

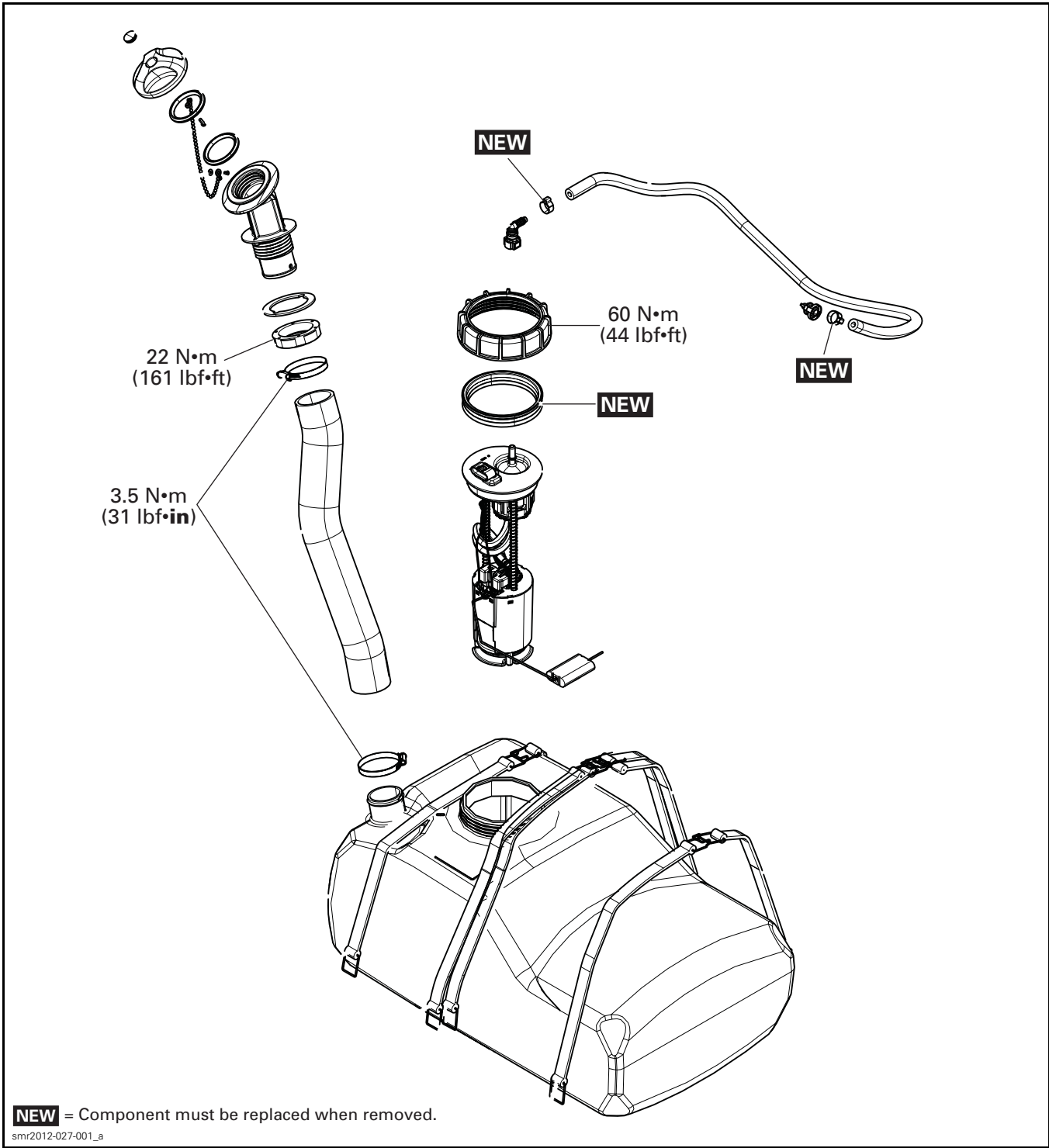
FUEL TANK AND FUEL PUMP

SERVICE TOOLS

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FUEL TANK AND FUEL PUMP

GTS/GTI Series, GTR and WAKE

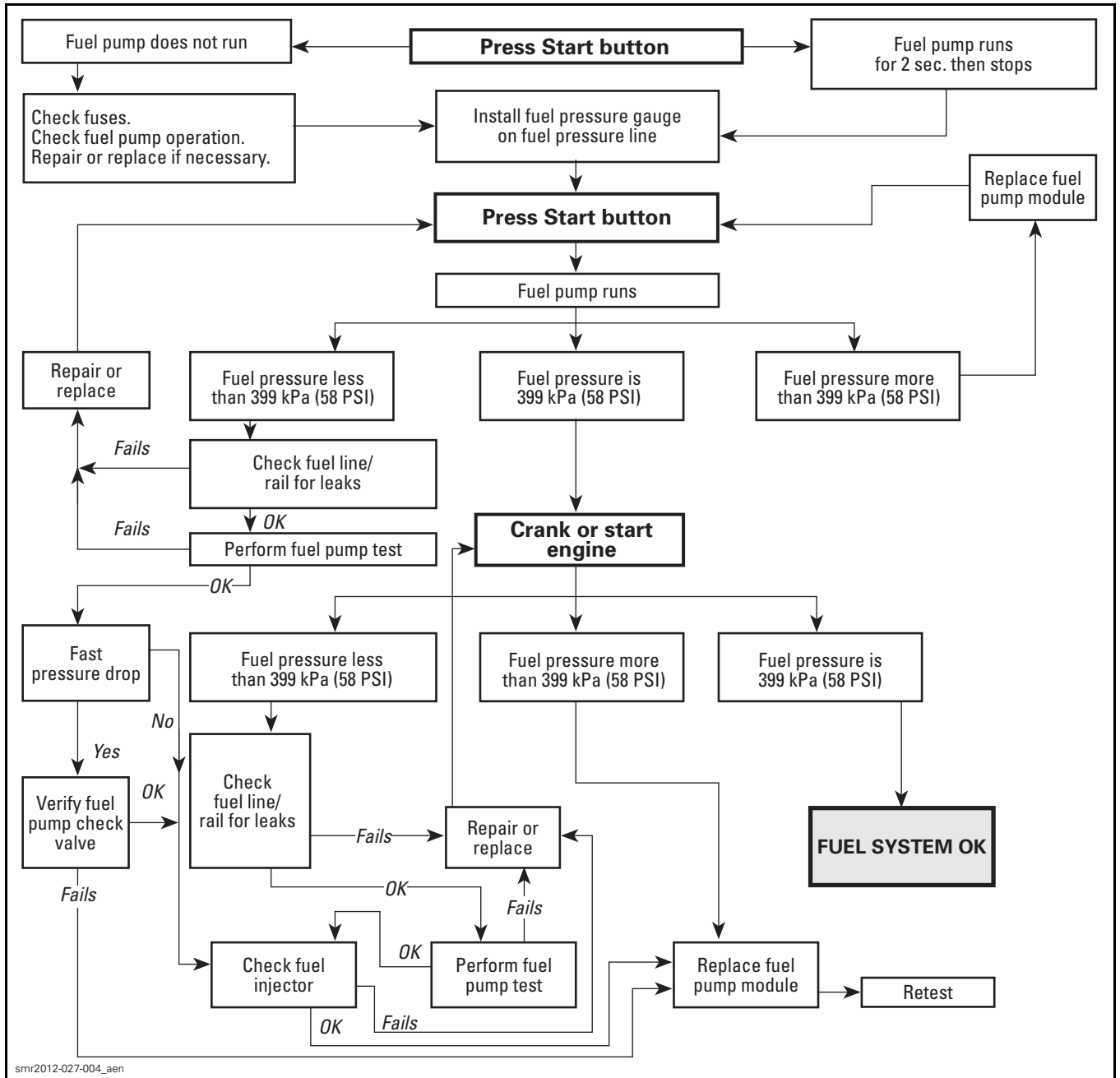




RXT/GTX



FUEL SYSTEM DIAGNOSTIC FLOW CHART



GENERAL

⚠ WARNING

Fuel lines remain under pressure at all times. Always proceed with care and use appropriate safety equipment when working on a pressurized fuel system. Wear safety glasses.

⚠ WARNING

Always disconnect battery prior to working on the fuel system. Fuel vapors are flammable and explosive under certain conditions. Always work in a well ventilated area. Do not allow fuel to spill on hot engine parts and/or on electrical connectors. Proceed with care when removing/installing high pressure test equipment or disconnecting fuel line connections. Cover the fuel line connection with an absorbent shop rag. Wipe off any fuel spillage in the bilge.

⚠ WARNING

When the repair is completed, ensure that hoses and connections from fuel rail to the fuel pump are properly secured. Then, pressurize the fuel system. After carrying out a fuel pump pressure test, use the valve on the fuel pressure gauge to release the pressure (if so equipped).

⚠ WARNING

The fuel pump is energized for a few seconds each time the START button is depressed. It builds fuel system pressure very quickly. Prior to pressing the START button, ensure there are no disconnected or damaged fuel lines that may leak fuel. A high pressure leak test must be carried out whenever a fuel system component has been disconnected.

⚠ WARNING

Ensure wires and hoses are routed and secured away from any vibrating, rotating, moving or hot components or sharp edges. Use appropriate shields and fastening devices as per factory standards.

NOTICE Whenever repairing the fuel system, always check for water infiltration in the fuel tank. Replace any damaged, leaking or deteriorated fuel line.

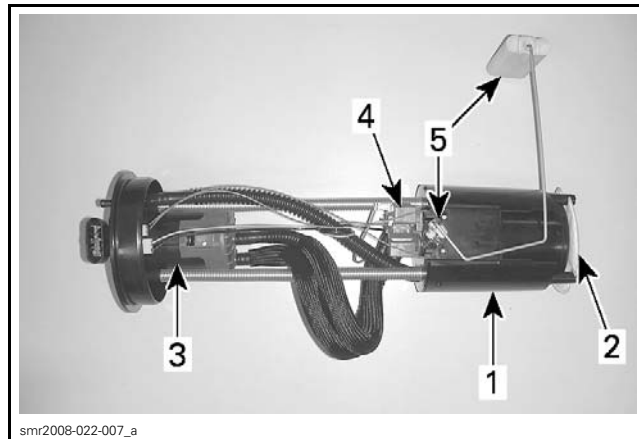
SYSTEM DESCRIPTION

The fuel system is comprised of:

- A fuel tank
- A vented fuel tank cap
- A fuel pump module mounted inside the fuel tank
- A fuel vent system, and
- A variety of hoses.

The fuel pump module is basically comprised of:

- An electric fuel pump mounted inside a canister type pump reservoir
- A lower inlet filter
- An upper outlet filter
- A pressure regulator
- A float type fuel level sensor.



smr2008-022-007_a

FUEL PUMP MODULE

1. Fuel pump reservoir
2. Lower inlet filter
3. Upper outlet filter
4. Fuel pressure regulator
5. Float type fuel level sensor

Fuel Pump Operation

When the pump is in operation, it draws fuel into the canister through a lower inlet filter and a disk type valve.

The pressurized fuel is pushed through an upper outlet filter to the fuel rail.

Excess fuel pressure generated by the pump is routed from the upper filter back to the pump canister reservoir by a pressure regulator mounted on the pump reservoir cover.

When the START button is pressed, the electrical system is powered. The fuel pump will come on for approximately 2 seconds to pressurize the fuel rail in preparation for the engine start.

The ECM supplies the ground signal to turn on the fuel pump motor.

The pressure regulator will ensure appropriate fuel pressure is supplied to the injectors.

When the ECM receives a signal to shut down the engine (START/STOP switch, engine cut-off switch, or T.O.P.S. switch) it removes the fuel pump ground signal.

Fuel Level Indication

An electric float type fuel level sensor is mounted on the side of the fuel pump reservoir. As the float moves with changing fuel levels, it varies a resistance that changes the voltage signal coming from the information center (multifunction gauge). This signal is representative of the fuel level.

The information center interprets the fuel level voltage signal that comes back from the fuel level sensor. It then displays the proper fuel level in the information center and a low fuel warning message when required.

The information center will also trigger the beeper which produces the appropriate beep signal to warn the driver of a low fuel condition.

The fuel level sensor resistance is at its lowest value when the fuel tank is full, and at its highest value when the tank is empty.

Refer to the *FUEL LEVEL SENSOR* in this subsection for fuel level sensor testing procedures.

Fuel Tank Venting

The entire vent system is incorporated within the fuel tank cap.

⚠ WARNING

If the cap requires replacement, it must be replaced with an approved vented cap of the same type supplied by BRP. Use of any other cap, or use of a non-vented cap will not allow proper venting of the fuel tank. The result may be engine fuel starvation, fuel tank overpressure, or fuel leaks which could lead to a fire or an explosion.

NOTE: BRP is the only supplier of the vented fuel tank cap. There is no equivalent vented fuel tank cap available on the market today.

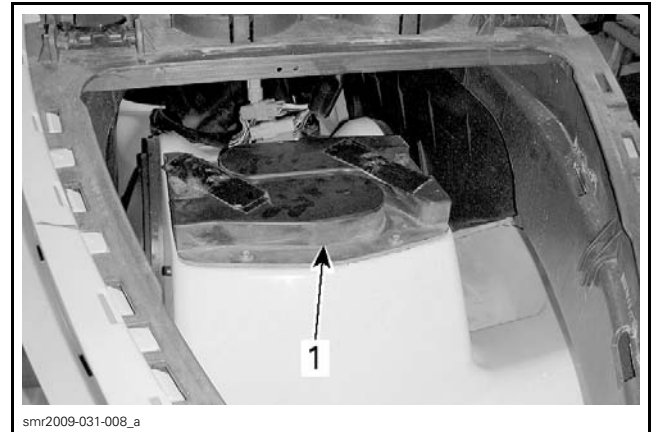
INSPECTION

FUEL TANK LEAK TEST

1. Open front storage compartment cover.
2. Remove storage bin or partitions. Refer to *BODY* subsection.

Models with Suspension

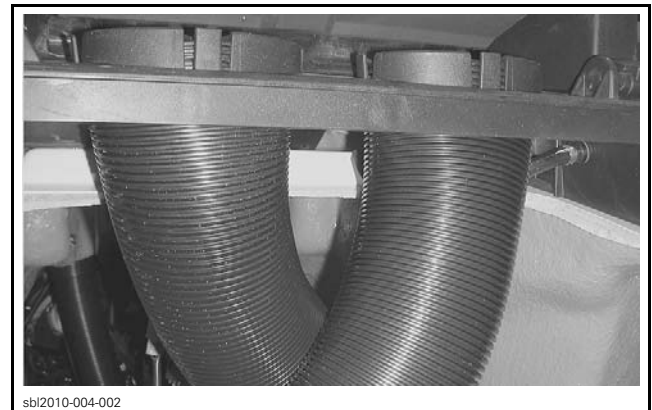
3. Remove front ventilation box.



1. Ventilation box

Models Without Suspension

4. Disconnect the top of the two front air ventilation hoses, refer to *BODY* subsection.



TYPICAL – FRONT AIR VENTILATION HOSES

All Models

5. Visually inspect condition of hoses and clamps.
6. Remove/open fuel tank cap.
7. Fill up fuel tank.
8. Install test cap on filler neck.

REQUIRED TOOL

TEST CAP (THREADED)
(529 033 102)



NOTE: Test cap is included in LEAK TEST KIT (P/N 529 033 100)

FUEL TANK TEST CAP (FLIP) (P/N 529 036 244)

9. Use the following tool to pressurize fuel tank.

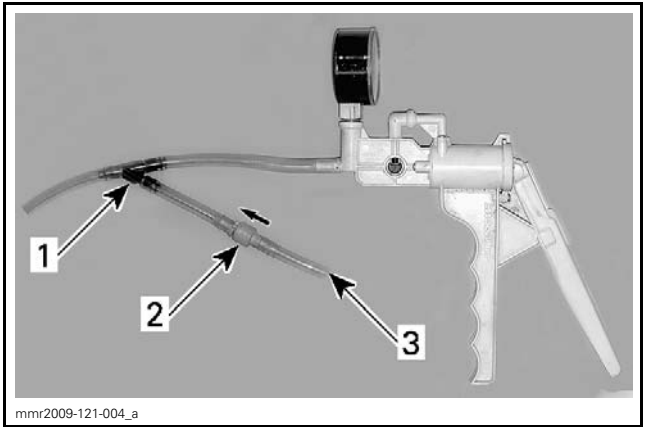
Subsection XX (FUEL TANK AND FUEL PUMP)

REQUIRED TOOL

VACUUM/PRESSURE PUMP
(P/N 529 021 800)

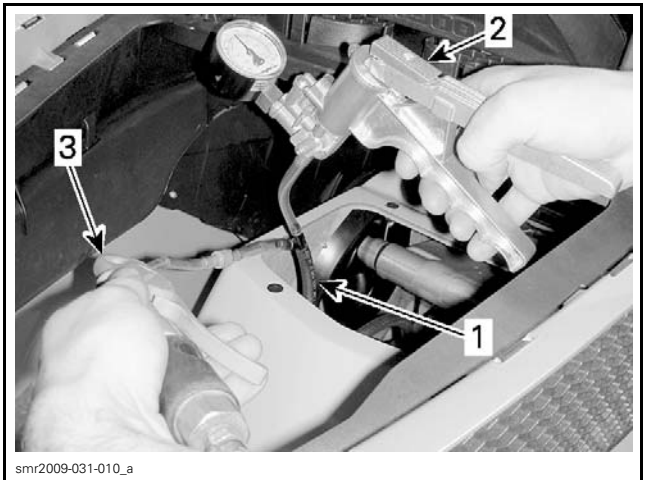


NOTE: A Y-fitting and a check valve can be installed to use compressed air for quick pressure build-up when the fuel tank is not full.



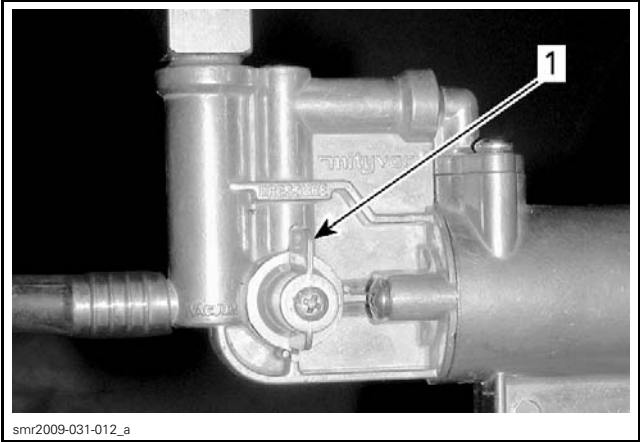
- 1. Y-fitting (P/N 293 710 059)
- 2. Check valve (P/N 275 500 505)
- 3. Apply compressed air here

10. Connect the vacuum/pressure pump to the nipple of fuel tank test cap.



- TYPICAL**
- 1. Inlet valve end
 - 2. Vacuum/pressure pump
 - 3. Compressed air supply

11. Set vacuum/pressure pump to PRESSURE.



1. Pressure selected

12. Pressurize fuel tank to specification.

NOTICE Do not exceed the specification when pressurizing the fuel tank.

FUEL TANK LEAK TEST	
PRESSURE	TIME WITHOUT PRESSURE DROP
21 kPa (3 PSI)	10 minutes

If the pressure drops, locate fuel leak(s), repair/replace leaking component(s) and retest.

Possible leak areas are:

- Filler neck, hose and connections
- Fuel tank
- Fuel tank neck
- Fuel pump gasket
- Fuel pump check valve (unlikely)

To locate a leak, check for a fuel smell or leaking fuel.

If a leak is not visible, spray a soapy water solution on components to ease locating the leak(s); bubbles will indicate the leak location(s).

NOTE: If the pressure drops and no leak has been found, it is possibly fuel pump check valve.

NOTICE When the fuel system leak test is completed, thoroughly rinse all components of the soapy water solution with clear water. A soapy water residue may cause premature deterioration and must be rinsed away.

 **WARNING**

If a leak is found, do not start the engine. Wipe off any fuel that leaked and ventilate the hull thoroughly to remove any accumulated fuel vapors. Do not use electric powered tools on watercraft unless system has passed the leak test.

13. Remove test cap.

FUEL TANK CAP LEAK TEST

To test the fuel tank cap, use the following tools.

REQUIRED TOOL
VACUUM/PRESSURE PUMP (P/N 529 021 800)
VENTED CAP TEST ADAPTER (THREADED) (P/N 529 036 243)
VENTED CAP TEST ADAPTER (FLIP) (P/N 529 036 245)



529021800

VACUUM/PRESSURE PUMP



529036141

VENTED CAP TEST ADAPTER — TYPICAL THREADED TYPE SHOWN

Inlet Check Valve Function Test

Install the fuel tank cap onto the vented cap test adapter.

Set vacuum/pressure pump to the VACUUM function.

Connect vacuum/pressure pump to nipple of vented cap test adapter.

Squeeze the vacuum/pressure pump handle several times to draw air in through the check valve of fuel tank cap.

Air should be drawn in freely and vacuum indication on pump should remain at zero. If vacuum rises, replace the fuel tank cap.

Pressure Relief Valve Function Test

Set the vacuum/pressure pump to the PRESSURE function.

Squeeze the vacuum/pressure pump handle to apply pressure to the check valve of fuel tank cap and observe the pressure rise. It should be as per specification.

FUEL TANK CAP TEST	
PRESSURE	TEST RESULT
Up to 6.9 kPa (1 PSI)	Pressure must hold
Above 6.9 kPa (1 PSI) and below 13.8 kPa (2 PSI)	Pressure must release

If pressure holds above specification, replace the fuel tank cap.

Remove test adapter.

Reinstall/close fuel tank cap.

FUEL SYSTEM HIGH PRESSURE LEAK TEST

⚠ WARNING

A high pressure leak test must be carried out before starting the engine anytime a fuel system component has been disconnected for maintenance or replacement.

1. Visually inspect fuel system to ensure all fuel system connections are properly made.
2. Lightly pull on hoses at each connection to ensure they are properly locked at the quick connect fittings.
3. Remove tether cord from the engine cut-off switch to prevent engine starting.
4. Press the START button to turn on the fuel pump for a few seconds and pressurize the fuel system.
5. Check for fuel odor and visually inspect hoses, fittings and components for leaking fuel.
6. If a leak is detected, repair or replace the leaking component and repeat leak test after the repair.
7. If no leak is found, engine can be started.

FUEL PUMP PRESSURE TEST

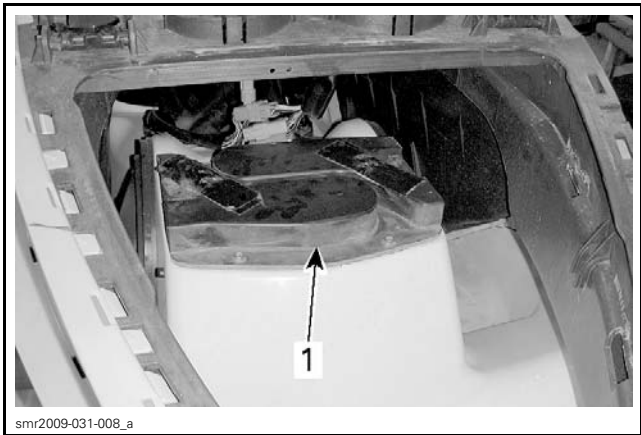
Preparation

The pressure test will show the available pressure at the fuel pump outlet. It validates the pressure regulator, the fuel pump and check valve and it tests for leaks in the system.

- 1. Ensure the battery is fully charged, refer to *CHARGING SYSTEM*.
- 2. Open front storage compartment cover.
- 3. Remove the storage bin or partitions. Refer to *BODY* subsection.

Models with Suspension

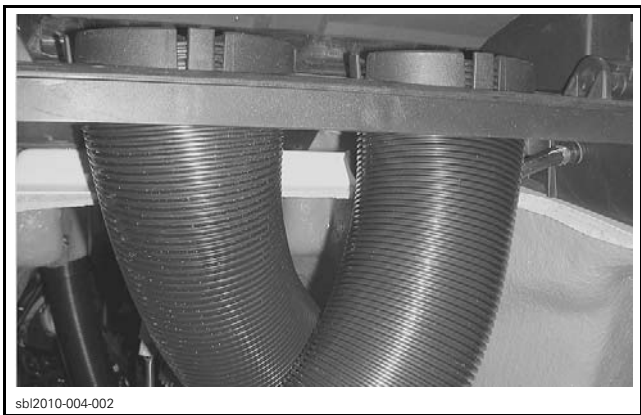
- 4. Remove front ventilation box.



1. Ventilation box

Models Without Suspension

- 5. Disconnect the top of the two front air ventilation hoses, refer to *BODY* subsection.



TYPICAL – FRONT AIR VENTILATION HOSES

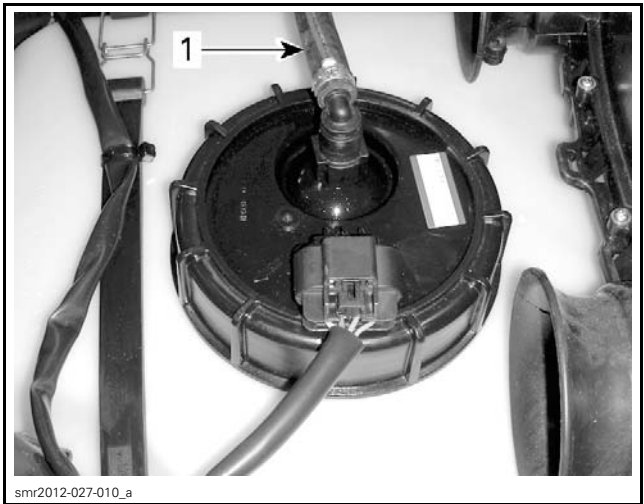
All Models

- 6. Ensure hoses and fittings are not leaking. Repair any leak.
- 7. Ensure there is enough gas in the fuel tank.

- 8. Disconnect the pressure outlet hose from the fuel pump.

WARNING

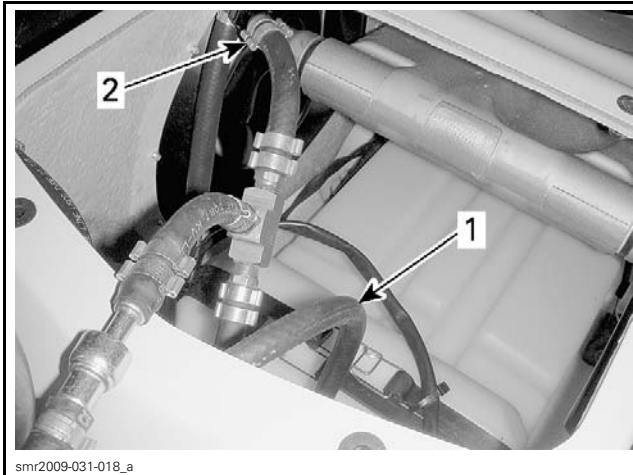
Cover the fuel line connection with an absorbent shop rag. Wipe off any fuel spillage inside the bilge.



1. Outlet hose

- 9. Install pressure test tools between disconnected hose and fuel pump fitting (in line installation).

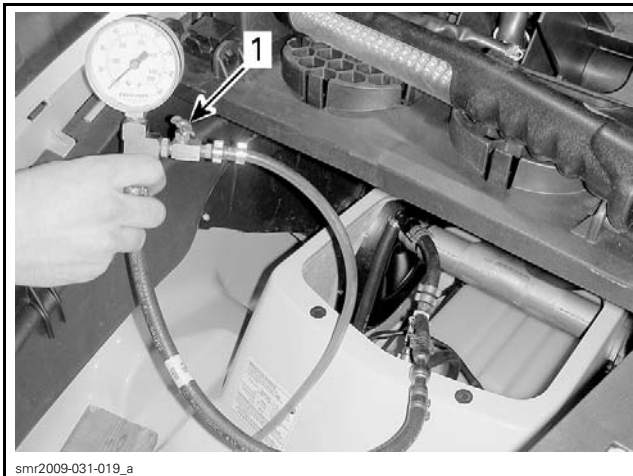
REQUIRED TOOLS	
PRESSURE GAUGE (P/N 529 035 709)	
FUEL HOSE ADAPTER (P/N 529 036 023)	



TYPICAL
1. Connect to fuel pump
2. Connect to outlet hose

Test when Engine Is Stopped

1. Remove tether cord from the engine cut-off switch to prevent engine starting.
2. Press the START button and observe fuel pressure.
3. Release pressure in system using the valve on the pressure gauge between each test so that the reading returns to zero (0).
4. Repeat test twice and compare readings to specifications in following table.



FUEL PUMP PRESSURE TEST
1. Valve on gauge

MODELS	FUEL PRESSURE (WHEN PRESSING THE START BUTTON)
All	386 kPa - 414 kPa (56 PSI - 60 PSI)

Test when Cranking or Starting Engine

1. Crank or start engine and observe fuel pressure. The fuel pressure should be the same as in previous test.

If pressure is good, fuel pump and pressure regulator are functioning correctly.

2. Stop the engine.

A rapid pressure drop indicates leakage either from the fuel rail or from the fuel pump check valve. Check fuel rail for leaks.

If a pressure drop occurs when pressing the START button and the fuel rail is not leaking, then replace the fuel pump module.

A slow pressure drop indicates leakage either from a fuel injector or from the fuel pressure regulator in the fuel pump module. To check fuel injectors for leaks, refer to the *ELECTRONIC FUEL INJECTION (EFI)* subsection. If injectors are not leaking, then replace fuel pump.

3. Release fuel pressure in system using the valve on the pressure gauge.
4. Remove pressure gauge and reinstall fuel hose on fuel pump module.

WARNING

Wipe off any fuel spillage in the bilge. Fuel is flammable and explosive under certain conditions. Always work in a well ventilated area.

5. Reinstall all other removed parts, refer to applicable subsections.

PROCEDURES

FUEL HOSES AND OETIKER CLAMPS

Fuel Hose Inspection

1. Inspect all fuel hoses for wear, kinks, cracks or any other types of damages.
2. Inspect all clamps for tightness.

Fuel Hose Replacement

When replacing fuel hoses, be sure to use hoses and clamps as available from BRP parts department. This will ensure continued proper and safe operation.

 **WARNING**

Use of fuel lines other than those recommended by BRP may compromise fuel system integrity.

 **WARNING**

- Never use a hose pincher on high pressure hoses.
- Never change the routing of a fuel hose.
- Always reinstall the corrugated protective tubing on fuel hoses.
- Secure fuel hoses using the appropriate locking tie or fastener to prevent contact with sharp edges or hot, rotating and moving parts.
- After connecting a hose or a quick connect fitting, pull on the hose near the fitting to make sure it is securely locked.
- Always validate fuel system tightness by performing a *FUEL PUMP PRESSURE TEST*.

Oetiker Clamp Replacement

REQUIRED TOOL	
OETIKER PLIERS (P/N 295 000 070)	

 **WARNING**

Whenever removing a hose in the fuel system, always use new Oetiker clamps at assembly.

FUEL PUMP

Fuel Pump Operation Test

1. Remove tether cord from the engine cut-off switch to prevent engine starting.
2. Press START button.
3. The fuel pump should run for 2 seconds to build up fuel system pressure.
4. If fuel pump runs, carry out the *FUEL PUMP PRESSURE TEST* as described in *INSPECTION* in this subsection.

5. If the fuel pump does not run:
 - Ensure ECM is powered. Refer to *ELECTRONIC FUEL INJECTION (EFI)* subsection.
 - Check fuse F18. If fuse is faulty, replace it and repeat test. If fuse is good, carry out the *FUEL PUMP INPUT VOLTAGE TEST* in this subsection.

Reconnect throttle body connector.

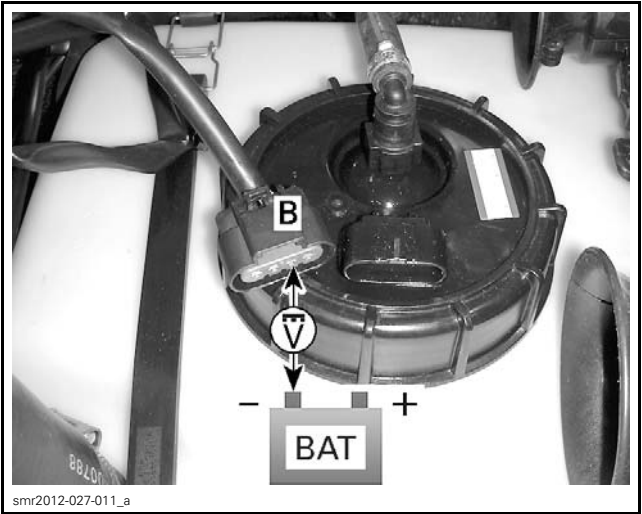
Fuel Pump Pressure Test

Refer to *INSPECTION* in this subsection.

Fuel Pump Input Voltage Test

1. Ensure the fuel pump fuse (F18) is in good condition.
2. Disconnect fuel pump harness connector. Refer to *FUEL PUMP REMOVAL*.
3. Use the FLUKE 115 MULTIMETER (P/N 529 035 868).
4. Select Vdc.
5. Press the START button.
6. Read voltage at fuel pump harness connector as per following table.

INPUT VOLTAGE TEST		
TEST PROBES		VOLTAGE
Pin B (+ probe)	Battery ground (- probe)	Battery voltage



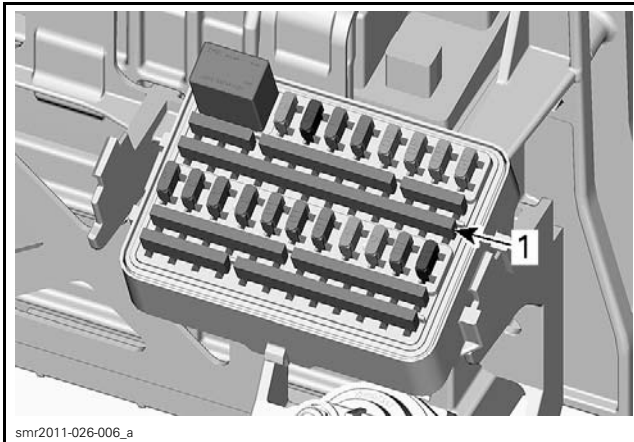
FUEL PUMP INPUT VOLTAGE TEST

If battery voltage is read, power circuit is good. Test the fuel pump circuit. Refer to *FUEL PUMP CIRCUIT TEST*.

If battery voltage is not read, power circuit is faulty. Test continuity of power circuit wiring between fuse box and fuel pump. Refer to *FUEL PUMP CIRCUIT TEST* in this subsection.

Fuel Pump Circuit Test

1. Reconnect the fuel pump harness connector.
2. Remove cover of fuse box.
3. Remove the long bus bar.



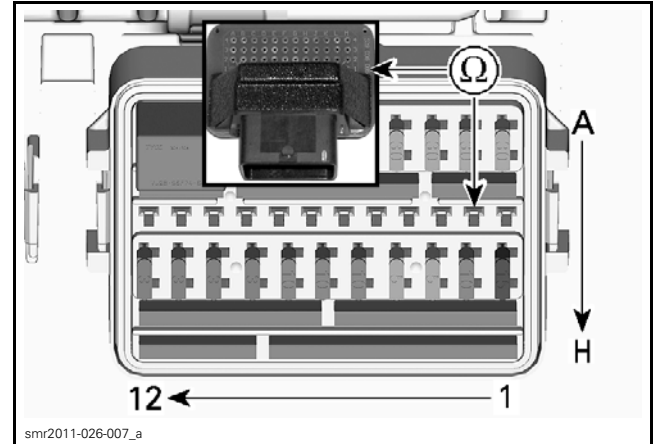
1. Long bus bar

4. Remove ECM connector "B" and install it on the ECM ADAPTER TOOL (P/N 529 036 166).



5. Set multimeter to Ω and test pump circuit as per following table.

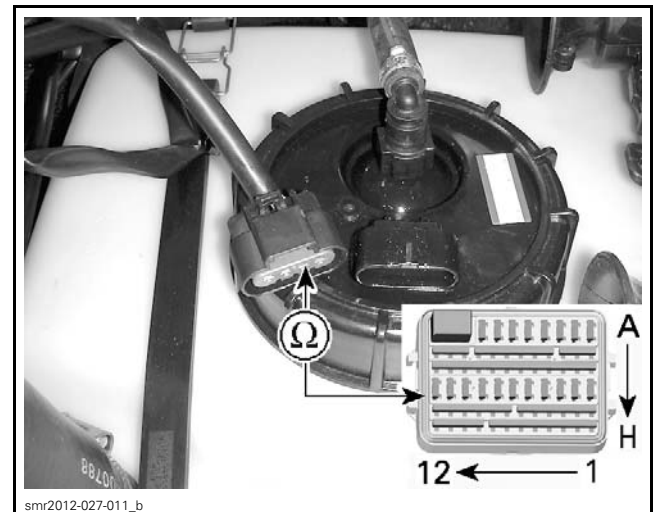
PUMP CIRCUIT TEST THROUGH FUEL PUMP		
TEST PROBES		RESISTANCE @ 20°C (68°F)
Fuse box terminal D2	ECM connector B pin B-M1	Approx. 12 Ω



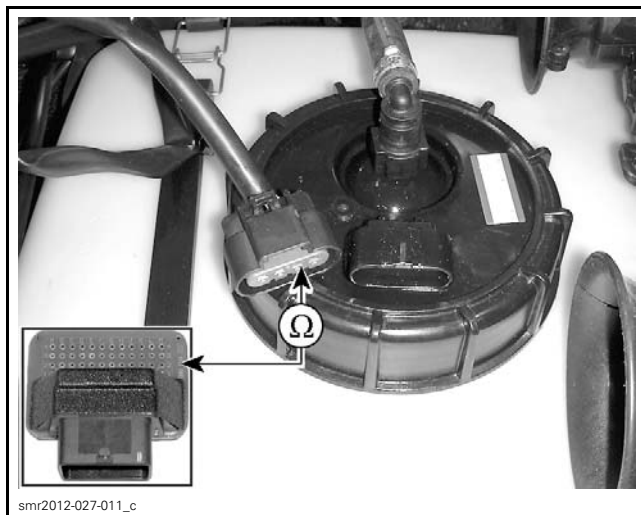
6. If test succeeded, the fuel pump, its fuse and its wiring harness are good.

7. If test failed, test wiring continuity as per table.

FUEL PUMP HARNESS CONTINUITY TEST (WIRING ONLY)		
TEST PROBES		RESISTANCE @ 20°C (68°F)
Pump harness connector pin B	Fuse box terminal F2	Close to 0 Ω (continuity)
Pump harness connector pin A	ECM connector B pin B-M1	



Subsection XX (FUEL TANK AND FUEL PUMP)



If there is an open circuit to FB-F2, repair wiring/connector between fuel pump and fuse box.

If there is good continuity to FB-F2 and fuel pump fuse (F18) is good, check continuity of the wire jumper between D2 and E2. Repair or replace wiring as required.

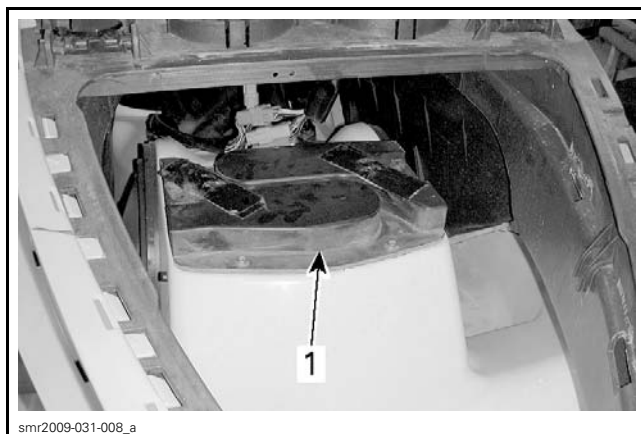
If every test succeeded and fuel pump still does not work, try a new ECM. Refer to *ELECTRONIC FUEL INJECTION (EFI)* subsection.

Fuel Pump Removal

1. Open front storage compartment cover.
2. Remove storage bin or partitions. Refer to *BODY* subsection.

Models with Suspension

3. Remove front ventilation box.



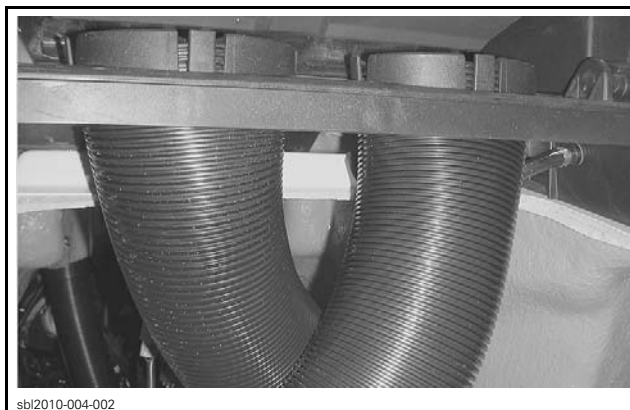
1. Ventilation box

4. Lift suspension to gain access.

NOTE: If more height is required or if the suspension cannot be used, manually lift suspension by the anchor points close to handlebar and safely lock in this position. Do not lift the watercraft from the anchor points.

Models Without Suspension

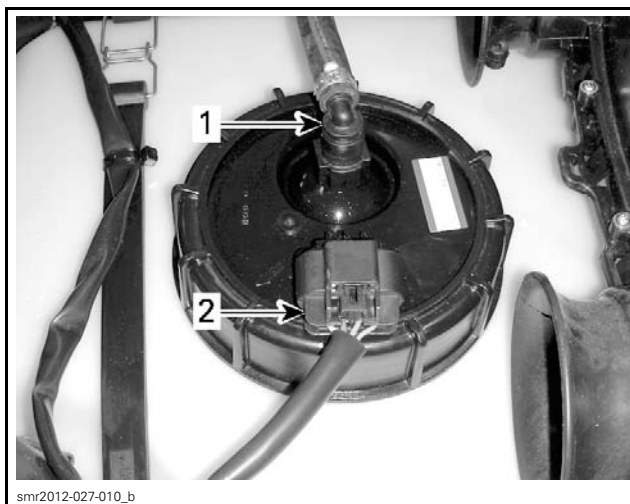
5. Disconnect the top of the two front air ventilation hoses, refer to *BODY* subsection.



FRONT AIR VENTILATION HOSES

All Models

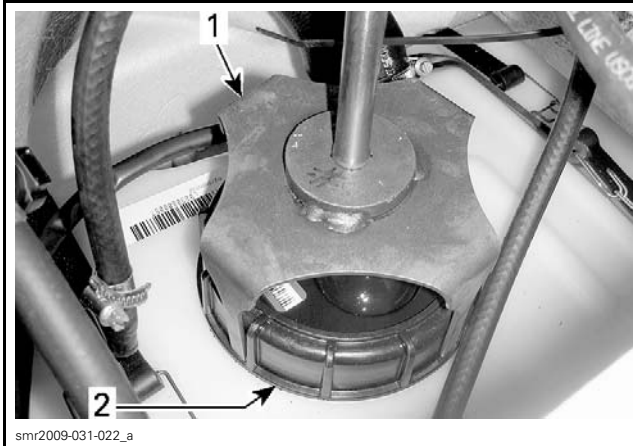
6. Disconnect the negative battery terminal, refer to *CHARGING SYSTEM* subsection.
7. Disconnect fuel pump electrical connector.
8. Disconnect the vent tube from the fuel pump.
9. Wrap shop rags around the high pressure fuel hose fitting, then press on the release button of the quick connect fitting and disconnect the hose.



1. Quick connect fitting (high pressure fuel hose)
2. Harness connector

10. Unscrew the fuel pump retaining nut.

REQUIRED TOOL	
FUEL PUMP MODULE SOCKET (P/N 529 036 125)	



1. Fuel pump module socket
2. Fuel pump retaining nut

NOTICE While pulling out the fuel pump module, pay attention to the corrugated tubes and fuel sensor float arm. Float arm can get caught up and bend which will reduce fuel sensor accuracy. If fuel pump module is dropped or damaged, it must be replaced.

11. Slowly pull fuel pump module up through opening until corrugated tubes contact sides of opening. Tilt the fuel pump module as you slowly pull the pump upwards.

⚠ WARNING
The upper filter and fuel pump reservoir on the fuel pump module contain fuel which will drain out when fuel pump module is not in an upright position.

12. Carefully pull fuel pump module out.



IS MODEL SHOWN

1. Pull out fuel pump module

⚠ WARNING
Always wipe off any fuel spillage from the watercraft. When working with fuel or fuel system and its components, always work in a well ventilated area.

Fuel Pump Installation

Reverse the removal procedure however, pay attention to the following.

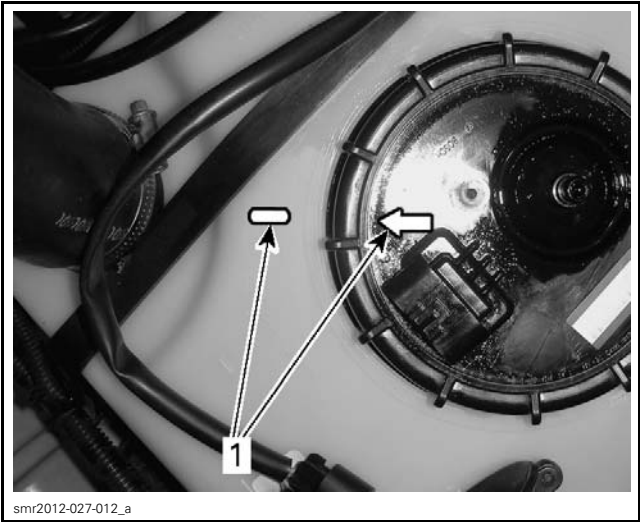
1. Carefully insert fuel pump module in fuel tank so as not to bend float arm.
2. Install a NEW fuel pump module gasket each time the module is reinstalled.

NOTE: Wipe off parts to prevent fuel pump from turning while torquing fuel pump nut.

3. Align arrow on top of fuel pump module with index mark on top of fuel tank or fuel sensor accuracy will be affected.

NOTE: Index mark and arrow locations are highlighted for clarity in following illustration.

Subsection XX (FUEL TANK AND FUEL PUMP)



FUEL PUMP MODULE INDEXING

1. Align marks

4. Tighten fuel pump nut.

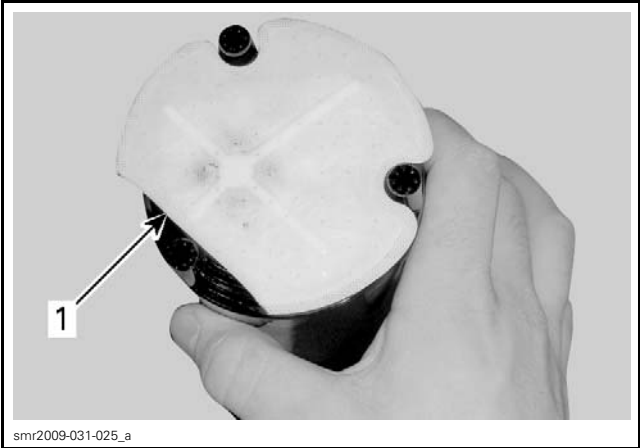
TORQUE	
Fuel pump nut	60 N•m (44 lbf•ft)

5. Carry out a *FUEL TANK LEAK TEST* and a *FUEL SYSTEM HIGH PRESSURE LEAK TEST*. See procedures in this subsection.

FUEL FILTER

Fuel Filter Inspection

Inspect fuel filter. If dirty, partially clogged or damaged, replace it.



1. Fuel filter

Fuel Filter Removal

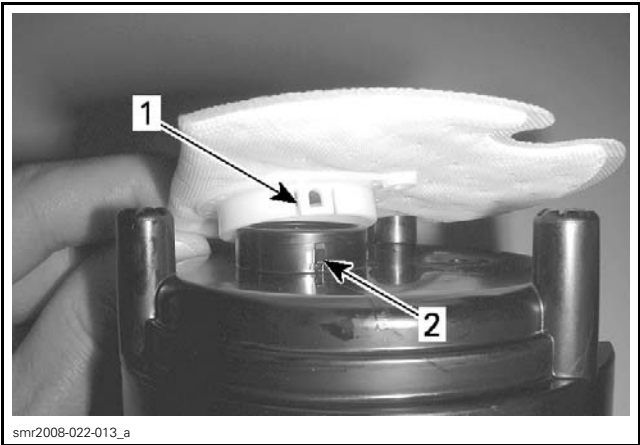
NOTE: The lower fuel filter on the fuel pump module does not require replacement under normal operating conditions. Replace only if permanently clogged or damaged.

1. Remove fuel pump. Refer to *FUEL PUMP* in this subsection.

**WARNING**

The upper filter and fuel pump reservoir on the fuel pump module contain fuel which will drain out when fuel pump module is not in an upright position.

2. Turn fuel pump upside down.
3. Using a small flat screwdriver, pry up the filter locking tabs.



1. Fuel filter locking tab (x2)
2. Filter locking pin (x2)

4. Pull filter off fuel pump reservoir housing.

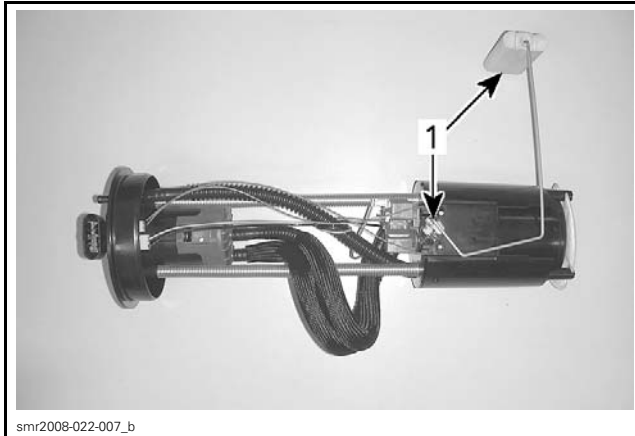
Fuel Filter Installation

1. Align new filter with pump reservoir housing.
2. Press new filter on by hand. Ensure it is fully seated and locked onto the pump reservoir housing.
3. Reinstall fuel pump as per procedure in this subsection.
4. Carry out a *FUEL SYSTEM HIGH PRESSURE LEAK TEST* as described in this subsection.
5. Install or other removed parts, refer to applicable subsection.

FUEL LEVEL SENSOR

Fuel Level System Overview

A float type fuel level sensor mounted on the fuel pump module sends a signal to the information center.



TYPICAL — FUEL PUMP MODULE

1. Fuel level sensor

The information center interprets this signal and turns on the appropriate number of segments of a bar type fuel level indication in the lower RH side of the digital screen in the information center.

Fuel Level Troubleshooting

FUEL LEVEL TROUBLESHOOTING	
SYMPTOM	POSSIBLE CAUSE
Fuel gauge always display EMPTY	– Wiring/connectors – Fuel level sensor – Float stuck in low position
Fuel gauge always display FULL	– Water in fuel pump connector – Float stuck in full position
Fuel level sensor fault code	– Wiring/connectors – Fuel level sensor
Fuel gauge displays wrong level	– Low battery voltage – Fuel level sensor fault

Use B.U.D.S. to check for a fault code. Refer to **DIAGNOSTIC AND FAULT CODES**.

Fuel Level Sensor Voltage Test

1. First ensure battery is fully charged.

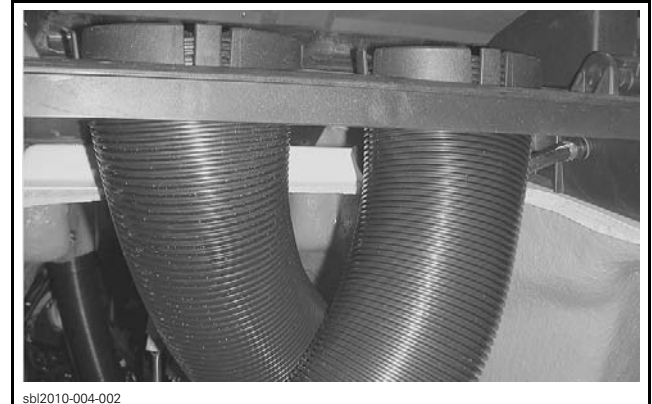
Models with Suspension

2. Lift suspension to gain access.

NOTE: On RXT aS 260 model, if more height is required, manually lift suspension by the anchor points close to handlebar and safely lock in this position. Do not lift the watercraft from the anchor points.

Models Without with Suspension

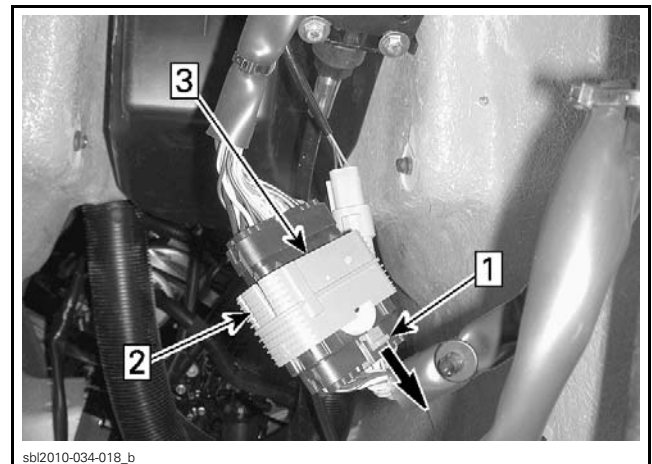
3. Disconnect the top of the two front air ventilation hoses, refer to **BODY** subsection.



FRONT AIR VENTILATION HOSES

All Models

4. From under the steering support area, disconnect the 24-pin connector.

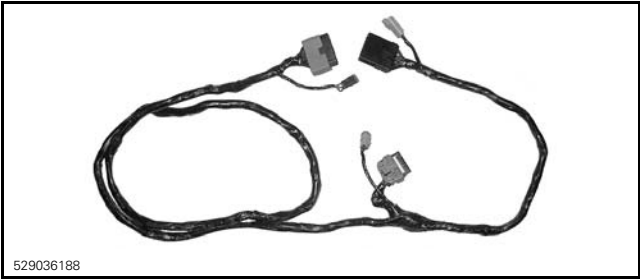


24-PIN STEERING CONNECTOR DISCONNECT

Step 1: Pull out safety lock
Step 2: Press in on release tab
Step 3: Pull locking collar down

5. Connect the DIAGNOSTIC HARNESS (P/N 529 036 188) to make an in-line connection between the disconnected connector.

Subsection XX (FUEL TANK AND FUEL PUMP)



- 6. Briefly press the START button to wake up the ECM.
- 7. Install the tether cord on the engine cut-off switch.
- 8. Use the FLUKE 115 MULTIMETER (P/N 529 035 868) and select Vdc.
- 9. Measure the voltage at the test connector of the diagnostic harness as follows.

FUEL TANK LEVEL	TEST CONNECTOR OF DIAGNOSTIC HARNESS	VOLTAGE
Full	Pins 5 and 17	0.14 Vdc
Empty		2.7 Vdc



TEST CONNECTOR OF DIAGNOSTIC HARNESS

NOTE: Voltage could be slightly different depending on battery voltage but should remain relatively close to this range. If fuel tank is not full or empty, the voltage value will be proportional to the fuel level (somewhere in-between).

If voltage is as per specifications the fuel level circuit and sensor are good. If fuel level does not work in information center, try a new one.

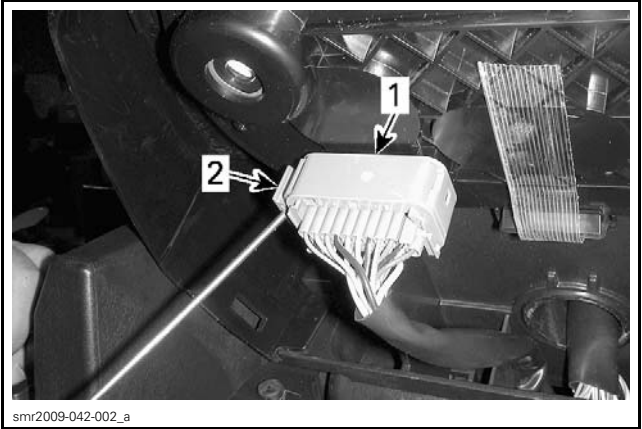
If voltage is out of specifications, perform the *FUEL LEVEL SENSOR RESISTANCE TEST AT INFORMATION CENTER* as described in this subsection.

Remove diagnostic harness and reconnect connector.

Fuel Level Sensor Resistance Test at Information Center

- 1. Disconnect information center (multifunction gauge) connector. Refer to *GAUGE* subsection.

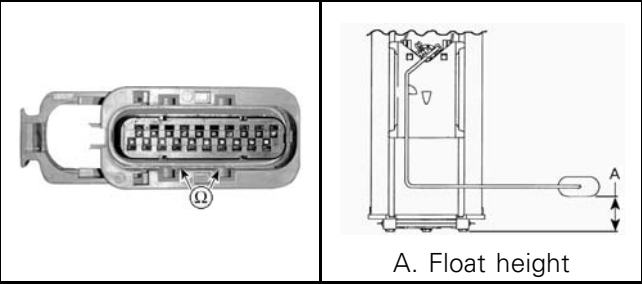
NOTICE Pull connector lock out. Do not twist the screwdriver.



- 1. Gauge connector
- 2. Pull out to unlock connector

- 2. Use the FLUKE 115 MULTIMETER (P/N 529 035 868) and select Ω .
- 3. Alternately drain then fill fuel tank and measure the sensor resistance between pins 19 and 20 as follows.

RESISTANCE (Ω)	FLOAT HEIGHT (MM)
4.8 ± 2.2	268.9 ± 3.0 (FULL)
17.8 ± 2.2	240.6 ± 3.0
27.8 ± 2.2	219.1 ± 3.0
37.8 ± 2.2	193.8 ± 3.0
47.8 ± 2.2	161.9 ± 3.0 (HALF)
57.8 ± 2.2	128.3 ± 3.0
67.8 ± 2.2	94.1 ± 3.0
77.8 ± 2.2	60.6 ± 3.0
89.8 ± 2.2	28.8 ± 3.0 (EMPTY)



NOTE: If fuel tank is not full or empty, the resistance value will be proportional to the fuel level (somewhere in-between).

If readings are as per specifications, the fuel level circuit and sensor are good. If fuel level does not work in information center, try a new one.

If readings are out of specifications, perform the *FUEL LEVEL SENSOR RESISTANCE TEST AT FUEL PUMP*.

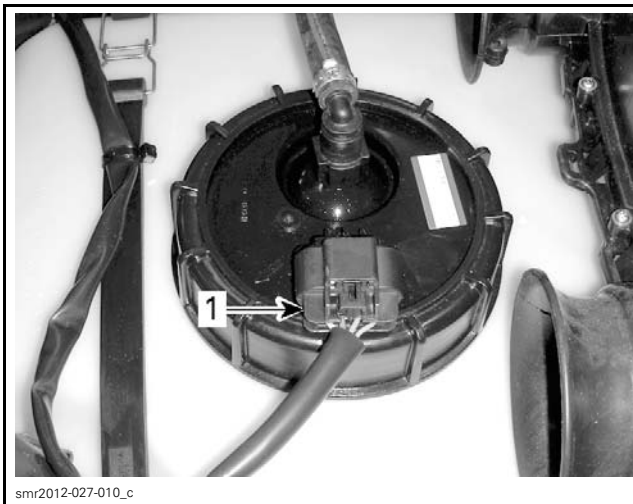
If an open circuit is measured, carry out a continuity test of the wiring from the information center to the 24-pin steering connector, and from the 24-pin steering connector to the fuel pump module connector. Refer to *WIRING DIAGRAM*.

If the wiring is good, carry out a *FUEL LEVEL SENSOR RESISTANCE TEST AT FUEL PUMP*.

4. Reconnect information center (multifunction gauge) connector.

Fuel Level Sensor Resistance Test at Fuel Pump

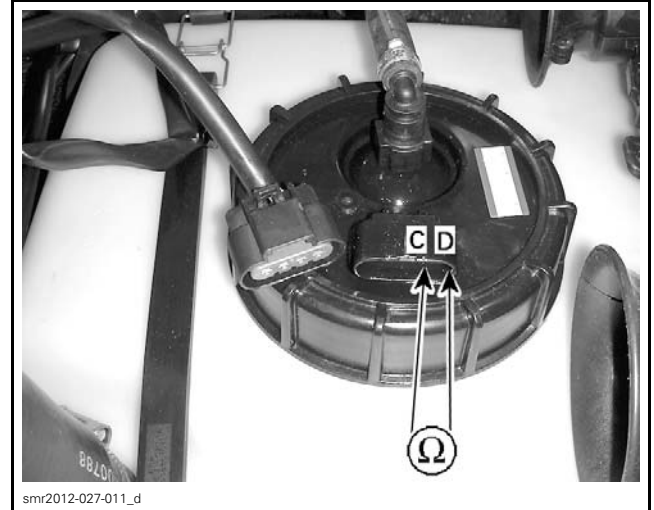
1. Disconnect fuel pump module connector.



FUEL PUMP MODULE

1. Fuel pump module connector

2. Alternately drain then fill fuel tank and measure the sensor resistance between pins "C" and "D" of the fuel pump connector. See table in *FUEL LEVEL SENSOR RESISTANCE TEST AT INFORMATION CENTER*.

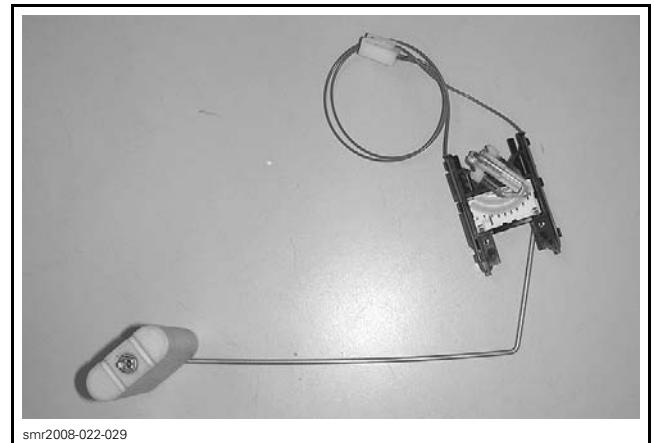


FUEL LEVEL SENSOR RESISTANCE TEST

If readings are out of specifications, replace sensor.

When everything else has been tested and fuel level is still not working, try a new information center.

Fuel Level Sensor Removal



FUEL LEVEL SENSOR

1. Remove fuel pump module from fuel tank, see *FUEL PUMP REMOVAL* in this subsection.

⚠ WARNING

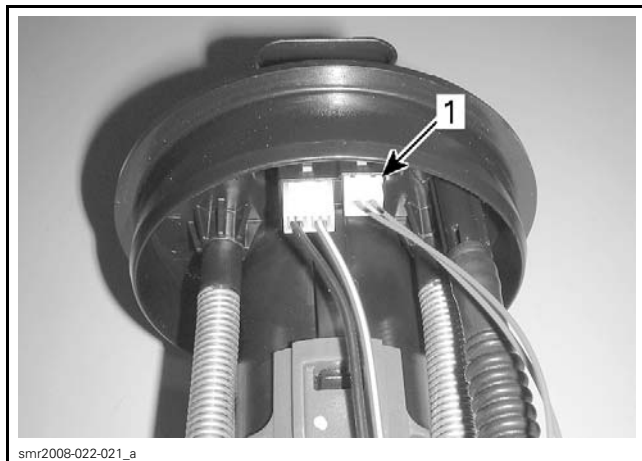
The upper filter and fuel pump reservoir on the fuel pump module contain fuel which will drain out when fuel pump module is not in an upright position.

2. Drain all fuel from the upper fuel filter and fuel pump reservoir in an appropriate container.

NOTE: Note routing of fuel level sensor wires prior to disconnecting the sensor from the fuel pump module flange.

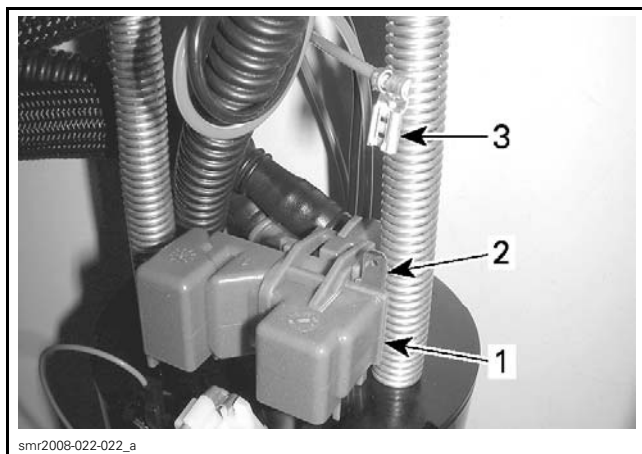
Subsection XX (FUEL TANK AND FUEL PUMP)

3. Disconnect the fuel level sensor connector from the fuel pump module upper flange.



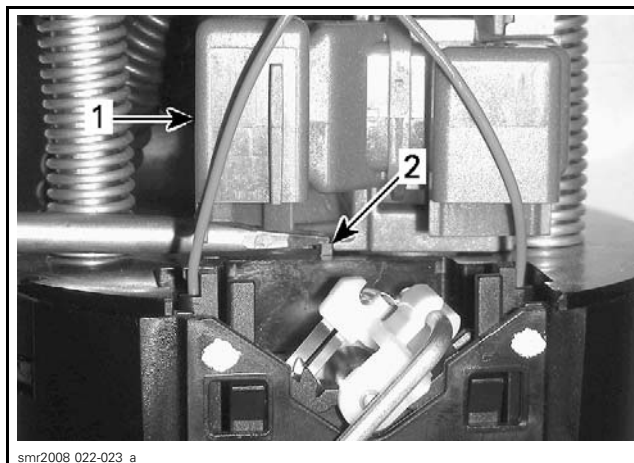
1. Fuel level sensor connector

4. Disconnect the ground wire from the pressure regulator. Be careful not to bend the ground contact on the pressure regulator.

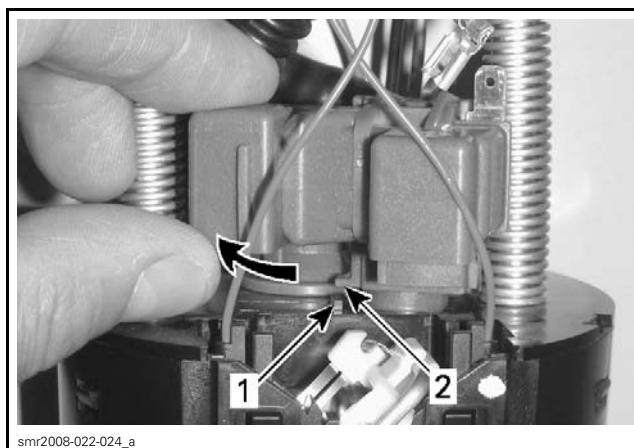


1. Pressure regulator
2. Ground wire contact on pressure regulator
3. Ground wire disconnected

5. Using a flat screwdriver, press down on the locking tab just below the pressure regulator to release it from the pump reservoir cover, and rotate it clockwise simultaneously so that it slips over the locking tab.

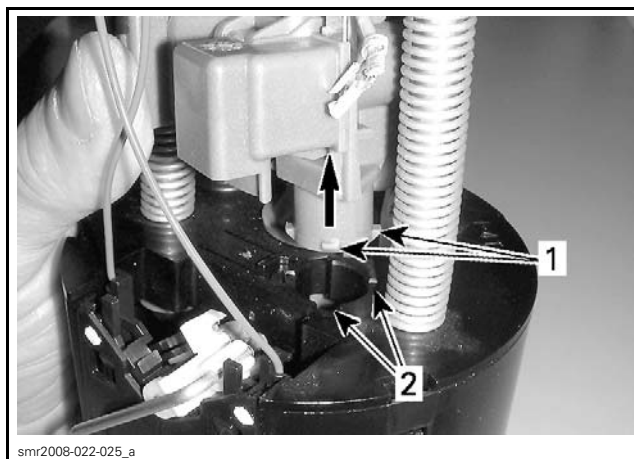


1. Pressure regulator
2. Pressure regulator locking tab



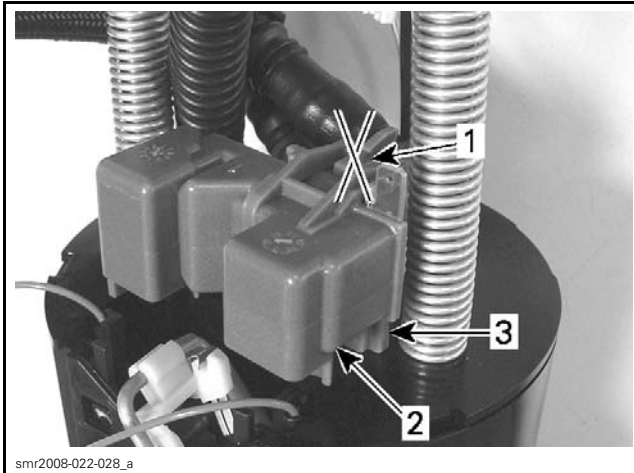
1. Pressure regulator locking tab
2. Pressure regulator rotated clockwise over locking tab

6. Once the pressure regulator is rotated over the locking tab, pull up on it to remove it from the pump reservoir cover.



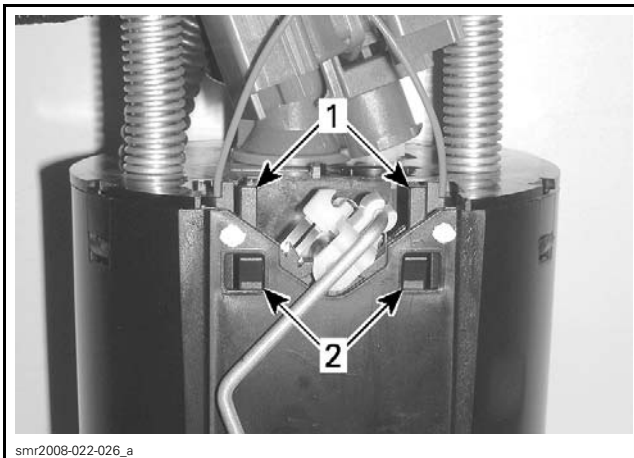
1. Pressure regulator alignment tabs
2. Fuel pump reservoir alignment tabs

NOTE: The pressure regulator cover must not be removed from the pressure regulator housing assembly.

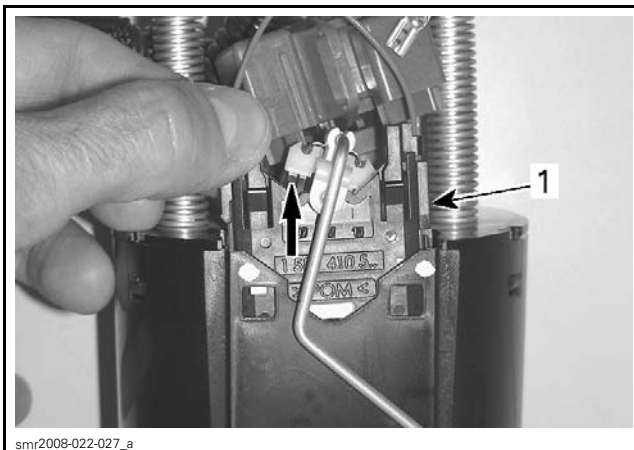


1. Do not remove pressure regulator cover at locking tabs
2. Pressure regulator cover
3. Pressure regulator housing

7. Push in on the release tabs at the top of the fuel level sensor to unlock it from the fuel pump reservoir housing, and simultaneously pull up on the fuel level sensor to remove it.



1. Fuel level sensor release tabs
2. Locking pins

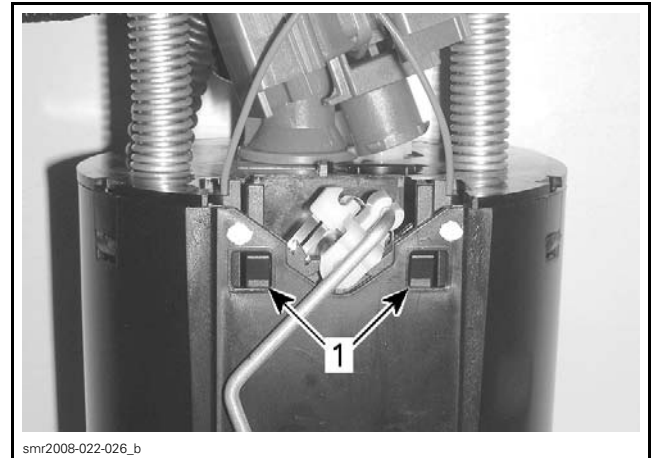


1. Pull up on fuel level sensor

Fuel Level Sensor Installation

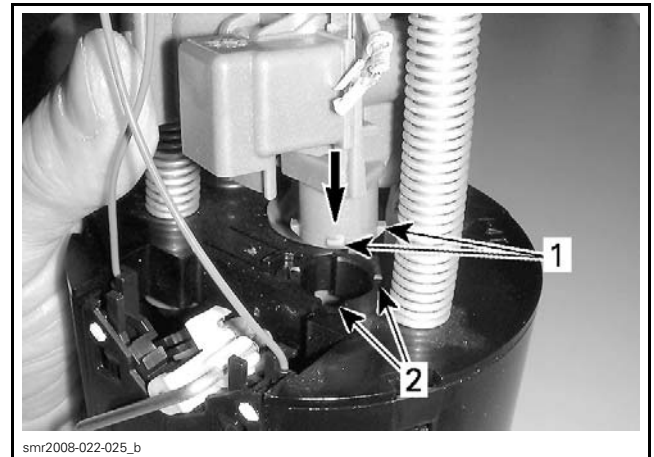
Installation is the reverse of the removal procedure however, pay attention to the following.

1. Ensure fuel level sensor locking pins are properly engaged into the fuel pump reservoir.



1. Ensure engagement of sensor locking pins

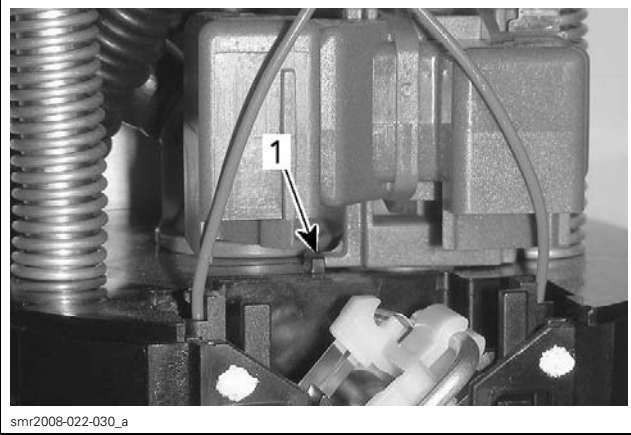
2. Align the fuel pressure regulator tabs into the pump reservoir cover and turn it counterclockwise until it locks properly.



PRESSURE REGULATOR INSERTION INTO PUMP RESERVOIR COVER

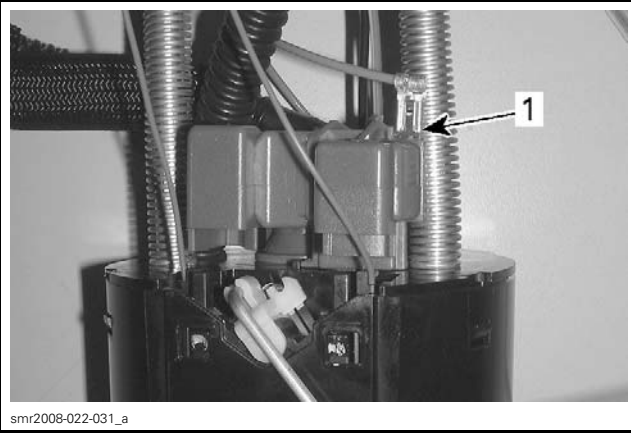
1. Pressure regulator alignment tabs
2. Fuel pump reservoir alignment tabs

Subsection XX (FUEL TANK AND FUEL PUMP)



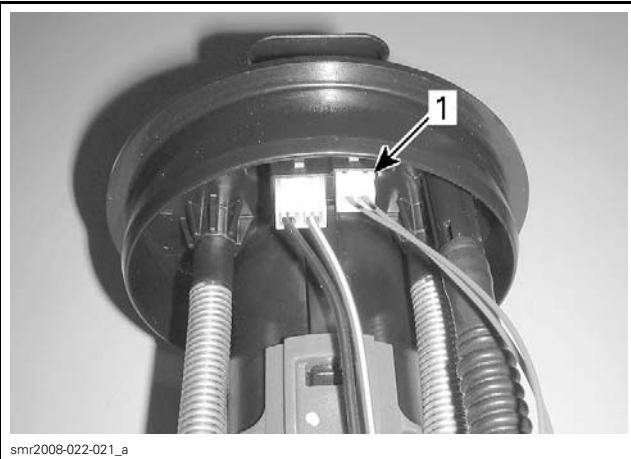
TAB UP WHEN PRESSURE REGULATOR PROPERLY LOCKED
1. Pressure regulator locking tab

3. Reconnect the ground wire onto the pressure regulator.



1. Pressure regulator ground wire installed

4. Ensure fuel level sensor connector is locked into the module flange connector.



1. Fuel level sensor connector

5. Carry out a *FUEL LEVEL SENSOR RESISTANCE TEST* as described in this subsection.

6. Reinstall the fuel pump module. Refer to *FUEL PUMP INSTALLATION* in this subsection.

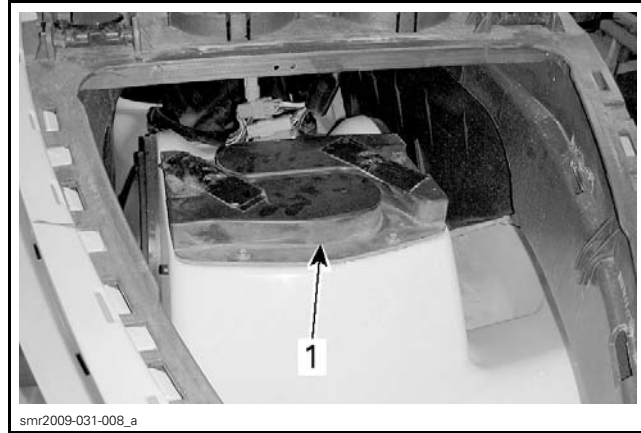
FUEL TANK

Fuel Tank Inspection

1. Open front storage compartment cover.
2. Remove storage bin or partitions. Refer to *BODY* subsection.

Models with Suspension

3. Remove front ventilation box.



1. Ventilation box

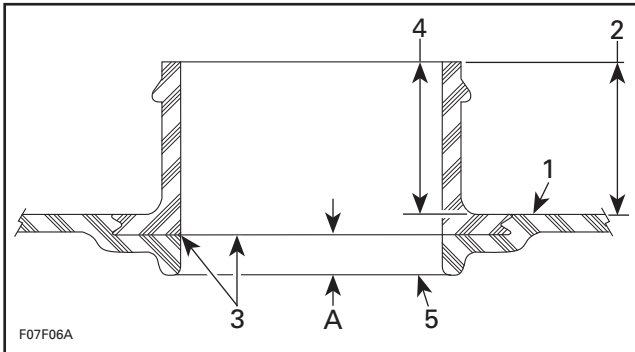
Models Without Suspension

4. Open or remove seat for access to aft end of fuel tank.

All Models

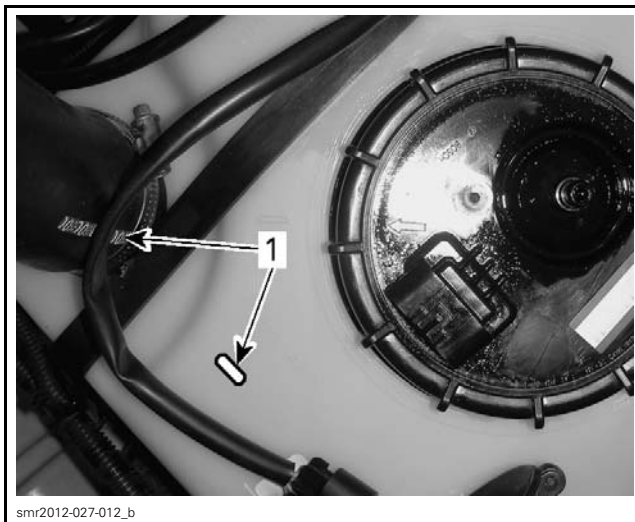
5. Inspect fuel tank retaining straps for wear, cracks or any other damages. Inspect strap clip anchors and bolts.
6. Inspect fuel tank for wear caused by any abnormal contact or rubbing with other component(s).
7. Disconnect fuel filler hose from fuel tank.
8. Inspect fuel tank filler hose for wear, cracks or other damages.
9. Visually inspect the inside and outside of the fuel tank filler necks for crack(s). If crack(s) are found, replace fuel tank.
10. With your fingers, feel the inside and outside surfaces of fuel tank, especially near the filler neck.
11. Flex fuel tank neck to ensure there are no hidden cracks.

NOTE: A fuel tank is comprised of 2 components: the tank and the filler neck. The filler neck is injection molded and the tank is then blow molded over the neck. During the molding process, a small molding seam may appear on the inner side of the neck at approximately 4 mm (5/32 in) from the base of the neck. It is normal to have a molding seam and it should not be confused with a crack.



1. Tank upper surface area
2. Inspect outer upper surface at filler neck
3. Normal molding seam
4. Inspect upper surface area inside filler neck
5. Base of filler neck
- A. Approx. 4 mm (5/32 in)

12. Install filler hose and torque retaining clamps.



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INDEXING WITH FUEL TANK

1. Align mark with the writing on hose

TORQUE	
Filler hose retaining clamps	3.5 N•m (31 lbf•in)

13. Reinstall all other removed parts. Refer to appropriate subsection.

Fuel Tank Removal

GTS/GTI Series, GTR, WAKE and RXP-X Series

1. Remove engine. Refer to *ENGINE REMOVAL AND INSTALLATION*.
2. Remove the air intake silencer. Refer to *AIR INTAKE SYSTEM (EXCEPT MODELS WITH SUSPENSION)* subsection.

RXT/GTX Without Suspension

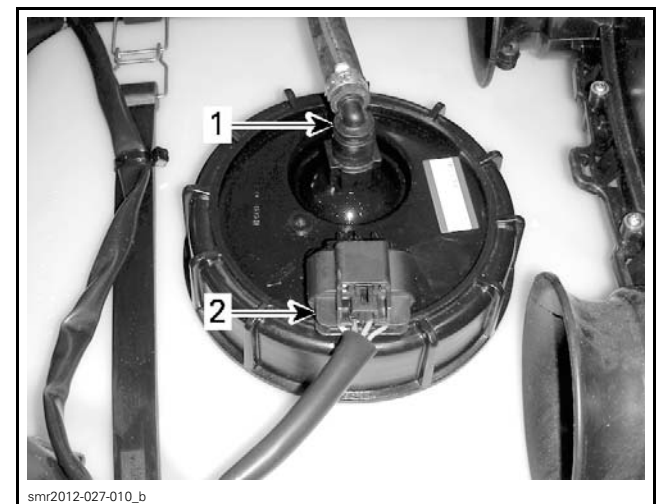
1. Remove the front body module. Refer to *BODY* subsection.
2. Remove the air intake silencer. Refer to *AIR INTAKE SYSTEM (EXCEPT iS AND aS MODELS)* subsection.

RXT/GTX with Suspension

1. Remove moving deck. Refer to *BODY* subsection.
2. Remove engine. Refer to *ENGINE REMOVAL AND INSTALLATION*.
3. Remove suspension base. Refer to *SUSPENSION*.

All Models

1. Siphon fuel tank.
2. Disconnect fuel pump connections.



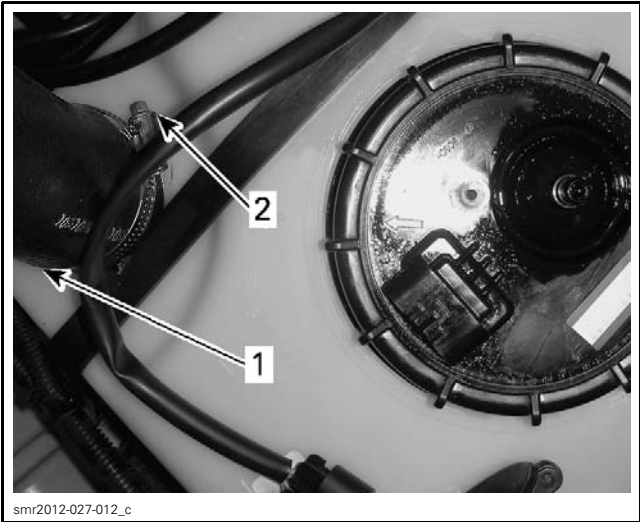
smr2012-027-010_b

1. Quick connect fitting (high pressure fuel hose)
2. Harness connector

3. Disconnect filler hose from fuel tank.

NOTE: Removing retaining screws of the filler neck may help to disconnect hose from fuel tank.

Subsection XX (FUEL TANK AND FUEL PUMP)



1. Filler hose
2. Retaining clamp

NOTE: Take note of wiring harness, hose and cable routing for proper reinstallation. Also note method used for securing with locking ties.

- 4. Detach fuel tank retaining straps.
- 5. Remove fuel tank from the vehicle.
- 6. Remove fuel pump as necessary. Refer to *FUEL PUMP* in this subsection.
- 7. Inspect hull and flotation foams for wear.

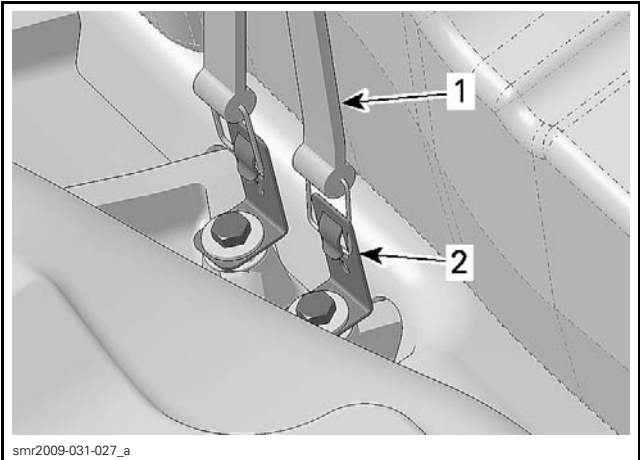
Fuel Tank Installation

NOTE: Apply torque values as specified in the exploded view.

- 1. Reinstall fuel pump if it was removed. Refer to *FUEL PUMP* in this subsection.
- 2. Ensure flotation foams are properly positioned under fuel tank.
- 3. Insert fuel tank in hull.

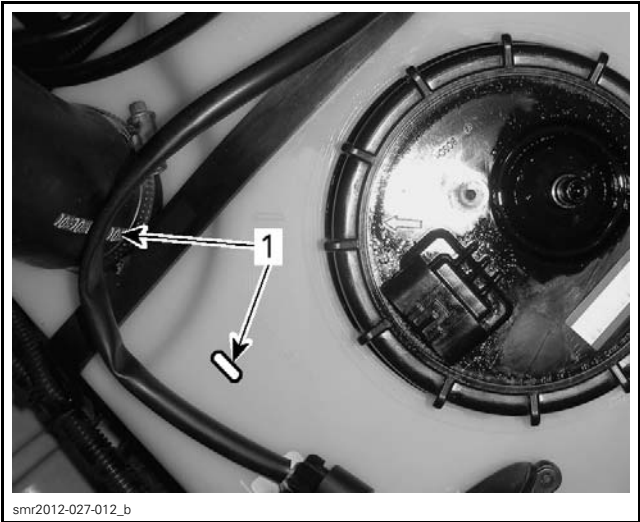
If anchoring clips have been removed, torque retaining screws to 10 N•m (89 lbf•in).

- 4. Place fuel tank retaining strap ends in anchoring clips. Temporarily use tape to hold straps on the top of fuel tank.



TYPICAL
1. Fuel tank retaining strap
2. Clip anchor securing strap to hull

- 5. Secure retaining strap ends on top of fuel tank.
- 6. Properly secure wire harness, cables and hose as prior to removal using appropriate locking ties.
- 7. Install fuel tank filler hose as illustrated.



INDEXING WITH FUEL TANK
1. Align mark with the writing on hose

TORQUE	
Filler hose retaining clamps	3.5 N•m (31 lbf•in)

- 8. Reinstall all other removed parts. Refer to their subsections.
- 9. When vehicle reassembly is complete, carry out a *FUEL TANK LEAK TEST* and a *FUEL SYSTEM HIGH PRESSURE LEAK TEST* as described in this subsection.