

Reference	SSM72731
Models	Range Rover / L405 Range Rover Sport / L494
Title	L405 & L494 Fuel Filling Difficulties
Category	Engine
Last modified	14-Apr-2016 00:00:00
Symptom	404000 Fuel System Concerns
Attachments	Example of vapour line restriction.jpg (Example of vapour line restriction.jpg) L405 & L494 fuel fill information1.pdf (L405 & L494 fuel fill information1.pdf) L405 & L494 fuel tank check valve1.pdf (L405 & L494 fuel tank check valve1.pdf)
Content	<p><u>Issue:</u> The customer may complain of fuel filling difficulties (gas station pump premature cut off). <u>Cause:</u> There are a number of possible causes for fuel filling difficulties. Please refer to TOPix workshop manual section 303-13: Evaporative Emissions, Diagnosis and Testing; in the first instance for advice on system checks. An example of the type of restriction which may be found in the vapour line between the fuel tank and the carbon canister is shown on the file attached "Example of vapour line restriction.jpg". Other Possible Causes:</p> <ul style="list-style-type: none"> Debris may be lodged in the fuel filler. See page 2 of L405 & L494 fuel fill information.pdf; for further detail. The anti-siphon device (where fitted) has become dislodged. See page 3 of L405 & L494 fuel fill information.pdf; for further detail. Note, this is only specified for E85 flex fuel vehicles. The fuel filler head under the filler cap is installed in the incorrect orientation. Page 4 of L405 & L494 fuel fill information.pdf; for further information. The check valve on the fuel tank where the fuel filler pipe connects may be obscured by a fuel pipe inside the tank. See page 5 of L405 & L494 fuel fill information.pdf; for further detail. Also refer to the file attached L405 & L494 fuel tank check valve.pdf; for additional information. <p><u>Action:</u></p> <ul style="list-style-type: none"> COMPONENTS ARE ONLY TO BE REPLACED IF A CLEAR FAULT IS OBSERVED. REPORT ALL FAULTS FOUND ON AN EPQR. If cause 1 is identified, correctly install the anti-siphon device. If cause 2 is identified, replace the fuel filler pipe (ensure the filler head is in the correct orientation on the new part). If cause 3 is identified, reroute the fuel pipe in the tank to prevent the check valve from being obstructed. Also take care to ensure the fuel sender is not obstructed. Fill with fuel and check to see if the issue is repaired. If so, report the fault found and fixed on EPQR. If not, raise a TA for further assistance to identify the fault. <p>If no fault is found, and the vehicle cannot be repaired, please submit an EPQR and include the following detail:</p> <ul style="list-style-type: none"> What is the nature of the customer concern? Inferred as; pump premature cut off. If something else (spit back, nozzle engagement) please specify. Can the customer concern be repeated? If so, when repeated, it is helpful to know how many times the pump shuts off and how much fuel is added. Is it always the same station used or is behavior different from one station to another? Where has the customer concern been experienced (can be collected from fuel receipt); Address of the station? Pump number? Please take a photo of the fuel dispensing nozzle and any manufacturer related markings / model numbers. Inspect the nozzle for signs of wear on the tip (possibly hidden by vapour recovery bellows if fitted) where it engages with the vehicle. Are there any issues engaging the nozzle to the filler neck on the vehicle? Is the problem experienced when the customer operates the dispenser or at a full service attendant operated dispenser? Please measure the steady flow dispensing rate: Time taken to get from gallon 1 to 4 uninterrupted. Share details of investigation work carried out on the car such as inspection for: Restrictions found in vapour lines and the filler routing. Obstruction of tank inlet check valves. Correct orientation of the flap beneath the fill cap. Are there any issues suggesting the fuel system is not in line with factory specification?



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L405 & L494 Range Rover & Range Rover Sport Fuel Filling Concerns

Possible Cause:

1. Debris may be lodged in the fuel filler. See page 2 for further detail.
2. The anti-siphon device (where fitted) has become dislodged. See page 3 for further detail. Note, this device is only specified for E85 flex fuel vehicles.
3. The fuel filler head under the filler cap is installed in the incorrect orientation. See page 4 for further information.
4. The check valve on the fuel tank where the fuel filler pipe connects may be obscured by a fuel pipe inside the tank.
 - See page 5 for further detail.
 - Refer to the file attached (L405 & L494 fuel tank check valve.pdf) for additional information.

Action:

- ONLY REPLACE THE FUEL FILLER IF A CLEAR FAULT IS OBSERVED. REPORT THE FAULT FOUND ON AN EPQR.
- If cause 1 is identified, correctly install the anti-siphon device.
- If cause 2 is identified, replace the fuel filler pipe (ensure the filler head is in the correct orientation on the new part).
- If cause 3 is identified, reroute the fuel pipe in the tank to prevent the check valve from being obstructed. Also take care to ensure the fuel sender is not obstructed.
- Fill with fuel and check to see if the issue is repaired. If so, report the fault found and fixed on EPQR. If not, raise a TA for further assistance to identify the fault.

Reports have been submitted showing debris in the filler pipe was causing an obstruction and fuel filling problems.

Debris can be identified using a borescope (no need to remove the fuel filler pipe).

See the examples below:



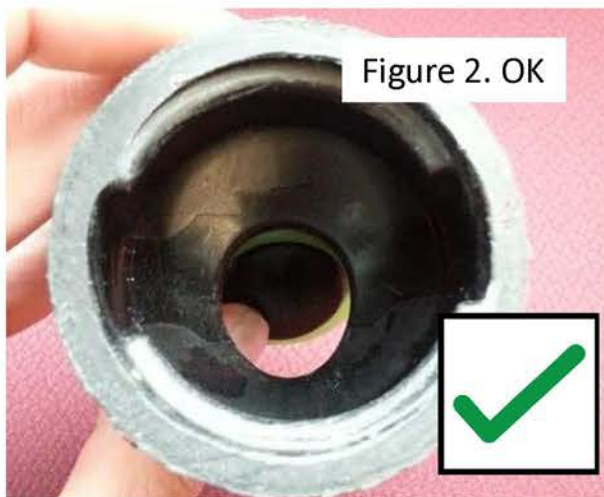
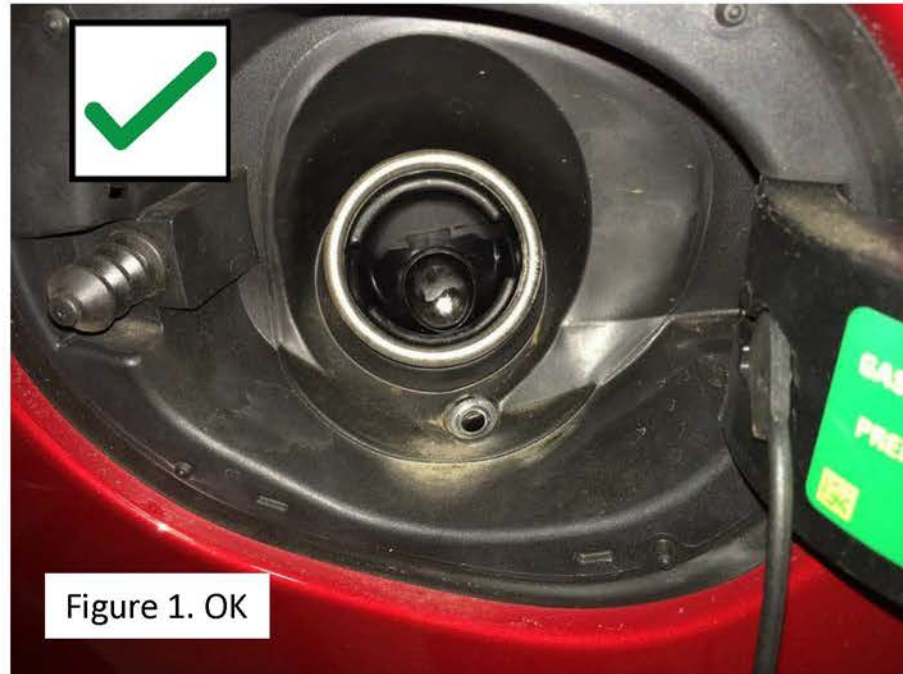
If the anti syphon device is dislodged it will cause the fuel flow to be disrupted and can cause shut off problems (as per the example below):



NOTE. 15MY & ONWARDS ONLY

Note.

1. Flap should appear as per figure 1 and 2.
2. It must hinge from the top as per figure 2.
3. If it hinges from the bottom (as per figure 3.), the filler pipe must be replaced.



WARNINGS:



The spilling of fuel is unavoidable during this operation. Ensure that all necessary precautions are taken to prevent fire and explosion.



Do not carry or operate cellular phones when working on or near any fuel related components. Highly flammable vapors are always present and may ignite. Failure to follow these instructions may result in personal injury.



Do not smoke or carry lighted tobacco or open flame of any type when working on or near any fuel related components. Highly flammable vapors are always present and may ignite. Failure to follow these instructions may result in personal injury.



If fuel contacts the eyes, flush the eyes with cold water or eyewash solution and seek immediate medical attention.



Wash hands thoroughly after fuel handling, as prolonged contact may cause irritation. Should irritation develop, seek medical attention.

1. With the fuel tank as close to empty as possible, remove the rubber section of filler pipe from the fuel tank to gain access to the check valve.



CAUTION: Be prepared to collect escaping fuel.

2. Press against the check valve. It should move easily through it's full range.
3. If it does not, refer to 'Removal and Installation' instructions for the fuel filter in workshop manual section 310-01: Fuel Tank and Lines
4. Do not remove the fuel filter, but carefully lift it an visually inspect for any obstruction of the check valve.
5. If obstruction is observed, reroute the fuel pipe in the tank to prevent the check valve from being obstructed. Also take care to ensure the fuel sender is not obstructed.

