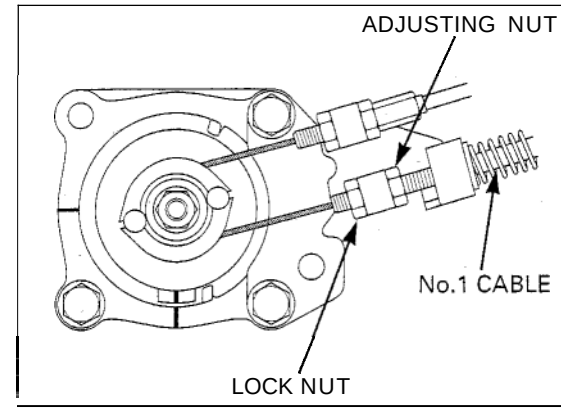


Fully loosen the No.1 adjusting cable (spring equipped cable) lock nut and adjusting nut.



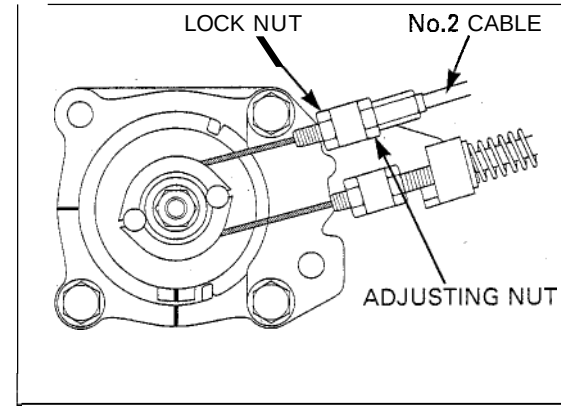
Adjust the EGCV position by loosening the No.1 adjusting cable lock nut and turning the adjusting nut.

Move the cable several times and recheck the index line.
Hold the No.1 cable adjusting nut, then tighten the lock nut securely.



Turn the No.2 cable lock nut and adjust the cable so there is no free play.
Tighten the No.2 cable lock nut securely.

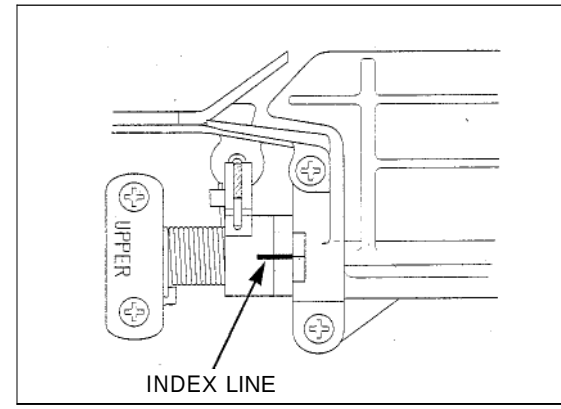
Remove the jumper wire from the service check connector.



INTAKE VALVE CONTROL CABLE ADJUSTMENT
Turn the ignition switch to "ON" and short the service check connector with a jumper wire (page 5-93).
Remove the air cleaner element (page 3-6).

Make sure the index lines between the intake valve shaft pulley and air guide are aligned.

If the index lines are not aligned adjust as follows.

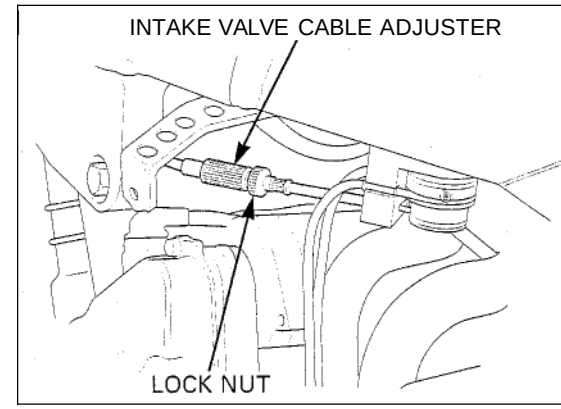


Loosen the intake valve cable adjuster lock nut.

Turn the intake valve cable adjuster, align the intake valve cable guide pulley index line with the index line on the valve shaft.

At this point, turn back the cable adjuster 1/2 turn.
Tighten the lock nut securely.

Remove the jumper wire from the service check connector.

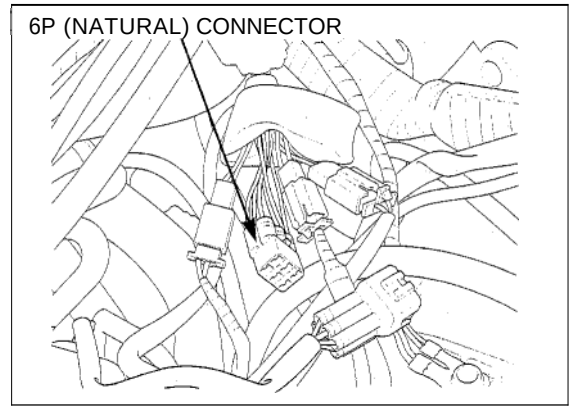


EGCV AND AIR INTAKE VALVE SERVO MOTOR

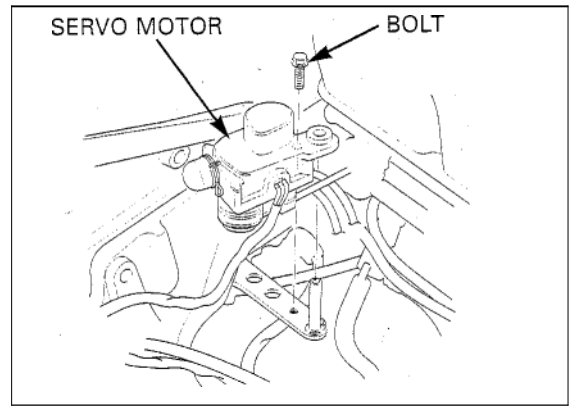
REMOVAL

Remove the fuel tank (page 5-59).

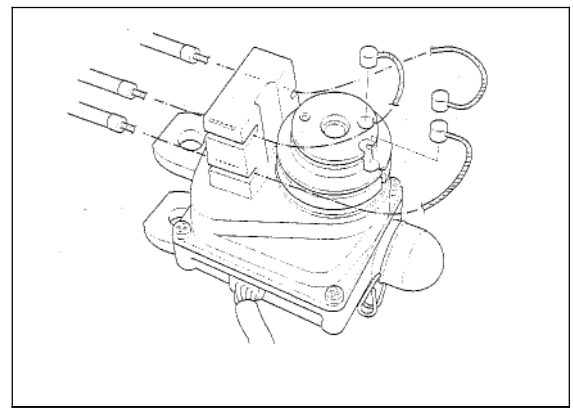
Disconnect the servo motor 6P (Natural) connector.



Remove the servo motor mounting bolt and pull out the servo motor from the bracket.



Disconnect the intake air valve and EGCV control cables from the servo motor pulley, then remove the servo motor.

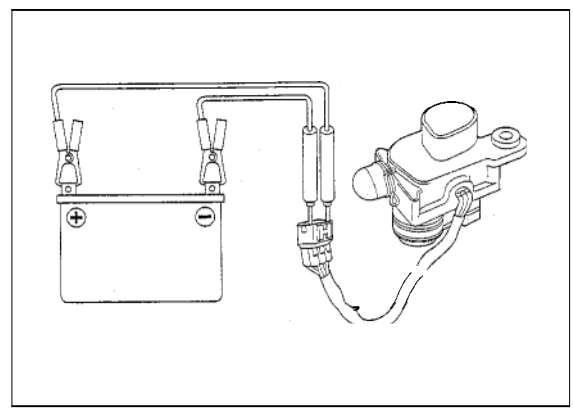


INSPECTION

Connect the 12 V battery to the servo motor 6P (Natural) connector terminals and check that the motor operation.

Connection: Red (+) – Blue (–)

If the servo motor does not turn, replace the servo motor with a new one.

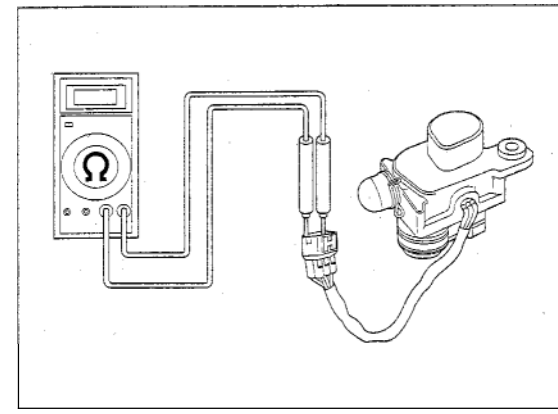


Measure the resistance between the servo motor 6P (Natural) connector terminals.

Connection: Yellow/Red – Green/Orange
Standard: 5 kΩ

Connection: Light green/Pink – Green/Orange
Standard: 0 – 5 kΩ

If the resistance is out of range, replace the servo motor.



INSTALLATION

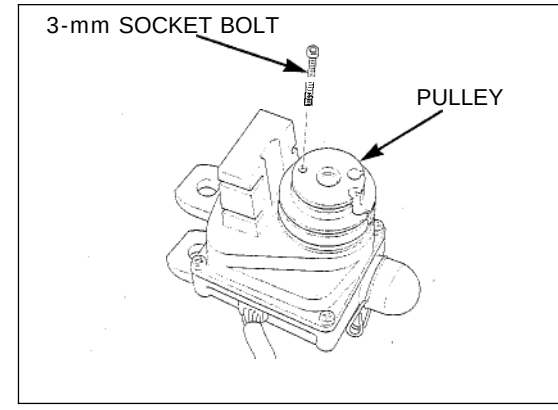
Connect the servo motor 6P (Natural) connector.

If you use a new servo motor, it is not necessary to do this procedure

Short the service check connector (page 5-93).

Turn the ignition switch to "ON".
The servo motor turns, then stops.
Secure the servo motor pulley at this position using a 3-mm socket bolt as shown.

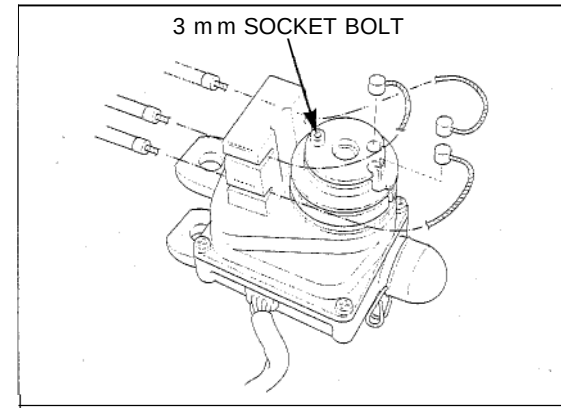
Socket bolt, 3 x 28 mm:
Parts number: 31420–MCJ–640



Connect the EGCV control cables to each position, then connect the intake valve control cable.

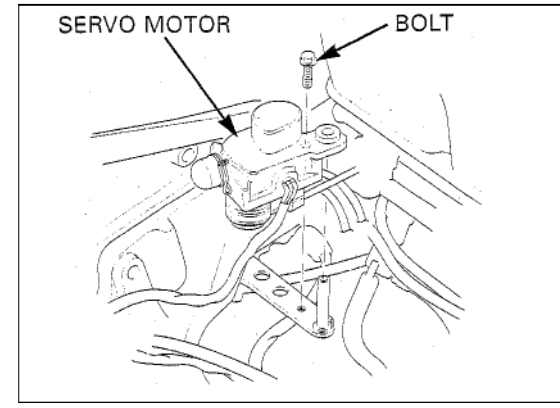
Adjust the EGCV and air intake valve control cables (page 5-93).

Remove the 3-mm socket bolt from the servo motor pulley.



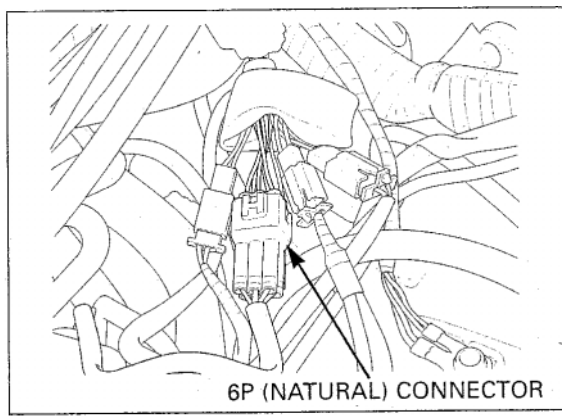
Install the servo motor onto the bracket.

Install and tighten the servo motor mounting bolt.



Connect the servo motor 6P (Natural) connector.

Install the fuel tank (page 5-61).



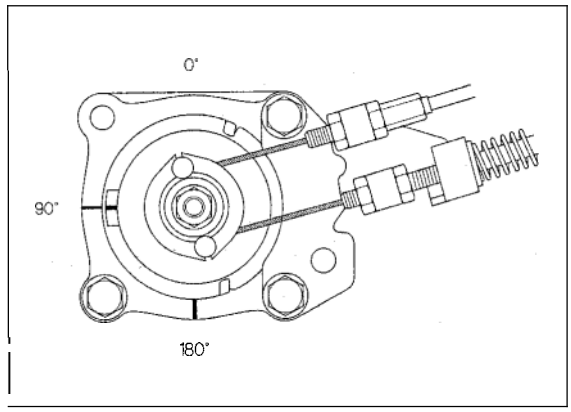
EGCV

OPERATING INSPECTION

Disconnect the EGCV control cables (page 2-15).

Turn the EGCV pulley from 0 to 180" and check for smooth operation.

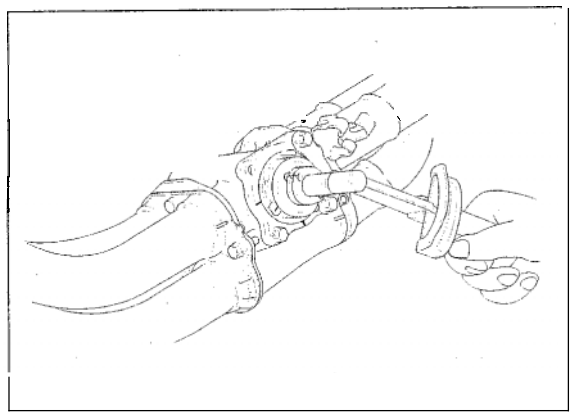
If operation is not smooth, check for carbon deposits in the EGCV and valve body (page 5-99).



Check the EGCV pre-load using a torque wrench.

PRE-LOAD:
0.34 N•m (0.035 kgf•m, 0.25 lbf•ft) maximum

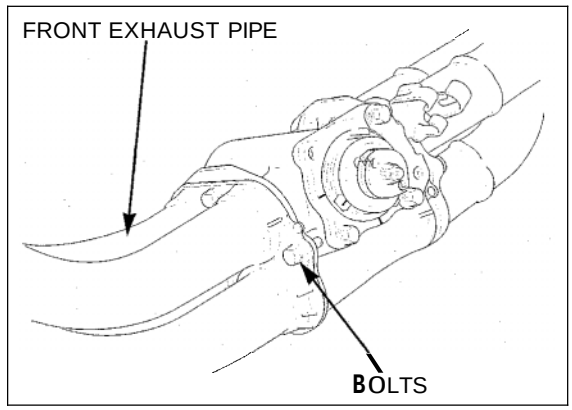
If pre-load is excessive, disassemble and i
EGCV.



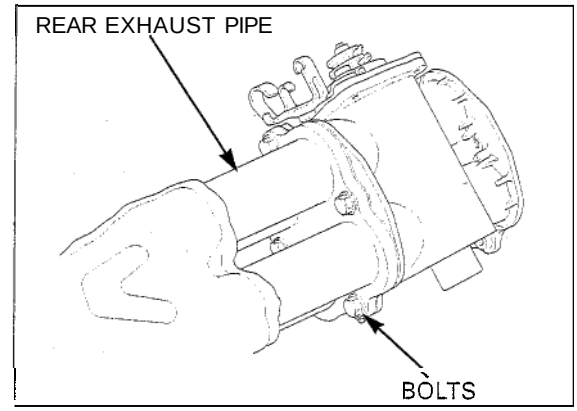
REMOVAL

Remove the exhaust pipe assembly (page 2-13).

Remove the bolts, front exhaust pipe and gasket.

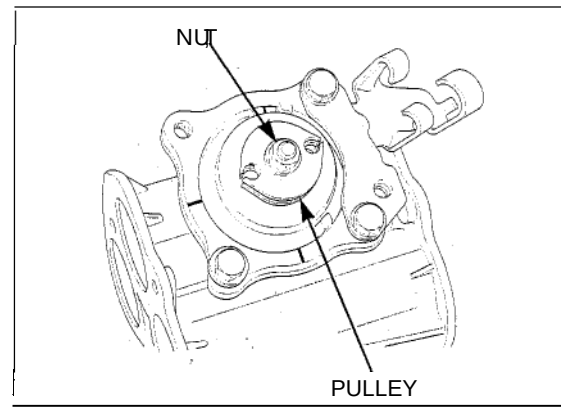


Remove the bolts, rear exhaust pipe and gasket.



DISASSEMBLY

Turn the EGCV cable guide pulley counterclockwise, and seat its tab with the stopper on the valve cover. Loosen and remove the nut, then remove the valve cable guide pulley.

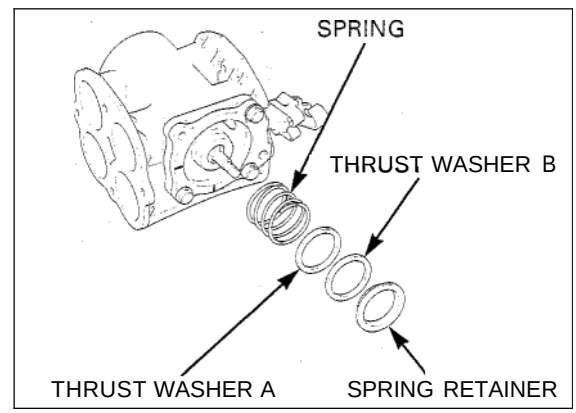


NOTICE

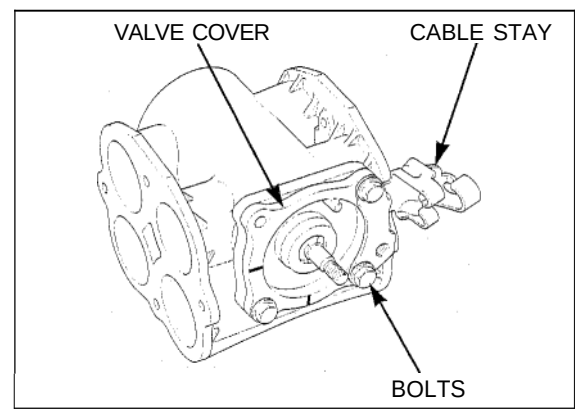
- *Be careful not to damage thrust washer B.*
- *Do not use any cleaning solution to clean thrust washer B.*
- *Do not apply any lubricant to thrust washer B.*

Remove the following:
- Spring retainer
- Thrust washer B
- Thrust washer A
- Thrust spring

Check thrust washer B for wear or damage.
Replace thrust washer B if it is wear or damage.



Remove the EGCV cover mounting bolts, cable stay, EGCV cover and metal gasket.



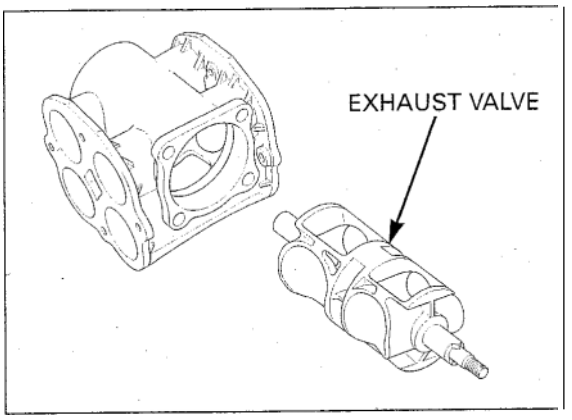
Remove the EGCV from the valve body.

Remove carbon deposits from the EGCV and valve body.

NOTICE

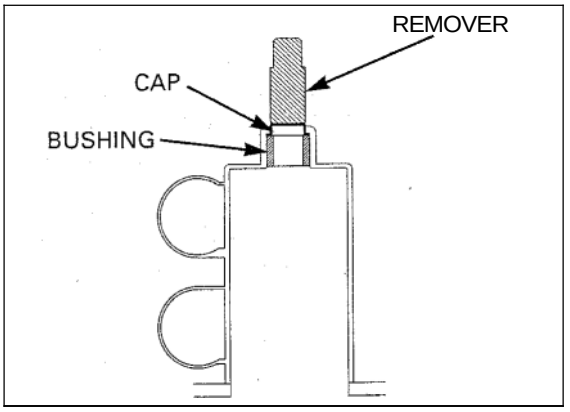
- *Do not use any cleaning solution to clean the EGCV bushings.*
- ***Do** not apply any lubricant to the EGCV bushings.*

Check that the EGCV for wear or damage.
Check that the EGCV body for wear or damage.



EGCV SHAFT BUSHING REPLACEMENT
Remove the valve body side EGCV bushing and cap using the following tools.

TOOL:
Remover, 14 x 16 rnm **07YMF–MCJ0400**



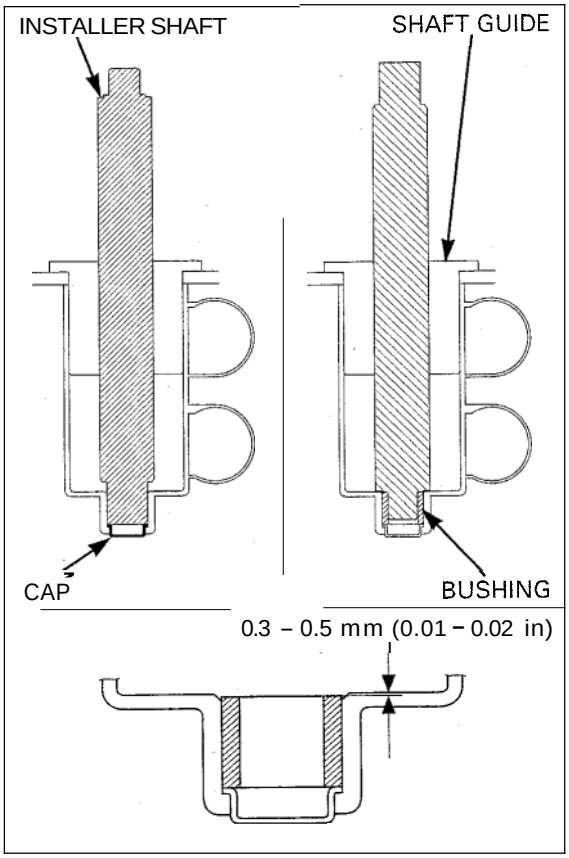
Install the EGCV cap into the EGCV body until it seats using the special tool.

TOOLS:
Installer shaft guide **07YMF–MCJ0100 or 07YMF–MCJA100 (U.S.A. only)**
Installer shaft **07YMF–MCJ0200 or 07YMF–MCJA200 (U.S.A. only)**

Press the EGCV bushing until its end is below 0.3 – 0 5 mm (0 01 – 0 02 in) from the valve body surface as shown

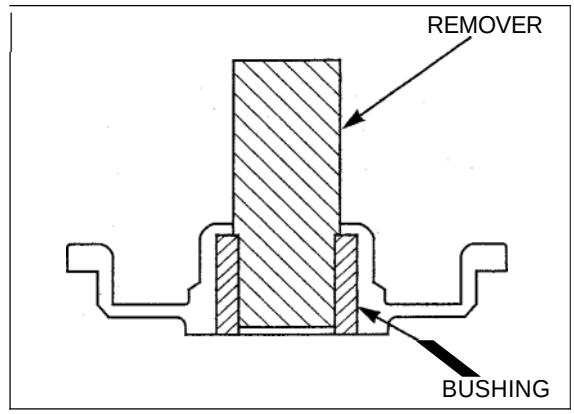
Press the EGCV bushing in using the special tool.

TOOLS:
installer shaft guide **07YMF–MCJ0100 or 07YMF–MCJA100 (U.S.A. only)**
Installer shaft **07YMF–MCJ0200 or 07YMF–MCJA200 (U.S.A. only)**



Press the valve cover side EGCV bushing out using the following tool.

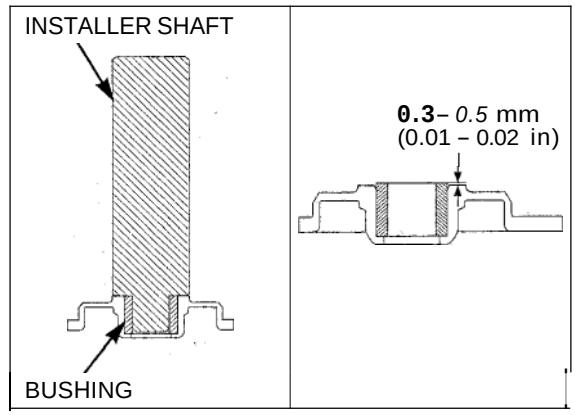
TOOL:
Remover, 14 x 16 mm **07YMF–MCJ0400**



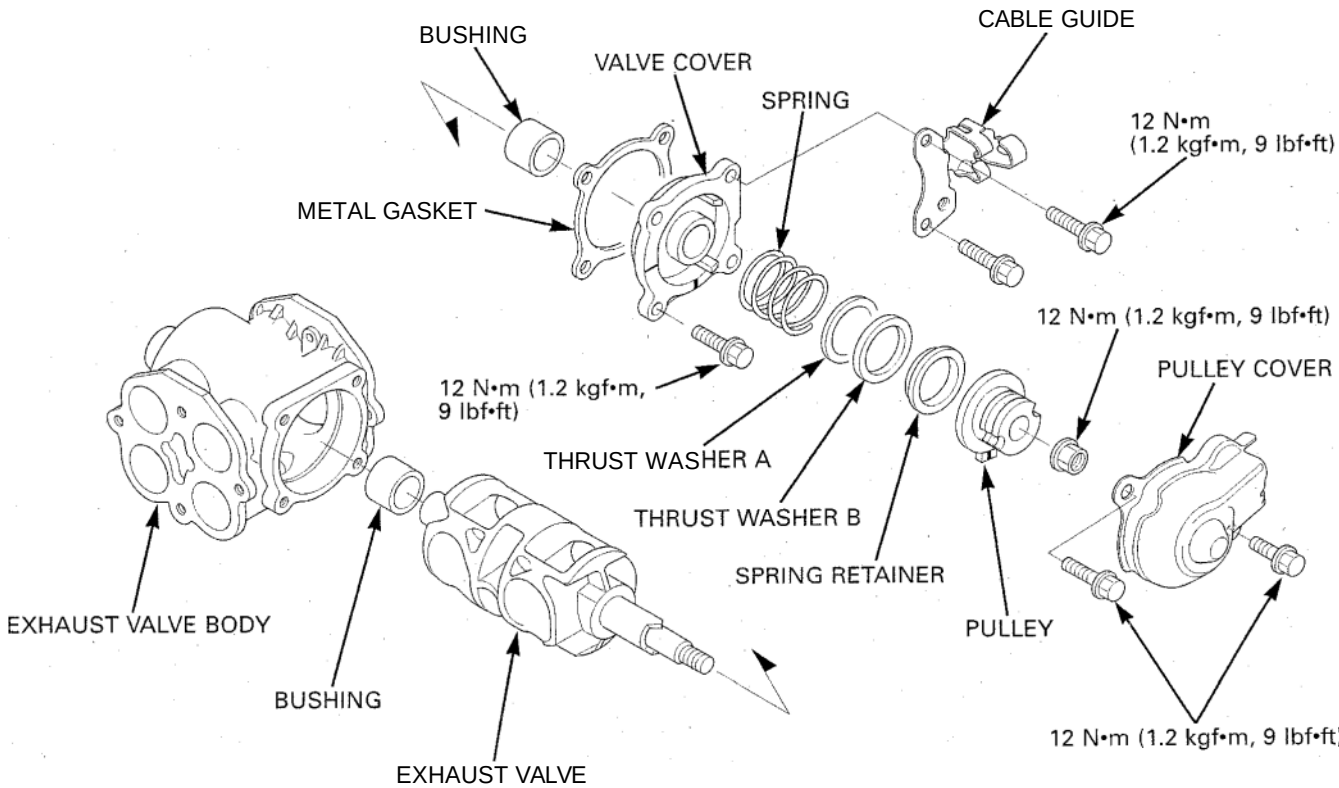
Press the EGCV bushing until its end is projected 0.3 – 0.5 mm (0.01 – 0.02 in) from the valve cover surface as shown

Press the EGCV bushing in using the special tool.

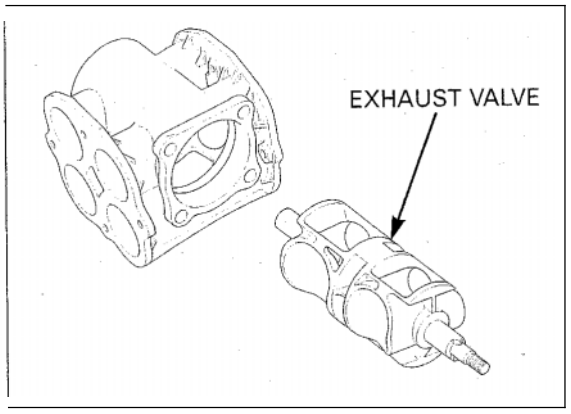
TOOL:
Installer shaft, 14 x 30 mm **07YMF–MCJ0300 or 07YMF–MCJA300 (U.S.A. only)**



ASSEMBLY

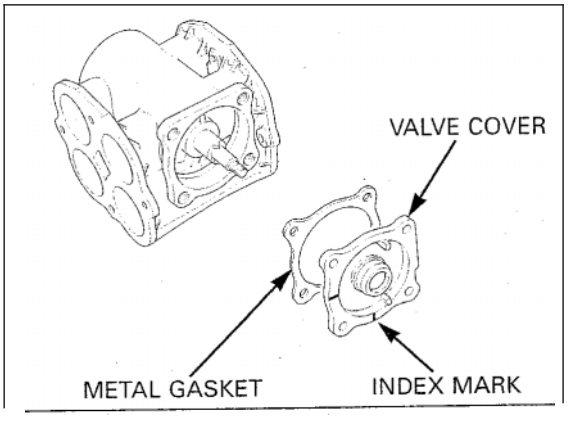


Install the EGCV into the EGCV body.



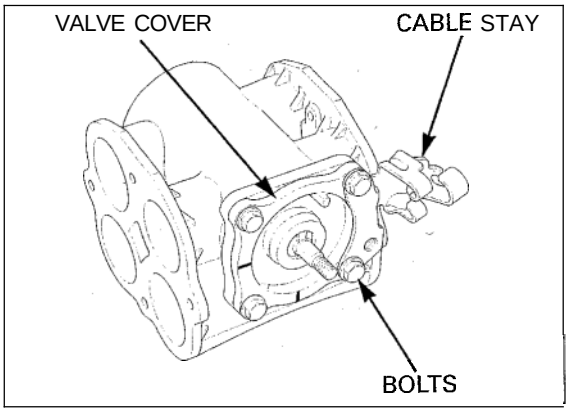
Install the EGCV cover with its index line facing down

Install the metal gasket and EGCV cover.



Install the EGCV cable stay and tighten the four EGCV cover mounting bolts to the specified torque.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)

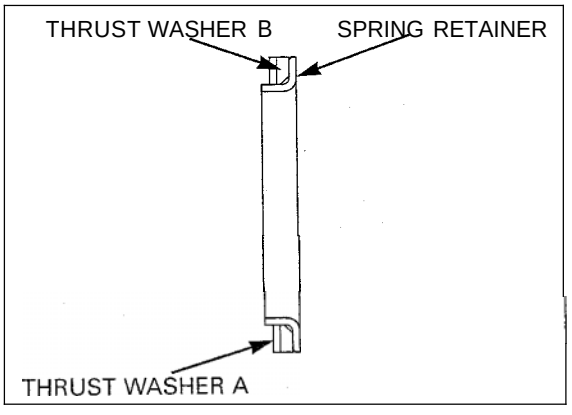


NOTICE

- *Be careful not to damage thrust washer B.*
- *Do not use any cleaning solution to clean thrust washer B.*
- *Do not apply any lubricant to thrust washer B.*

Install thrust washer B with its chamfered side facing the spring retainer.

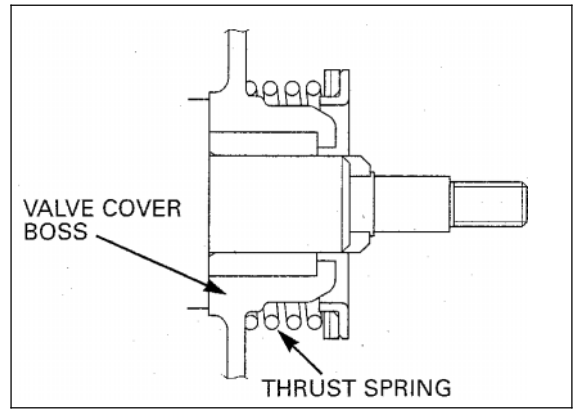
Install thrust washers B and A onto the spring retainer.



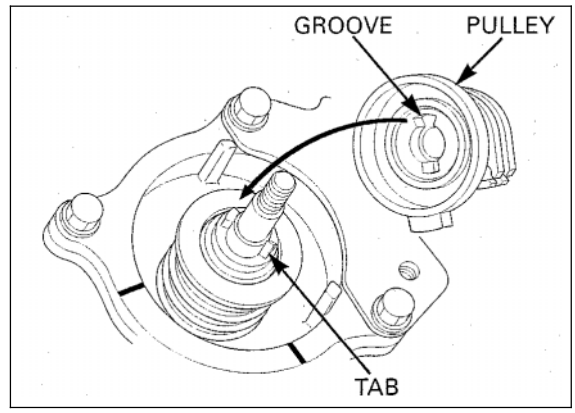
Make sure the thrust spring is seated on the EGCV cover boss

Install the thrust spring onto the EGCV cover.

Install the spring retainer assembly onto the thrust spring.

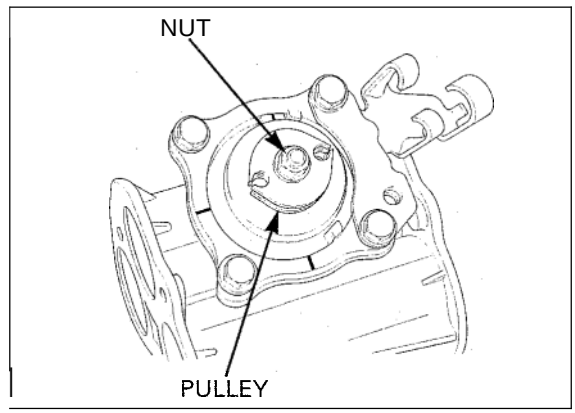


Install the valve cable guide pulley aligning its cut-out with the the valve shaft tab as shown.



Install the valve cable guide pulley flange nut.
Turn the valve cable guide pulley clockwise, seat the pulley tab with the stopper on the valve cover.
Tighten the nut to the specified torque.

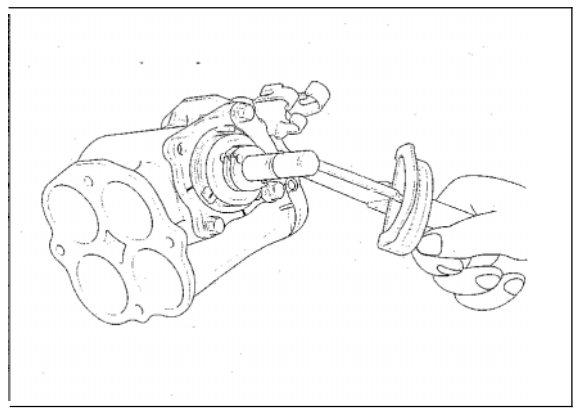
TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



Check the EGCV pre-load using a torque wrench.

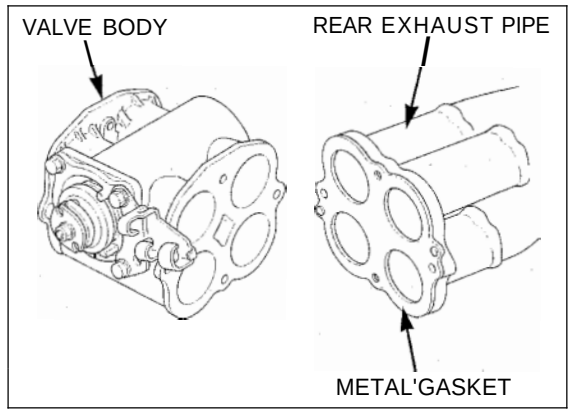
PRE-LOAD:
0.34 N·m (0.035 kgf·m, 0.25 lbf·ft) maximum

If pre-load is excessive, reassemble the EGCV.



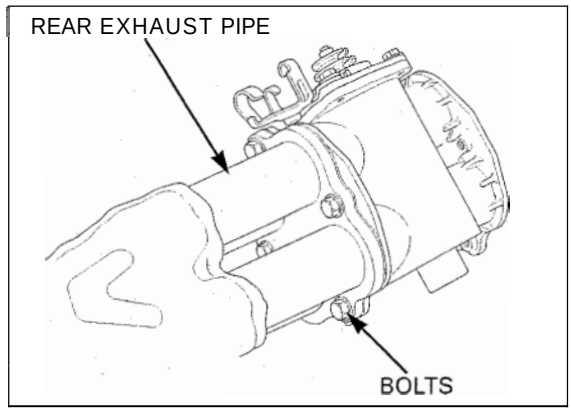
INSTALLATION

Install the metal gasket and rear exhaust pipe onto the EGCV body.

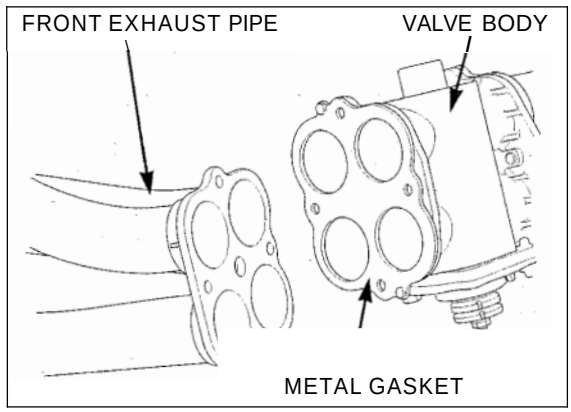


Tighten the EGCV mounting bolt to the specified torque.

TORQUE: 14 N·m (1.4 kgf·m, 10 lbf·ft)

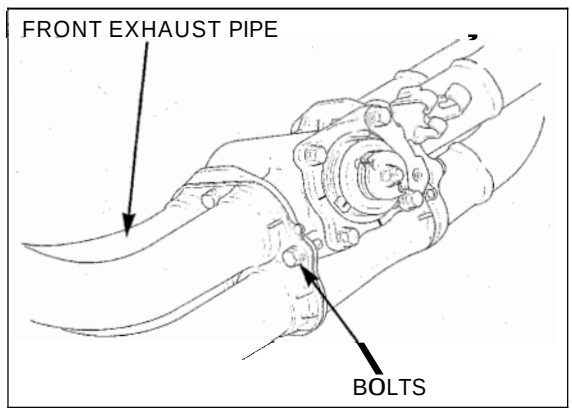


Install the metal gasket and front exhaust pipe onto the EGCV body.



Tighten the EGCV mounting bolt to the specified torque.

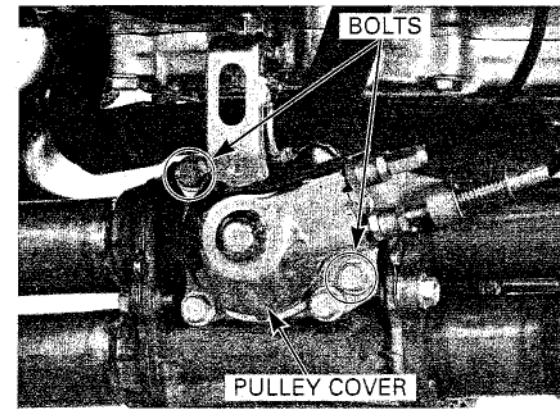
TORQUE: 14 N·m (1.4 kgf·m, 10 lbf·ft)



Install the exhaust pipe assembly (page 2-16).
Connect the EGCV control cables and adjust the control cables (page 5-93).

Remove the EGCV cover front upper bolt.
Install EGCV cable guide pulley cover and tighten the bolts to the specified torque.

TORQUE: 12 N•m (1.2 kgf•m, 9 lbf•ft)

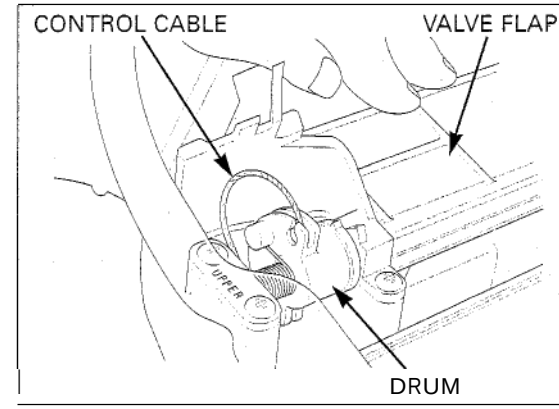


VARIABLE AIR INTAKE VALVE

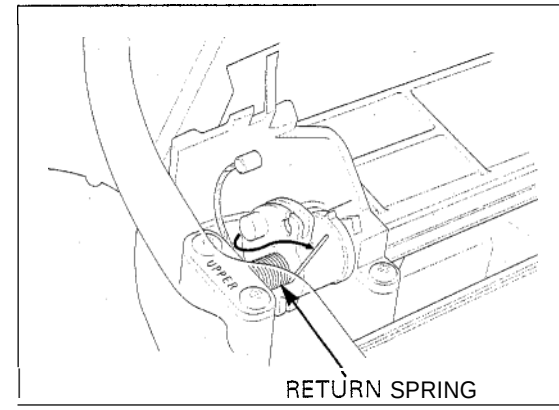
DISASSEMBLY

Remove the air cleaner housing (page 5-64).

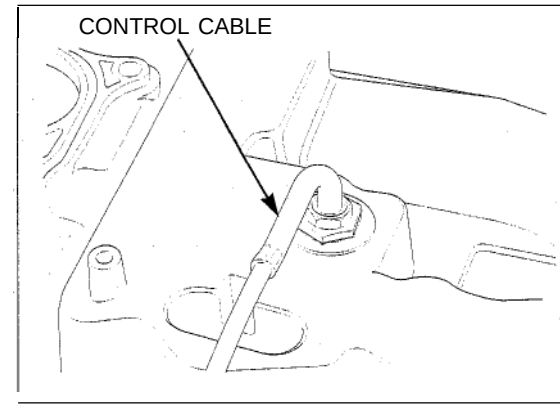
Open the intake valve flap by hand, disconnect the intake valve cable end from the drum.



Unhook the return spring ends from the hooks.

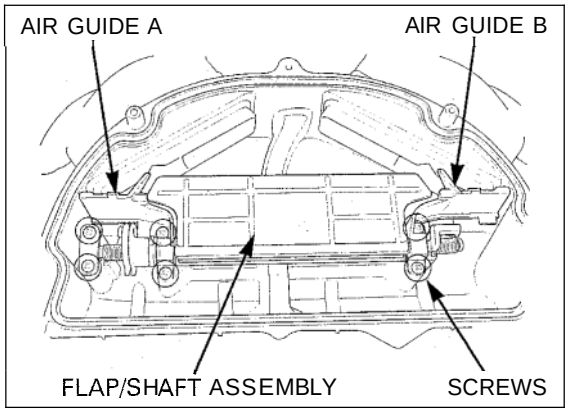


If necessary, loosen the control cable nut and remove the control cable from the air cleaner housing.

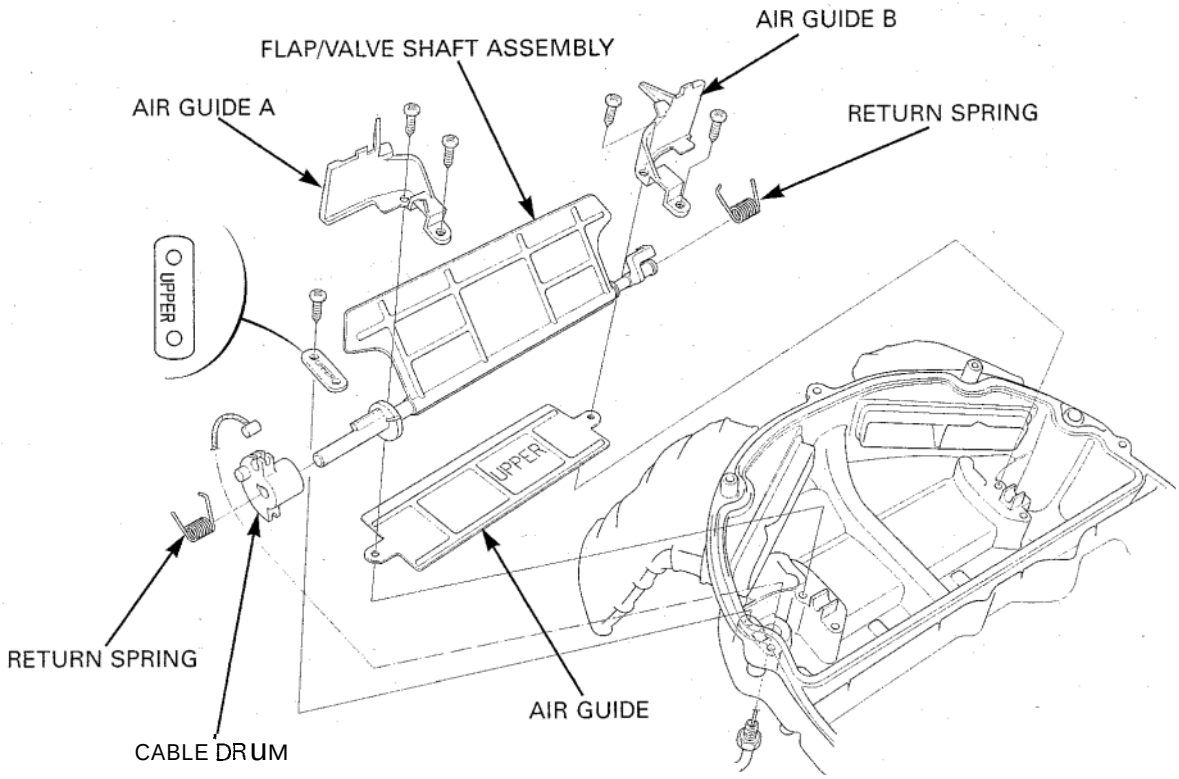


Remove the intake valve shaft holder mounting screws and holder.
Remove air guides A and B mounting screws.

Remove the intake valve flap/shaft assembly, air guides A and B.

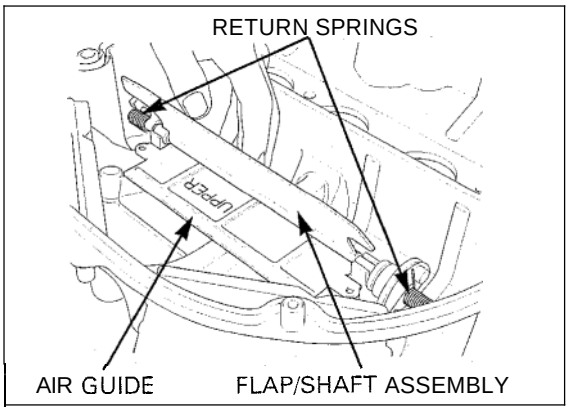


ASSEMBLY

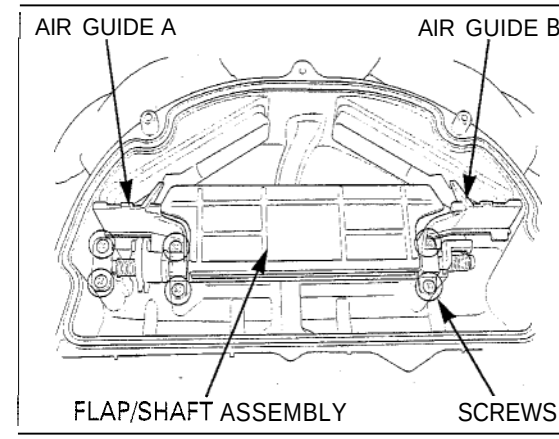


Install the intake valve drum onto the shaft aligning its groove with the intake valve shaft boss.
Install the return spring on both sides.

Install the air guide with its "UPPER" mark facing up.
Install the intake valve flap/shaft assembly onto the air cleaner housing.

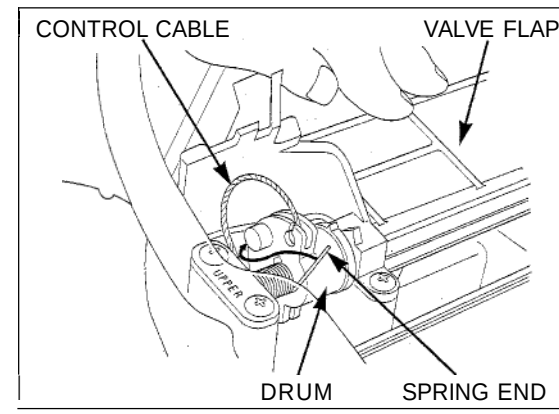


Install air guides A and B, then tighten the mounting screws.
Install the intake valve shaft holder plate with its "UPPER" mark facing up.
install and tighten the mounting screws.



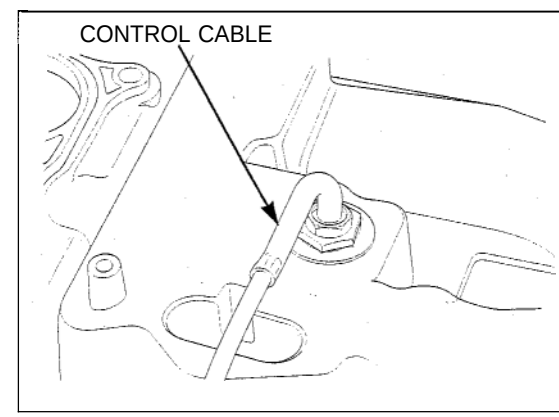
Open the intake valve flap by hand, connect the intake valve control cable end to the drum.

Turn the return spring end counterclockwise turn and then install it onto the hook as shown.



Face the control cable to the left, then tightening the lock nut

Tighten the cable lock nut securely if it is removed.



Install the air cleaner housing (page 5-65),

Adjust the variable air intake valve control cable (page 5-94).