COPY

CL-10406698-43974

[redacted]
Arlington, VA [redacted]

May 30, 2011

Land Rover North America, Inc.
Attn: Customer Relationship Center
555 MacArthur Boulevard
Mahwah, NJ 07430

JUN 0 2011

REF: 2006 Range Rover Sport HSE, VIN: SALSF25466A[redacted]

Dear Sir or Madam:

I am writing in reference to a March 21, 2011 service on my 2006 Range Rover Sport HSE. After the vehicle became inoperable due to a loud grinding noise coming from the front of the vehicle, I was forced to have the vehicle towed to Land Rover Alexandria for service. There was a total disabling of the drivetrain and this could have caused serious injury or death.

After inspection by a certified Land Rover technician, I was informed that the front differential went bad on the vehicle. Keep in mind that the vehicle only had 39,885 miles when this front differential failure was detected.

When I purchased this vehicle, I bought an extended warranty through Genuine Warranty Solutions, a warranty company that specializes in high-end import vehicles. When I informed Genuine Warranty Solutions about the front differential needing service, they sent a technician out to Land Rover Alexandria to inspect the part. What they found, as did your Land Rover technician, was "Tech removed drain plug and found the fluid overheated and full of metal shavings. Tech removed the diff and found the paint delaminated from the inside of the diff." The warranty company denied the claim because Land Rover had issued warnings about this defective item. The warranty company expressed great concern over the failure of this product and then cited a NHTSA Investigation.

As a result of this defective product, I am requesting reimbursement for the installation of the front differential totaling $2,473.38. At 39,885 miles, this part should not fail and, in most other high-end vehicles, this service would have been covered. Over the last one year, I have spent over $6,500.00 servicing this vehicle at the Land Rover dealership. The compensation I am asking for is for parts and service and minimally the amount asked for.

This was the complete failure of a crucial Land Rover part, and not a result of normal vehicle usage. When the vehicle has only 39,885 miles and the part has a coating inside

ET
06131

of it that renders the part defective, it causes me great concern that a recall has not been issued and owners have not been notified about this. The safety of drivers should be a top priority and the findings of your technician serves as proof that the front differentials on your 2006 Range Rover Sport's are defective and could cause serious harm or death to drivers.

Thank you for your time and review of my request. Compensation can be forwarded to the above address. If you have any additional questions, please feel free to contact me.

[redacted]

Cc: US NHTSA (NHTSA Action Number: PE07019)
John Fox, Esq.

LAND ROVER ALEXANDRIA

2712 Duke Street
Alexandria, VA 22314
(703) 370-6565
Fax: (703) 370-6566
www.landroveralexandria.net

**SERVICE DEPARTMENT HOURS**
7:30 a.m. to 5:30 p.m.
Monday - Friday
7:30 a.m. to 3:00 p.m. Saturday

| R/O Open Date | R/O Number |
|---|---|
| 3/21/11 | 26006043/1 |
| R/O Close Date | Status |
| 3/28/11 | Pre-Invoice |
| Mileage In | Mileage Out |
| 39885 | 39890 |
| Service Advisor / Tag # | |
| Dave Shenkle/2880 | |

[redacted]
ARLINGTON, VA [redacted]

Work Phone [redacted]
Home Phone [redacted]

Vehicle Identification Number: SALSF25466A[redacted]
Delivery Date:
In-Service Date: 6/01/10

| Year | Make | Model | Body | Color | License Number |
|---|---|---|---|---|---|
| 2006 | LAND ROVER | RANGE RVR SPO | 4DR WGN HSE | BLUE | |

| DESCRIPTION OF SERVICE AND PARTS | | AMOUNT |
|---|---|---|
| #1 - 16LRZ02: VEHICLE NOISE ***MSPR SHEET REQUIRED***CUSTOMER STATES VEHICLE NOISE (SPECIFY WHEN NOISEOCCURS, AT WHAT SPEED(S), ROAD CONDITIONS, & OTHERCOMMENTS). CUST STATES HEARS GRINDING NOISE COMING FROM FRONT WHEELS | | |
| Work performed by TONY T. 3787 (AT2) | | 1077.04 |
| Installed LR009478 :AXLE ASSY - FRON | 1@801.10 | 801.10 |
| Installed 7590WGL :75/90 SYN GEAR | 4@12.35 | 49.40 |
| Installed TDL500030 :CIRCLIP | 2@3.01 | 6.02 |
| Installed LR014147 :KIT - WHEEL BEAR | 1@252.39 | 252.39 |
| TECH TEST DROVE VEHICLE. FOUND WHIRRING NOISE FROM THE FRONT DIFFERENTIAL. TECH REMOVED DRAIN PLUG AND FOUND THE FLUID OVERHEATED AND FULL OF METAL SHAVINGS. TECH REMOVED THE DIFF AND FOUND THE PAINT DELAMINATED FROM THE INSIDE OF THE DIFF. EXT WARRANTY INSPECTED AND DENIED CLAIM. TECH REPLACED THE FRONT DIFFERENTIAL AND FILLED FLUID TO LEVEL. NO FURTHER DIFF NOISE HEARD. | | |
| Sub Total: 2185.95 | | |
| #2 - 70LRZ4: RENTAL VEHICLE (RARA AVIS) LAND ROVER LR2 - 11383L | | |
| #3 - 90LRZMPI: LAND ROVER MULTI-POINT INSPECTION (MPI) PLEASE PERFORM A COMPLEMENTARY MULTI-POINTINSPECTION. (MPI SHEET MUST BE STAPLED TO RO.) COMPLETED MPI. | | |
| Sub Total: .00 | | |

TERMS: STRICTLY CASH UNLESS ARRANGEMENTS ARE MADE. "I hereby authorize the repair work hereinafter to be done along with the necessary material and agree that you are not responsible for loss or damage to vehicle or articles left in the vehicle in case of fire, theft, or any other cause beyond your control or for any delays caused by unavailability of parts or delays in parts shipments by the supplier or transporter. I hereby grant you or your employees permission to operate the vehicle herein described on streets, highways, or elsewhere for the purpose of testing and/or inspection. An express mechanic's lien is hereby acknowledged on above vehicle to secure the amount of repairs thereto."

DISCLAIMER OF WARRANTIES. Any warranties on the products sold hereby are those made by the manufacturer. The seller hereby expressly disclaims all warranties either express or implied, including any implied warranty of merchantability or fitness for a particular purpose, and the seller neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of said products. Any limitation contained herein does not apply where prohibited by law.

| | |
|---|---|
| LABOR | |
| PARTS | |
| DEDUCTIBLE | |
| SUBLET | |
| SHOP SUPPLIES | |
| HAZARDOUS MATERIALS | |
| SALES TAX OR TAX I.D. | |
| SPECIAL ORDER DEPOSIT | |
| DISCOUNTS | |
| TOTAL DUE | |

**NO RETURN ON ELECTRICAL OR SAFETY ITEMS OR SPECIAL ORDERS.**

X

LAND ROVER ALEXANDRIA

2712 Duke Street
Alexandria, VA 22314
(703) 370-6565
Fax: (703) 370-6566
www.landroveralexandria.net

**SERVICE DEPARTMENT HOURS**
7:30 a.m. to 5:30 p.m.
Monday - Friday
7:30 a.m. to 3:00 p.m. Saturday

| R/O Open Date | R/O Number |
|---|---|
| 3/21/11 | 26006043/ |
| R/O Close Date | Status |
| 3/28/11 | Pre-Invoic |
| Mileage In | Mileage Out |
| 39885 | 39890 |
| Service Advisor / Tag # | |
| Dave Shenkle/2880 | |

[redacted]
ARLINGTON, VA [redacted]

Work Phone [redacted]
Home Phone [redacted]

Vehicle Identification Number SALSF25466A [redacted]

| Year | Make | Model | Body | Color | Delivery Date | In-Service Date | License Number |
|---|---|---|---|---|---|---|---|
| 2006 | LAND ROVER | RANGE RVR SPO | 4DR WGN HSE | BLUE | | 6/01/10 | |

| DESCRIPTION OF SERVICE AND PARTS | AMOUNT |
|---|---|
| #4 * 16LRZ02: VEHICLE NOISE ***MSPR SHEET REQUIRED***CUSTOMER STATES VEHICLE NOISE (SPECIFY WHEN NOISEOCCURS, AT WHAT SPEED(S), ROAD CONDITIONS, & OTHERCOMMENTS). TECH FOUND LEFT FRONT HUB ASSEMBLY MAKING NOISE AN D LOOSE<br>Work performed by TONY T. 3787 (AT2)<br>AFTER INSTALLING DIFFERENTIAL, TECH FOUND ANOTHER NOISE COMING FROM THE FRONT LEFT WHEEL. TECH FOUND THE WHEEL BEARINGS WORN. TECH REPLACED THE LEFT FRONT HUB. TEST DROVE VEHICLE. NOISE HAS BEEN ELIMINATED.<br>Sub Total: 191.98<br>Sub Total: .00 | 191.98 |

TERMS: STRICTLY CASH UNLESS ARRANGEMENTS ARE MADE. "I hereby authorize the repair work hereinafter to be done along with the necessary material and agree that you are not responsible for loss or damage to vehicle or articles left in the vehicle in case of fire, theft, or any other cause beyond your control or for any delays caused by unavailability of parts or delays in parts shipments by the supplier or transporter. I hereby grant you or your employees permission to operate the vehicle herein described on streets, highways, or elsewhere for the purpose of testing and/or inspection. An express mechanic's lien is hereby acknowledged on above vehicle to secure the amount of repairs thereto."

DISCLAIMER OF WARRANTIES. Any warranties on the products sold hereby are those made by the manufacturer. The seller hereby expressly disclaims all warranties either express or implied, including any implied warranty of merchantability or fitness for a particular purpose, and the seller neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of said products. Any limitation contained herein does not apply where prohibited by law.

| | |
|---|---|
| LABOR | 1269.02 |
| PARTS | 1108.91 |
| DEDUCTIBLE | .00 |
| SUBLET | .00 |
| SHOP SUPPLIES | 40.00 |
| HAZARDOUS MATERIALS | .00 |
| SALES TAX OR TAX I.D. | 55.45 |
| SPECIAL ORDER DEPOSIT | .00 |
| DISCOUNTS | .00 |
| TOTAL DUE | 2473.38 |

**NO RETURN ON ELECTRICAL OR SAFETY ITEMS OR SPECIAL ORDERS.**

X

# Front Differential Problems and Solutions (Range Rover III)



Introduction
Failure Symptoms
Emergency Field Recovery
Underlying Causes
Official Land Rover Efforts to Address Problem
Checking for Misalignment and Wear
Differential Replacement
Aligning the Front Differential
More Permanent Solution: Custom Driveshaft
Prevention Advice to Owners
Reporting Procedure for Diff Failures
Land Rover Customer Service Contacts
NHTSA Investigation (US)
VOSA Investigation (UK)
More Information

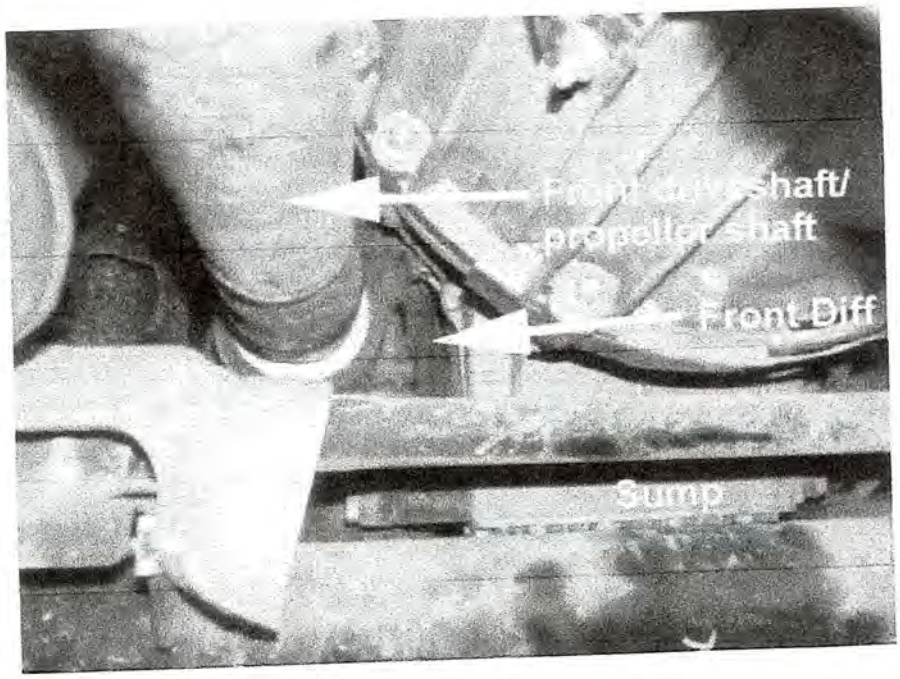



***Photo: View (looking forward) of front drifeshaft and diff on author's 2004 Range Rover. Note diff mounted on left side of engine crankcase/sump, with driveshaft entering it with no U joint.***

## Introduction

A front differential would normally be expected to last the life of the vehicle, but on the new Range Rover introduced in 2002 it was a major failure item. The problem lay in the design of the front driveshaft, which had no flexible coupling at the front end, so any minor misalignment put severe stress on the front diff input splines, leading to failure and immobilization of the vehicle. In 2006 the problem was solved (by a redesigned front drive shaft/prop shaft) on the updated model introduced in that year, but the 2002-2005 models were left unchanged. Until early 2008 there was still no safety recall or redesign of the components involved, although more than one service bulletin had been produced on the subject and temporary fixes in the form of realignment of the front diff/driveshaft connection were implemented.

In 2008 after investigations by the vehicle safety agencies of several countries a "Service Action" campaign was finally introduced to replace the front drive shaft on the 2002-2005 models with redesigned parts incorporating a CV joint at the front end as well as the existing flexible joint at the rear. This brought the

design into line with the one used on the 2006 & up. For full details of the 2008 service action, see the Front Diff Recall Page.

The information below was originally compiled when the diff failures started being reported, and was an effort to assemble existing knowledge on this problem and how to solve it. Since there has now been a permanent solution implemented by Land Rover, much of the information herein is of historical interest only. However, if you can provide any additional information on the problem or solutions, please email me

## Failure Symptoms

Of the many owners who have reported front diff failure to me, few if any have had prior warning of the event. One dealer employee reports that an often-missed warning of imminent failure is a loud clunk when changing from drive to reverse and back again. In a notice filed by Land Rover with the NHTSA in March 2005, it is claimed that the premature wear results in "excessive noise". However I have not heard from any owners that have observed these warning signs. The first you usually know about it is when the front driveshaft generates a loud grinding noise caused by the splines being mangled. The vehicle will not accelerate -- putting your foot on the gas is accompanied by more loud grinding noises. There is a total disabling of the drivetrain. Some owners have reported the vehicle's computers have cut power to the engine. The message center tells you to put the transmission in neutral, and forces you to come to an abrupt stop. When it happens on the freeway, you are lucky if you make it to the side of the road to stop safely. You will have to use the parking brake to stabilize the vehicle once stopped -- shifting into "Park" will not hold it on a slope. I have heard of one case that happend at 80 mph and caused the front wheels to lock, resulting in a loss of control (see this thread on the Range Rover III Forum for this and a sample of other reports; additional ones are described in the front diff section of the RIII common symptoms and causes page).

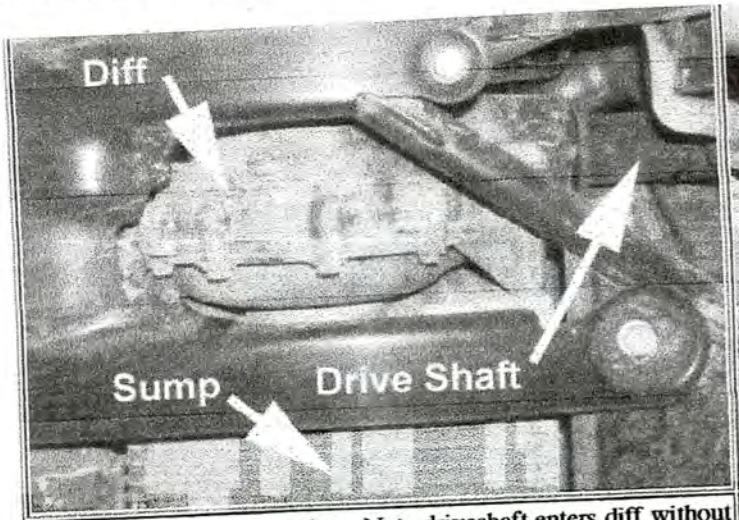
Quite a few owners have experienced the failure two or three times -- it usually seems to happen at 20 or 30,000 mile intervals. On my 2004 RR, I decided to have the front diff checked at 30,000 miles to make sure it would not fail out in the deert far from help -- even though its May 2004 build date was well after the official fix (see below) was in. Sure enough, the splines were worn out and the diff had to de replaced.

## Emergency Field Recovery

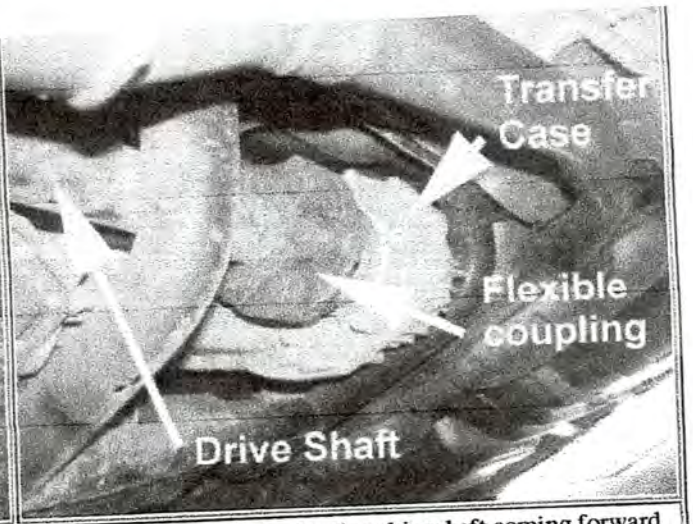
See the Diff Failure Emergency Recovery Page for ideas on how to prepare yourself for the possibility of diff failure in the field far from help.

## Underlying Causes

The cause of the problem is stress on the front driveshaft and front diff input due to misalignment. To understand this, we need to elucidate the design of the Range Rover III front drive layout. The front differential is mounted on the left side of the engine crankcase, which was strengthened in the design process to accommodate this arrangement. The front diff receives its input from the front driveshaft which comes forward from the transfer case. Because the engine is bolted directly to the transmission, and the transmission to the transfer case, the designers (not unreasonably) must have assumed the whole structure would be perfectly rigid and the usual arrangement of CV joints, U-joints or flexible couplings used on the front driveshafts of lesser 4X4's would not be needed. Mysteriously, they did provide a flexible coupling at the rear end of the driveshaft, where it attaches to the transfer case, but not on the front end where it goes into the diff.

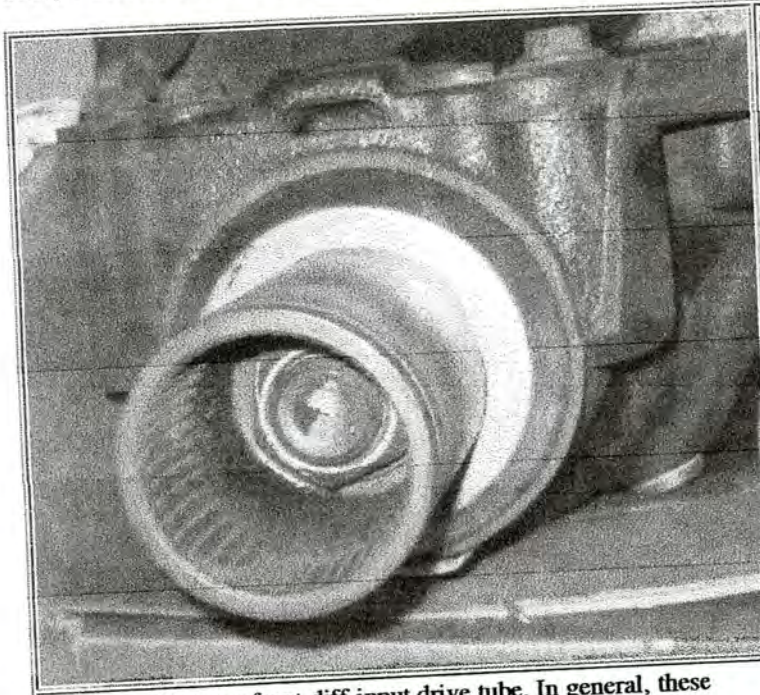



Front diff viewed from below. Note driveshaft enters diff without benefit of any flexible coupling.

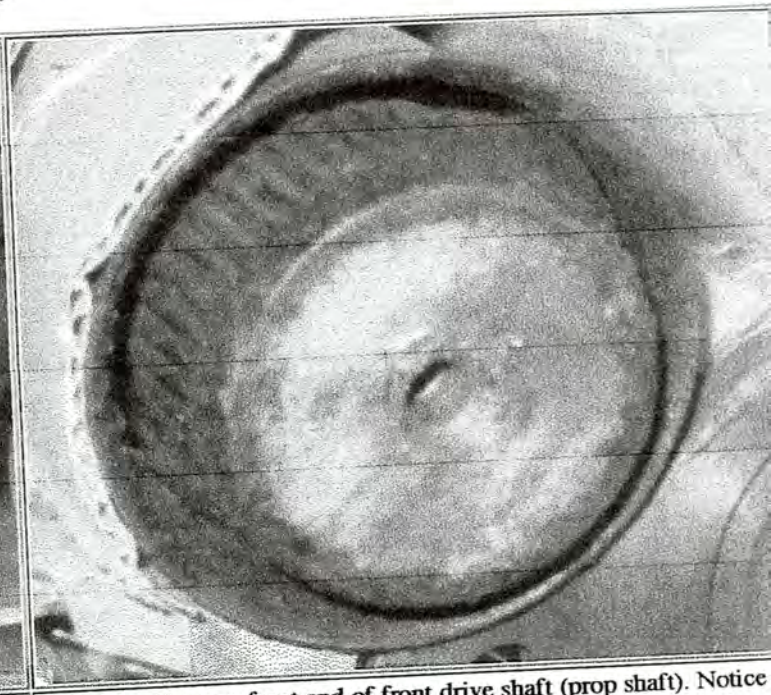



View looking rearwards showing driveshaft coming forward from transfer case. Note flexible coupling at transfer case end of the shaft.

Accordingly, no problems have been reported at the transfer case end, but the connection to the front differential fails far more frequently than it should, often wrecking the entire diff with it. An obvious cure would be to provide some form of flexible coupling at the front end of the driveshaft, but to date (January 2006) I have not heard of any such cure being adopted by Land Rover.



Stripped splines on front diff input drive tube. In general, these splines seem to sufer more than the ones on the drive shaft.



Stripped splines on front end of front drive shaft (prop shaft). Notice this one has gone completely bald at the end. Note hole in end of drive shaft did not prevent the problem.

One owner reported the internals of the diff rather than the splines being destroyed -- if you know more about this please email me.

## Official Land Rover Efforts to Address the Problem

When the new Jaguar-derived engines

were incorporated in the 2006 model, a CV joint was added at the front as well as the rear of the driveshaft (see photo of front end of driveshaft courtesy of Mark Osen). This was in effect a tacit recognition that the earlier design (omitting any flexible coupling at the front end of the driveshaft) was not satisfactory.

However, the adoption of this improved design for 2006 did not help owners of the earlier 2002-2005 models with the BMW drivetrain, for which Land Rover's official solution to the problem was limited to checking for correct alignment of the front differential. A series of technical bulletins were issued on the matter.

## June 2003 Service Bulletin (H121)

In June 2003, shortly after the new vehicle was introduced to the market, a service bulletin (54/03/03) was issued entitled "Front Differential Alignment Process", stating that the required procedure for differential alignment during replacement is not thoroughly covered in the RAVE Workshop Manual. (Amusingly, this made it sound as if front differential replacement was a routine matter). This bulletin said that any damage to the differential drive tube splines requires replacement of the whole front diff as well as the prop shaft. It states "The differential assembly includes a collapsible spacer that determines the bearing preload. There is currently no acceptable procedure for renewing a drive tube in service. If an attempt is made to change the drive tube only, rapid failure of the differential bearings will occur. Damaged or worn splines in the drive tube will have affected the prop shaft, requiring replacement". The service bulletin included a procedure for aligning the new diff. An associated worldwide Land Rover Field Action campaign (ABD121) was evidently implemented to apply this procedure.

## May 2004 Service Campaign (SB 121)

In May 2004, a campaign was initiated to check the alignment and wear of the front driveshafts and differential input when owners brought in their RRs for service. Affected vehicles were all "New Range Rover (LM)" vehicles from VIN 3A101029 to 4A144905 (ie all 2003 and early build 2004 models, with build dates from 18 April 2002 to 17 June 2003 and 02 July 2003 to 03 July 2003). At the time, parts availability was limited and each dealer was to be provided with only one differential and prop shaft set. Accordingly, some owners reported having to wait some time for their repairs. The parts used for repairs appear to be basically identical to the original parts, although one owner reports the dealer told him they were improved.

## Subsequent Developments

In 2005 a steady trickle of owners continued reporting the front diff failures, some for the second time. It was unclear whether the earlier service bulletins had resolved the issue. In November 2005 bulletin 121 was updated and re-issued. The changes were minor, such as incorporating provision for new pre-drilled propeller shafts if replacement is required. The affected vehicle range remained the same, so the official story seems to be that the problem is solved and does not exist on models built after July 3rd, 2003. However, failures continue to occur even on 2005 models.

Interestingly, in March 2005 Land Rover filed a foreign field action report with the NHTSA to report its worldwide campaign back in June 2003 (see above). This was described as a "customer satisfaction" action rather than a defect or safety issue, and the wording made an effort to blame the customer for ignoring the "excessive noise" due to the spline wear that preceded the failures: "Premature wear of front differential splines has been identified on gas and diesel Rnage Rover. The wear is caused by a misalignment of the front differential to transfer gearbox output flange and results in excessive noise. If the customer does not seek service when symptoms of noise are noticed, or symptoms are ignored, and condition is not corrected, there is potential for failure of these splines that could result in loss of drive". Vehicles affected were still only up to VIN 4A146500 (ie e up to July 2003 build dates). Note use of the word "could" indicating this is a purely hypothetical problem!!

March 2007: Dealer sources unofficially report a huge influx of 2004 models (reaching the 30-40K mileage) coming in with the front diff failure. In the USA, the NHTSA finally started a review of the problem.

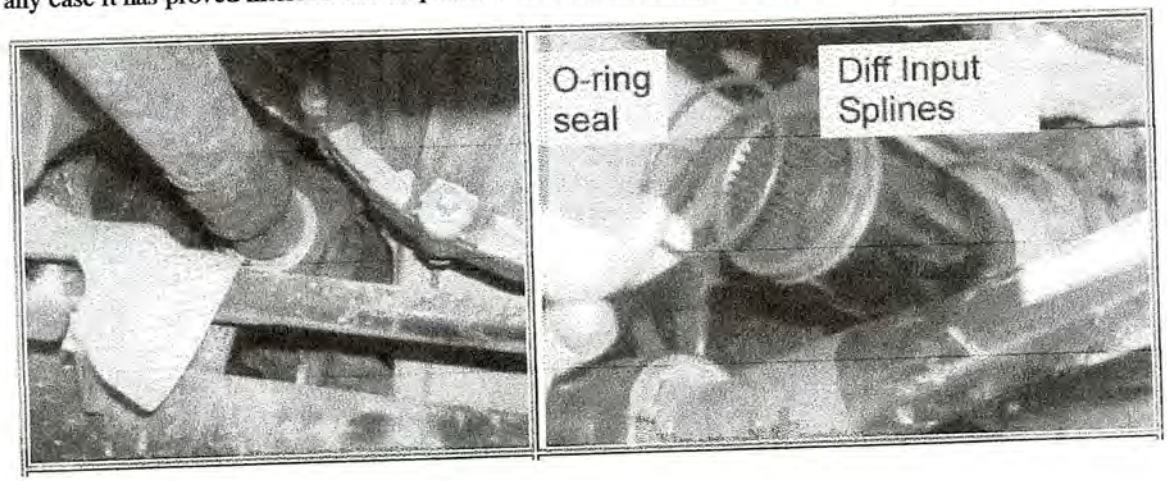
Sadly, the official fix seems to be no more than a temporary expedient to get the vehicles past the warranty period in the hope that owners will have to pay for subsequent repairs themselves. The only way around this appears to be to get an NHTSA investigation started in the US (and equivalent actions in other countries) by reporting these failures every time they happen. So, if you have had one in the past, please go to the link and report it.

**May 2008:**
Land Rover finally instituted a free replacement program for the notorious front diff problem on the BMW-engined RR III models manufactured from 2002-2005. Beginning in May 2008 in the UK and Europe, the program spread to the US in July of the same year. A phased program was evidently needed due to the wait for the necessary parts to be produced in sufficient quantity. Full information on the recall appears on the Front Diff Recall Page.

If you have any updated information, please email me so we can share it with other owners.

## Checking for Misalignment and Wear

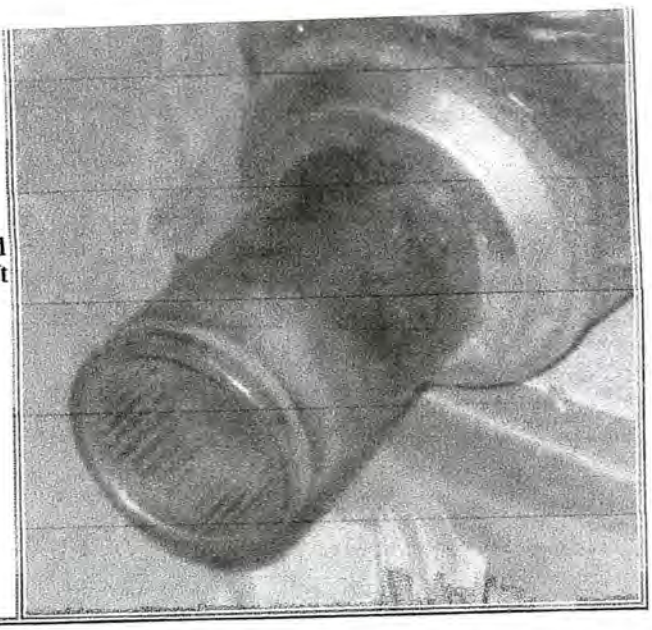
The procedure for checking the front drive shaft and differential are fairly simple, and for vehicles out of warranty might be worthwhile for the owner to do. The process described in the service bulletins basically involves removing the driveshaft, inspecting the splines, reinstalling its front end and wiggling the rear end around to see if its alignment is centered on the output shaft of the transfer case. During the procedure, it is recommended that a hole is drilled into the front end of the drive shaft. There is no explanation of why this was thought to be needed, but it may be to relieve any pressure buildup of the lubricants in the splines. In any case it has proved ineffective. The photos below show what good and bad diff splines look like.



Above: View looking forward along the front driveshaft (propeller shaft) towards front diff. Horizontal bar below driveshaft is the anti-sway bar.

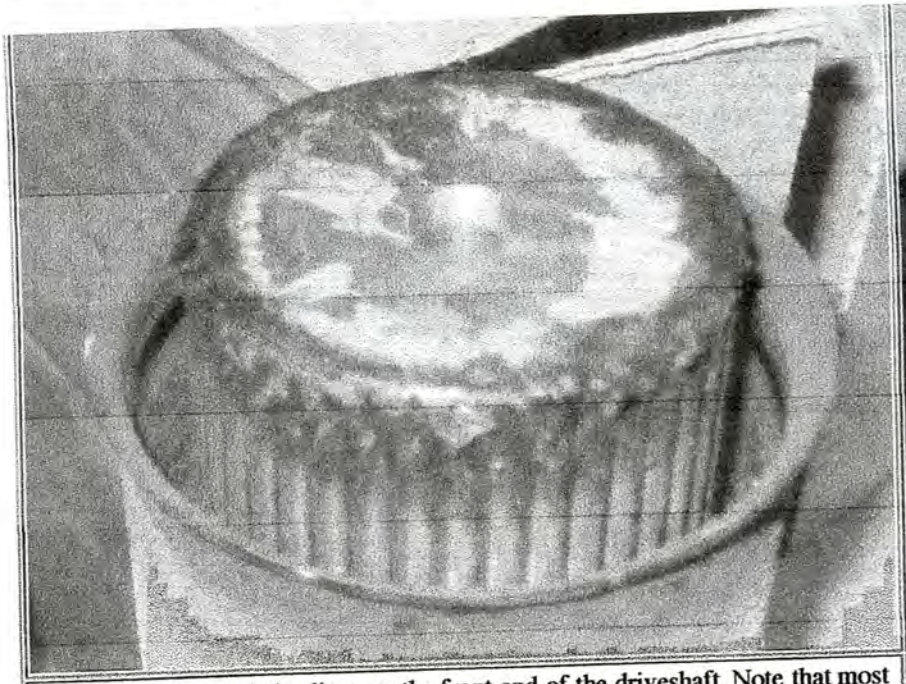
Top Right: Similar view but closer in (adapted from official Land Rover TSB) with driveshaft removed to see the the input splines of the front differential. Anti-sway bar at bottom.

Bottom Right: Closeup of failed splines on diff input tube.

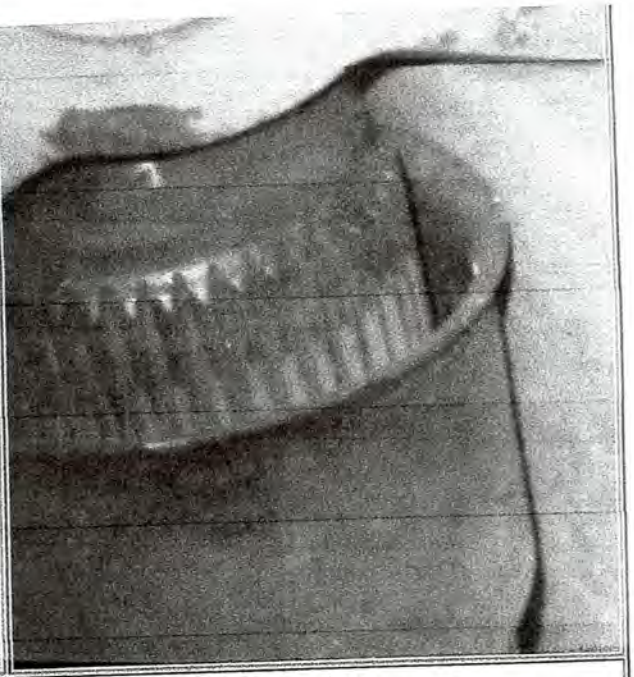


The main steps of the wear and alignment checking procedure are as follows:

1. Jack up and safely support the front of the vehicle. Undo the 6 bolts securing the flexible coupling.
2. Slide the driveshaft forward and remove the coupling. Scribe reference marks on the diff and shaft to aid reassembly, and slide the shaft rearwards to disengage it from the diff. Remove the "O" ring from inside the diff drive tube.
3. Inspect the splines on the drive shaft and inside the differential drive tube for excessive wear.
4. If wear is excessive on the driveshaft, replace it. (30% is excessive).
5. If wear is excessive in the diff input splines, the whole diff has to be replaced. (Note that replacement is not needed if there is only limited wear, spline noise or red fretting corrosion. Alignment of the diff will resolve the noise and limited wear).
6. If re-using the old driveshaft, drill a 5 mm (13/64) hole in the front end of the driveshaft. A fairly long (2.5 inch) hole is needed before you reach the inside of the driveshaft tube, so be careful not to break the drill bit. A lathe is preferable for this operation, but a careful job with a hand drill is OK -- in either case do not let metal shavings remain on the splines afterwards. If replacing the driveshaft, the new part has a hole already drilled in it.
7. To reassemble, align the reference marks on the driveshaft and differential, and reinsert the shaft into the diff input sleeve.
8. Wiggle the rear end of the shaft up and down, measuring its deflection in either direction. If the center point of this slop is more than 1 mm from the center of the transfer case output shaft), the differential needs aligning (see "Aligning the Differential" below).
9. Remove the driveshaft again, lubricate a new "O" ring, insert it into the drive tube and grease the splines with the approved grease (LR part number TIA500010). Reassemble flexible coupling using new nuts, torqued to 81 lb ft (110 NM). Note -- the November 2005 update no longer requires the O ring renewal.



Another set of mangled splines on the front end of the driveshaft. Note that most of the length of the splines is not too badly worn -- most of the wear seems to take place in the diff input tube splines. (Note that again the hole had already been put in the driveshaft but had no effect in preventing the failure).



A good driveshaft for comparison.

## Differential Replacement

If the spline wear on the inside of the diff input drive tube is excessive, the official procedure is to replace the entire differential assembly. According to the June 2003 service bulletin, the assembly includes a collapsible spacer that determines the bearing preload, and renewal of the drive tube only can apparently result in rapid failure of the differential bearings.

If the input tube and spacer can be obtained from somewhere as separate parts, it is quite likely that an experienced diff shop could dissassemble and reassemble the original diff satisfactorily. Please email me if you have tried this.

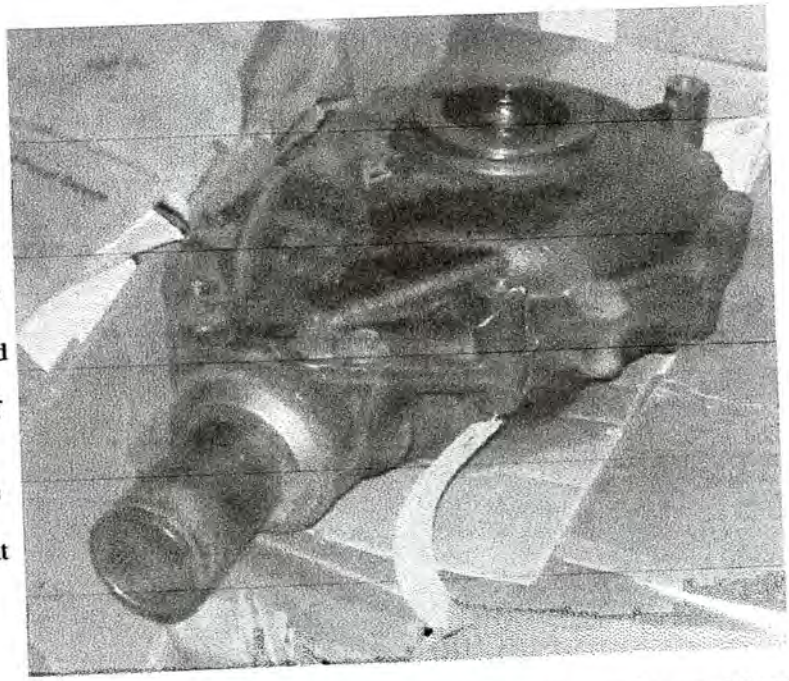


***Photo at left (courtesy of Atlantic British): New replacement front differential unit with input drive at right side of picture.***

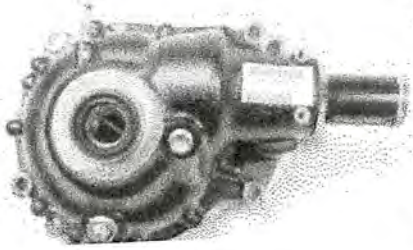


***Photo at right: Diff removed from vehicle; input tube has stripped splines.***

If the diff does need replacing, the procedure for doing so is fully

described in the workshop manual.

## Aligning the Differential

If the diff needs realigning, it is a fairly simple matter of loosening the four bolts that mount it to the left side of the engine crankcase, and rotating the diff housing forward or back slightly until the alignment as described above is perfect. The rotation is performed by using the drive shaft as a lever and moving its rear end up or down until the desired alignment is achieved.


View looking along the left front axle shaft (confusingly also called "driveshaft") on author's 2004 RR. You can just see some of the mounting bolts that attach the diff to the left side of the engine crankcase/sump.

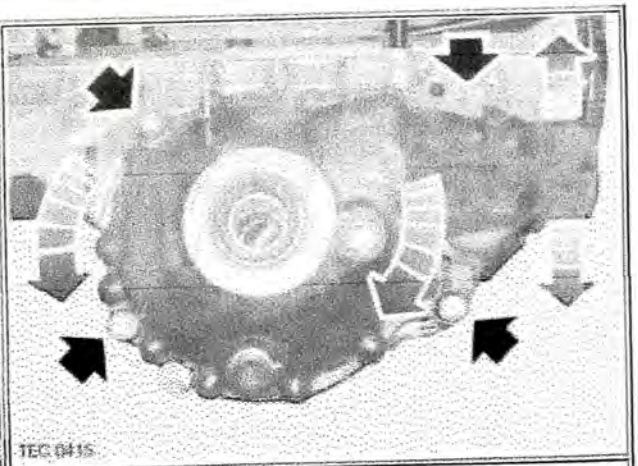



Illustration from official Land Rover Technical Service Bulletin. This picture is looking from a similar angle, showing how diff is rotated (with mounting bolts loosened) to align its input correctly.

When alignment is satisfactory, re-tighten the diff mounting bolts to 81 lb-ft (110 Nm), and re-check the alignment.

Finally, remove the driveshaft, lubricate and reassemble as in step 9 above.

## Aftermarket-Originated Permanent Solutions: Custom Driveshafts and Coupling Upgrade Kits

Several readers have siggested getting a custom driveshaft made by one of the many suppliers who do this for modified Jeeps etc. It is obvious that adding a flexible coupling, U joint or CV joint to the front end of the driveshaft would eliminate the problem permanently.

Finally, such a solution is now available to our readers -- in the US, Rover 3 Drivelines has entered the fray with a high quality custom driveshaft incorporating U joints at both ends. In the UK, GKN can modify the driveshaft to incorporate a front U-joint. For more information see the RR III Replacement Front Driveshaft page.

In spring 2008, Atlantic British came up with some new, stronger parts to prevent recurrence of the driveshaft coupling spline failure. Their replacement Coupling Upgrade Kit features a higher grade coupling machined from # 4340 steel alloy that is heat-treated, resulting in a more durable design that will last longer than the inferior genuine coupling. Each kit includes: a Hardened Steel Shaft Coupling, Lock Nuts, 1.5 oz. Tube PTFE Grease, 2 inch O-Ring, Inner Dust Shield, Dust Shield Removal Tool, Dust Shield Installation Tool and Instructions. Cost is $299 -- a fraction of the usual repair bill for this common failure. This could be a handy repair kit to carry along on those remote expeditions!

## Prevention Advice to Owners

In the absence of a redesigned front driveshaft, the most practical solution for owners wishing to avoid this problem is to have the front diff input splines inspected at regular intervals -- probably every 30,000 miles would be appropriate. You will probably have to pay the dealer for the labor to do this -- 1.1 hours is the specified time in Service Bulletin 121 to remove the driveshaft, check for wear, drill the shaft, pack with grease and reasemble. Just removing the shaft, checking the splines, and reassembling should be the work of half an hour. Or, if you are mechanically inclined you can do it yourself (see details of this procedure above). If excessive wear is found, the dealer will probably replace the front diff if your RR is still under warranty. Since the problem is basically one of known defective design you may also be able to persuade them to replace it even if the vehicle is beyond its official warranty period, but you might have to complain higher up the corporate chain. More information on owners' attempts to get Land Rover to pay for the repair after warranty expiration appears on the Common Symptoms and Fixes page.

## Reporting Procedure for Front Diff Failures

Since failure of the front diff results in a complete loss of drive power and therefore can jeopardize safety, US owners who have experienced this problem (even if it was some time ago) should report it to the National Highway and Traffic Safety Administration (NHTSA), in order to get the process started that will lead to a redesign and recall campaign that is our only hope for a real and permanent solution. In the UK, you can file a report with file a report with:
Vehicle Safety Branch, Vehicle and Operator Services Agency, Berkeley House, Croydon Street, Bristol, BS5 ODA.
Tel: 0117-9543300 http://www.vosa.gov.uk, (broadly the UK equivalent of the NHTSA).

If anyone knows the equivalent reporting agencies in other countries, please email me.

## NHTSA Investigation

On April 4, 2006, the US National Highway Safety and Transportation Administration (NHTSA) began an investigation into the front diff failure issue. The NHTSA website http://www-odi.nhtsa.dot.gov describes the investigation as follows:

NHTSA Action Number : PE07019

NHTSA Recall Campaign Number : N/A

Model/Build Years:
2003-2004
2002-2003

Make / Models :
LAND ROVER / NEW RANGE ROVER
LAND ROVER / RANGE ROVER
Manufacturer : LAND ROVER
Component :
POWER TRAIN:AXLE ASSEMBLY:AXLE SHAFT
POWER TRAIN:DRIVELINE:DIFFERENTIAL UNIT
POWER TRAIN:DRIVELINE:DRIVESHAFT
Date Investigation Opened : April 4, 2007
Date Investigation Closed : Open
Summary:
ODI HAS RECEIVED 38 VEHICLE OWNER QUESTIONNAIRES (VOQS) ALLEGING FAILURE OF THE FRONT DRIVE SHAFT AND/OR THE FRONT AXLE DIFFERENTIAL. MANY OF THE COMPLAINANTS ALLEGE THAT THE FAILURE RESULTS IN A LOSS OF VEHICLE PROPULSION AND SUBSEQUENT VEHICLE IMMOBILIZATION. SEVENTEEN OF THE COMPLAINTS ALLEGE THAT THE FAILURE OCCURRED WHILE DRIVING AT SPEEDS GREATER THAN 40 MPH. SIXTEEN OF THE COMPLAINANTS ALLEGE THE VEHICLE REQUIRED TOWING AS A RESULT OF THE FAILURES. ADDITIONALLY, EIGHT OF THE COMPLAINANTS ALLEGE THAT THEY EXPERIENCED TWO FAILURES OF THE FRONT DIFFERENTIAL AND/OR FRONT DRIVESHAFT. A PRELIMINARY EVALUATION HAS BEEN OPENED TO ASSESS THE SCOPE, FREQUENCY AND SAFETY CONSEQUENCES OF THE ALLEGED DEFECT.

## VOSA Investigation (UK)

In December 2007 one of our UK readers received a letter from the **Vehicle & Operator Services Agency** (**VOSA**) as a result of his prior complaint to them about his second diff failure. They stated that they had just conducted an investigation during the August-December period to establish whether or not the defect was attributable to a design or construction deficiency, which was liable to cause a significant risk of personal injury or death. Their finding was "inconclusive" as to whether or not such a deficiency exists, but they are now exploring, with Land Rover, whether the performance of this part of the transmission can be improved and expect this exercise to be completed in mid - 2008. Meanwhile, our reporter in the UK encourages any UK owners who have the problem to continue to report it to VOSA (see contact information below) - the more who report it, the greater the chance of remedial action.

## Land Rover Customer Service Contacts

At least one owner has achieved satisfaction by taking his problem to Land Rover Customer Service in the UK:

Land Rover Customer Service Centre on 08705 000 500.
Or write to:
Customer Relationship Centre
Abbey Road
Whitley
Coventry
CV3 4LH
UK

## More Information

Front Diff Recall Page
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 top
Return to Repair Operation Details
Return to Rangerovers.net Main Page


[redacted]
Arlington, VA [redacted]
USA

NHTSA Headquarters
1200 New Jersey Avenue, SE
West Building
Washington, DC 20590