# Front Differential Recall for Range Rover III (up to 2005)



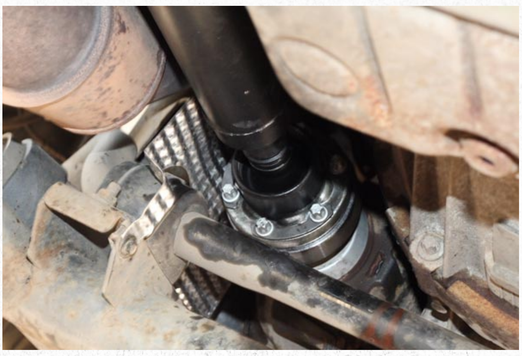


*Photo: View (looking forward) of front drifeshaft on 2002 build date Mk III Range Rover. Note new flexible coupling at forward end of drive shaft where it enters the differential. Photo courtesy of Rangerovers.net forum member Fisha from Scotland.*

## Introduction

Finally in 2008, a permanent official solution to the notorious front diff failure problem was implemented by Land Rover in a worldwide recall campaign. After many customer complaint incidents, service bulletins and investigations by the vehicle safety agencies of various governments, a redesign of the front driveshaft was offered to solve the problem.

## Recall Implementation

The program to replace the front drive shaft and drive flange with new parts was technically called a "Service Action" rather than a recall. This apparently means the customer must have the work done within a definite time period for it to be covered. Beginning in May 2008 in the UK and Europe, the program spread to the US in July. A phased program was evidently needed due to the wait for the necessary parts to be produced in sufficient quantity. Letters are being sent out in a phased manner to all existing owners of the 2003-2005 model affected. Also if you bring your car in for service and it is in the affected model year range, the action should pop up onthe dealer's monitor as something to be done. The recall work requires about 4-6 hours of labor due to the extensive list of parts needing to be replaced. In the US, dealers are also providing $150 credit towards any other work needed on your vehicle, to compensate for the inconvenience of having to have the recall work done.

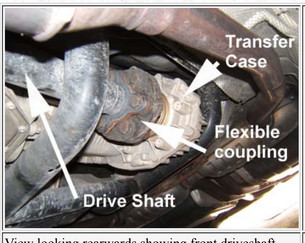
## Summary of Problem and Solution

As reported on Rangerovers.net starting from the early days of the Mk III model, the problem lay in the design of the front driveshaft, which had no flexible coupling at the front end, so that any minor misalignment put severe stress on the front diff input splines, leading to failure and immobilization of the vehicle. In our view, Land Rover's original design was perfectly reasonable from an engineering point of view, since the engine and transmission were all bolted together as one unit and theoretically would not need provision for flexiblity in the drive shaft. But once the failures started to happen, it was obvious that the assembly must not be as rigid as hoped, and what was needed was a driveshaft with flexible couplings at both ends. Indeed, this was the design adopted in the 2006 model year upgrade. However it took a long time for Land Rover to admit there was a real problem with the earlier models. During this period of uncertainty, aftermarket driveshafts with the necessary flexible joints at both ends were produced by third party manufacturers. Now that Land Rover has made an official solution available free fo charge, we applaud the company for this action which should close the door on the whole episode and help enhance Land Rover's reputation for reliability.

## Mechanical Details of Drive Shaft Redesign

**Old Design:**

The front driveshaft/diff design, derived from the BMW X5, had a flexible coupling at the rear end only (see photos below left). It therefore relied on very accurate alignment of the diff input shaft with the front prop shaft/drive shaft. When alignment drifted away from perfection, the splines at this connection would be subject to excessive wear and eventually disintegrate. Several service campaigns to realign the diff did not seem to solve the problem permanently.



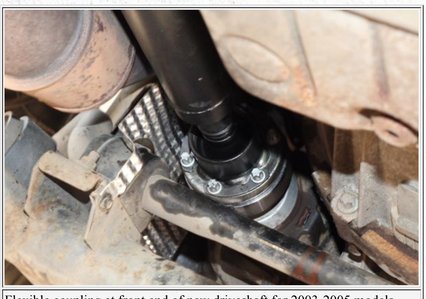

View looking rearwards showing front driveshaft coming forward from transfer case. Note flexible coupling at transfer case end of the shaft.

Front end of original driveshaft, where it enters the front diff, without flex coupling of any kind.

**New Design:**

When the 2006 models came out, using the Jaguar engines, the front driveshaft design was changed to eliminate this reliance on accurate alignment, by providing a flexible joint at the front end of the drive shaft (see photo below left). When the newly designed front driveshaft finally came out, its new flexible CV joint at the front end (photo below right) remarkably resembled the 2006 design. This also required a new carrier on the front diff itself to accept the new driveshaft. The same simple flex coupling as before is retained at the rear end of the shaft.

Flexible coupling used on front end of redesigned drive shaft for 2006 and up models with Jaguar-derived engine.



Flexible coupling at front end of new driveshaft for 2003-2005 models. Note resemblance to 2006 design. Note new heat shield, also installed as part of the service action, to the left of the drive shaft to shield it from the catalytic converter.

The new design eliminates the need for the front diff to be aligned so accurately.
Officially, the operation is referred to as the "Front Differential to Propshaft Spline SVC Action". When I had mine done (September 2008) the complete list of parts used in the operation was as follows:
1 LR008102 SHAFT ASSY - DRI
1 LR007758 FLANGE - COUPLING
1 LR008106 HEAT SHIELD
1 LR008114 KIT - HARDWARE
2 TKE000040 CIRCLIP
1 568680 STRAP - CABLE

The following fluids were also used:

1 LRN7951 OIL - ENGINE
1 STC50550/10 RVT SEALANT
2 LRN2261 FLUID - POWER AS
1 ROBC BRAKE CLEAN
3 SYNGEAR SYNTHETIC GEAR OIL

In my case, during the reassembly operation the techs were unable to crush the crush sleeve, so a new one had to be fitted (LR007771 SPACER, BEARING).

## Owner Experiences

A number of owners have reported experiencing a tighter feeling driveline after the recall, with less slack in it. A few have noticed subsequent drivetrain problems, such as a clunk and jerk at slow speed while turning or flexing the suspension (going over a speed bump). If you know anything about this, please email me.

## More Information

RR III Replacement Front Driveshaft Page
Diff Emergency Field Recovery page: Ideas on how to recover from front diff failure when it happens in the field.
Front Diff Failure Section of RR III Common Symptoms and Fixes page
Alldata: Source of Range Rover Technical Service Bulletins (subscription required)
NHTSA page for filing a complaint about the front diff issue
Range Rover III Forum: Do a search for "diff" to read about owner experiences.


Return to Repair Operation Details
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