



# Technical Service Bulletin

No.JTB00175  
04  
August 2009

**Subject/Concern:** Differential Replacement

<b>Models:</b>		
S-TYPE	2.7L Diesel and 4.2L Supercharged Gasoline Only	2.7L Diesel and 4.2L Supercharged Gasoline Only VIN- range: M45255-N91220
XF	V6 2.7L Diesel and 4.2L Supercharged Gasoline Only	V6 2.7L Diesel and 4.2L Supercharged Gasoline Only VIN- range: R00019-N91220
XJ Range	V6 Diesel and 3.5L V8 Gasoline Only	V6 Diesel and 3.5L V8 Gasoline Only VIN- range: G00442 -H32692

**Markets:** All

**Section:** 205-00

**Summary:**

The differential design has changed for service use. If the differential needs to be replaced this technical bulletin will need to be followed once only to convert the driveline system to use the new differential. If there are any future repairs required to the differential, propshaft, or half shafts it will only require the affected components to be replaced. **Suggested Customer Concern Code N12.**

**Cause:** New process to Install a new differential design.

**Action:** To install a new differential follow the Service Instruction outlined below.

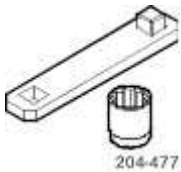
<b>Parts Required:</b>		
Description	Part Number	Quantity
XF V8 Supercharged Differential	C2C 40994	1
XF V8 Supercharged Propshaft Kit	JLM 21865	1
XF V6 Diesel Differential	C2C 40994	1
XF V6 Diesel Propshaft Kit	JLM 21867	1
S-Type V6 Diesel Automatic to (V) N41580 Differential	C2C 40994	1
S-Type V6 Diesel Automatic to (V) N41580 Propshaft Kit	JLM 21868	1
S-Type V6 Diesel Automatic to (V) N41580 OB Joint Kit	C2C 6710	2
S-Type V6 Diesel Automatic (V) N41580 on Differential	C2C 40994	1
S-Type V6 Diesel Automatic (V) N41580 on Propshaft Kit	JLM 21868	1
S-Type V6 Petrol Manual to (V) N41580 Differential	C2C 40994	1
S-Type V6 Petrol Manual to (V) N41580 Propshaft Kit	JLM 21870	1
S-Type V6 Petrol Manual to (V) N41580 OB Joint Kit	C2C 6710	1
S-Type V6 Petrol Manual (V) N41581 On Differential	C2C 40994	1
S-Type V6 Petrol Manual (V) N41581 On Propshaft Kit	JLM 21870	1
XJ SWB V8 3.5L to (V)G41511 Differential	C2C 40994	1
XJ SWB V8 3.5L to (V)G41511 Propshaft Kit	JLM 21871	1
XJ SWB V8 3.5L to (V)G41511 OB Joint Kit	C2C 6710	1
XJ SWB V8 3.5L (V)G41512 on Differential	C2C 40994	1
XJ SWB V8 3.5L (V)G41512 on Propshaft Kit	JLM 21871	1

Differential oil	C2D3653	1
S/C brake caliper bolts S-Type to N52047	C2C6745	4
Non S/C brake caliper bolts XJ / S-Type to G49700 / N52047	C2C1247	4
Brake caliper bolts from G49701 / N52048 / R00019	C2C27237	2
Brake disc retaining clip	C2C33384	2
Hub nut	C2P12731	2
Differential filler plug	C2D3648	1
Tie rod nut - XF	XR81593	1
Tie rod nut - XJ / S-Type	XR848057	1
Lower wishbone to knuckle nut - XJ, S-Type	XR82681	1
Lower wishbone to knuckle nut- XF	XR853342	1
Halfshaft circlip	XR811133	2
Propshaft mounting nut	C2C34448	3
Differential mounting nut -front	C2Z2224	1
Propshaft mounting bolts	C2D2087	6
Propshaft centre bearing fixing	C2C36871	2

### Special Service Tools



Powertrain Assembly Jack.  
HTJ1200-2



Replacer - Mounting Bolts Final Drive To Subframe.  
204-477



Halfshaft splitter handle  
307-443



307-442

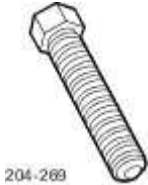
Halfshaft splitter  
307-442



Hub puller  
205-491



Adaptor nuts  
205-491-01



Flange remover forcing screw  
204-269

<b>Labour Time:</b>		
<b>Operation Description</b>	<b>Operation No.</b>	<b>Time</b>
Rear drive Line Replacement XF	51.91.20	3.2 hours
Rear drive Line Replacement XJ - VIN Range - G41512 - H32692	51.91.20	3 hours
Rear drive Line Replacement XJ - VIN Range - G00442 - G41511	51.91.20	3.1 hours
Rear drive Line Replacement S- Type - VIN Range - N41581 - N91220	51.91.20	3 hours
Rear drive Line Replacement S- Type - VIN Range - M45255 - N41580	51.91.20	3.1 hours

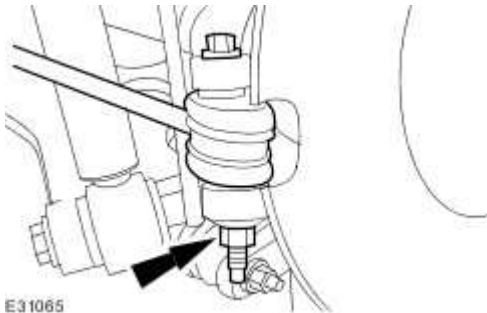
<b>Repair/Claim Coding:</b>	
<b>Causal Part:</b>	C2C40994
<b>ACES Condition Code:</b>	42
<b>Defect Code:</b>	

# Service Instruction

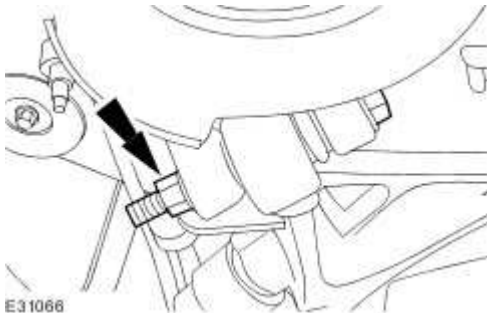
Appendix Table
Appendix 1: XJ Range Only step 1 - 57.
Appendix 2: S Type Range Only step 58 - 110.
Appendix 3: XF Range Only step 111 - 147.

## Appendix 1: XJ Range Only.

- 1 . Raise and support the vehicle. Refer to GTR 100-02 Jacking and Lifting
- 2 . Remove rear wheels and tires. Refer to GTR 204-04
- 3 . Remove the exhaust system. Refer to GTR 309-00
- 4 . Remove RH brake disc. Refer to GTR 206-04 Rear Disc Brake
- 5 . Detach the RH outer tie rod.

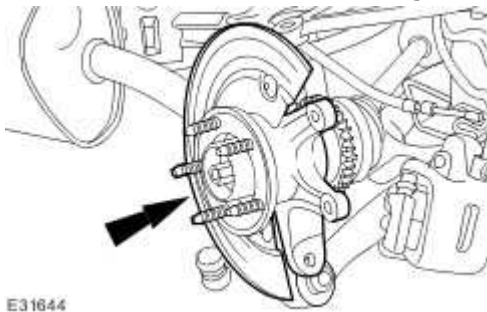


- 6 . Detach the lower arm from the RH wheel knuckle.

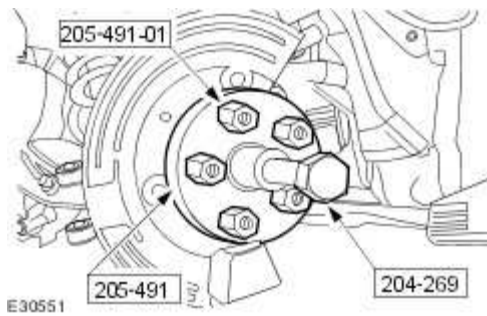


- 7 . **NOTE:** Brake disc and caliper not shown for clarity.

Remove RH driveshaft securing nut.



- 8 . Using the special tools, detach the RH halfshaft.



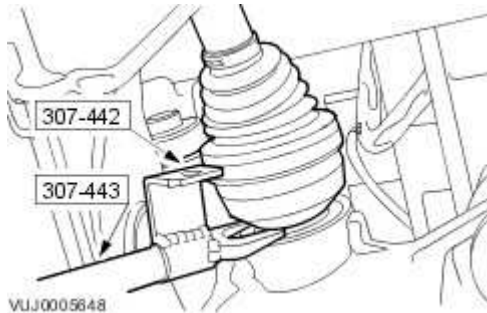
9 .



**CAUTION:** To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

**NOTE:** The halfshaft is retained in the axle assembly by a retaining clip.

Using the special tools, remove the RH halfshaft.

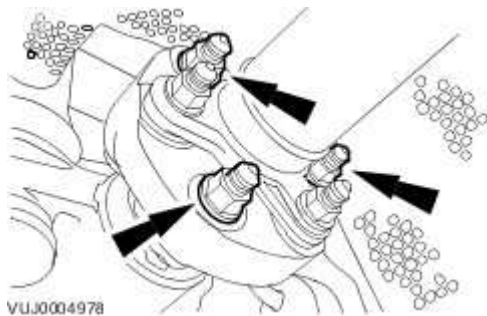


10 .



**CAUTION:** Under no circumstances must the flexible coupling (or its fixings) be loosened or removed from the driveshaft.

Detach the driveshaft from the differential flange.



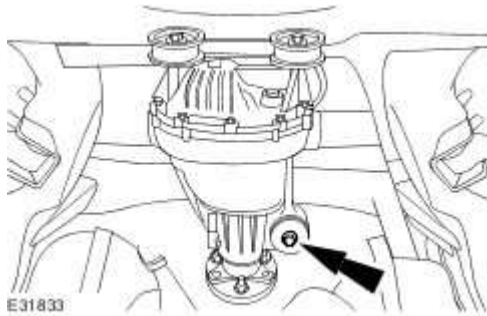
11 .



**CAUTION:** When supporting the axle assembly, use a suitable packing material to prevent damage to the axle assembly.

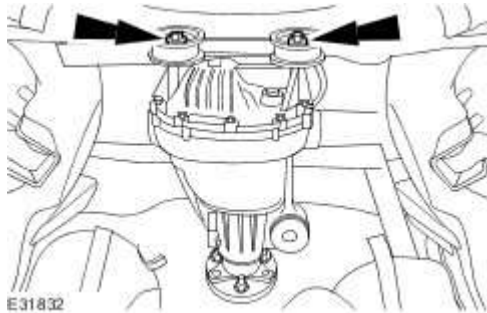
Using the special tool HTJ1200-02, support the axle assembly.


- 12 . Remove the axle assembly front retaining bolt.
  - 1 . Remove and discard front mounting spacer.



- 13 . **NOTE:** The axle assembly rear retaining bolts do not have to be fully removed for the axle assembly to be removed, slacken the rear retaining bolts alternately until the rear axle assembly is released.

Undo but do not remove axle assembly rear retaining bolts.

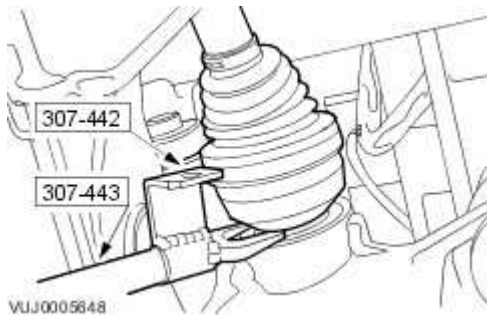


- 14 .  **CAUTION:** To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

**NOTE:** The halfshaft is retained in the axle assembly by a retaining clip.

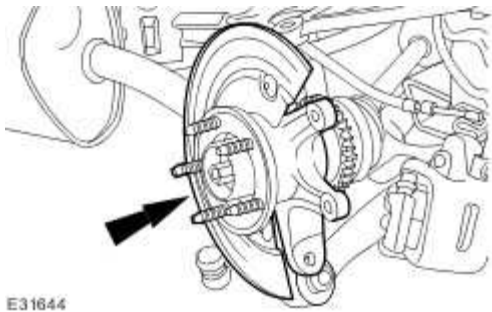
Using the special tools, remove the LH halfshaft.

- 1 . With assistance lower and remove axle assembly.



- 15 . **NOTE:** Brake disc and caliper not shown for clarity.

Remove driveshaft securing nut.

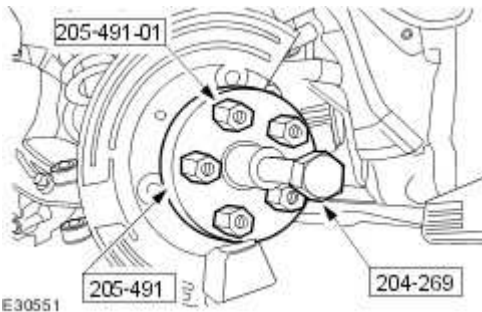


E31644

16 . **NOTE:** Brake disc and caliper not shown for clarity.

Using the special tools, detach the LH halfshaft.

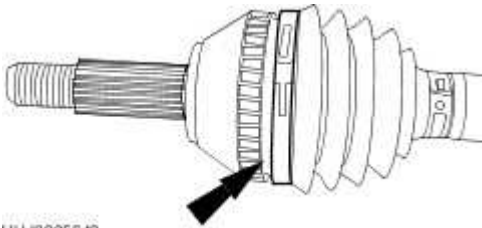
- 1 . Remove the LH halfshaft.



17 . **NOTE:** Vehicles from VIN G00442 to G41511.

Remove the outer constant velocity (CV) joint boot retaining clip.

- 1 . Remove and discard the retaining clip.
- 2 . Repeat operation for the other side.



VUJ0005649

18 .  **CAUTION: Do not damage the bearing retainer.**

**NOTE:** The outer CV joint is retained to the shaft by a spring clip.

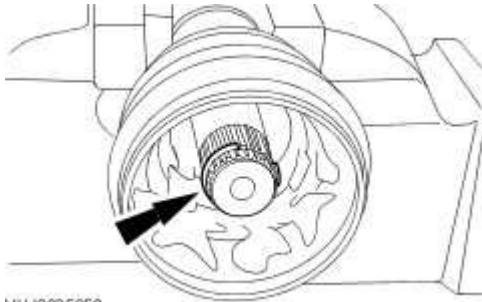
Using a suitable brass drift, remove the outer CV joint.

- 1 . Repeat operation for the other side.



VUJ0005650

- 19 . Remove the retaining clip.
  - 1 . Remove and discard the retaining clip.
  - 2 . Repeat operation for the other side.



VUJ0005652

- 20 . Install the new retaining clip.
  - 1 . Repeat operation for the other side.



VUJ0005652

- 21 .  **CAUTION: Make sure the CV joint ball bearings do not drop out of the CV joint.**

**NOTE:** Use a CV grease meeting Jaguar specification.

Fit the outer CV joint (Part number C2C 6710).

- 1 . **NOTE:** Make sure grease is applied to the CV joint.

Fill the CV joint with 50% grease and the CV boot with 50% grease.

- 2 . Repeat operation for the other side.



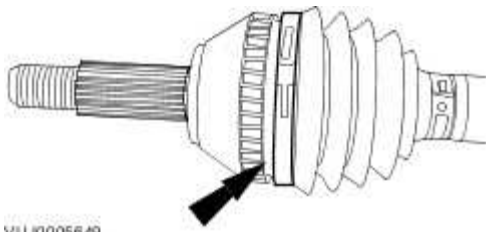
VUJ0005650

- 22 . **NOTE:** Make sure enough air is present in the CV boot.

Install the new retaining clip.

- 1 . Using a suitable tool, install the retaining clip.
- 2 . Repeat operation for the other side.



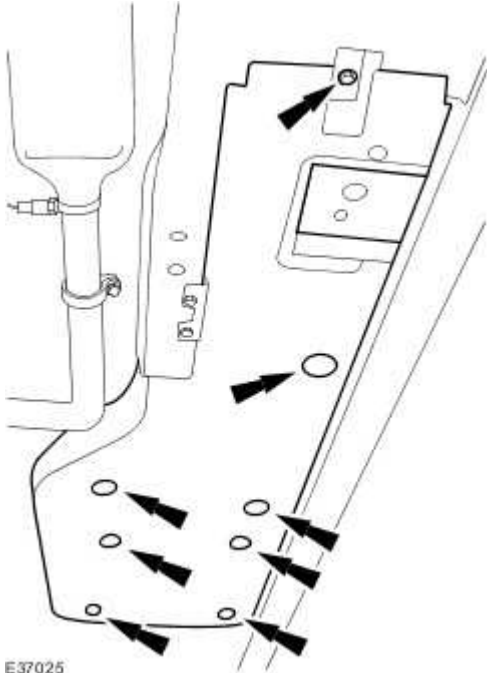


VUJ0005649

23 . **NOTE:** All Vehicles.

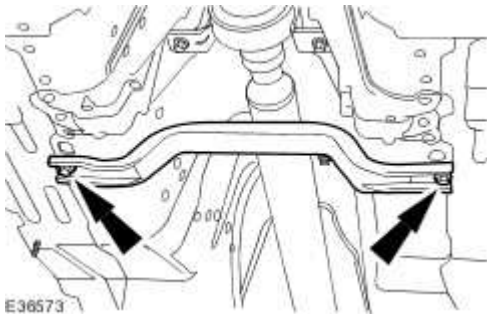
**NOTE:** Left-hand shown, right-hand similar.

Remove the splash shields.



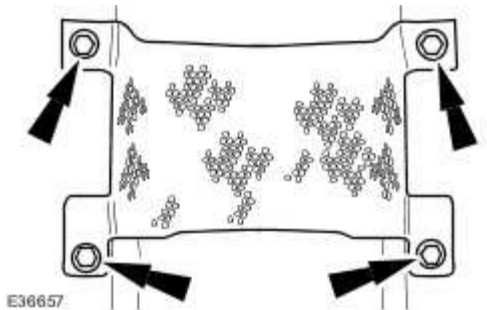
E37025

24 . Remove the support bracket.



E36573

25 . Remove the driveshaft heat shield.



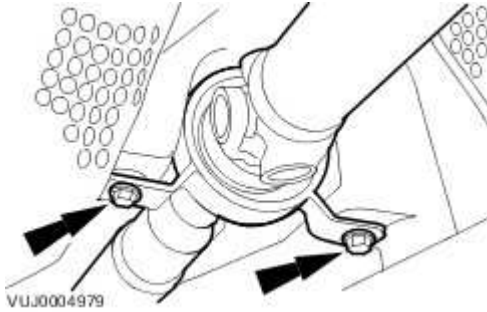
E36657


- 26 .  **CAUTION: Support the driveshaft front section.**

**NOTE:** Note the position of the driveshaft centre bearing spacers.

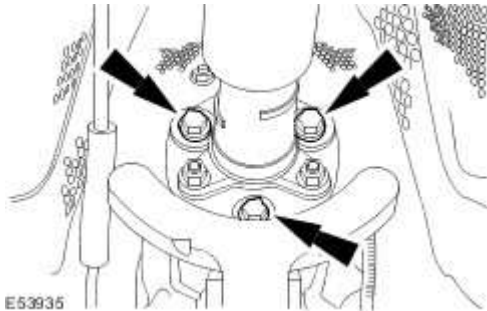
Remove and discard the centre drive shaft bearing securing bolts.

- 1 . Remove and discard the driveshaft centre bearing spacers.



- 27 .  **CAUTION: Under no circumstances must the flexible coupling (or its fixings) be loosened or removed from the driveshaft.**

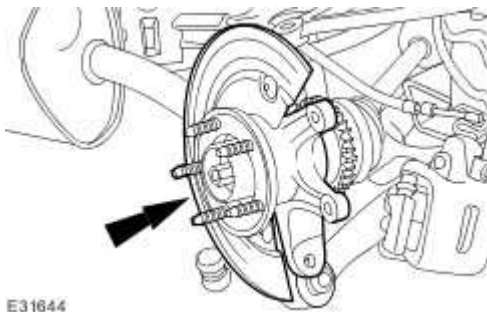
Detach the driveshaft from the transmission flange.




- 28 . **NOTE:** Brake disc and caliper not shown for clarity.

**NOTE:** Using the old wheel hub nut, tighten to 150 Nm.

Attach the LH halfshaft to the wheel knuckle .



- 29 .  **CAUTION: When supporting the axle assembly, use a suitable packing material to prevent damage to the axle assembly.**

Using special tool HTJ1200-02, support the axle assembly.

- 1 . Lift axle assembly towards rear subframe.

30 .  **CAUTION: Do not damage the axle shaft seal.**

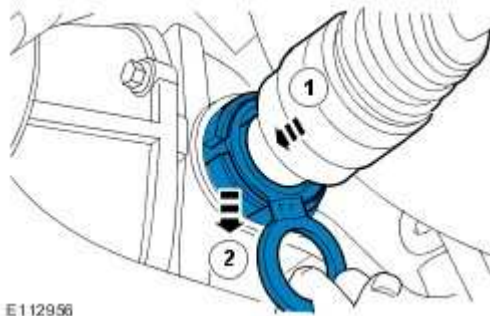
 **CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

 **CAUTION: Make sure no damage occurs to the halfshaft seal when installing the halfshaft.**

**NOTE:** Do not fully engage the halfshaft into the axle assembly until the oil seal protector has been removed.

Install the LH halfshaft.

- 1 . Open halfshaft oil seal protector.
- 2 . Remove and discard centre disc.
- 3 . Lubricate the seal and the bearing running surfaces with clean axle oil.
- 4 . Install the halfshaft.
- 5 . Pull oil seal protector clear of oil seal.
- 6 . Break the halfshaft seal protector in to two pieces and remove the halfshaft seal protector.
- 7 . Make sure the snap ring is fully engaged and retains the halfshaft.

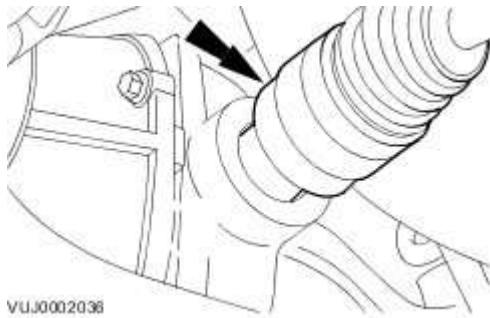


31 .  **CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

 **CAUTION: Make sure no damage occurs to the halfshaft seal when installing the halfshaft.**

**NOTE:** Make sure the retaining clip is correctly seated.

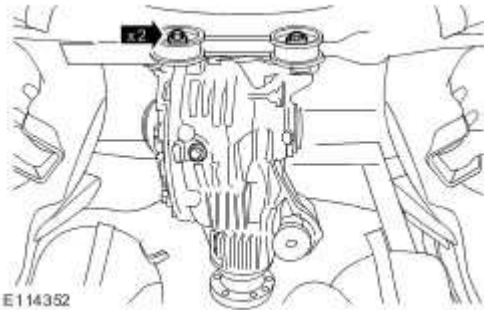
Attach the LH halfshaft.



VUJ0002038

32 . **NOTE:** Loosely tighten the axle assembly rear retaining bolts.

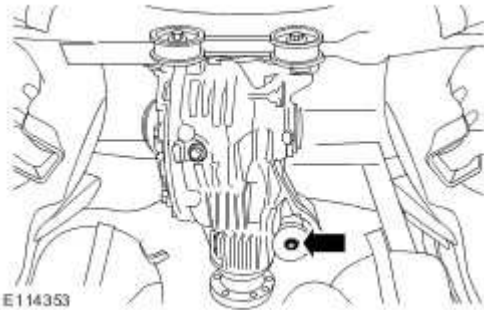
Install the axle assembly.




E114352

33 . **NOTE:** Make sure the original axle front spacer is not installed.

Loosely install the axle assembly front retaining bolt and new mounting bush.

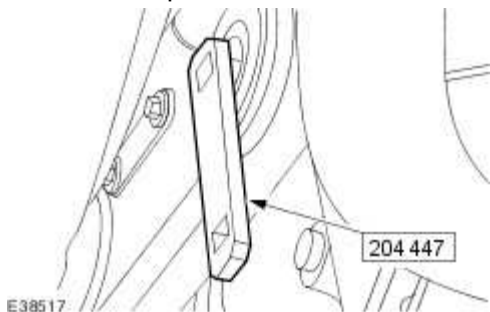


E114353

34 .  **CAUTION:** When supporting the axle assembly, use a suitable packing material to prevent damage to the axle assembly.

Remove the special tool HTJ1200-02, supporting the axle assembly.

35 . Install the special tool.



E38517

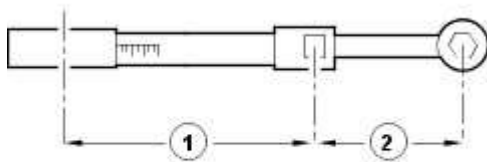
36 .



**CAUTION: Make sure the axle rear retaining bolts are tightened to the correct torque specification. Failure to follow this instruction may result in damage to the vehicle.**

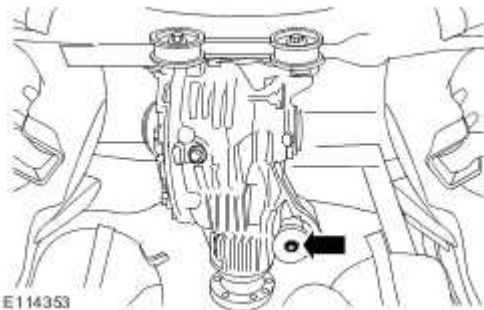
Using the special tool and a torque wrench, tighten the axle rear retaining bolts.

- 1 . Tighten to 200 Nm.
- 2 . To make sure the axle rear retaining bolts are torqued to the correct specification, using the special tool and a torque wrench the following calculation steps must be followed. Step 1. Multiply 200 Nm by the effective length of the torque wrench (1). Step 2. Add the effective length of the special tool (2) to the effective length of the torque wrench (1). Step 3. Divide the total of step 1 by the total of step 2. Step 4. Set the torque wrench to the figure arrived at in step 3.



E37107

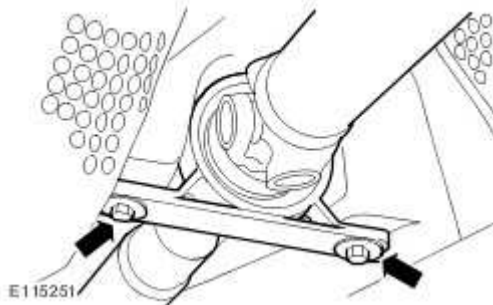
- 37 . Tighten to 90 Nm.



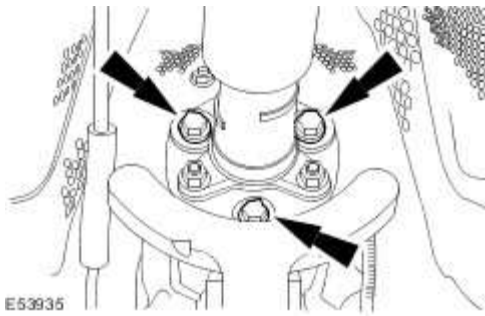
- 38 . **NOTE:** Spacers must not be fitted between the centre bearing and the body.

With assistance, install the driveshaft and secure the center bearing.

- 1 . Install new driveshaft centre bearing securing bolts.
- 2 . Tighten to 47 Nm.



- 39 . Attach the driveshaft to the transmission flange.
  - 1 . Tighten to 108 Nm.

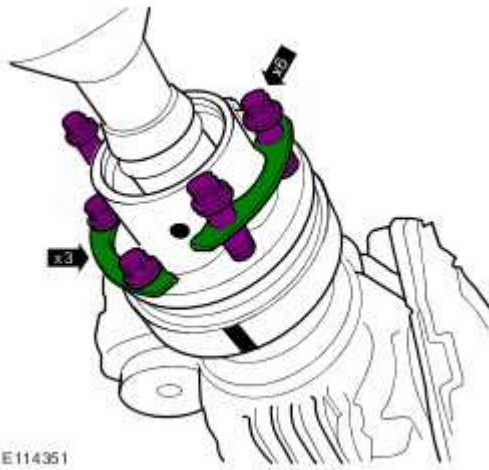


40 . **NOTE:** Make sure the driveshaft bolts are correctly installed.

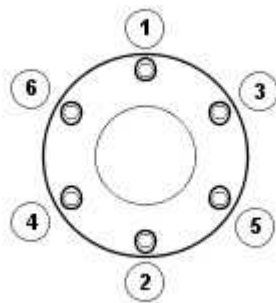
**NOTE:** Some differences in the illustrations may occur but the essential information is correct.

Secure the driveshaft to the rear axle drive flange.

- 1 . Align the mark on the driveshaft with the mark on the pinion flange.
- 2 . Fit but do not fully tighten bolts and formed washers.

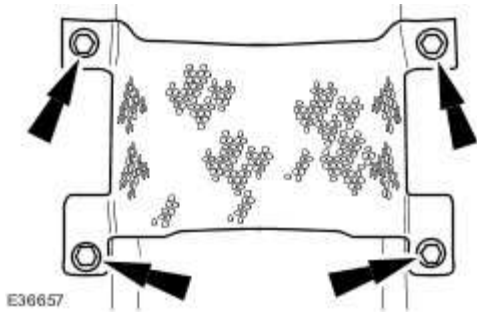


41 . Tighten the bolts in the sequence shown to 73 Nm (33 lb.ft).

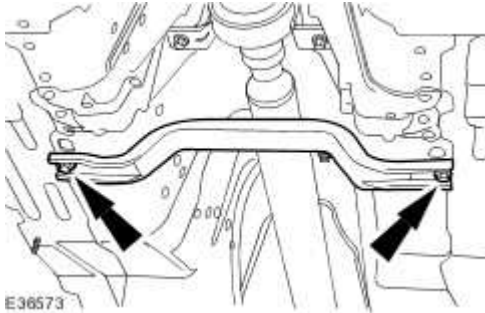


42 . Install the driveshaft heat shield retaining bolts.

- 1 . Tighten to 7 Nm.

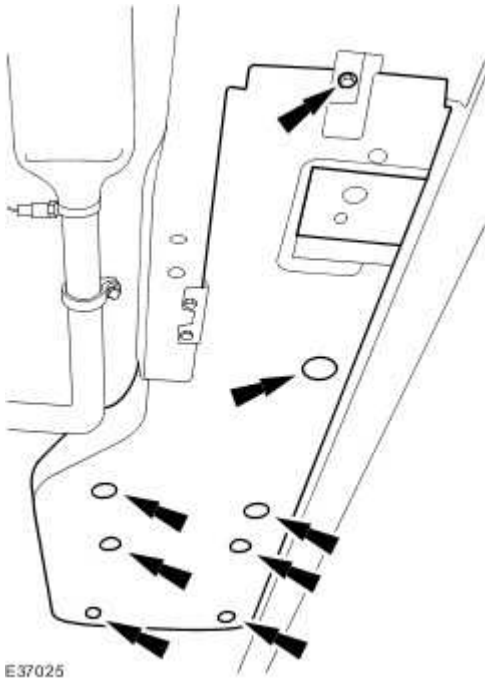


- 43 . Install the support bracket.  
 1 . Tighten to 9 Nm.




- 44 . **NOTE:** Right-hand shown, left-hand similar.

Install the splash shields.



- 45 .  **CAUTION: Do not damage the axle shaft seal.**

 **CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**



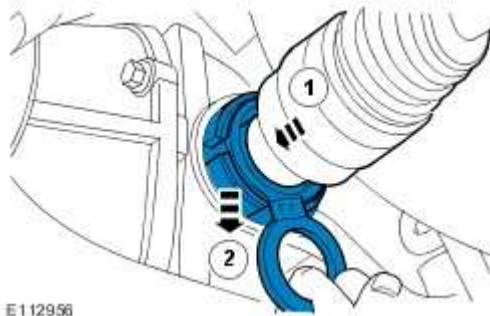


**CAUTION: Make sure no damage occurs to the halfshaft seal when installing the halfshaft.**

**NOTE:** Do not fully engage the halfshaft into the axle assembly until the oil seal protector has been removed.

Install the RH halfshaft.

- 1 . Open halfshaft oil seal protector.
- 2 . Remove and discard centre disc.
- 3 . Lubricate the seal and the bearing running surfaces with clean axle oil.
- 4 . Install the halfshaft.
- 5 . Pull oil seal protector clear of oil seal.
- 6 . Break the halfshaft seal protector in to two pieces and remove the halfshaft seal protector.
- 7 . Make sure the snap ring is fully engaged and retains the halfshaft.



46 .



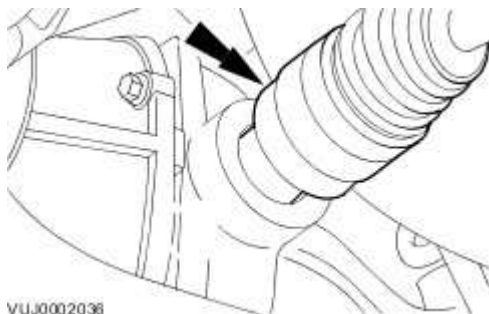
**CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**



**CAUTION: Make sure no damage occurs to the halfshaft seal when installing the halfshaft.**

**NOTE:** Make sure the retaining clip is correctly seated.

Attach the RH halfshaft.



47 .



**CAUTION: Axle fluid should flow from the filler plug threaded hole when full. Failure to follow this instruction may result in damage to the axle.**



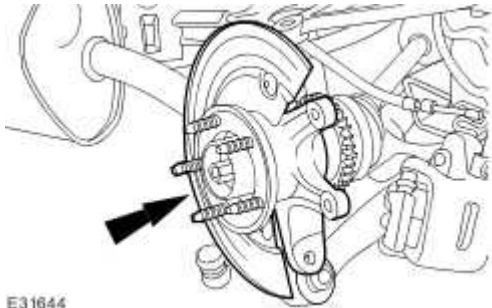
Fill the differential case with the recommended lubricant until a thread of oil runs from the level/filler plug.

- 1 . **NOTE:** Install a new fluid level filler plug.

Tighten to 34 Nm.

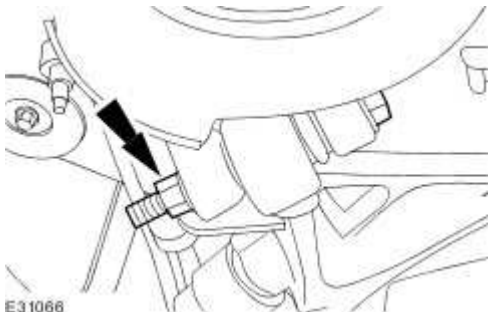
- 48 . **NOTE:** Using the old wheel hub nut, tighten to 150 Nm.

Attach the RH wheel knuckle to the halfshaft.



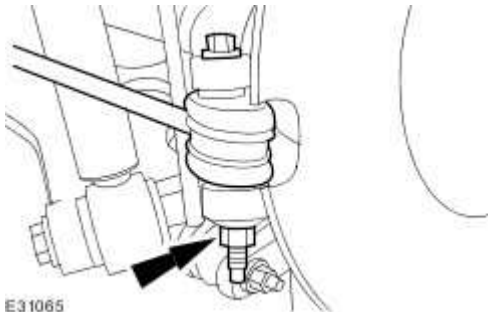
E31644

- 49 . Install the RH lower arm to the wheel knuckle.



E31066

- 50 . Install the RH outer tie rod retaining nut.



E31065

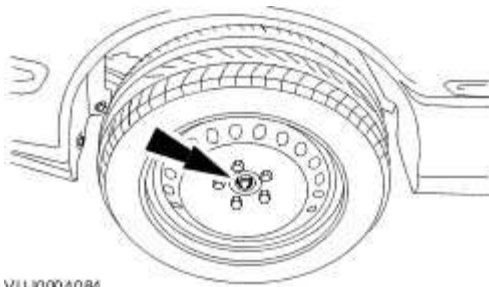
- 51 . Install the RH brake disc. Ref GTR 206-04 Rear Disc Brake
- 52 . Install the exhaust system. Ref GTR 309-00
- 53 . Install rear wheels and tires. Ref GTR 204-04
- 54 .




**CAUTION: Make sure that a new nut is installed.**

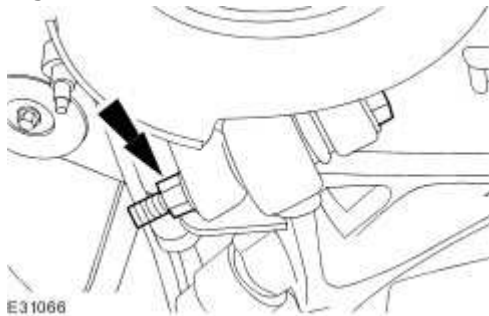
**Remove and discard the old wheel hub nuts, install a new wheel hub nut.**


- 1 . Tighten to 300 Nm.



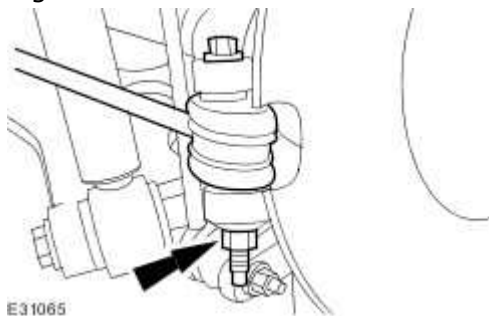
- 55 .  **CAUTION: The final tightening of the rear suspension components must be carried out with the vehicle on its wheels.**

Tighten the RH lower arm bolt to 150 Nm.



- 56 .  **CAUTION: The final tightening of the rear suspension components must be carried out with the vehicle on its wheels.**

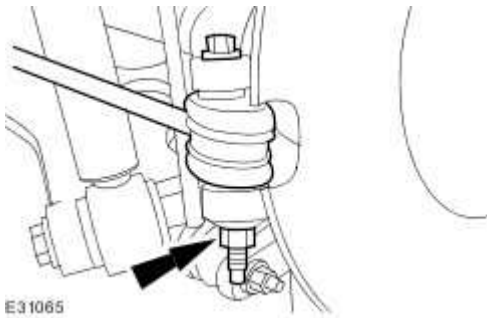
Tighten the RH outer tie rod to 55 Nm.



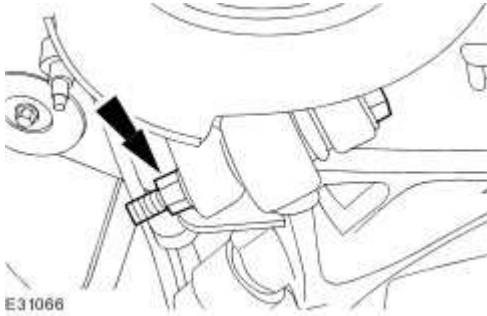
- 57 . Using only wheel alignment equipment approved by Jaguar, check and adjust the rear wheel alignment. Ref GTR 204-00.

**Appendix 2: S Type Range Only.**

- 58 . Raise and support the vehicle. Refer to GTR 100-02 Jacking and Lifting
- 59 . Remove rear wheels and tires. Refer to GTR 204-04
- 60 . Remove the exhaust system. Refer to GTR 309-00
- 61 . Remove RH brake disc. Refer to GTR 206-04 Rear Disc Brake
- 62 . Detach the RH outer tie rod.

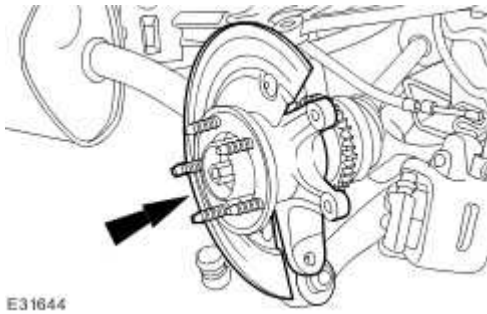


63 . Detach the lower arm from the RH wheel knuckle.

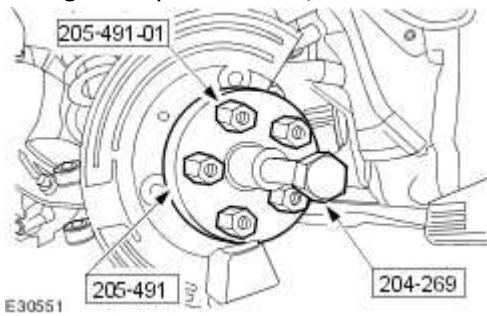


64 . **NOTE:** Brake disc and caliper not shown for clarity.

Remove RH driveshaft securing nut.



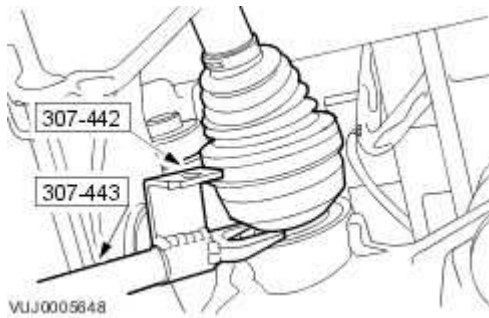
65 . Using the special tools, detach the RH halfshaft.



66 .  **CAUTION: To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

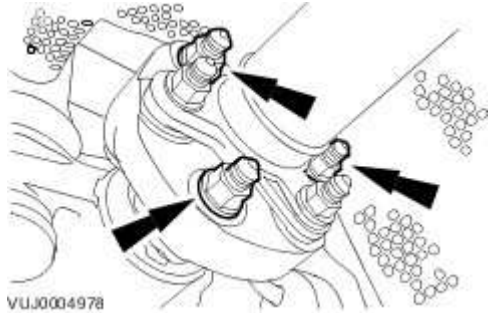
**NOTE:** The halfshaft is retained in the axle assembly by a retaining clip.


Using the special tools, remove the RH halfshaft.



- 67 .  **CAUTION: Under no circumstances must the flexible coupling (or its fixings) be loosened or removed from the driveshaft.**

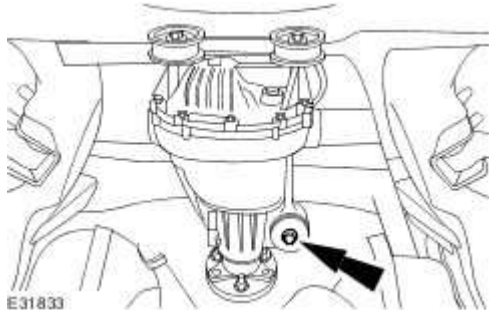
Detach the driveshaft from the differential flange.



- 68 .  **CAUTION: When supporting the axle assembly, use a suitable packing material to prevent damage to the axle assembly.**

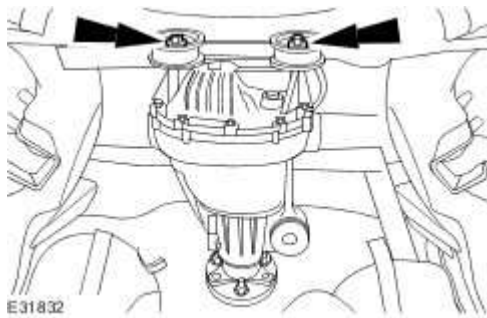
Using the special tool HTJ1200-02, support the axle assembly.

- 69 . Remove the axle assembly front retaining bolt.  
 1 . Remove and discard front mounting spacer.



- 70 . **NOTE:** The axle assembly rear retaining bolts do not have to be fully removed for the axle assembly to be removed, slacken the rear retaining bolts alternately until the rear axle assembly is released.

Undo but do not remove axle assemble rear retaining bolts.



71 .

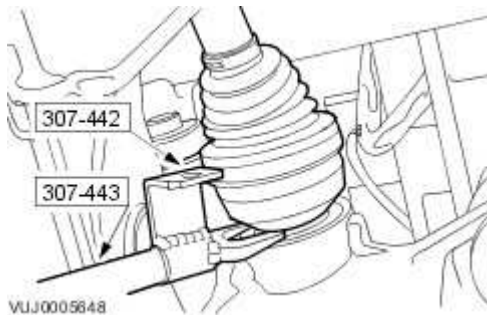


**CAUTION:** To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

**NOTE:** The halfshaft is retained in the axle assembly by a retaining clip.

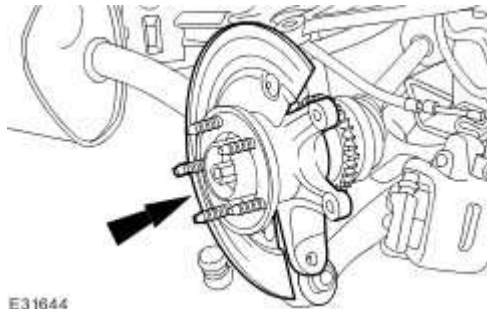
Using the special tools, remove the LH halfshaft.

- 1 . With assistance lower and remove axle assembly.



72 . **NOTE:** Brake disc and caliper not shown for clarity.

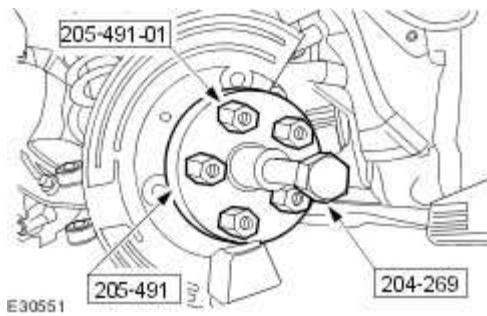
Remove driveshaft securing nut.



73 . **NOTE:** Brake disc and caliper not shown for clarity.

Using the special tools, detach the LH halfshaft.

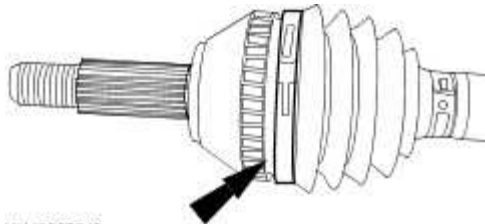
- 1 . Remove the LH halfshaft.



74 . **NOTE:** Vehicles without supercharger from VIN M45255 to N41580.

Remove the outer constant velocity (CV) joint boot retaining clip.

- 1 . Remove and discard the retaining clip.
- 2 . Repeat operation for the other side.



VUJ0005649

75 .  **CAUTION: Do not damage the bearing retainer.**

**NOTE:** The outer CV joint is retained to the shaft by a spring clip.

Using a suitable brass drift, remove the outer CV joint.

- 1 . Repeat operation for the other side.



VUJ0005650

76 . Remove the retaining clip.

- 1 . Remove and discard the retaining clip.
- 2 . Repeat operation for the other side.

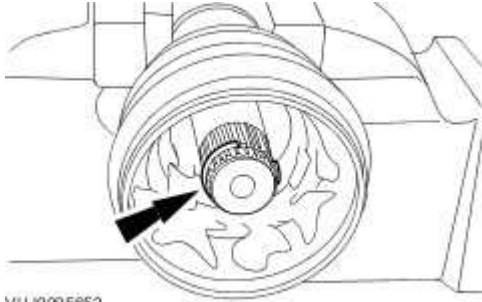


VUJ0005652

77 . Install the new retaining clip.



1 . Repeat operation for the other side.



VUJ0005652

78 .



**CAUTION:** Make sure the CV joint ball bearings do not drop out of the CV joint.

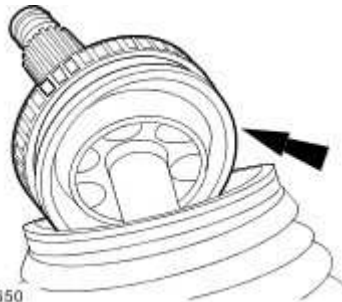
**NOTE:** Use a CV grease meeting Jaguar specification.

Fit the outer CV joint (Part number C2C 6710).

1 . **NOTE:** Make sure grease is applied to the CV joint.

Fill the CV joint with 50% grease and the CV boot with 50% grease.

2 . Repeat operation for the other side.



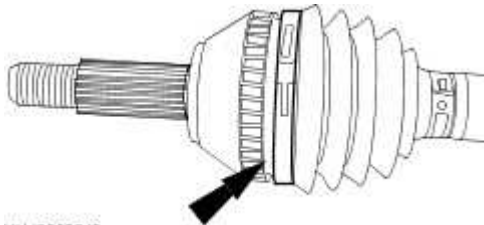
VUJ0005650

79 . **NOTE:** Make sure enough air is present in the CV boot.

Install the new retaining clip.

1 . Using a suitable tool, install the retaining clip.

2 . Repeat operation for the other side.



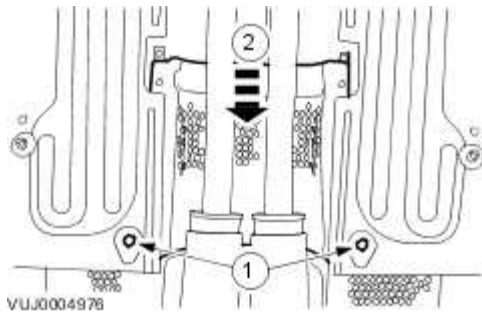
VUJ0005649

80 . **NOTE:** All Vehicles.

Remove the driveshaft heat shield.

1 . Remove the 4 bolts.

2 . Remove the driveshaft heat shield.

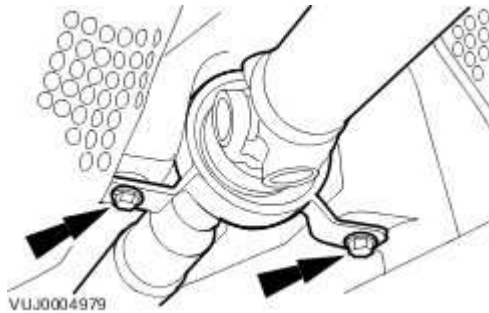



81 .  **CAUTION: Support the driveshaft front section.**

**NOTE:** Note the position of the driveshaft centre bearing spacers.

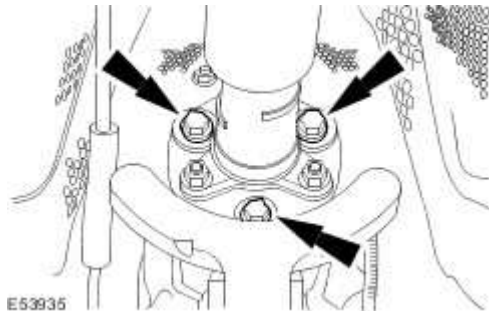
Remove and discard the centre drive shaft bearing securing bolts.

1 . Remove and discard the driveshaft centre bearing spacers.



82 .  **CAUTION: Under no circumstances must the flexible coupling (or its fixings) be loosened or removed from the driveshaft.**

Detach the driveshaft from the transmission flange.

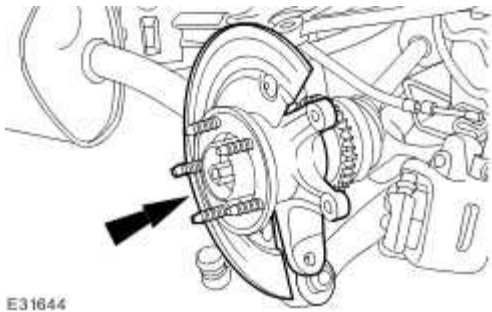


83 . **NOTE:** Brake disc and caliper not shown for clarity.


**NOTE:** Using the old wheel hub nut, tighten to 150 Nm.

Attach the LH halfshaft to the wheel knuckle .






E31644

- 84 .  **CAUTION: When supporting the axle assembly, use a suitable packing material to prevent damage to the axle assembly.**

Using special tool HTJ1200-02, support the axle assembly.

- 1 . Lift axle assembly towards rear subframe.

- 85 .  **CAUTION: Do not damage the axle shaft seal.**

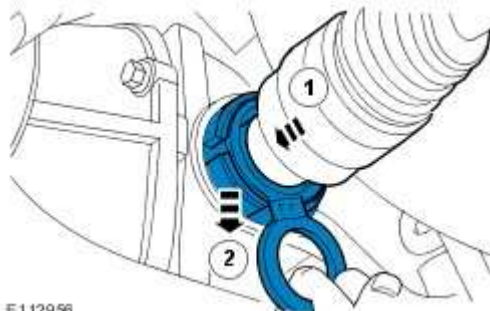
 **CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

 **CAUTION: Make sure no damage occurs to the halfshaft seal when installing the halfshaft.**

**NOTE:** Do not fully engage the halfshaft into the axle assembly until the oil seal protector has been removed.

Install the LH halfshaft.

- 1 . Open halfshaft oil seal protector.
- 2 . Remove and discard centre disc.
- 3 . Lubricate the seal and the bearing running surfaces with clean axle oil.
- 4 . Install the halfshaft.
- 5 . Pull oil seal protector clear of oil seal.
- 6 . Break the halfshaft seal protector in to two pieces and remove the halfshaft seal protector.
- 7 . Make sure the snap ring is fully engaged and retains the halfshaft.



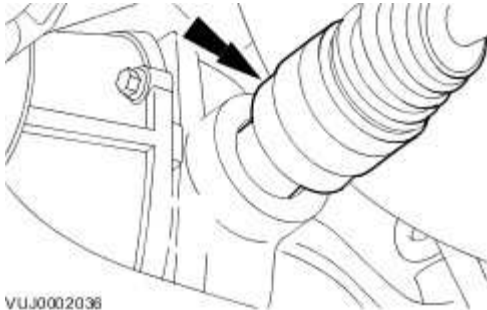
E112956

- 86 .  **CAUTION:** To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

 **CAUTION:** Make sure no damage occurs to the halfshaft seal when installing the halfshaft.

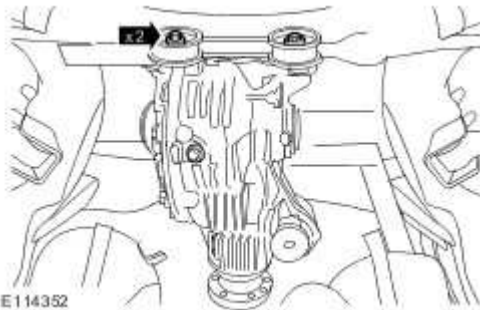
**NOTE:** Make sure the retaining clip is correctly seated.

Attach the LH halfshaft.



- 87 . **NOTE:** Loosely tighten the axle assembly rear retaining bolts.

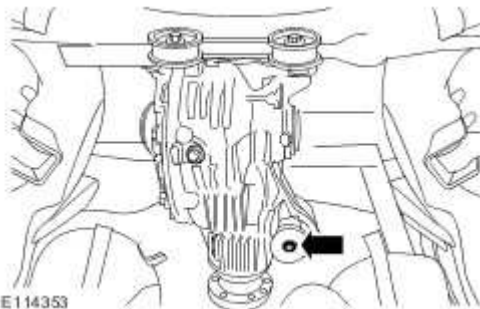
Install the axle assembly.



- 88 . **NOTE:** Some variation in the illustration may occur but the essential information is always correct.

**NOTE:** Make sure the original axle front spacer is not installed.

Loosely install the axle assembly front retaining bolt and new mounting bush.

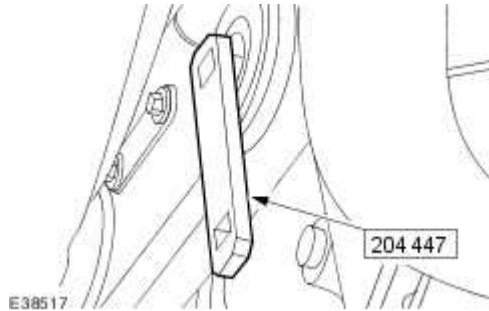


- 89 .  **CAUTION:** When supporting the axle assembly, use a suitable packing

**material to prevent damage to the axle assembly.**

Remove the special tool HTJ1200-02, supporting the axle assembly.

90 . Install the special tool.



91 .

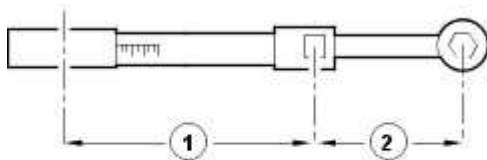


**CAUTION: Make sure the axle rear retaining bolts are tightened to the correct torque specification. Failure to follow this instruction may result in damage to the vehicle.**

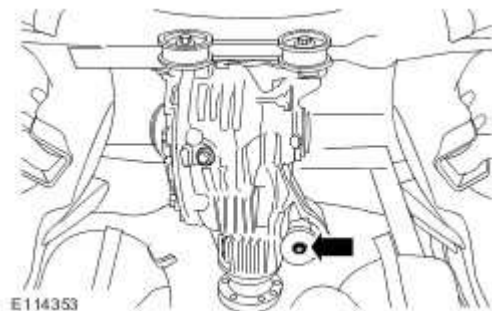
Using the special tool and a torque wrench, tighten the axle rear retaining bolts.

1 . Tighten to 200 Nm.

2 . To make sure the axle rear retaining bolts are torqued to the correct specification, using the special tool and a torque wrench the following calculation steps must be followed. Step 1. Multiply 200 Nm by the effective length of the torque wrench (1). Step 2. Add the effective length of the special tool (2) to the effective length of the torque wrench (1). Step 3. Divide the total of step 1 by the total of step 2. Step 4. Set the torque wrench to the figure arrived at in step 3.



92 . Tighten to 90 Nm.

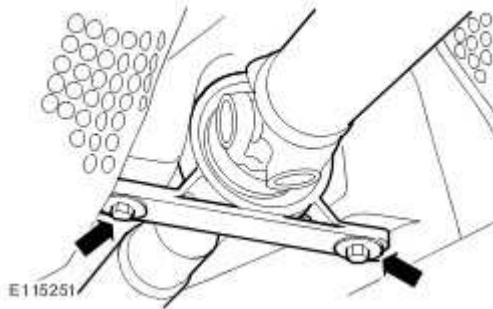


93 . **NOTE:** Spacers must not be fitted between the centre bearing and the body.

With assistance, install the driveshaft and secure the center bearing.

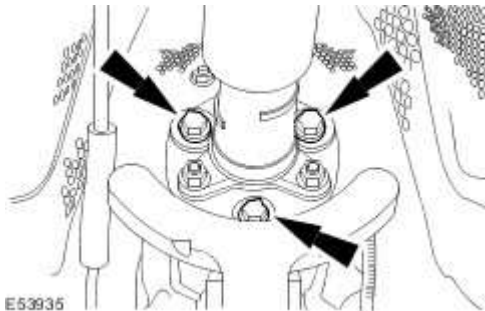
1 . Install new driveshaft centre bearing securing bolts.

2 . Tighten to 47 Nm.



94 . Attach the driveshaft to the transmission flange.

1 . Tighten to 108 Nm.



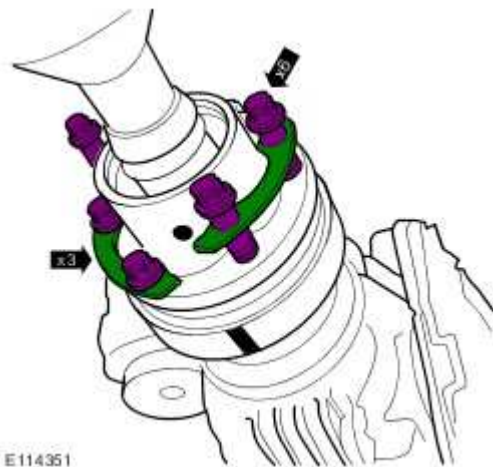
95 . **NOTE:** Make sure the driveshaft bolts are correctly installed.

**NOTE:** Some differences in the illustrations may occur but the essential information is correct.

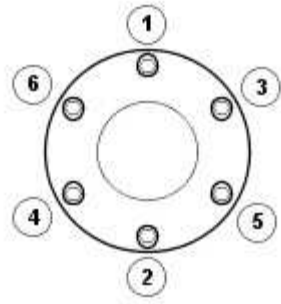
Secure the driveshaft to the rear axle drive flange.

1 . Align the mark on the driveshaft with the mark on the pinion flange.

2 . Fit but do not fully tighten bolts and formed washers.



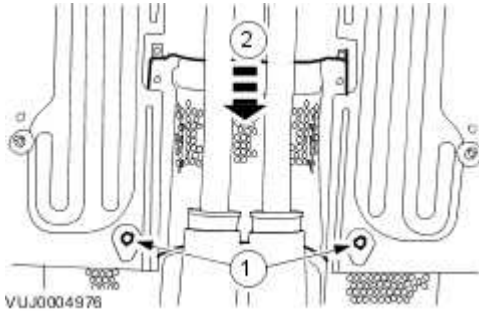
96 . Tighten the bolts in the sequence shown to 73 Nm (33 lb.ft).



E112957

97 . Install the center heat shield.

- 1 . Install the bolts and tighten to 10 Nm (7 lb.ft).



98 .



**CAUTION: Do not damage the axle shaft seal.**



**CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

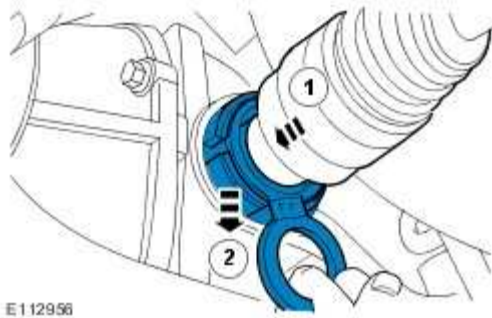


**CAUTION: Make sure no damage occurs to the halfshaft seal when installing the halfshaft.**

**NOTE:** Do not fully engage the halfshaft into the axle assembly until the oil seal protector has been removed.

Install the RH halfshaft.

- 1 . Open halfshaft oil seal protector.
- 2 . Remove and discard centre disc.
- 3 . Lubricate the seal and the bearing running surfaces with clean axle oil.
- 4 . Install the halfshaft.
- 5 . Pull oil seal protector clear of oil seal.
- 6 . Break the halfshaft seal protector in to two pieces and remove the halfshaft seal protector.
- 7 . Make sure the snap ring is fully engaged and retains the halfshaft.



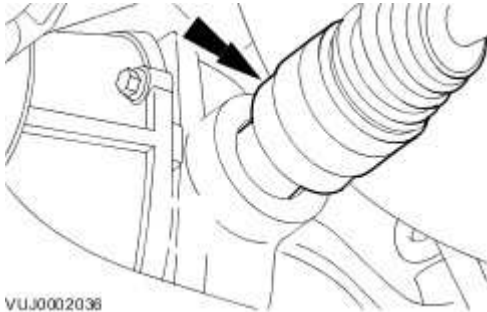
E112956

- 99 .  **CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

 **CAUTION: Make sure no damage occurs to the halfshaft seal when installing the halfshaft.**

**NOTE:** Make sure the retaining clip is correctly seated.

Attach the RH halfshaft.



VUJ0002036

- 100 .  **CAUTION: Axle fluid should flow from the filler plug threaded hole when full. Failure to follow this instruction may result in damage to the axle.**

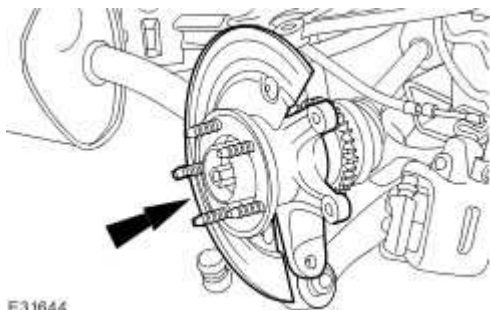
Fill the differential case with the recommended lubricant until a thread of oil runs from the level/filler plug.

- 1 . **NOTE:** Install a new fluid level filler plug.

Tighten to 34 Nm.

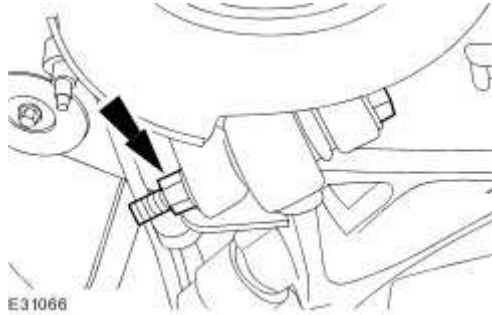
- 101 . **NOTE:** Using the old wheel hub nut, tighten to 150 Nm.

Attach the RH wheel knuckle to the halfshaft.

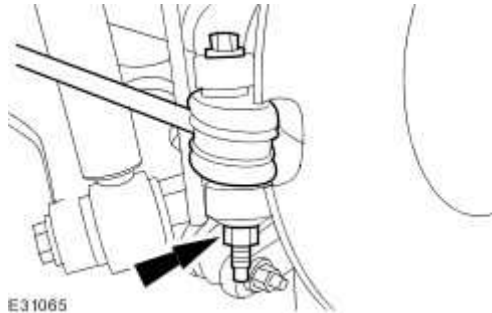


E31644

102 . Install the RH lower arm to the wheel knuckle.



103 . Install the RH outer tie rod retaining nut.



104 . Install the RH brake disc. Ref GTR 206-04 Rear Disc Brake

105 . Install the exhaust system. Ref GTR 309-00

106 . Install rear wheels and tires. Ref GTR 204-04

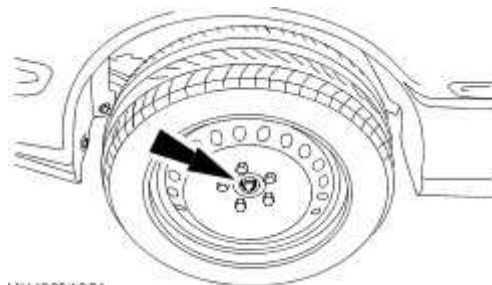
107 .



**CAUTION: Make sure that a new nut is installed.**

**Remove and discard the old wheel hub nuts, install a new wheel hub nut.**

1 . Tighten to 300 Nm.



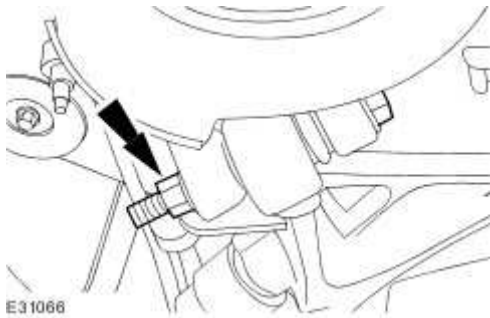
108 .



**CAUTION: The final tightening of the rear suspension components must be carried out with the vehicle on its wheels.**

Tighten the RH lower arm bolt to 150 Nm.



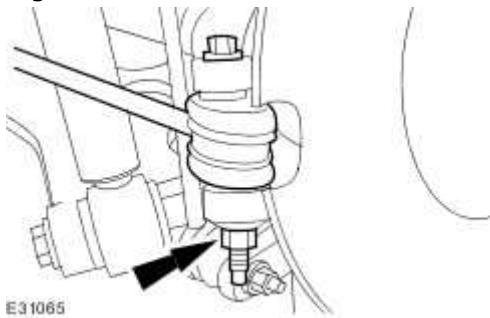


109 .



**CAUTION: The final tightening of the rear suspension components must be carried out with the vehicle on its wheels.**

Tighten the RH outer tie rod to 55 Nm.



110 . Using only wheel alignment equipment approved by Jaguar, check and adjust the rear wheel alignment. Ref GTR 204-00.

**Appendix 3: XF Range Only.**

111 . Raise and support the vehicle. Refer to GTR 100-02 Jacking and Lifting

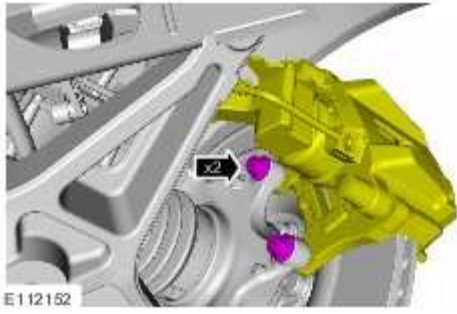
112 . Remove rear wheels and tires. Refer to GTR 204-04

113 .



114 .

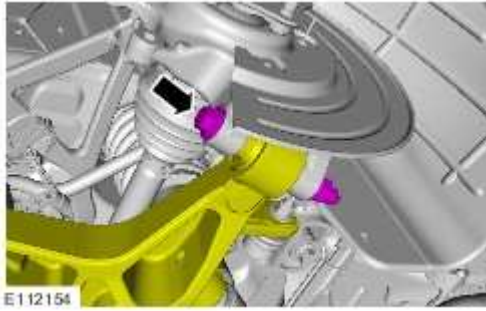




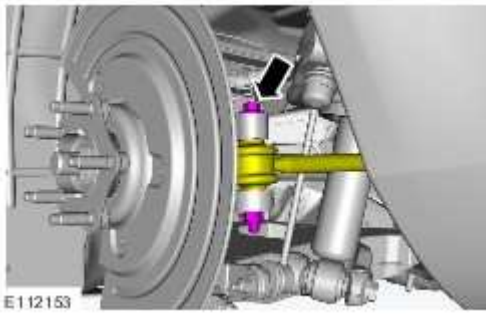
115 .



116 .



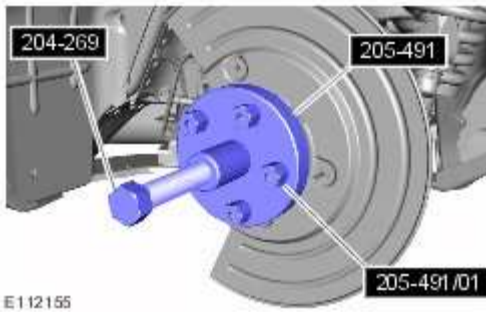
117 .




118 .

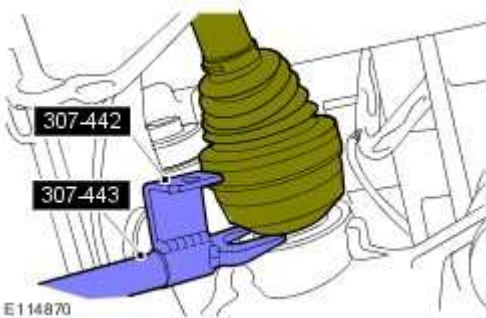


- 119 .  **CAUTION: LH illustration shown, RH is similar.**

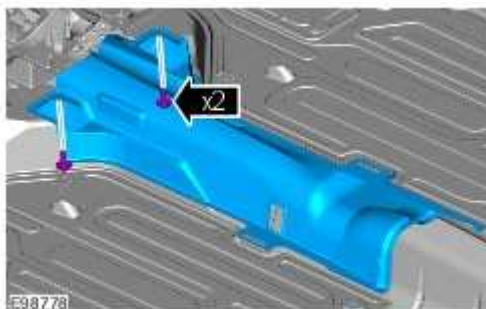


- 120 .  **CAUTION: To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

**NOTE:** The halfshaft is retained in the axle assembly by a retaining clip.



- 121 . Remove Exhaust Ref GTR 309-00.  
 122 . Torque 9Nm



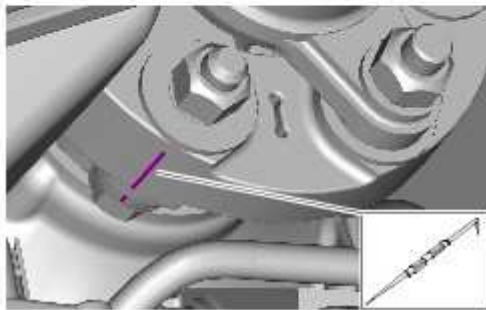
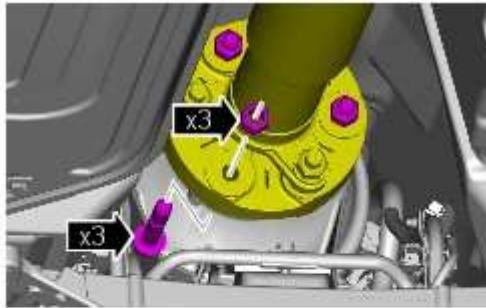
123 .



**CAUTION:** Under no circumstances must the flexible coupling (or its fixings) be loosened or removed from the driveshaft.



**CAUTION:** Make sure that the driveshaft is supported with suitable retaining straps.



E98779

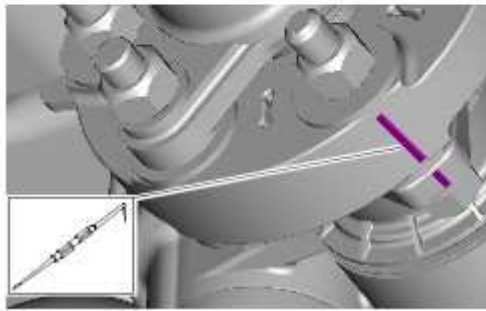
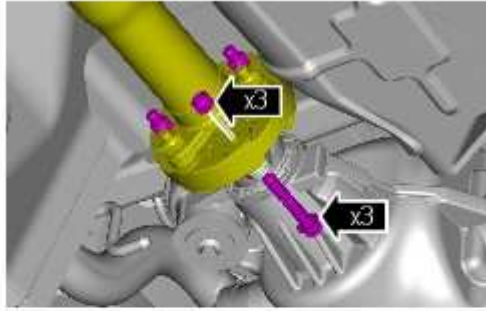
124 .



**CAUTION:** Under no circumstances must the flexible coupling (or its fixings) be loosened or removed from the driveshaft.



**CAUTION:** Make sure that the driveshaft is supported with suitable retaining straps.

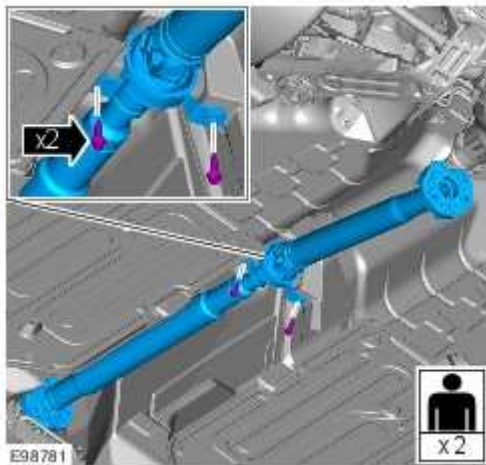


125 .



**WARNING:** This step requires the aid of another technician.

**NOTE:** Remove and discard spacers and bolts.

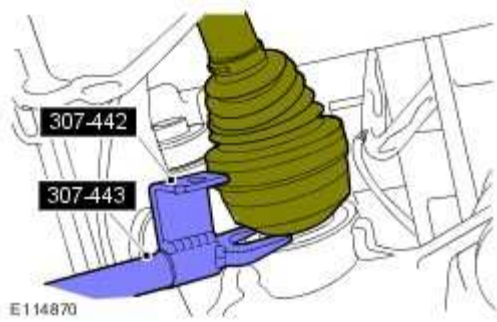


126 .



**CAUTION:** To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

**NOTE:** The halfshaft is retained in the axle assembly by a retaining clip.



127 . Using the special tool, support the axle assembly.



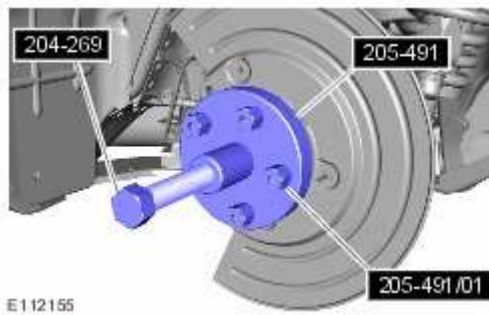
128 . **NOTE:** Discard the axle front spacer.

Release the LH halfshaft from the axle assembly.

1 . With assistance lower and remove axle assembly.



129 .




130 . **NOTE:** Installation

**NOTE:** Do not fully tighten the locking nut at this stage.

- Attach the LH halfshaft to the wheel knuckle.




- 131 .  **CAUTION: When supporting the axle assembly, use suitable packing material to prevent damage to the axle assembly.**

Using a transmission jack, support the differential case.

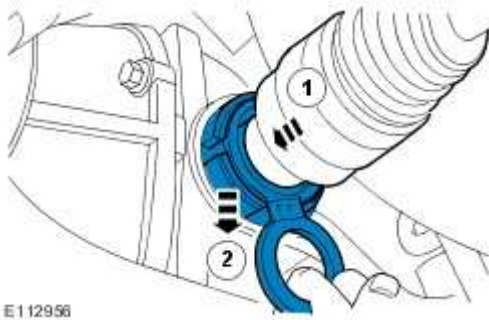


- 132 .  **CAUTION: Do not damage the axle shaft seal.**

 **CAUTION: To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

**NOTE:** Do not fully engage the halfshaft into the axle assembly until the oil seal protector has been removed.

Install the LH halfshaft.

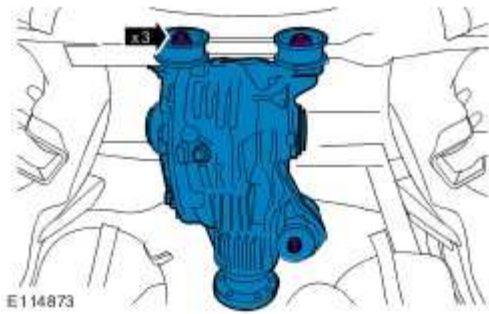


- 133 .  **CAUTION: Rear mounting bolts must be tightened first, failure to follow this instruction may cause damage to the vehicle.**

**NOTE:** Make sure the original axle front spacer is not installed.

M12 torque 90 NM M14 torque 200Nm





134 . Remove the transmission jack.



135 .



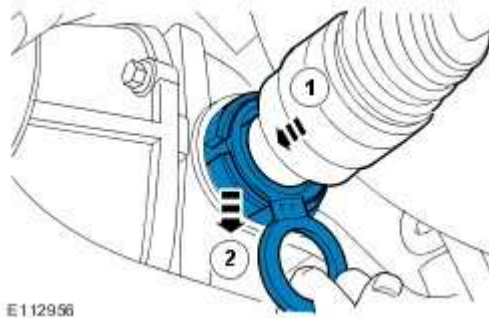
**CAUTION: Do not damage the axle shaft seal.**



**CAUTION: To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

**NOTE:** Do not fully engage the halfshaft into the axle assembly until the oil seal protector has been removed.

Install the RH halfshaft.



136 . **NOTE:** Do not fully tighten the locking nut at this stage.



137 .



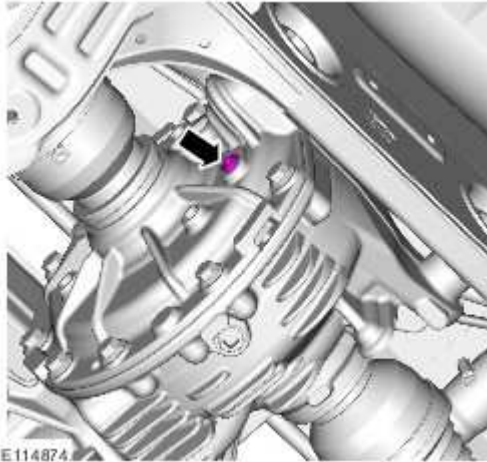
**CAUTION: Only use lubricants meeting the Jaguar specification.**



**CAUTION:** Axle fluid should flow from the filler plug threaded hole when full. Failure to follow this instruction may result in damage to the axle.

**NOTE:** Install a new fluid level filler plug.

Fill the differential case with the recommended lubricant until a thread of oil runs from the level/filler plug. Tighten the level/filler plug to 34Nm.

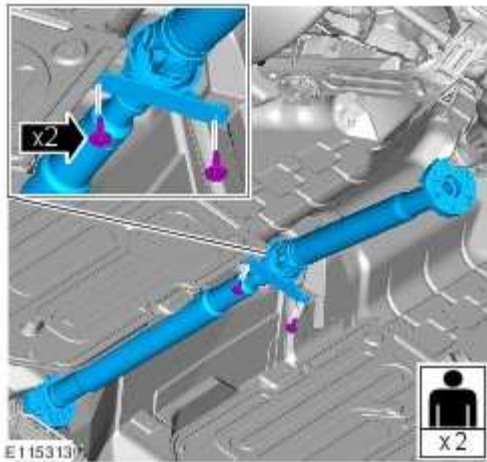


138 .



**WARNING:** This step requires the aid of another technician.

Tighten to 47Nm.



139 .



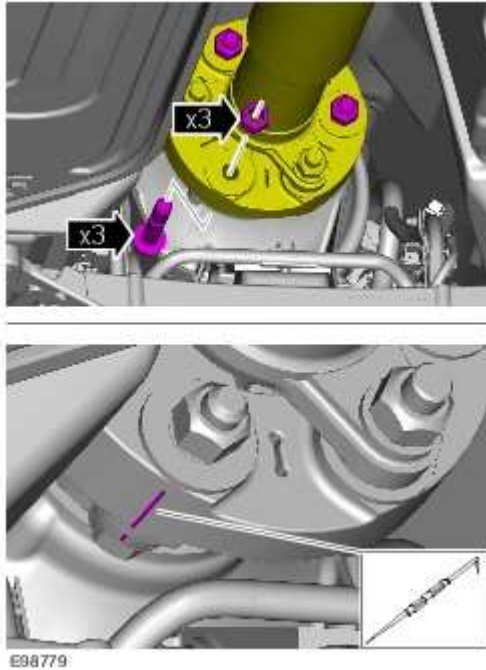
**CAUTION:** Under no circumstances must the flexible coupling (or its fixings) be loosened or removed from the driveshaft.



**CAUTION:** Make sure that the driveshaft is supported with suitable retaining straps.

Tighten to 108Nm.



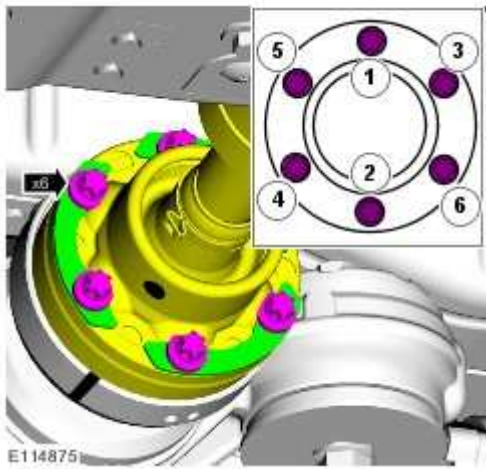


140 .

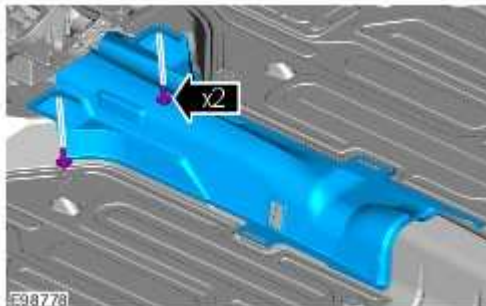


**CAUTION: Tighten the bolts in the sequence shown.**

Align the mark on the driveshaft with the mark on the pinion flange. Tighten bolts to 75Nm.



141 . Tighten to 9Nm.



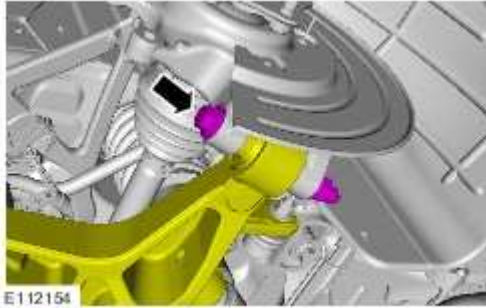
142 . Install Exhaust system GTR reference309-00

143 .



**CAUTION: The final tightening of the suspension components must be carried out with the vehicle on its wheels.**

Tighten to 150Nm.

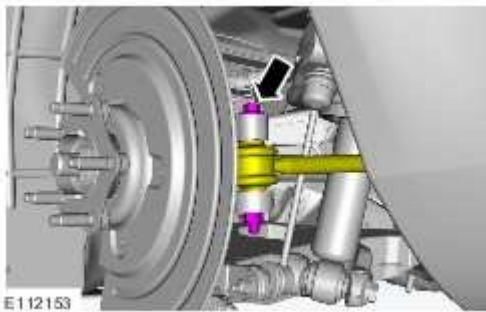


144 .

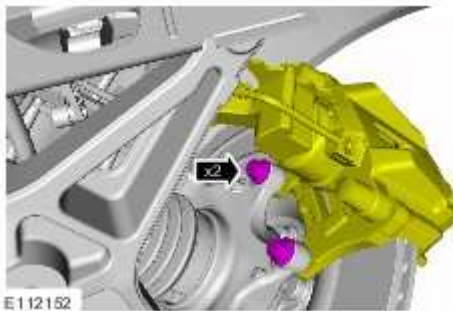


**CAUTION: The final tightening of the suspension components must be carried out with the vehicle on its wheels.**

Tighten to 55Nm.



145 . Tighten to 134Nm.



146 . Install the wheel and tire ref GTR procedure 204-04.

147 .



**CAUTION: Make sure that a new nut is installed.**

Tighten to 300Nm.



148 . Using only wheel alignment equipment approved by Jaguar, check and adjust the rear wheel alignment Ref GTR procedure 204-00.

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