

Fuel System

Precautions

Precautions for Fuel System

B705H21700001

⚠ WARNING

- Keep away from fire or spark.
 - During disassembling, use care to minimize spillage of gasoline.
 - Spilled gasoline should be wiped off immediately.
 - Work in a well-ventilated area.
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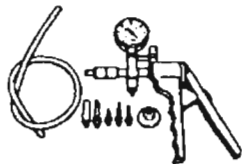
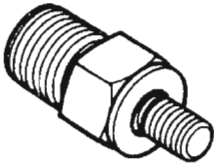
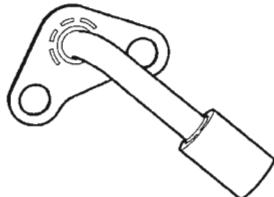
⚠ CAUTION

- To prevent the fuel system (fuel tank, fuel hose, etc.) from contamination with foreign particles, blind all openings.
 - After removing the throttle body, tape the cylinder intake section to prevent foreign particles from entering.
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Special Tools and Equipment

Special Tool

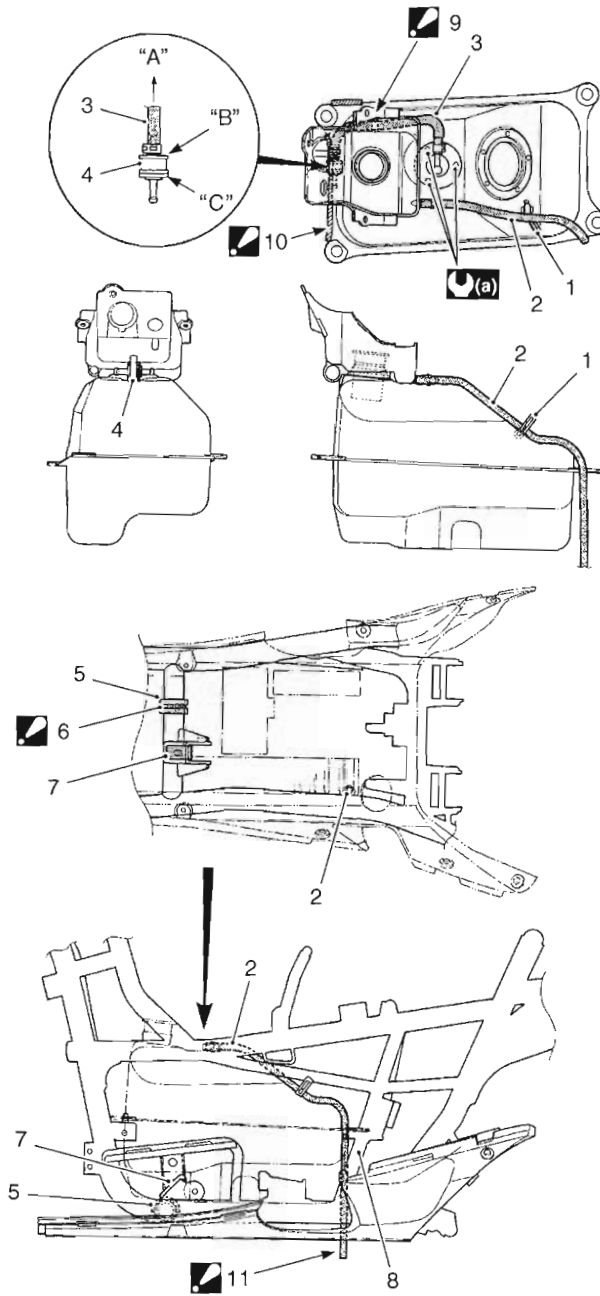
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<p>09900-25008 Multi-circuit tester set ☞ (Page1G-12)</p> 	<p>09915-74521 Oil pressure gauge hose ☞ (Page1G-10)</p> 
<p>09915-77331 Meter (for high pressure) ☞ (Page1G-10)</p> 	<p>09917-47011 Vacuum pump gauge ☞ (Page1G-8)</p> 
<p>09940-40211 Fuel pressure gauge adapter ☞ (Page1G-10)</p> 	<p>09940-40230 Fuel pressure gauge hose attachment ☞ (Page1G-10)</p> 

Schematic and Routing Diagram

Fuel Tank Hose Construction

B705H21702001



I705H1170039-02

1. Clamp	7. Cushion	"A": To fuel tank
2. Water drain hose	8. Clamp	"B": Black
3. Breather hose	9. Breather hose : Pass the breather hose through into the ring part of the tray.	"C": Orange
4. Check valve	10. Molding : Adhere both ends and center area for approx. 10 mm (1.4 in) using adhesive.	
5. Cushion	11. Water drain hose : Pass the water drain hose through into the slit located on rear left side end of under cover.	
6. Clamp : Cut off the clamp after tightening.	(a) : 3.5 N·m (0.35 kgf·m, 2.5 lb·ft)	

Diagnostic Information and Procedures

Fuel System Diagnosis

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Condition	Possible cause	Correction / Reference Item
Engine will not start or hard to start (Gasoline does not reach the intake pipe)	Clogging, bending or improper routing of fuel filter or fuel hose.	<i>Clean, replace or adjust.</i>
	Fuel pump failure.	<i>Replace.</i>
	Fuel pressure regulator failure.	<i>Replace.</i>
	Fuel pump injector failure.	<i>Replace.</i>
	Fuel pump relay failure.	<i>Replace.</i>
	ECM failure.	<i>Replace.</i>
	Wiring connection failure.	<i>Inspect or repair.</i>
Engine will not start or hard to start	Throttle position sensor improperly adjusted.	<i>Adjust.</i>
	Throttle position sensor failure.	<i>Replace.</i>
	Intake air pressure sensor failure.	<i>Replace.</i>
	ECM failure.	<i>Replace.</i>
	Engine temperature sensor failure.	<i>Replace.</i>
	Intake air pressure sensor failure.	<i>Replace.</i>
	Fuel pump failure.	<i>Replace.</i>
	Fuel hose improperly routed.	<i>Adjust.</i>
Engine is likely to stop (Improper air/Fuel ratio)	Fuel pump filter clogging.	<i>Clean or replace.</i>
	Fuel pump failure.	<i>Replace.</i>
	Fuel pressure regulator failure.	<i>Replace.</i>
Engine is likely to stop (Fuel injector function failure)	ECM failure.	<i>Replace.</i>
	Injection signal not received from ECM.	<i>Repair or replace.</i>
	Lead wire disconnection or shorted.	<i>Repair or replace.</i>
	Battery failure or voltage too low.	<i>Replace or recharge.</i>
Engine is likely to stop (Control circuit or sensor function failure)	ECM failure.	<i>Replace.</i>
	Fuel pressure regulator failure.	<i>Replace.</i>
	Throttle position sensor failure.	<i>Replace.</i>
	Fuel pump relay failure.	<i>Replace.</i>
Engine is likely to stop (Engine parts function failure)	Fuel hose clogging.	<i>Clean.</i>
Engine operation failure in high speed range (Engine internal parts or electrical equipment failure)	ECM failure.	<i>Replace.</i>
	Insufficient fuel supply to injector due to fuel hose blockage.	<i>Clean and priming.</i>
	Fuel pump failure.	<i>Replace.</i>
	Throttle sensor failure.	<i>Replace.</i>
Insufficient engine power in high speed range (Airflow system failure)	Air leakage from throttle body joint.	<i>Repair or replace.</i>
Insufficient engine power in high speed range (Control circuit or sensor failure)	Fuel pressure too low.	<i>Repair or replace.</i>
	Throttle position sensor failure.	<i>Replace.</i>
	ECM failure.	<i>Replace.</i>
	Throttle position sensor synchronization failure.	<i>Adjust.</i>
	Fuel tank pressure control valve failure.	<i>Replace.</i>
Insufficient engine power (Engine internal parts or electrical equipment failure)	Injector clogged.	<i>Clean.</i>
	Throttle position sensor adjustment failure.	<i>Replace.</i>
	Air leakage from throttle or vacuum hose.	<i>Retighten or replace.</i>
	Fuel pump or ECM failure.	<i>Replace.</i>

Condition	Possible cause	Correction / Reference Item
Insufficient engine power (Control circuit or sensor failure)	Fuel pressure too low.	Repair or replace.
	Throttle position failure.	Replace.
	ECM failure.	Replace.
	Throttle position sensor synchronization failure.	Adjust.
Engine overheats (Fuel mixture too lean)	Fuel injector failure.	Replace.

Repair Instructions

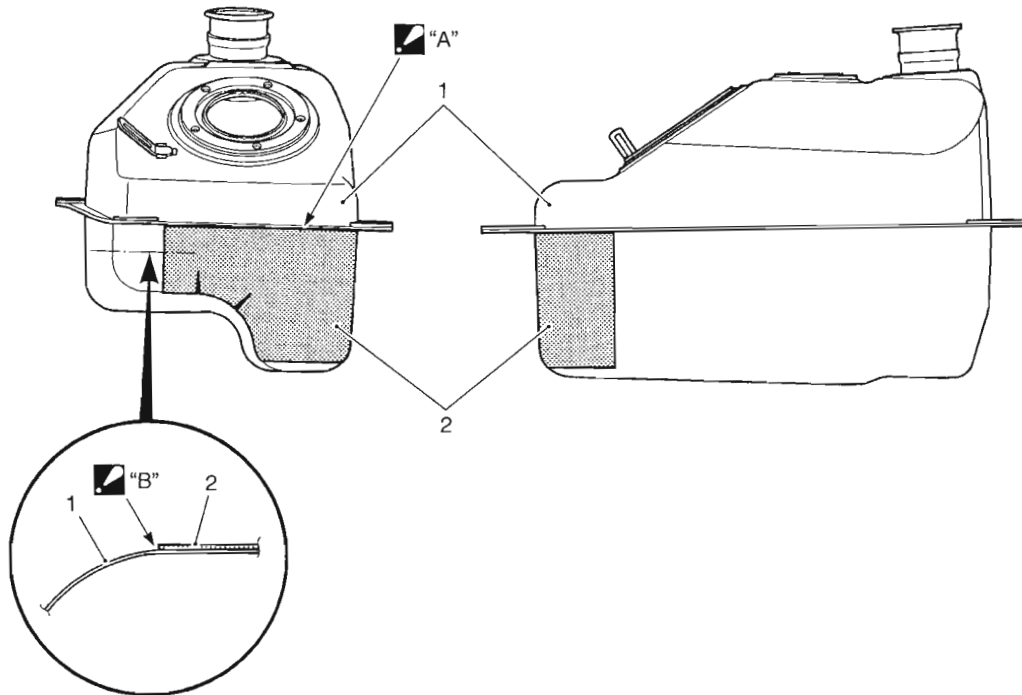
Fuel System Components

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Refer to "EVAP Canister Hose Routing Diagram (Only for E-33) in Section 1B (Page1B-8)".

Fuel Tank Heat Shield Construction

B705H21706002



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1. Fuel tank	☑ "A": Match the upper end of the fuel tank heat shield with the flange base.
2. Fuel tank heat shield	☑ "B": Match the fuel tank heat shield with the R-edge.

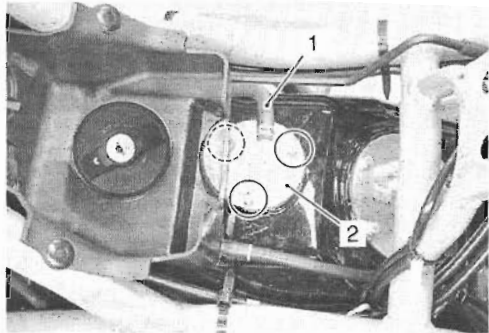
1G-5 Fuel System:

Fuel Cut Valve Removal and Installation

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Removal

- 1) Remove the front box. Refer to "Front Box Removal and Installation in Section 9D (Page9D-18)".
- 2) Disconnect the hose (1) and remove the fuel cut valve (2).



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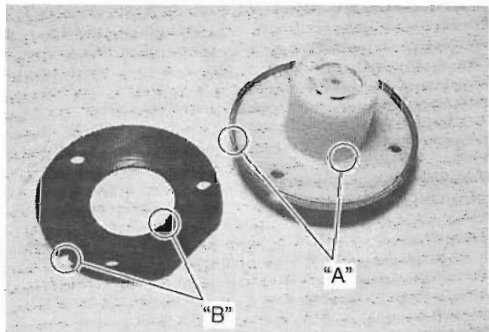
Installation

Install the fuel cut valve in the reverse order of removal. Pay attention the following points:

- Install the fuel cut valve with its protrusions "A" engaged with cutaway "B" on the gasket.

CAUTION

Replace the gasket with a new one.

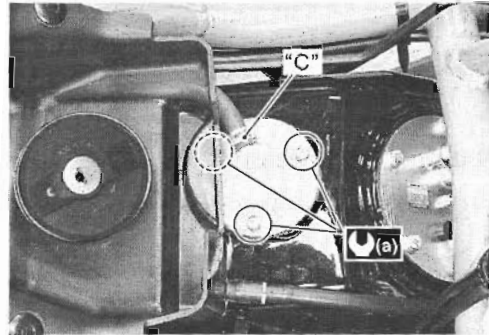


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- Install the fuel cut valve with its hose attaching section "C" facing the vehicle body right side.
- Tighten the fuel cut valve bolt to the specified torque.

Tightening torque

Fuel cut valve bolt (a): 3.5 N·m (0.35 kgf·m, 2.5 lb·ft)



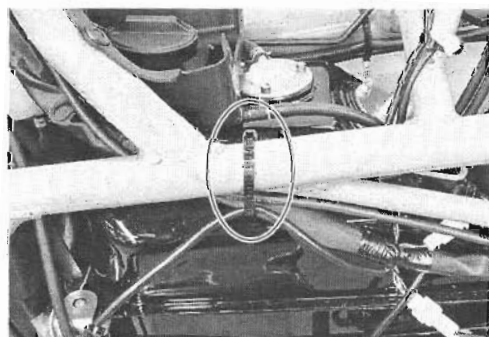
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Fuel Tank Removal and Installation

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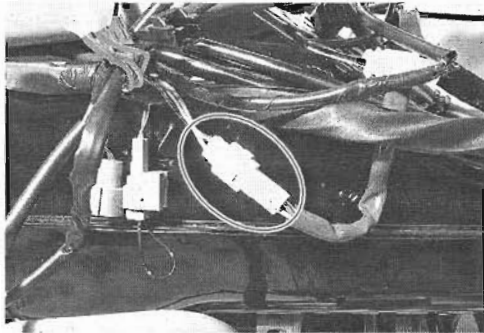
Removal

- 1) Remove the footboards. Refer to "Footboard Removal and Installation in Section 9D (Page9D-21)".
- 2) Remove the engine. Refer to "Engine Assembly Removal and Installation in Section 1D (Page1D-6)".
- 3) Remove the cushion lever mounting nut. Refer to "Rear Shock Absorber and Rear Shock Absorber Assembly Removal and Installation in Section 2C (Page2C-4)".
- 4) Remove the clamp.



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5) Disconnect the fuel pump coupler.

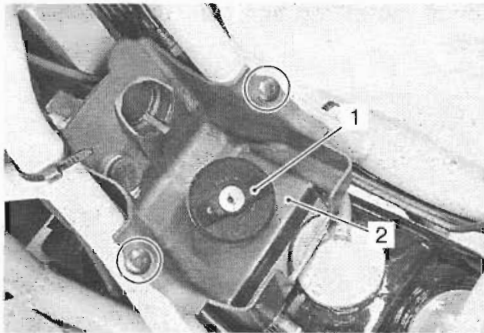


I705H1170003-01

6) Remove the fuel tank filler cap (1) and fuel drain tray (2) from the fuel inlet.

⚠ CAUTION

After removing the fuel drain tray (2), refit the fuel tank filler cap (1) to the fuel tank.

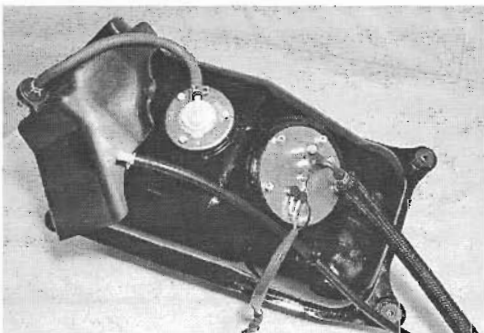


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7) Remove the fuel tank by removing the bolts and bracket.

⚠ CAUTION

Keep away from fire or sparks since gasoline may leak.



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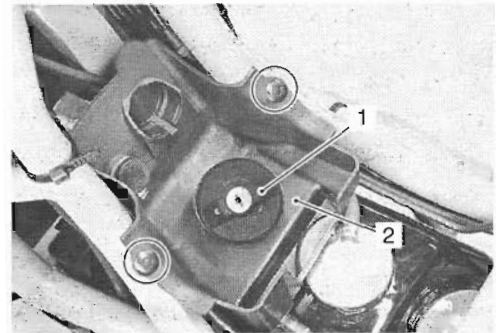
Installation

Install the fuel tank in the reverse order of removal. Pay attention the following points:

- Tighten the fuel tank bolts.
- Remove the fuel filler cap (1) and install the fuel drain tray (2) on the fuel inlet.

⚠ CAUTION

After the fuel drain tray (2) has been fitted on the fuel tank, the fuel tank filler cap (1) should be fitted to the fuel tank.



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- Clamp the wiring harness surely.

Fuel Pump Assembly Removal and Installation

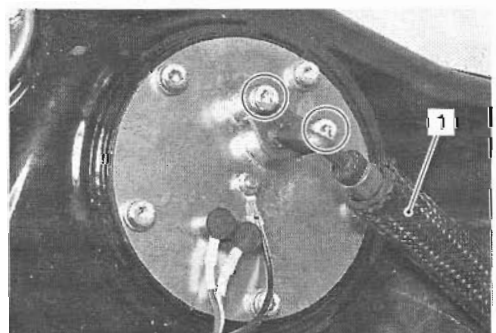
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Removal

- 1) Remove the front box. Refer to "Front Box Removal and Installation in Section 9D (Page9D-18)".
- 2) Loosen the fuel tank bolt and move the fuel tank rearward.
- 3) Disconnect the fuel hose (1).

⚠ CAUTION

After the fuel hose (1) has been disconnected, fit a blind plug to the opening.



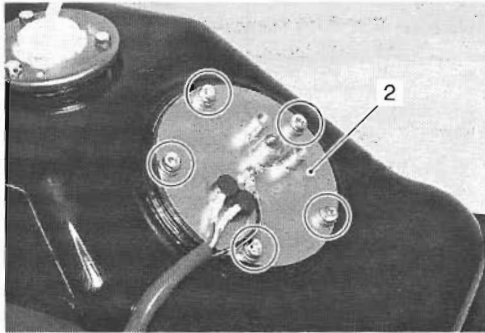
I705H1170005-03

1G-7 Fuel System:

- Remove the fuel pump assembly (2).

⚠ CAUTION

When removing the fuel pump assembly, take care not to cause damage to it. If such a possibility is thought to exist, remove the fuel tank from the body. Refer to "Fuel Tank Removal and Installation (Page1G-5)".



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⚠ WARNING

- Use caution to minimize spillage of gasoline.
- Spilled gasoline should be wiped off immediately.
- Keep away from fire or spark.
- Work in a well-ventilated area.

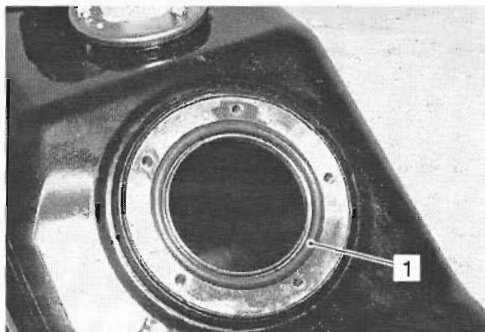
Installation

Install the fuel tank assembly in the reverse order of removal. Pay attention the following points:

- Apply engine oil to the O-ring (1) and install the fuel tank.

⚠ CAUTION

Replace the fuel pump O-ring and fuel hose O-ring with the new ones.

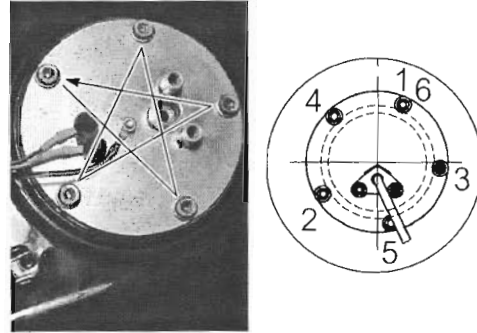


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- When installing the fuel pump assembly, first tighten all the fuel pump mounting bolts lightly and then to the specified torque, in the ascending order of numbers.

Tightening torque

Fuel pump mounting bolt: 10 N·m (1.0 kgf·m, 7.0 lb-ft)



I705H1170008-01

- Tighten the fuel hose to the specified torque.

Tightening torque

Fuel hose mounting bolt (a): 10 N·m (1.0 kgf·m, 7.0 lb-ft)



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Fuel Drain Tray and FTPC Valve Removal and Installation

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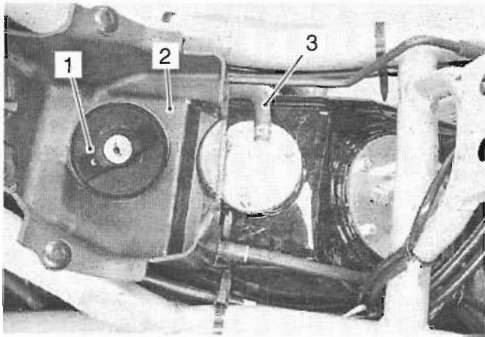
Removal

- Remove the front box. Refer to "Front Box Removal and Installation in Section 9D (Page9D-18)".
- Remove the fuel tank filler cap (1) fuel drain tray (2) from the fuel tank.

⚠ CAUTION

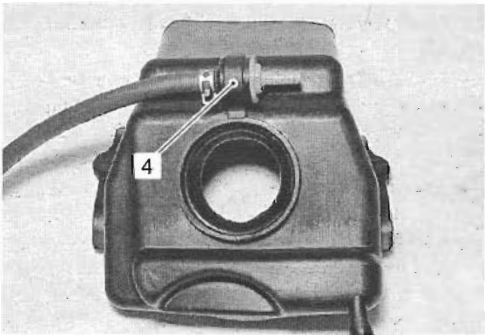
After the fuel drain tray has been removed, the fuel cap should be fitted to the fuel tank.

3) Disconnect the hose (3) from the fuel cut valve.



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4) Remove the FTPC valve (4) from the fuel drain tray.



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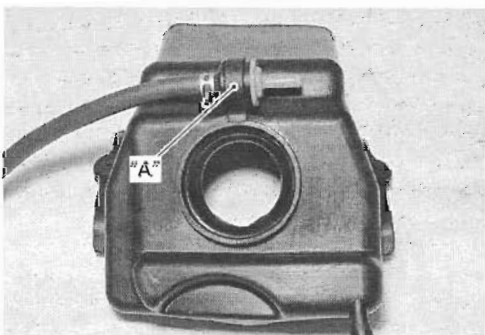
Installation

Install the fuel drain tray and FTPC valve in the reverse order of removal. Pay attention the following points:

- The hose should be fitted on the black side "A" of the FTPC valve.

⚠ CAUTION

When installing fuel drain, care should be used not to cause tear or other damage.



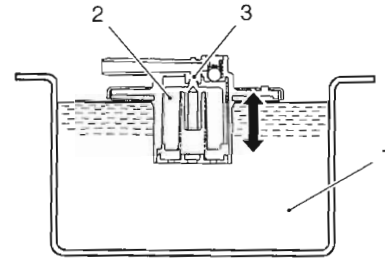
I705H1170010-02

Fuel Cut Valve Inspection

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Inspect the fuel cut valve in the following procedures:

- 1) Remove the fuel cut valve. Refer to "Fuel Drain Tray and FTPC Valve Removal and Installation (Page1G-7)".
- 2) Check for the following points and replace if any abnormal condition is found.
 - With the fuel cut valve being immersed in kerosene (1), check that valve (2) operates smoothly and valve seat (3) contacts correctly.

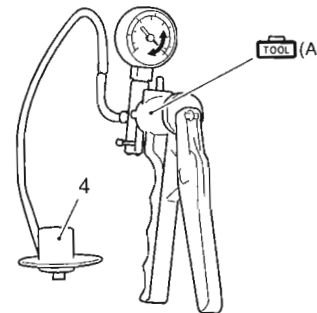


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- Using the special tool, apply vacuum to the fuel cut valve (4) and check that the gauge pointer moves correctly.

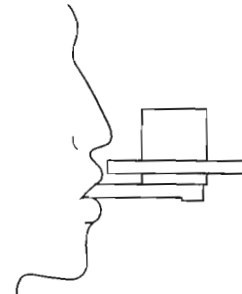
Special tool

TOOL (A): 09917-47011 (Vacuum pump gauge)



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- Check for resistance when the fuel cut valve is blown.



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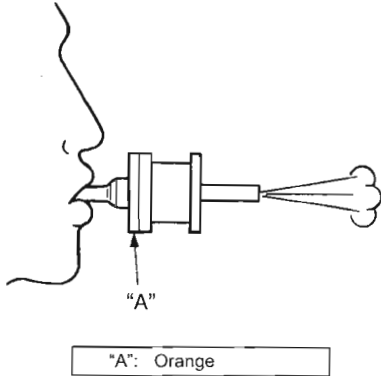
3) After finishing the fuel cut valve inspection, reinstall the fuel cut valve. Refer to "Fuel Drain Tray and FTPC Valve Removal and Installation (Page1G-7)".

FTPC Valve Inspection

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Inspect the FTPC valve in the following procedures:

- 1) Remove the FTPC valve. Refer to "Fuel Drain Tray and FTPC Valve Removal and Installation (Page1G-7)".
- 2) Check that air passes easily when blown from the orange paint side of the FTPC valve and that resistance exists when blown from the other side. If any abnormal condition exists, replace the valve with a new one.



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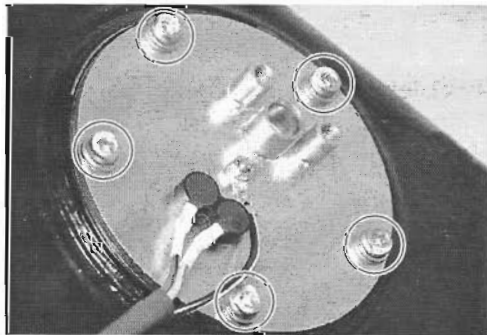
- 3) After finishing the FTPC valve inspection, reinstall the FTPC valve. Refer to "Fuel Drain Tray and FTPC Valve Removal and Installation (Page1G-7)".

Fuel Pump Disassembly and Assembly

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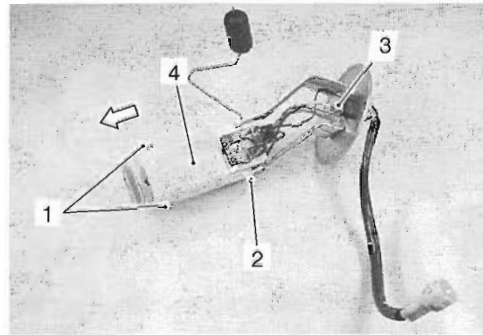
Disassembly

- 1) Remove the fuel pump assembly. Refer to "Fuel Pump Assembly Removal and Installation (Page1G-6)".



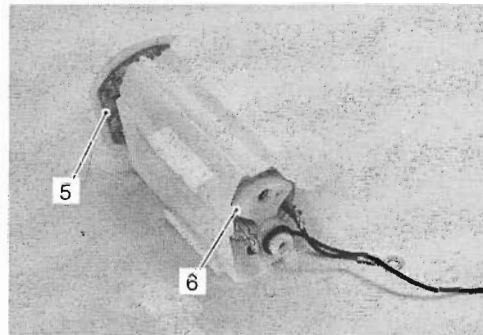
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- 2) After removing the clamp screw (1), ground wire (2) and lead wire (Bl) (3), remove the fuel pump assembly (4).



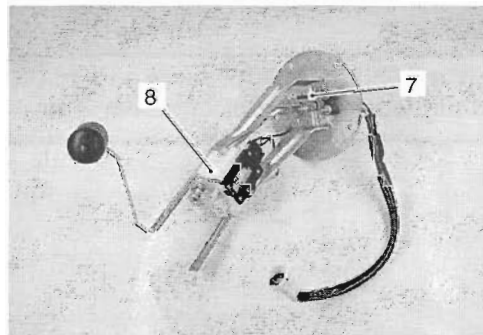
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- 3) Detach the fuel mesh filter (5) and remove the fuel pump (6).



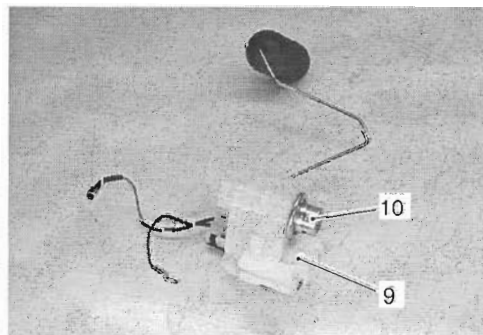
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- 4) Disconnect the lead wire (gray) (7) and remove the fuel level gauge assembly (8).



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- 5) Remove the fuel guide (9) and fuel pressure regulator (10).



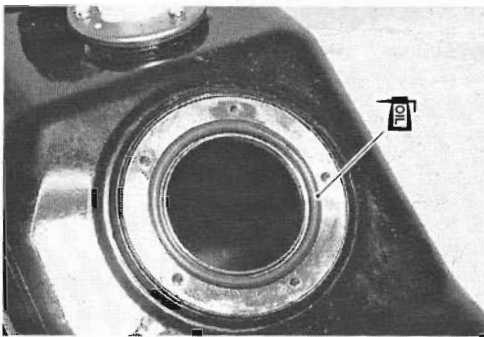
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Assembly

Refer to "Fuel Mesh Filter Inspection (Page1G-12)". Assemble the fuel pump assembly in the reverse order of the disassembly. Pay attention to the following points:

⚠ CAUTION

- To prevent fuel leakage, each O-ring must be replaced with a new one.
 - Apply engine oil lightly to each of the O-rings.
-
- Connect all wiring couplers securely so as not to cause contact failure.
 - With the engine oil lightly applied to the O-ring, install the fuel pump to the fuel tank.

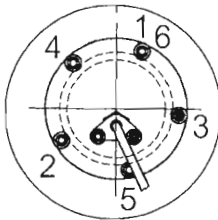
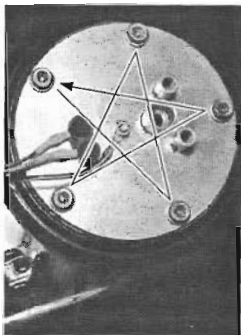


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- After the fuel pump mounting bolts have been tightened temporarily, tighten them to specification in the specified torque.

Tightening torque

Fuel pump mounting bolt: 10 N·m (1.0 kgf·m, 7.0 lb-ft)



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Fuel Pressure Inspection

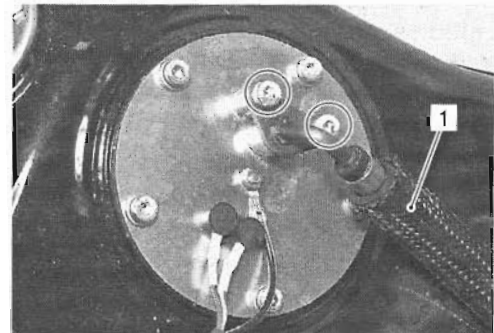
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Inspect the fuel pressure in the following procedures:

- 1) Remove the fuel tank bolt and move the fuel tank for vehicle backward.
- 2) Place a rag under the fuel feed hose and disconnect fuel feed hose (1) from the fuel tank.

⚠ WARNING

- Use caution to minimize spillage of gasoline.
- Keep away from fire or spark.
- Spilled gasoline should be wiped off immediately.
- Work in a well-ventilated area.



I705H1170030-01

- 3) Install the special tools to the fuel tank.

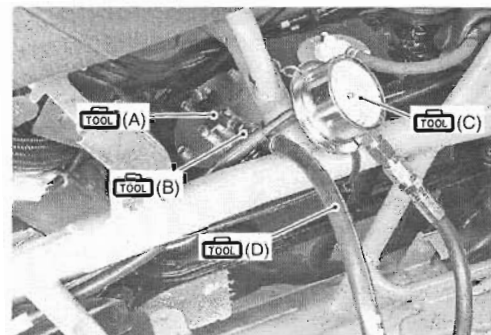
Special tool

TOOL (A): 09940-40211 (Fuel pressure gauge adapter)

TOOL (B): 09940-40230 (Fuel pressure gauge hose attachment)

TOOL (C): 09915-77331 (Meter (for high pressure))

TOOL (D): 09915-74521 (Oil pressure gauge hose)



I705H1170031-01

1G-11 Fuel System:

4) Turn the ignition ON and check for fuel pressure.

Fuel pressure

Approx. 300 kPa (3.0 kg/cm², 43.5 psi)

If the fuel pressure is lower than the specification, check for the followings:

- Hose leakage
- Filter clogging
- Pressure regulator
- Fuel pump

If the fuel pressure is higher than the specification, check for the followings:

- Pump check valve
- Pressure regulator

⚠ CAUTION

- Prior to removing the special tool, turn the ignition switch to OFF position and gradually release fuel pressure.

⚠ WARNING

- Use caution to minimize spillage of gasoline.
- Keep away from fire or spark.
- Spilled gasoline should be wiped off immediately.
- Work in a well-ventilated area.

5) After finishing the fuel pressure inspection, reinstall the fuel tank. Refer to "Fuel Tank Removal and Installation (Page1G-5)".

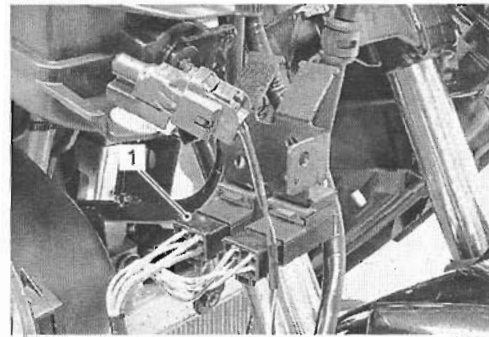
Fuel Pump Relay Inspection

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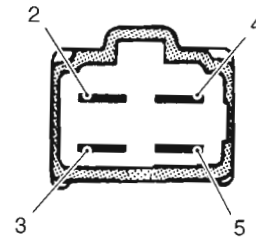
Refer to "Electrical Components Location in Section 0A (Page0A-7)".

Inspect the fuel pump relay in the following procedures:

- 1) Remove the front leg shield. Refer to "Front Leg Shield Removal and Installation in Section 9D (Page9D-14)".
- 2) Remove the fuel pump relay (1).
- 3) First, check for insulation with the tester between terminals (2) and (3). Next, check for continuity between (2) and (3) with 12 V voltage applied, positive (+) to terminal (4) and negative (-) to terminal (5). If continuity does not exist, replace the relay with a new one.



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Fuel Mesh Filter Inspection

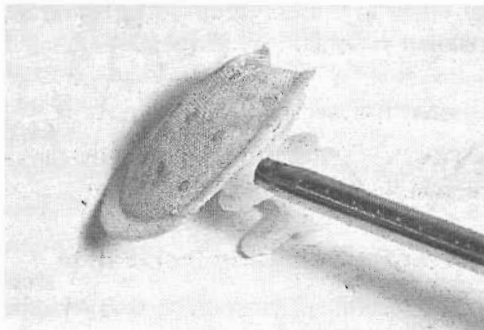
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Inspect the fuel mesh filter in the following procedures:

- 1) Remove the fuel mesh filter. Refer to "Fuel Pump Disassembly and Assembly (Page1G-9)".
- 2) If the fuel mesh filter is clogged with foreign particles, it hinders smooth gasoline flow resulting in loss of engine power. Such a filter should be cleaned by blowing with compressed air.

NOTE

When the fuel mesh filter is dirtied excessively, replace the fuel filter cartridge with a new one.



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- 3) After finishing the fuel mesh filter inspection, reinstall the fuel mesh filter. Refer to "Fuel Mesh Filter Inspection (Page1G-12)".

Fuel Level Gauge Inspection

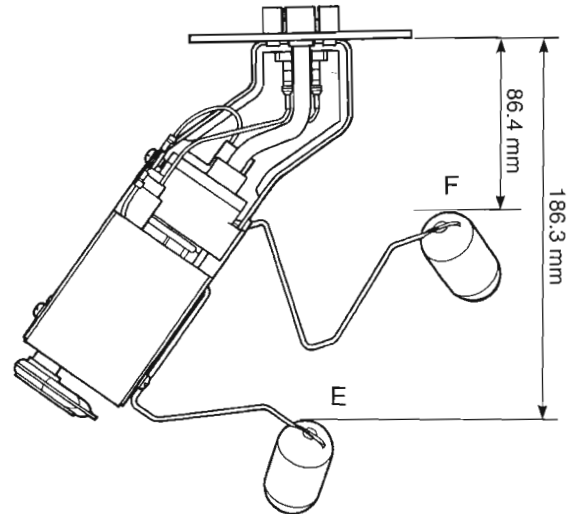
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Inspect the fuel level gauge in the following procedures:

- 1) Remove the fuel pump assembly. Refer to "Fuel Pump Disassembly and Assembly (Page1G-9)".
- 2) Check for resistance between the terminals for each of the following float position.
If the resistance measured is out of specification, replace the fuel gauge with a new one.

Special tool

TOOL : 09900-25008 (Multi-circuit tester set)



I705H1170033-06

Float position	Resistance between terminals
F: 86.4 mm from tank mating face	Approx. 9 – 11 Ω
E: 186.3 mm from tank mating face	Approx. 129 – 131 Ω

- 3) Inspect the fuel meter. Refer to "Fuel Level Meter Inspection in Section 9C (Page9C-2)".

1G-13 Fuel System:

Fuel Pump Inspection

B705H21706014

Turn the ignition switch ON and check for operation of the fuel pump for a few seconds. If the fuel pump is not operating properly, replace the fuel pump or check the fuel pump relay and fuel cut sensor.

Fuel Discharge Inspection

▲ WARNING

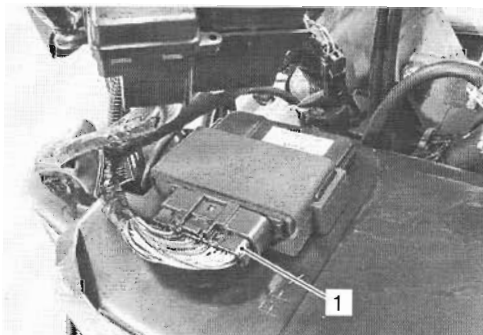
- Use caution to minimize spillage of gasoline.
- Keep away from fire or spark.
- Spilled gasoline should be wiped off immediately.
- Work in a well-ventilated area.

- 1) Remove the front frame cover. Refer to "Front Frame Cover Removal and Installation in Section 9D (Page9D-17)".
- 2) Disconnect the fuel feed hose from the injector.
- 3) Insert the end of fuel feed hose into a measuring cylinder.



I705H1170034-01

- 4) Remove the meter panel. Refer to "Meter Panel Removal and Installation in Section 9D (Page9D-14)".
- 5) Disconnect the ECM lead wire coupler.



I705H1170042-02

- 6) With 12 V voltage applied to the power source lead wire (Y/R), measure the volume of gasoline discharged within 10 seconds.
- 7) If the discharge amount is out of the specification, the probable cause may be failure of the fuel pump or clogged fuel filter.

Fuel discharge amount

At least approx. 35 ml/10 seconds

NOTE

The battery should be in fully charged condition.

- 8) After finishing the fuel discharge inspection, reinstall the fuel feed hose, meter panel and front frame cover. Refer to "Front Frame Cover Removal and Installation in Section 9D (Page9D-17)".

Fuel Injector Inspection

B705H21706015

Refer to "DTC "C32" (P0201): Fuel Injector Circuit Malfunction in Section 1A (Page1A-52)".

Fuel Injector Removal and Installation

B705H21706016

Refer to "Throttle Body Disassembly and Assembly in Section 1D (Page1D-13)".

Specifications

Service Data

B705H21707001

Injector + Fuel Pump + Fuel Pressure Regulator

Item	Specification	Note
Injector resistance	Approx. 10.3 Ω at 20 °C (68 F°)	—
Fuel pump discharge amount	35 ml and more For 10 sec., at 300 kPa (3.0 kgf/cm ² , 43 psi)	—
Fuel pressure regulator operating set pressure	Approx. 300 kPa (3.0 kgf/cm ² , 43 psi)	—

Fuel

Item	Specification	Note
Fuel type	Use only unleaded gasoline of at least 87 pump octane or 91 octane (R/2 + M/2) or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.	E-03, 28, 33
	Gasoline used should be graded 91 octane or higher. An unleaded gasoline type is recommended.	The others countries
Fuel tank capacity	Including reserve	13.5 L (3.6/3.0 US/Imp gal)
	Reserve	4.0 L (3.17/2.64 US/Imp gal)

Tightening Torque Specifications

B705H21707002

Fastening part	Tightening torque			Note
	N·m	kgf·m	lb·ft	
Fuel cut valve bolt	3.5	0.35	2.5	☞ (Page1G-5)
Fuel pump mounting bolt	10	1.0	7.0	☞ (Page1G-7) / ☞ (Page1G-10)
Fuel hose mounting bolt	10	1.0	7.0	☞ (Page1G-7)

NOTE

The specified tightening torque is also described in the following.
 “Fuel Tank Hose Construction (Page1G-2)”

Reference:

For the tightening torque of fastener not specified in this section, refer to “Tightening Torque Specifications in Section 0C (Page0C-7)”.