



MODEL
S-TYPE

DATE
20 Apr 2007

NUMBER
R176
V 4 NAS

SERVICE

TECHNICAL BULLETIN

NAS VERSION '4' CONTAINS ENHANCED INFORMATION REGARDING SEAL INSTALLATION AND GO / NO-GO GAUGE MEASUREMENT METHODS.

SECTION: 310 – FUEL SYSTEM

RECALL: Fuel Tank Repair or Replacement

AFFECTED VEHICLE RANGE:

Jaguar S-TYPE

VIN: N05049 – N52047

Model Year: 2005

CONDITION SUMMARY:

INSPECT FUEL TANK – REPLACE SEALS OR INSTALL REVISED SPECIFICATION TANK

Situation: A concern has been identified with the fuel tank installed on certain 2005 Model Year S-TYPE vehicles in the VIN Range N05049 – N52047 imported into the United States and Canada. These vehicles are specified with the Low Emission Vehicle Stage II evaporative emissions system. It is possible that some fuel tanks were not made to specification. This may prevent the fuel delivery module, jet pump module or cluster valve seals from adequately sealing. The vehicle may illuminate a malfunction indicator lamp (MIL), exhibit a fuel odor or, possibly after completely refueling, liquid fuel may be seen on the ground. Liquid fuel, in the presence of an ignition source, could result in a fire.

Action: Sold vehicles will be subject to the standard customer recall notification which started during the week of February 5th. Refer to Service Administration Bulletin 7-47USA or 7-47CAN "Safety Recall R176 – Fuel Tank Replacement" for additional information. Dealers are to remove the installed fuel tank on affected vehicles, inspect the tank and determine if seal replacement is possible. If repair is NOT possible, the original tank is to be replaced with a tank manufactured to the approved specification following standard Workshop Manual procedures.

PARTS:

△ **NOTE:** Allocation of fuel tanks to dealers has commenced at a rate determined by dealer sales and the supply stream.

XR8 57241	Fuel Tank Seal Kit	Qty 1
XR8 50738	LEV II fuel tank assembly - Normally Aspirated	Qty 1
XR8 50591	LEV II fuel tank assembly - Supercharged	Qty 1

△ **NOTE:** Removed tanks must be safely disposed of following local regulations and established Jaguar policy. Your Aftersales Market Managers (AMM) have been provided with further details on disposal cost reimbursement procedures incurred because of local legislation or high volume. Contact your AMM for additional information.

TOOL ID NUMBERS

- 0-93-0025.....Go / No Go Gauge (128.5 mm / 132 mm)
- 0-93-0026.....Go / No Go Gauge (115.5 mm /119 mm)
-(Pry bar sent with US tool kits not for use in this procedure)

NOTE: The information in Technical Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment required to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers." If you are not a Retailer, do not assume that a condition described affects your vehicle. Contact an authorized Jaguar service facility to determine whether the bulletin applies to a specific vehicle.



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WARRANTY:

△ NOTE: Repair procedures are under constant review, and therefore times are subject to change; those quoted here must be taken as guidance only. Always refer to DDW to obtain the latest repair time.

Warranty claims should be submitted quoting Campaign Code R176 together with the relevant option code from the table. This will result in payment of the stated time and associated parts. As option codes are used, there is no requirement for you to enter parts or labor; they are repeated here for information only. The option that allows for the drive in/drive out allowance can only be claimed if the vehicle is brought back into the workshop for this action alone to be undertaken.

Campaign Code	Option	Description	SRO	Time	Part No.	Qty
SUPERCHARGED VEHICLES						
R176	F	Carry out inspection – renew fuel tank (S/C)	19.91.85	3.3	XR8 50591	1
R176	G	Carry out inspection - renew fuel tank (S/C) Drive in/drive out	19.91.85 10.10.10	3.3 0.1	XR8 50591	1
R176	M	All Vehicles Carry out inspection, install new tank seals and carry out smoke test – no further action required	19.91.83	3.8	XR8 57241	1
R176	N	All Vehicles Carry out inspection, install new tank seals and carry out smoke test – no further action required Drive in/drive out	19.91.83 10.10.10	3.8 0.1	XR8 57241	1
R176	P	Carry out inspection, install new tank seals, carry out smoke test and renew fuel tank (S/C)	19.91.84	4.0	XR8 57241 XR8 50591	1 1
R176	Q	Carry out inspection, install new tank seals, carry out smoke test and renew fuel tank (S/C) Drive in/drive out	19.91.84 10.10.10	4.0 0.1	XR8 57241 XR8 50591	1 1
NORMALLY ASPIRATED VEHICLES						
R176	H	Carry out inspection – renew fuel tank (N/A)	19.91.85	3.3	XR8 50738	1
R176	J	Carry out inspection – renew fuel tank (N/A) Drive in/drive out	19.91.85 10.10.10	3.3 0.1	XR8 50738	1
R176	M	All Vehicles Carry out inspection, install new tank seals and carry out smoke test – no further action required	19.91.83	3.8	XR8 57241	1
R176	N	All Vehicles Carry out inspection, install new tank seals and carry out smoke test – no further action required Drive in/drive out	19.91.83 10.10.10	3.8 0.1	XR8 57241	1
R176	S	Carry out inspection, install new tank seals, carry out smoke test and renew fuel tank (N/A)	19.91.84	4.0	XR8 57241 XR8 50738	1 1
R176	T	Carry out inspection, install new tank seals, carry out smoke test and renew fuel tank (N/A) Drive in/drive out	19.91.84 10.10.10	4.0 0.1	XR8 57241 XR8 50738	1 1

Normal warranty policy and procedures apply.

REPAIR PROCEDURE

FUEL TANK REMOVAL AND DISASSEMBLY

△ **NOTE:** Fasteners and clamps removed from the originally installed tank are to be reused for the installation of the replacement fuel tank.

△ **NOTE:** Global Technical Reference (GTR) lookup sequence is as follows:
GTR Home > NAS > Service Information/ S-TYPE - 2005 > Workshop Manuals > Bookmark "Powertrain/Fuel System 310-01 Fuel Tank and Lines" Link "Fuel Tank 4.2L/2.5L/3.0L (19.55.01)"

⚠ **CAUTION:** The fuel tank **MUST** be removed in order to perform the inspection and the repair of the fuel tank.

⚠ **WARNING:** The Warnings and Cautions associated with fuel tank draining and removal contained in Global Technical Reference (GTR) literature website must be observed to avoid the risk of personal injury or collateral damage to vehicle components.

1. Refer to GTR Workshop Manual 310-01, Section 19.55.01. Drain and remove the installed fuel tank.
2. Refer to GTR section 310-01 and remove the fuel pump module and the fuel transfer pump from the fuel tank

△ **NOTE:** Some vehicles will have been assembled with shear heads on the clamps. If installed the shear head is easily pushed off to reveal the standard clamp hex head.

3. Undo the control valve retaining clamp.
4. Release and remove the control valve clamp.
5. Release and remove the control valve from the tank.
6. If the seal remains attached to the modules, slide the old seals over components (or over the top of the Module Flange) and remove, being careful not to bend the fuel level sender arm. (Figure 1)

⚠ **CAUTION:** Tools may **NOT** be used to pry the seal off of the fuel tank. Sharp tools such as screwdrivers and pry bars can cause damage to the sealing surface.

7. If the seals remain attached to fuel tank, peel the seal off the tank by hand and discard. (Figure 2)

Figure 1



Figure 2



FUEL TANK GO / NO-GO GAUGE INSPECTION

! CAUTION: Only light finger tip pressure should be required to insert the GO/NO GO gauge into the fuel pump tank opening on the "GO" side.

1. Place the large GO gauge (tool number 0-93-0025) into the fuel pump tank opening with the "GO" side down and measure the opening as follows:
 - Rotate the gauge through 360 degrees with light finger pressure and check for binding. (Figure 3)
 - If binding is felt on the gauge, go to bulletin section "[Replacement Fuel Tank Installation](#)" below and install a new fuel tank.
2. Remove the GO gauge from the fuel tank.
3. Turn the GO gauge (tool number 0-93-0025) over and insert the NO GO side of the gauge into the tank opening as follows:
 - Place the side without the cut-out into the tank opening first. (Figure 4)
 - Center the gauge with thumb and finger without applying downward pressure. (Figure 4)
 - Ensure that the NO-GO tab under the cut-out has not dropped into the tank opening. (Figure 5)

Figure 3



Figure 4



Figure 5



RECALL

⚠ CAUTION: At no time should pressure be applied to the NO-GO gauge during the measurement rotation. (Figure 6)

4. Carefully rotate the gauge through 360 degrees while viewing the cut-out in the tool to verify that the NO-GO gauge tab does not drop inside the opening in any orientation.
5. If the NO-GO gauge binds, but does not drop cleanly down into the tank opening during the rotation, lift the gauge free and continue the inspection rotation.

⚠ CAUTION: If the NO-GO gauge drops into the tank opening of its own weight at any point during the inspection rotation, the opening does not meet specification.

6. If the NO GO gauge drops of its own weight into the fuel pump opening at any time, go to bulletin section "[Replacement Fuel Tank Installation](#)" and install a new tank. (Figure 7)

Figure 6

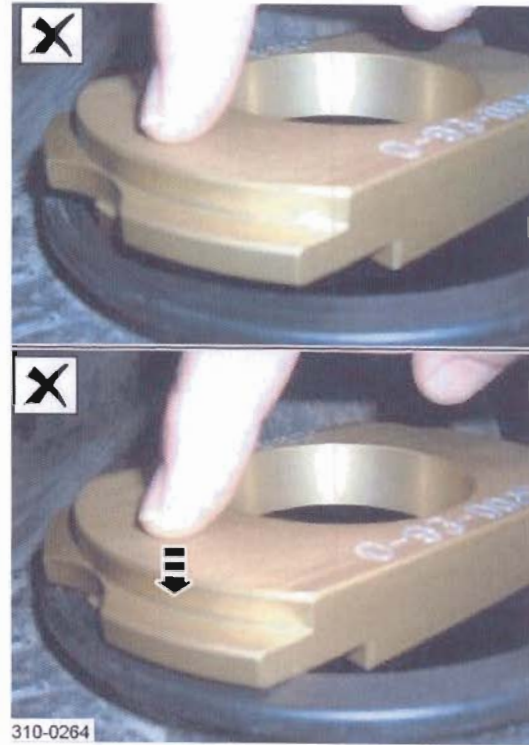




Figure 7



RECALL

 **CAUTION:** Only light finger tip pressure is required to insert the GO/NO GO gauge into the transfer pump tank opening on the "GO" side.

7. Place the large GO gauge (tool number 0-93-0025) into the transfer pump tank opening and measure the opening as follows:
 - Rotate the gauge through 360 degrees and check for binding as outlined in Step 1 above.
 - If binding is felt on the gauge, go to bulletin section "[Replacement Fuel Tank Installation](#)" below and install a new fuel tank.
8. Remove the gauge from the fuel tank.
9. Turn the GO gauge (tool number 0-93-0025) over.
10. Insert the NO_GO gauge without applying downward pressure as outlined in Step 3 above to measure the transfer pump opening as follows:
 - Rotate the gauge through 360 degrees while viewing the cut-out in the tool to check if the gauge will fit inside the opening as outlined in Steps 4-5 above.
 - If the NO GO gauge does drop into the transfer pump opening at any time, go to bulletin section "[Replacement Fuel Tank Installation](#)" and install a new tank.

 **CAUTION:** Only light finger tip pressure is required to insert the GO/NO GO gauge into the control valve tank opening on the "GO" side.

11. Place the small GO gauge (tool number 0-93-0026) into the control valve tank opening and measure the opening as follows:
 - Rotate the gauge through 360 degrees and check for binding as outlined in Step 1 above.
 - If binding is felt on the gauge, go to bulletin section "[Replacement Fuel Tank Installation](#)" below and install a new fuel tank.
12. Remove the GO gauge from the fuel tank.
13. Turn the GO gauge (tool number 0-93-0026) over.
14. Insert the NO_GO gauge without applying downward pressure as outlined in Step 3 above to measure the control valve opening as follows:
 - Rotate the gauge through 360 degrees while viewing the cut-out in the tool to check if the gauge will fit inside the opening as outlined in Steps 4-5 above.
 - If the NO GO gauge does drop into the control valve opening at any time, go to bulletin section "[Replacement Fuel Tank Installation](#)" and install a new tank.

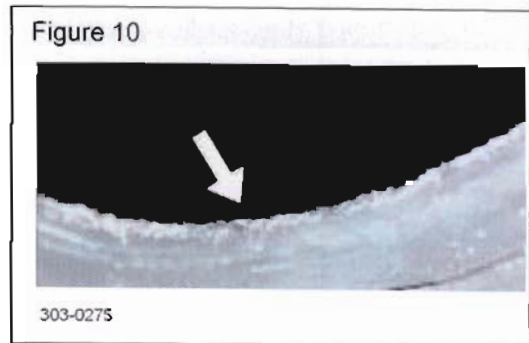
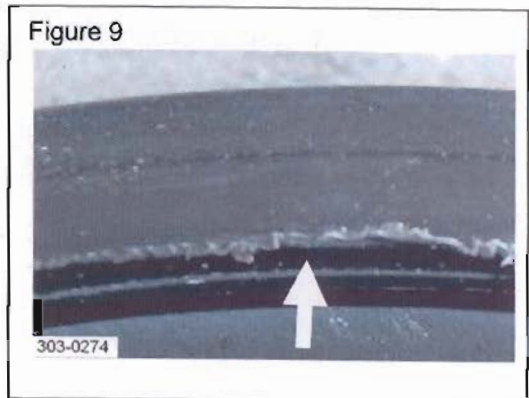
TANK OPENINGS - PERMISSIBLE MINOR IRREGULARITIES

△ NOTE: Nicks, burrs and minor inner edge defects are permissible on the immediate edge of the fuel tank cut hole. The tank seals do not seal against the inner cut hole edge.

△ NOTE: Some tanks may exhibit a slight deformation or "waviness" around the tank flange surface. This is acceptable. The clamping loads on the seal ring applied during module assembly will correct these irregularities.


The "smoke test" performed at the end of this procedure in Step 16 of section "Install New Seals to Inspected Tank" will eliminate any tank that may have a flange surface that will not seal properly.

1. Inspect fuel tank openings to confirm that only minor inner edge inconsistencies, that are **acceptable** for a proper sealing operation to be performed, are present. (Figures 8-10)



RECALL

TANK OPENING INSPECTION FOR UNACCEPTABLE PHYSICAL DAMAGE

 **CAUTION:** If damage is found in the following inspection, a new fuel tank must be installed.

1. Visually inspect all three fuel tank openings for gouges, tool marks or damage that may impair tank seal performance. (Figures 11-14)
2. If unacceptable damage is found at any opening as shown in the illustrations, go to bulletin section "[Replacement Fuel Tank Installation](#)" and install a new tank.

Figure 11



Figure 12

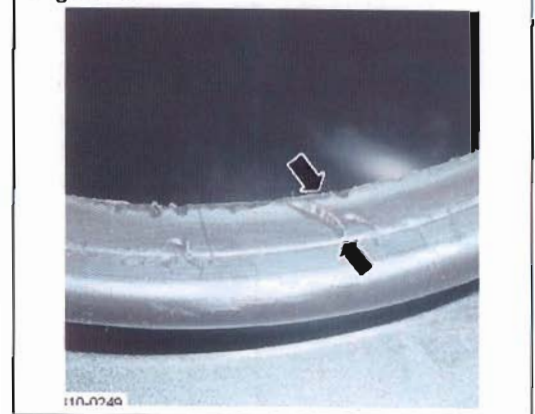


Figure 13

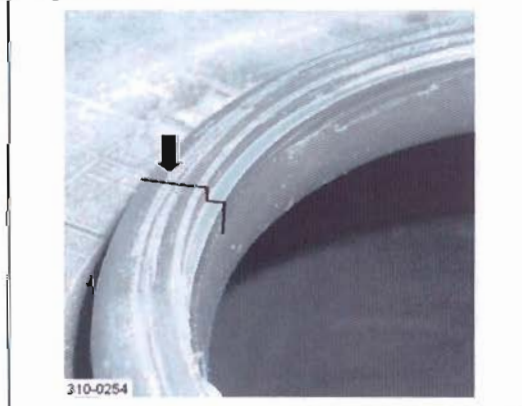
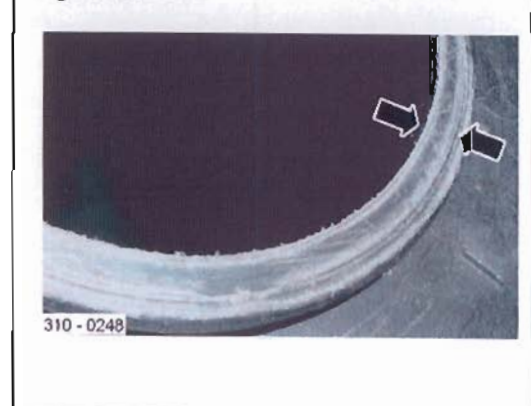


Figure 14



INSTALL NEW SEALS TO INSPECTED TANK

- ⚠ CAUTION:** Care must be taken to ensure the fuel level sender arm is not bent.
- ⚠ CAUTION:** Grease or other lubricants are not to be used when installing the seal to the module. The seal must be moved up the surface of the module diameter **EVENLY**.
1. Install and fully seat the new fuel pump module seal to the module. (Figure 15)
 2. Install and fully seat the new transfer pump module seal to the module.
- ⚠ CAUTION:** Fuel pump assembly pipes must be correctly oriented during pump assembly to the tank. (Figure 15)
3. Orient fuel pump pipes as illustrated and install and fully seat the fuel pump and fuel pipes assembly. (Figure 15)
 4. Install and fully seat the fuel pump module clamping ring.
 5. Install and fully seat the fuel pump module retaining worm clamp.
- ⚠ CAUTION:** Hand tools are the only permissible tools for tightening the retaining clamps.
6. Install and fully tighten the fuel pump module retaining worm clamp until the head sheers off.
 7. Install, but do not fully seat, the transfer pump module.
 8. Connect the transfer pump module to transfer pump module fuel pipes.
 9. Install and fully seat the transfer pump clamping ring.
 10. Install and fully seat the transfer pump module retaining worm clamp.
- ⚠ CAUTION:** Hand tools are the only permissible tools for tightening the retaining clamps.
11. Install and fully tighten to the transfer pump module retaining worm clamp until the head sheers off.
 12. Install and fully seat a new fuel tank control valve seal to the valve.
 13. Install and fully seat the fuel tank control valve.
 14. Install and fully seat the control valve retaining worm clamp.
- ⚠ CAUTION:** Hand tools are the only permissible tools for tightening the retaining clamps.
15. Install and fully tighten the control valve retaining worm clamp until the head sheers off.
 16. Perform a smoke test using Jaguar recommended equipment before installing the tank into vehicle.
 17. If the fuel tank fails the smoke test, go to bulletin section "[Replacement Fuel Tank Installation](#)" and install a new tank.

Figure 15





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18. If the fuel tank **passes** the smoke test, refer to GTR Workshop Manual 310-01, Section 19.55.01, and install the inspected and resealed fuel tank to the vehicle.
19. Replenish the resealed tank with removed fuel and check for leaks at all fittings and connections.

REPLACEMENT FUEL TANK INSTALLATION

1. If indicated in the procedure above, refer to GTR Workshop Manual 310-01, Section 19.55.01, and install a new replacement fuel tank.



NOTE: Removed tanks must be safely disposed of following local regulations and established Jaguar policy.

2. Replenish the new tank with removed fuel and check for leaks at all fittings and connections.

RECALL



R176 Technical Q & A

Main Message: An issue has been identified on certain 2005 Model Year S-TYPE vehicles in the VIN Range from N05049 to N52047 specified with the Low Emission Vehicle Stage II evaporative emissions system. It is possible that some fuel tanks were not made to specification. This may prevent the fuel delivery module, jet pump module or cluster valve seals from adequately sealing. The vehicle may illuminate a malfunction indicator lamp (MIL), exhibit a fuel odor or, possibly after completely refueling, liquid fuel may be seen on the ground. Liquid fuel, in the presence of an ignition source, could result in a fire.

Q1 Why is Jaguar recalling certain S-TYPE Models?

A Jaguar Cars is conducting a voluntary safety recall involving certain 2005 Model Year S-TYPE vehicles to fit replacement seals or, if necessary, fit a fuel tank manufactured to the correct specification. This work will be carried out free of charge.

Q2 Can you tell me more about what is wrong with the vehicle?

A Investigations have determined that 2005MY North American specification vehicles may be fitted with a fuel tank that has inadequate thickness around the apertures and/or dimension concerns that could lead to aperture distortion around the seals. Where the tank aperture sealing is inadequate it is possible for the On Board Diagnostic leak detection system to sense this and could result in illumination of the malfunction indicator lamp (MIL) or a fuel odor. Fuel leaks are most likely to occur only after a fuel tank has been fully filled with fuel.

Q3 How would the customer become aware of potentially having this concern?

A The vehicle may illuminate a malfunction indicator lamp (MIL), exhibit a fuel odor or, possibly after completely refueling, liquid fuel may be seen on the ground.

Q4 Does this recall affect vehicle safety?

A Because most of the reports describing fuel leaks that Jaguar has received indicate that the leaks occurred following refueling of the tank, it is advisable that customers refrain from completely filling their fuel tanks.

Q5 How was the condition discovered?

A This condition was discovered through routine analysis of warranty data.

Q6 Have there been any accidents or injuries?

A There have been no fires, accidents or injuries of which we are aware.

Q7 Is the defect leading you to any concerns regarding the reliability of a system, which is supposed to be designed and engineered for the passengers' safety? What type of measures are you planning to take?

A We have no concerns with the reliability of the fuel tank when it is manufactured to the correct specification. This issue is a quality concern associated with manufacturing process of the fuel tank that was manufactured away from specification by the fuel tank supplier. Appropriate additional safeguards have been introduced at the supplier to prevent a re-occurrence of this manufacturing problem.



R176 Technical Q & A

- Q8** What will authorized dealers do to the vehicles?
A Authorized dealers will inspect the fuel tank and replace the tank opening seals. If required they will replace the fuel tank with a known good fuel tank.
- Q9** Which vehicles are affected by this recall?
A This concern affects 2005 Model Year S-TYPE vehicles that are fitted with the Low Emission Vehicle Stage II (LEVII) evaporative emissions control system only. These vehicles are only specified for sale in the United State of America and Canada. S-TYPE vehicles in all other markets are fitted with a completely different fuel tank and are unaffected by this concern.
- Q10** Are other Jaguar models affected by these actions?
A No other Jaguar vehicles are affected by this action.
- Q11** Are parts available to rework vehicles?
A Parts will be available at campaign launch.
- Q12** How much will the recall cost Jaguar?
A Cost is never a factor in Jaguar's decisions to recall vehicles.
- Q13** How do I know if my S-TYPE vehicle is affected?
A All owners of potentially affected vehicles will receive a letter inviting them to contact a Jaguar authorized dealer for the work to be carried out.
- Q14** How long does it take for the car to be inspected and repaired?
A The work to be carried out will vary in time depending on the vehicle type, but it is expected to be completed in approximately 4 hours. Naturally, due to dealer schedules, vehicles may be required for longer.
- Q15** Can I continue to drive my S-TYPE vehicle safely until it has been recalled?
A If a customer is at all concerned about operating their vehicle in these conditions, our advice is to fill the fuel tank no more than $\frac{3}{4}$ full.

Note: Please ensure that any Press enquiries are referred to Jaguar Public Affairs office.

RECALL