

TECHNICAL BULLETIN

JTB00175v6
16 FEB 2012



© Jaguar Land Rover Limited
All rights reserved.

This reissue replaces all previous versions. Please destroy all previous versions.
This bulletin supersedes TSB JTB00175v5/2011 dated 20 JUN 2011, which should either be destroyed or clearly marked to show it is no longer valid (e.g. with a line across the page). Only refer to the electronic version of this Technical Bulletin in TOPIx.

SECTION: 205-00

Differential Replacement - Automatic Transmissions

AFFECTED VEHICLE RANGE:

S-TYPE - Automatic Transmissions Only	Model Year:	2002-2008
	VIN:	M45255-N91220
XF (X250)	Model Year:	2009-2010
	VIN:	R00001-R41865
XJ Range	Model Year:	2003-2009
	VIN:	G00001-H31470
XK Range	Model Year:	2007-2009
	VIN:	B00001-B32752

MARKETS:

All

CONDITION SUMMARY:

Situation:

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.

This version has been issued for a change to the Parts Required and Service Instruction.

Cause: New process to Install a new differential design. **Suggested Customer Concern Code - N12.**

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

PARTS:



NOTE: Please see Table 1 for Differential parts, Propshaft kits and OB Joint kits.

C2D3653	Differential oil	Quantity: 1
C2C1247	Non SC brake caliper bolts XJ / S-TYPE to G49700 / N52047	Quantity: 2
C2C27237	Brake caliper bolts from G49701 / N52048 / all XK / all XF	Quantity: 2
C2C6746	SC brake caliper bolts XJ / S-TYPE to G49700 / N52047	Quantity: 2
C2C6745	SC brake caliper mounting bolts XJ / S-TYPE to G49700 / N52047	Quantity: 2
C2C33384010	Brake disc retaining clip	Quantity: 2
C2P12731	Hub nut	Quantity: 2
C2D3648	Differential filler plug	Quantity: 1
XR848057	Tie rod nut	Quantity: 1
XR853342	Lower wishbone to knuckle nut	Quantity: 1
XR811133	Halfshaft circlip	Quantity: 2
C2C34448	Propshaft mounting nut	Quantity: 3

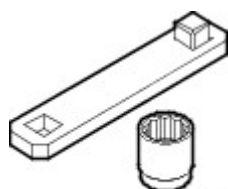
C2Z2224	Nut	Quantity: 1
C2C32665	Diesel Particulate Filter mounting bracket bolts - V6 Diesel Only	Quantity: 4
C2P14155	Differential mounting bolt	Quantity: 2

TOOLS:



HTJ12002

Powertrain Assembly Jack.
HTJ1200-2



204-477

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



307-443

Halfshaft splitter handle
307-443



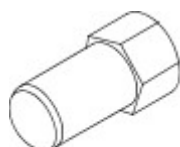
307-442

Halfshaft splitter
307-442



205-491

Hub puller
205-491



20549101

Adaptor nuts
205-491-01



204-269

Flange remover forcing screw
204-269

WARRANTY:

 **NOTE: Repair procedures are under constant review, and therefore times are subject to change; those quoted**

here must be taken as guidance only. Always refer to TOPIx to obtain the latest repair time.



NOTE: DDW requires the use of causal part numbers. Labor only claims must show the causal part number with a quantity of zero.

DESCRIPTION	SRO	TIME	CONDITION CODE	CAUSAL PART
Rear drive Line Replacement XK	51.91.20	2.4 hours	42	C2C40994
Rear drive Line Replacement XF 4.2L AJV8 N/A	51.91.20	2.5 hours		
Rear drive Line Replacement S-TYPE	51.91.20	2.3 hours		
Rear drive Line Replacement XJ -	51.91.20	2.3 hours		
Rear drive Line Replacement XF - 2.7L TDV6	51.91.20	2.5 hours		
Rear drive Line Replacement XF - 4.2L AJV8 SC	51.91.20	2.5 hours		
Rear drive Line Replacement XF - 3.0L AJV6	51.91.20	2.4 hours		
Rear drive Line Replacement XF - 3.0L TDV6	51.91.20	2.4 hours		
Rear drive Line Replacement XF - 5.0L AJV8	51.91.20	2.3 hours		



NOTE: Normal Warranty procedures apply.

Table 1



NOTE: The propshaft kits contain the following new components that must be fitted – propshaft, left and right half shafts, snubber washer, propshaft to differential fixings (six), link washers (three), and propshaft centre bearing fixings (two)."

Vehicle	Engine	VIN Range	Differential	Propshaft kit	2 OB Joint Kits Required
XK	V8 N/A and SC	All	C2C 40995	JLM 21883	Not Required
.
XF	V8 N/A	All	C2C 40995	JLM21865	Not Required
XF	V8 SC	All	C2C 40994	JLM21865	Not Required
XF	V6 Diesel	All	C2C 40994	JLM21867	Not Required
XF	V6 Gasoline	All	C2C 40995	JLM21869	Not Required
.
S-TYPE	V6 Diesel Automatic	to N41580	C2C 40994	JLM21868	C2C6710
S-TYPE	V6 Diesel Automatic	from N41581	C2C 40994	JLM21868	Not Required
S-TYPE	V6 Gasoline Automatic	to N41580	C2C 40995	JLM21870	C2C6710
S-TYPE	V6 Gasoline Automatic	from N41581	C2C 40995	JLM21870	Not Required
S-TYPE	V8 SC	All	C2C 40993	JLM21866	Not Required
S-TYPE	V8 N/A	to N41580	C2C 40993	JLM21866	C2C6710
S-TYPE	V8 N/A	from N41581	C2C 40993	JLM21866	Not Required
.
XJ	V8 3.5L	to G41511	C2C 40994	JLM21871	C2C6710
XJ	V8 3.5L	from G41512	C2C 40994	JLM21871	Not Required
XJ	V6 Diesel	to G41511	C2C 40994	JLM21872	C2C6710
XJ	V6 Diesel	from G41512	C2C 40994	JLM21872	Not Required
XJ	V6 Gasoline	to G41511	C2C 40995	JLM21873	C2C6710
XJ	V6 Gasoline	from G41512	C2C 40995	JLM21873	Not Required
XJ	V8 SC	All	C2C 40993	JLM21871	Not Required
XJ	V8 N/A	to G41511	C2C 40993	JLM21871	C2C6710
XJ	V8 N/A	from G41512	C2C 40993	JLM21871	Not Required
XJ LWB	V6 Diesel	to G41511	C2C 40994	JLM21875	C2C6710
XJ LWB	V6 Diesel	from G41512	C2C 40994	JLM21875	Not Required
XJ LWB	V6 Gasoline	to G41511	C2C 40995	JLM21876	C2C6710
XJ LWB	V6 Gasoline	from G41512	C2C 40995	JLM21876	Not Required
XJ LWB	V8 SC	All	C2C 40993	JLM21874	Not Required
XJ LWB	4.2L V8 N/A	to G41511	C2C 40993	JLM21874	C2C6710
XJ LWB	4.2L V8 N/A	from G41512	C2C 40993	JLM21874	Not Required
XJ LWB	3.5L V8 N/A	from G41511	C2C 40994	JLM21874	C2C6710

Vehicle	Engine	VIN Range	Differential	Propshaft kit	2 OB Joint Kits Required
XJ LWB	3.5L V8 N/A	from G41512	C2C 40994	JLM21874	Not Required

SERVICE INSTRUCTION:

Appendix Table

Appendix 1: XJ Range Only step 1 - 58.

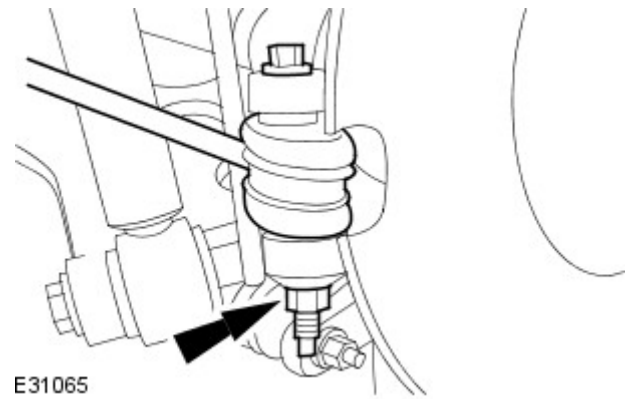
Appendix 2: S-Type Automatic Only step 59 - 111.

Appendix 3: XF Only step 112 - 149.

Appendix 4: XK Range Only step 150 - 198.

Appendix 1: XJ Range Only.

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

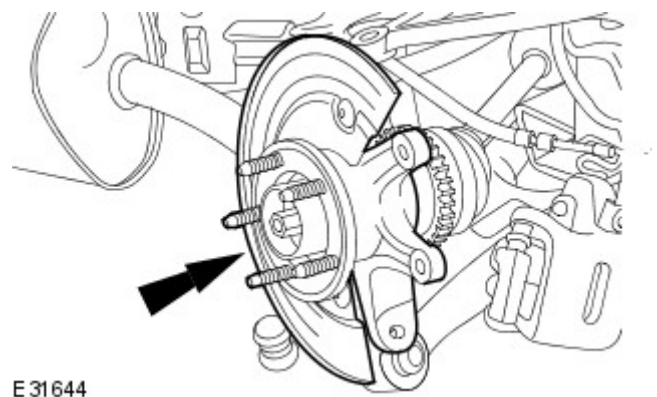


6. Detach the lower arm from the RH wheel knuckle.

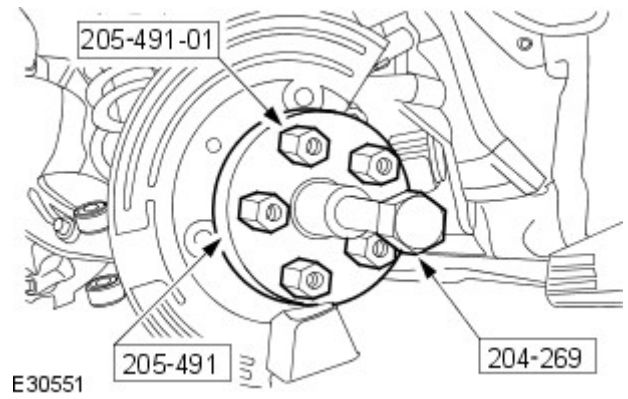


7.  **NOTE: Brake disc and caliper not shown for clarity.**

Remove RH driveshaft securing nut.



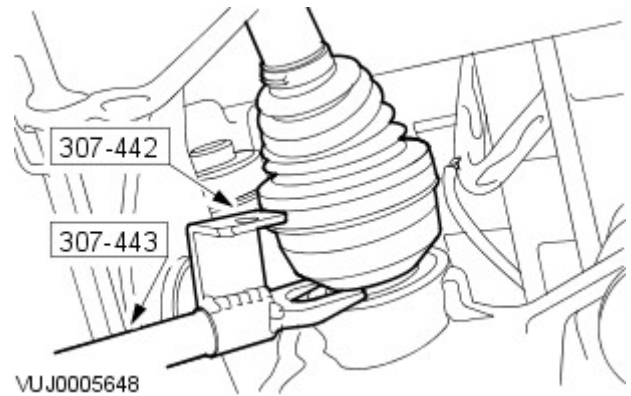
8. Using the special tools, detach the RH halfshaft.



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.

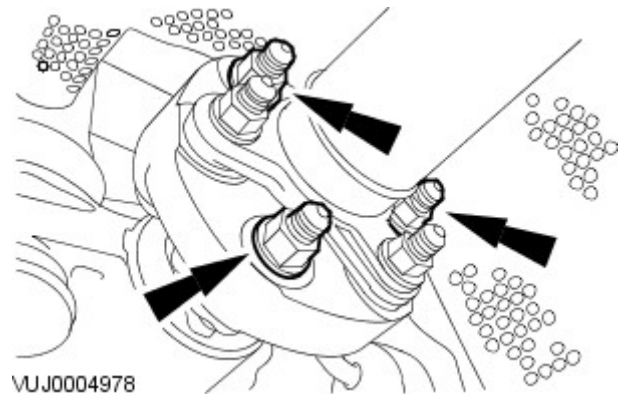
△ NOTE: The halfshaft is retained in the axle assembly by a retaining clip.

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.

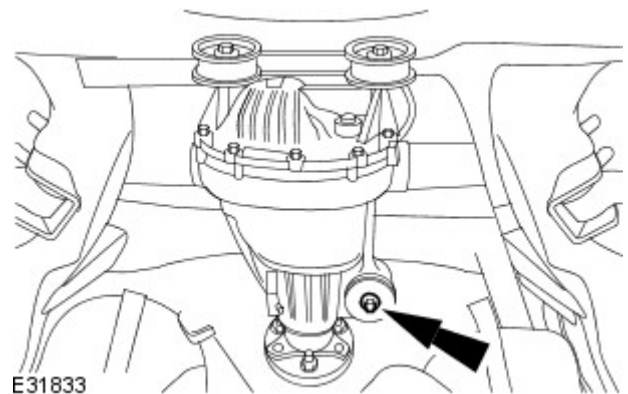



11. **⚠ CAUTION:** When supporting the axle assembly, use a suitable packing material to prevent damage to the axle assembly.

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

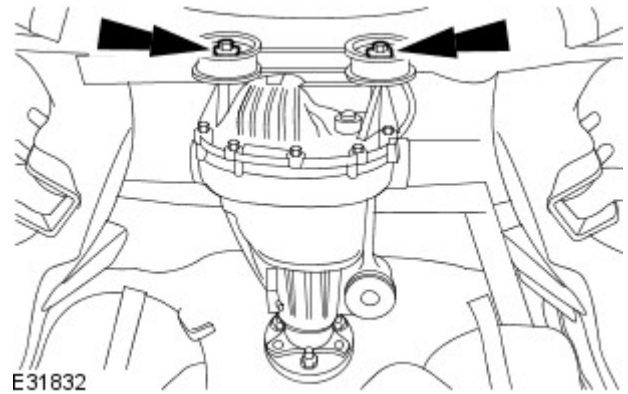
12. Remove the axle assembly front retaining bolt.


- 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.

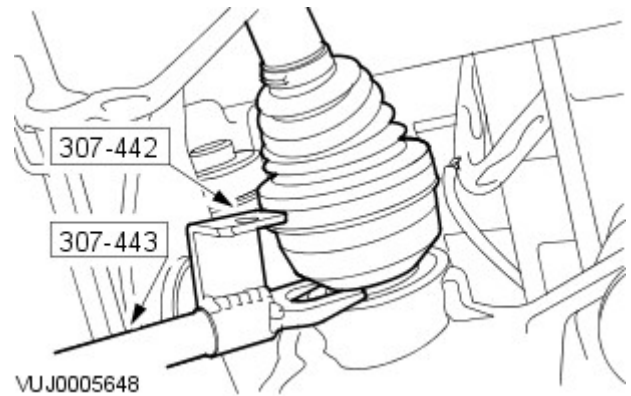


14.  **CAUTION:** To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

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

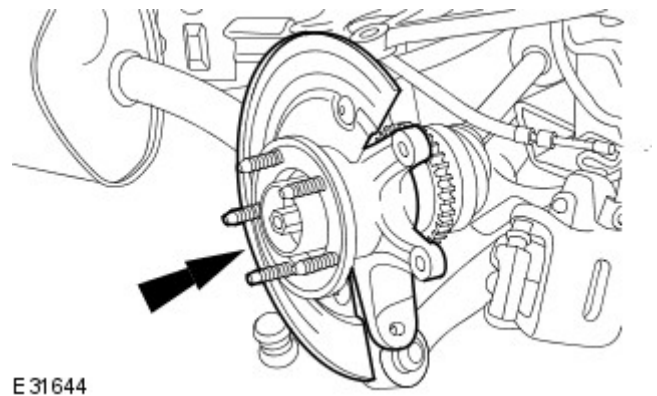
Using the special tools, remove the LH halfshaft.

- With assistance lower and remove axle assembly.



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

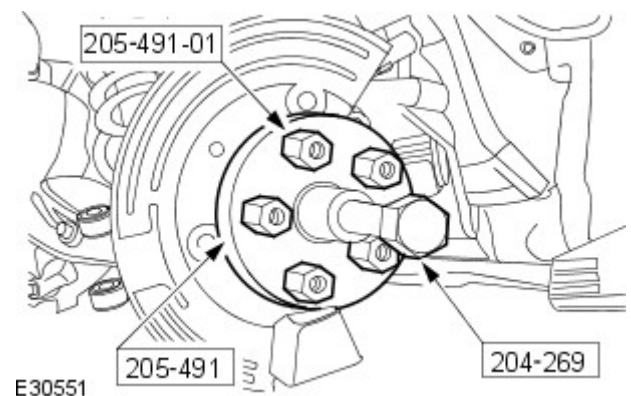
Remove driveshaft securing nut.



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

Using the special tools, detach the LH halfshaft.

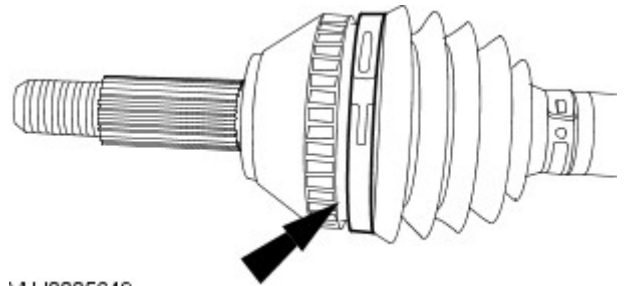
- Remove the LH halfshaft.



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

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

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



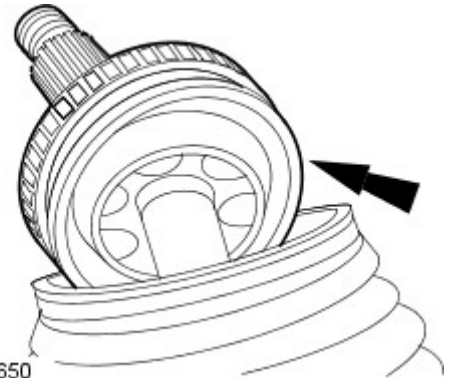
VUJ0005649

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.

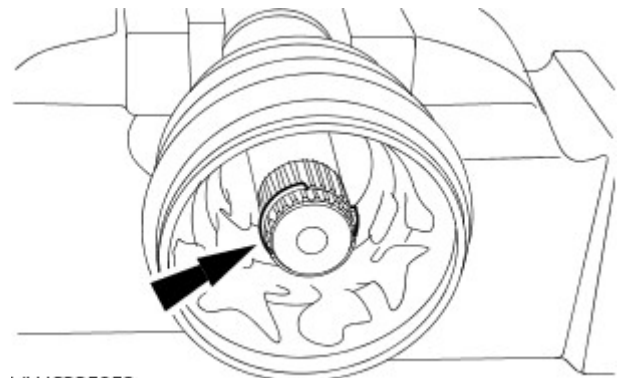
- Repeat operation for the other side.



VUJ0005650

19. Remove the retaining clip.

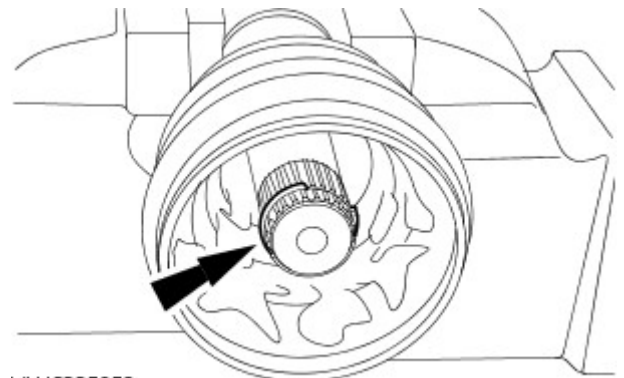
- Remove and discard the retaining clip.
- Repeat operation for the other side.



VUJ0005652

20. Install the new retaining clip.

- Repeat operation for the other side.



VUJ0005652

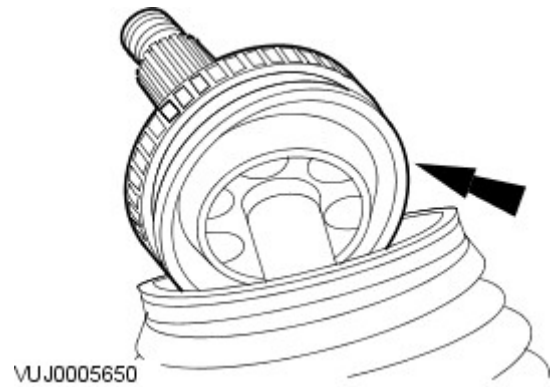
21.  **CAUTION: Make sure the CV joint ball bearings do not drop out of the CV joint.**

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

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

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

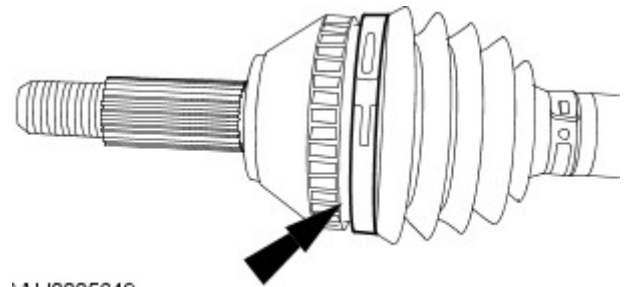
- Fill the CV joint with 50% grease and the CV boot with 50% grease.
- Repeat operation for the other side.



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

Install the new retaining clip.

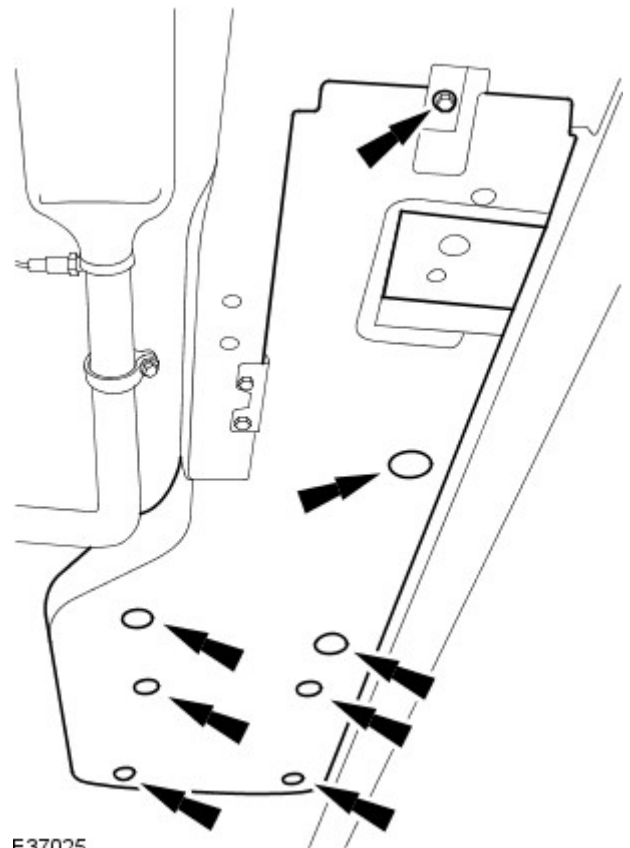
- Using a suitable tool, install the retaining clip.
- Repeat operation for the other side.



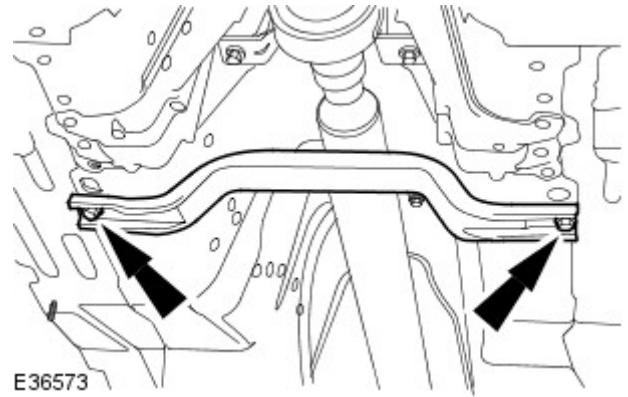
23.  **NOTE: All Vehicles.**

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

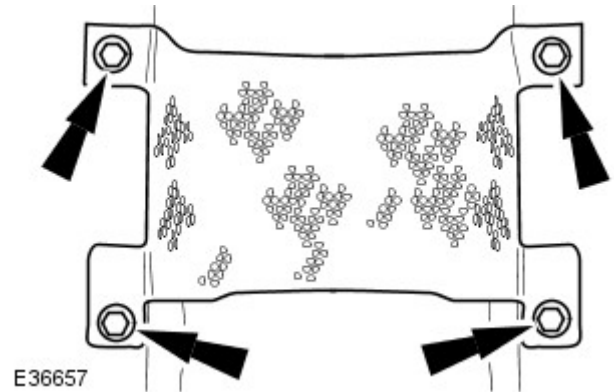
Remove the splash shields.



24. Remove the support bracket.



25. Remove the driveshaft heat shield.

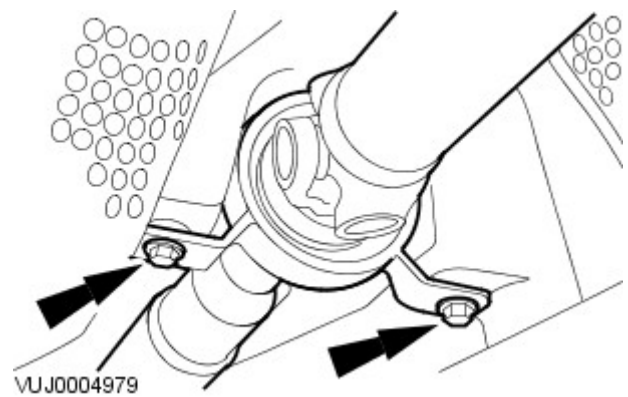



26.  **CAUTION: Support the driveshaft front section.**

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

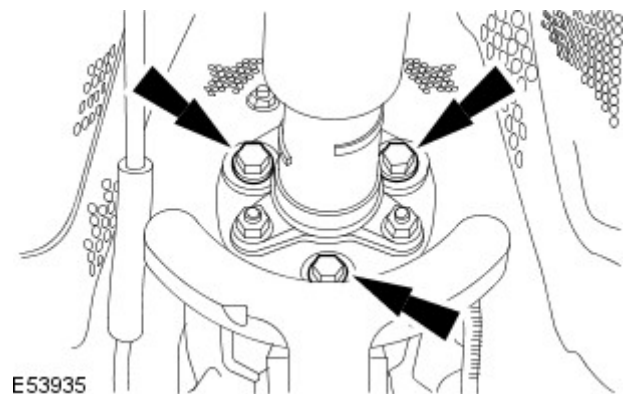
Remove and discard the centre drive shaft bearing securing bolts.


- 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.**

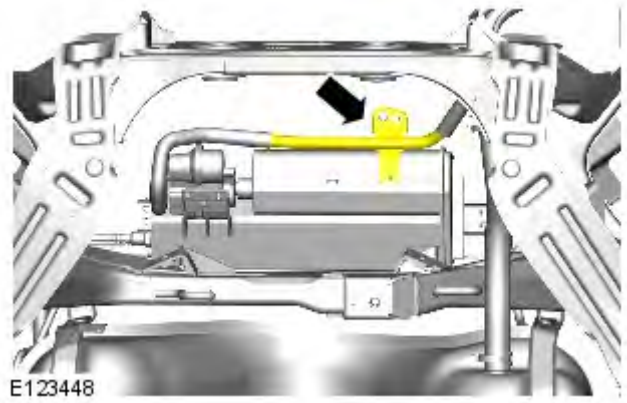
Detach the driveshaft from the transmission flange.



28.  **CAUTION: Do not use excessive force on the carbon can hose bracket. Failure to follow this instruction may result in damage to the vehicle.**

 **NOTE: For Japan and NAS spec only.**

Push the carbon can hose bracket (approximately 5mm to 10 mm (3/16 inch to 3/8 inch)) towards the vehicle underfloor to increase differential clearance.

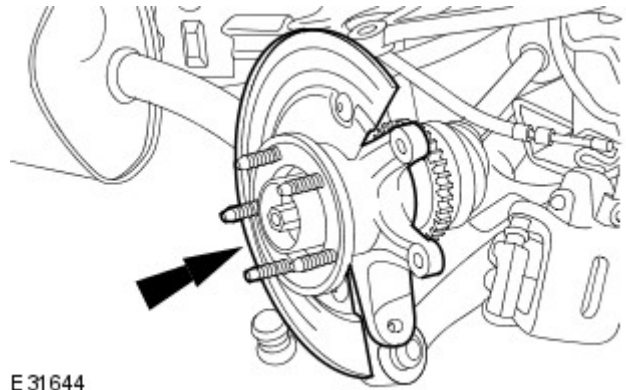


Install

29.  **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 .



30.  **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.

- Lift axle assembly towards rear subframe.

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

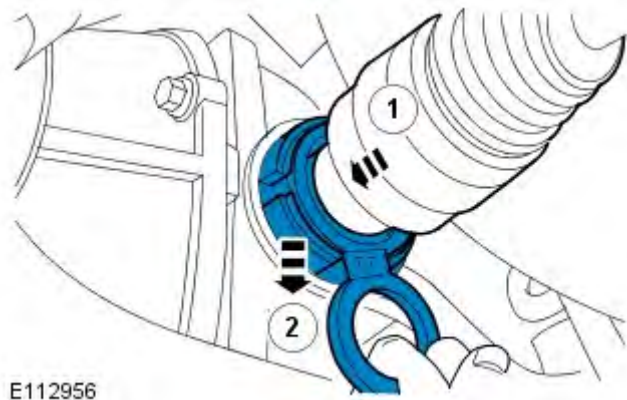
 **CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

 **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.

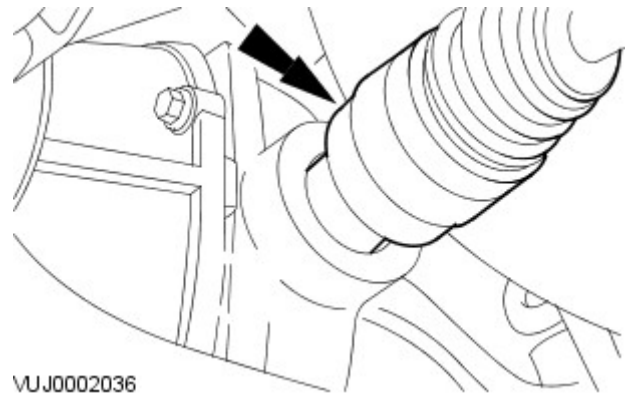


32.  **CAUTION:** To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

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

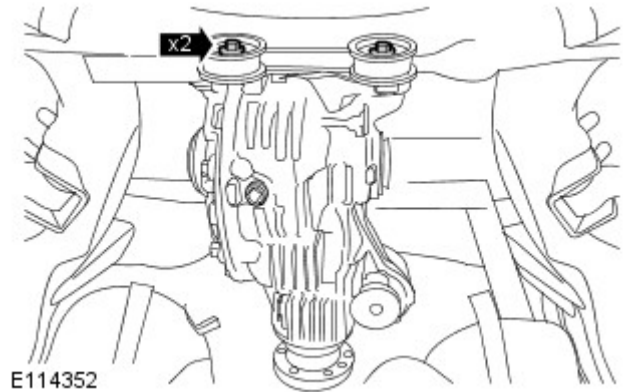
-  **NOTE:** Make sure the retaining clip is correctly seated.

Attach the LH halfshaft.



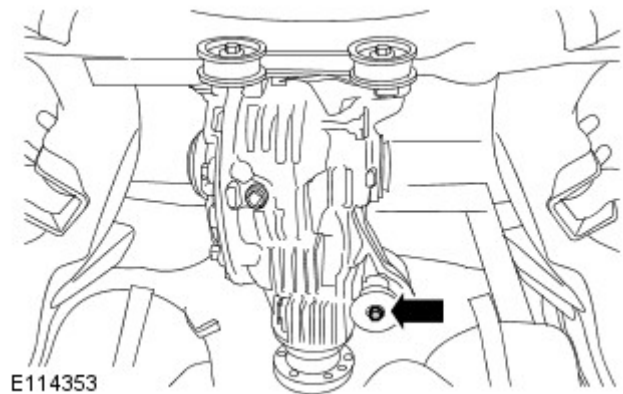
33.  **NOTE:** Loosely tighten the axle assembly rear retaining bolts.

Install new bolts(C2P14155) Install the axle assembly.



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

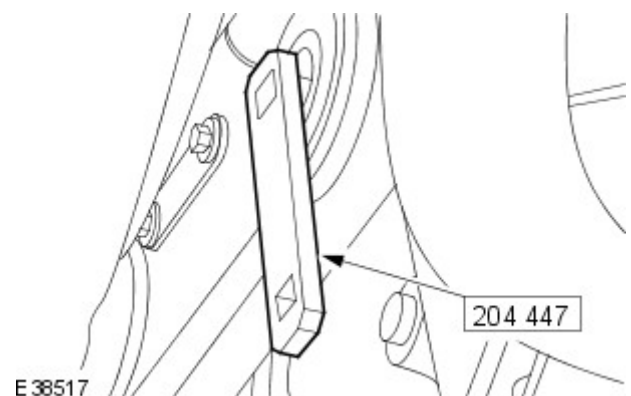
Loosely install the axle assembly front retaining bolt and new mounting bush.




35.  **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.

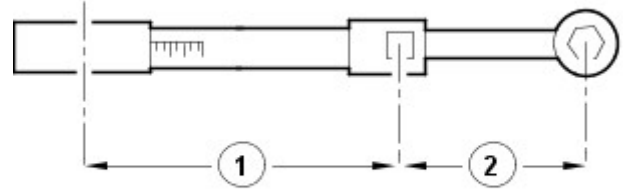
36. Install the special tool.



37.  **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.**

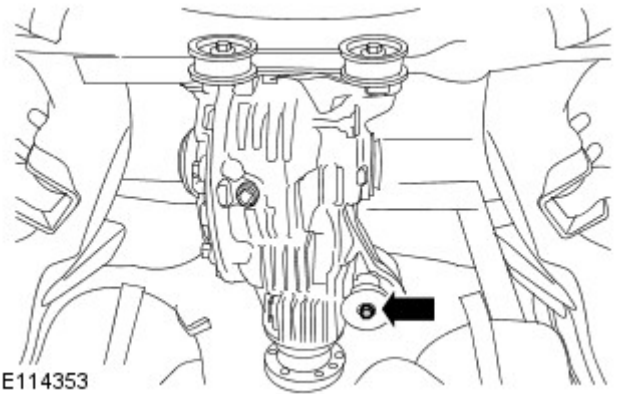
Using the special tool and a torque wrench, tighten the axle rear retaining bolts.

- Tighten to 200 Nm.
- 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

38. Tighten to 90 Nm.

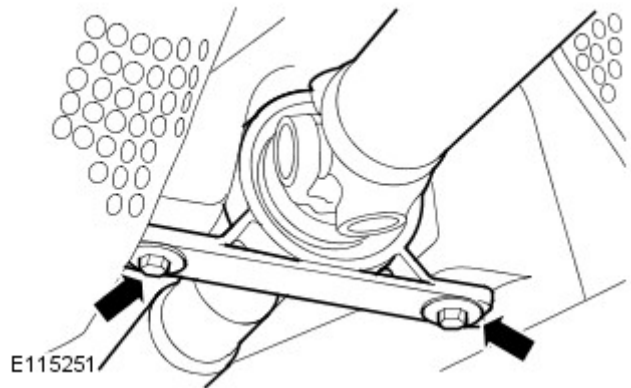


E114353

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

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

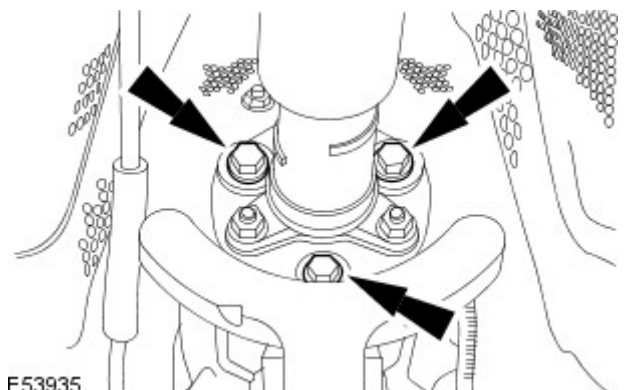
- Install new driveshaft centre bearing securing bolts.
- Tighten to 47 Nm.



E115251

40. Attach the driveshaft to the transmission flange.

- Tighten to 108 Nm.



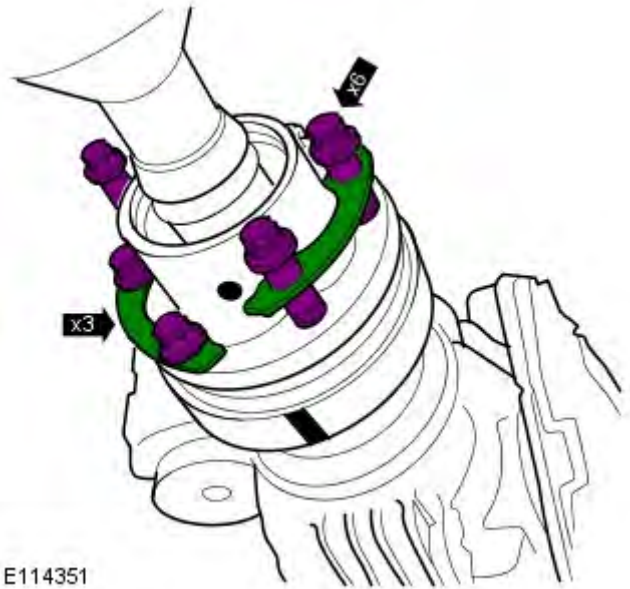
E53935

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

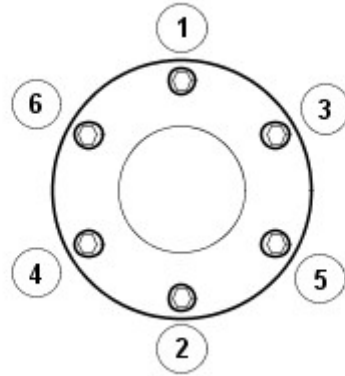
-  **NOTE: Some differences in the illustrations may occur but the essential information is correct.**

Secure the driveshaft to the rear axle drive flange.

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

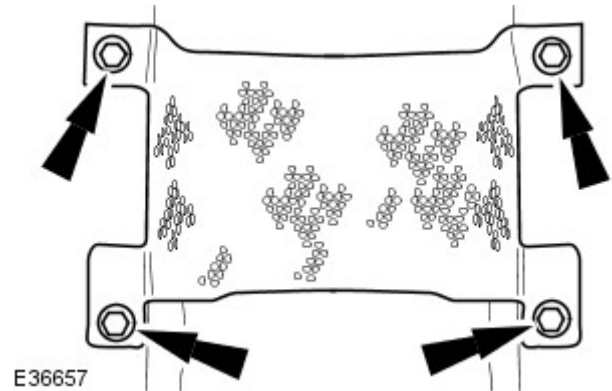


42. Tighten the bolts in the sequence shown to 73 Nm (33 lb.ft).



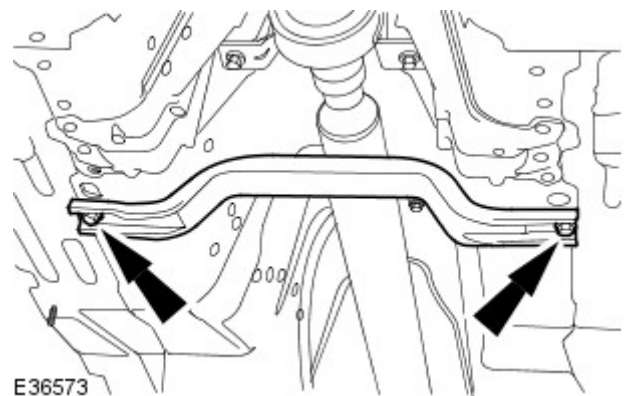
43. Install the driveshaft heat shield retaining bolts.

- Tighten to 7 Nm.



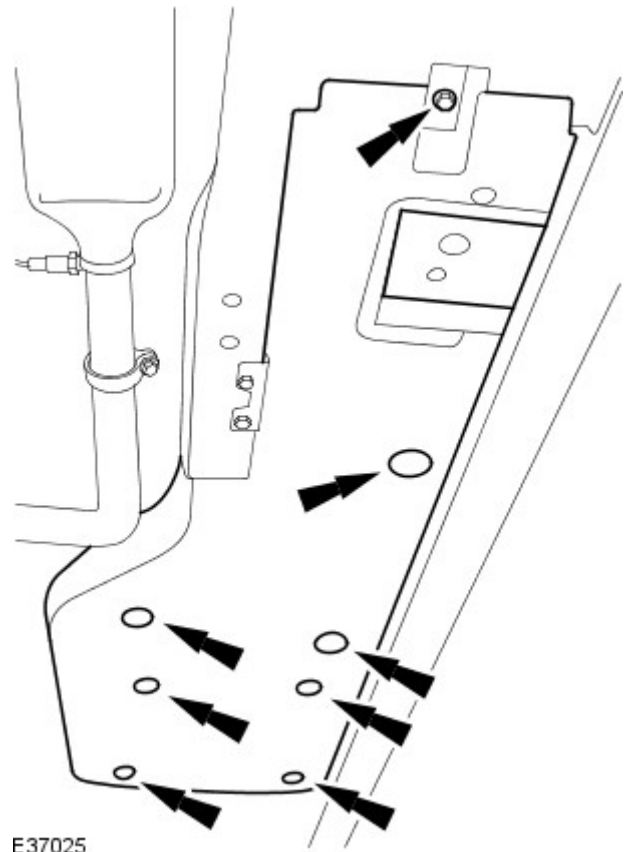
44. Install the support bracket.

- Tighten to 9 Nm.



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

Install the splash shields.



46.  **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.

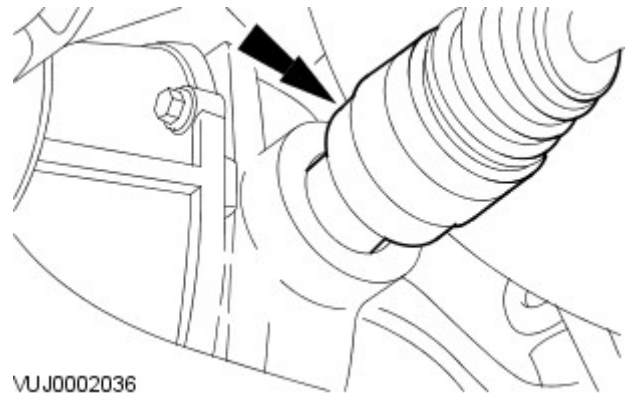


47.  **CAUTION:** To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

-  **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.



48.  **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.

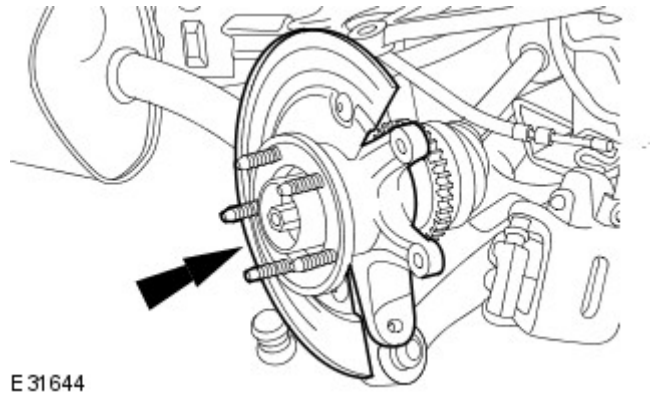
Fill the differential case with the recommended lubricant until a thread of oil runs from the level/filler plug.

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

- Tighten to 34 Nm.

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

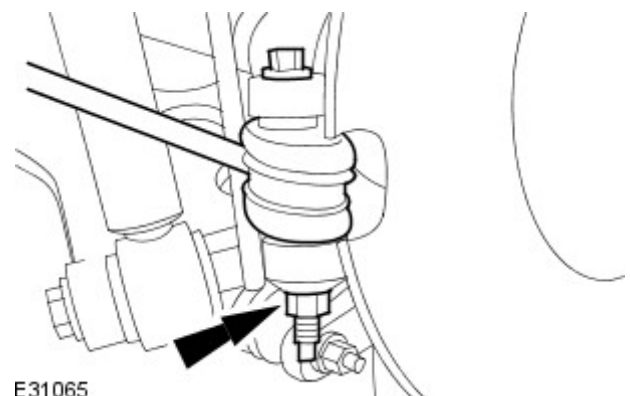
Attach the RH wheel knuckle to the halfshaft.



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



51. Install the RH outer tie rod retaining nut.



52. Install the RH brake disc. Ref TOPIx 206-04 Rear Disc Brake

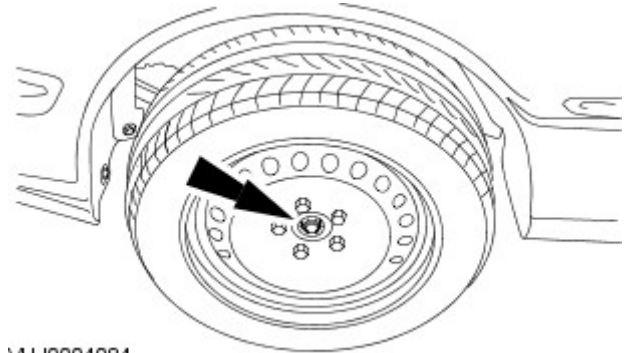
53. Install the exhaust system. Ref TOPIx 309-00

54. Install rear wheels and tires. Ref TOPIx 204-04

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

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

- Tighten to 300 Nm.



VUJ0004084

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

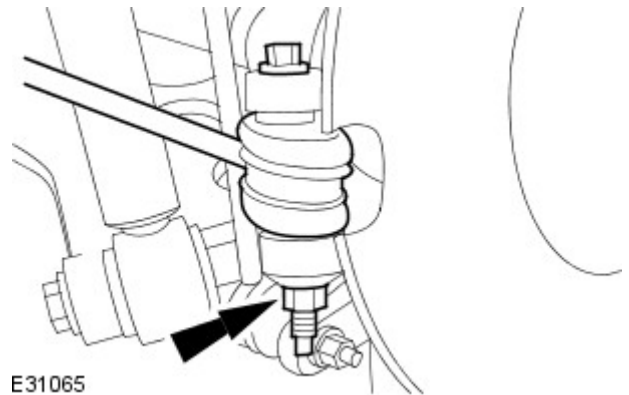
Tighten the RH lower arm bolt to 150 Nm.



E31066

57.  **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.



E31065

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

Appendix 2: S-TYPE Automatic Only 59 - 111

S-TYPE Automatic Transmission Only

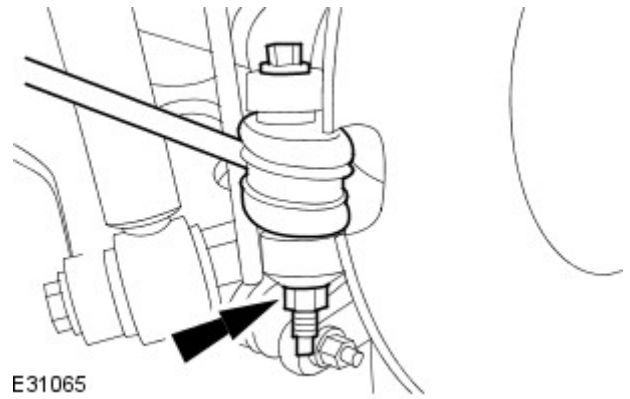
59. Raise and support the vehicle. Refer to TOPIx 100-02 Jacking and Lifting

60. Remove rear wheels and tires. Refer to TOPIx 204-04

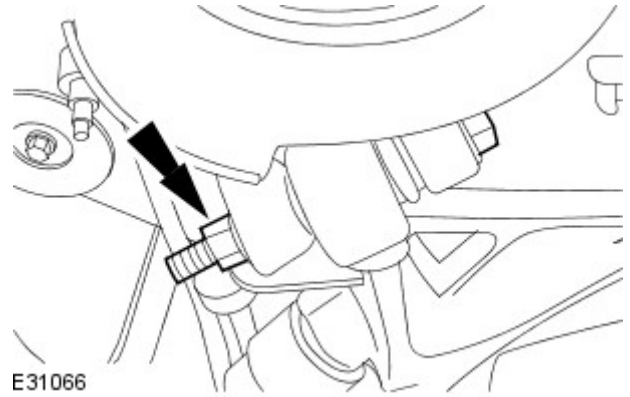
61. Remove the exhaust system. Refer to TOPIx 309-00


62. Remove RH brake disc. Refer to TOPIx 206-04 Rear Disc Brake

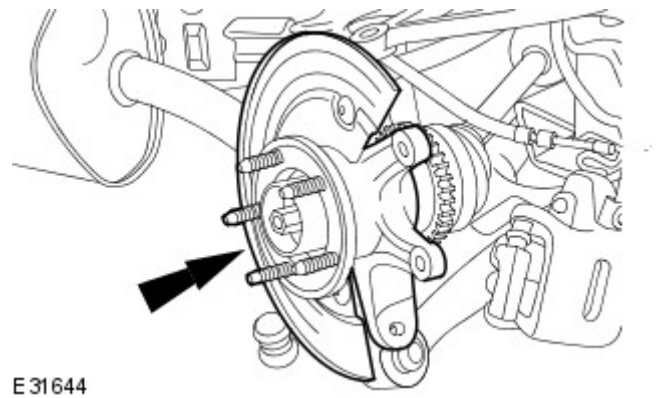
63. Detach the RH outer tie rod.



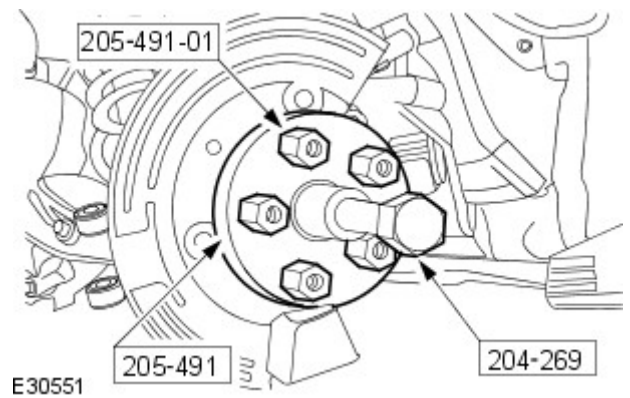
64. Detach the lower arm from the RH wheel knuckle.




65.  **NOTE: Brake disc and caliper not shown for clarity.**
Remove RH driveshaft securing nut.



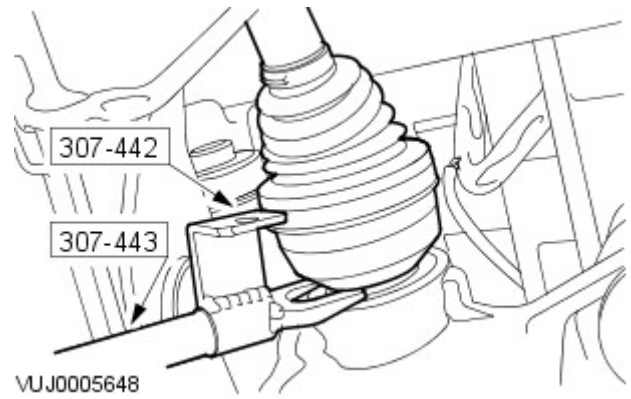
66. Using the special tools, detach the RH halfshaft.




67.  **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.

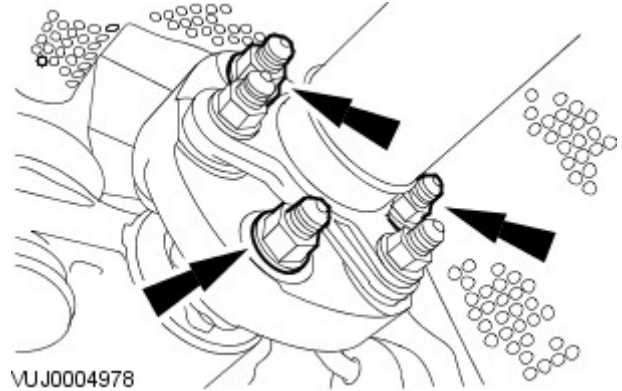
 **NOTE:** The halfshaft is retained in the axle assembly by a retaining clip.

Using the special tools, remove the RH halfshaft.



68.  **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.

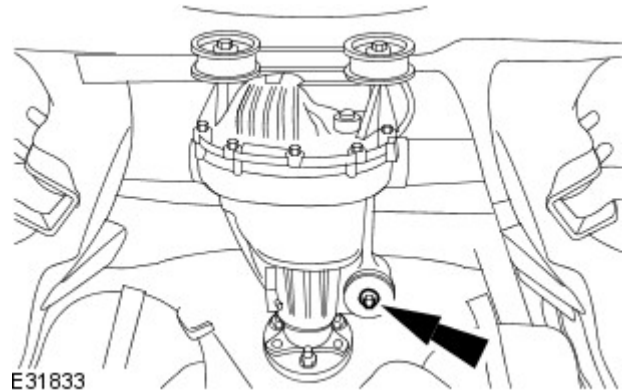



69.  **CAUTION:** When supporting the axle assembly, use a suitable packing material to prevent damage to the axle assembly.

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

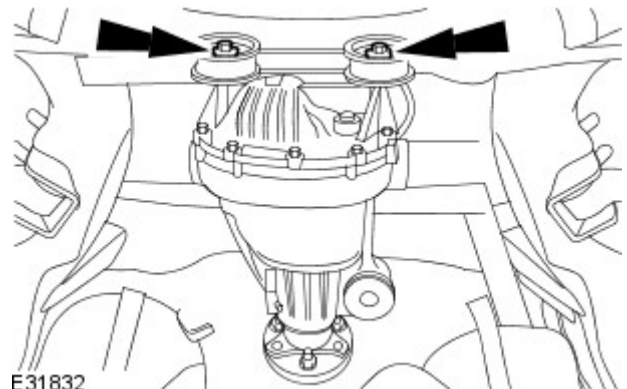
70. Remove the axle assembly front retaining bolt.


- Remove and discard front mounting spacer.



71.  **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.

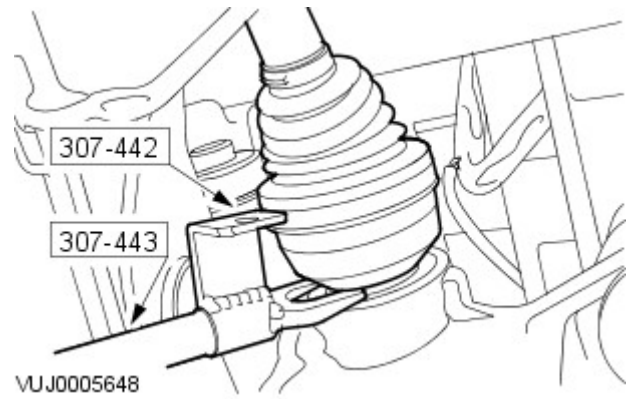


72.  **CAUTION:** To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

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

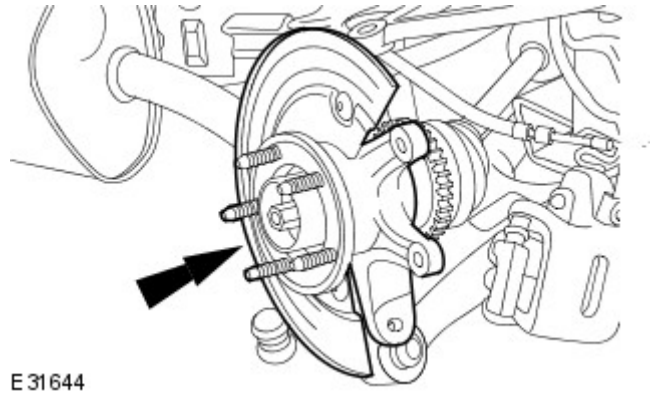
Using the special tools, remove the LH halfshaft.

- With assistance lower and remove axle assembly.



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

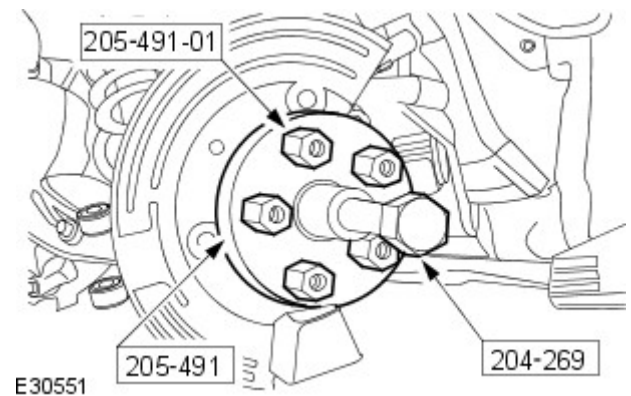
Remove driveshaft securing nut.



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

Using the special tools, detach the LH halfshaft.

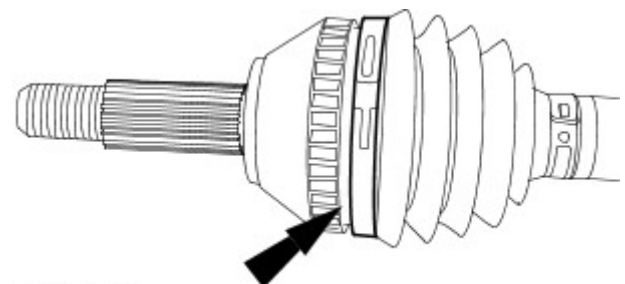
- Remove the LH halfshaft.



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

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

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

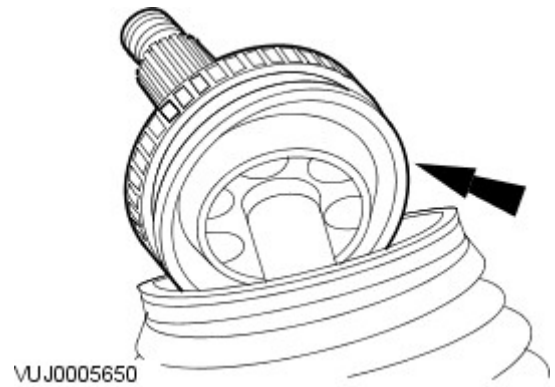


76.  **CAUTION: Do not damage the bearing retainer.**

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

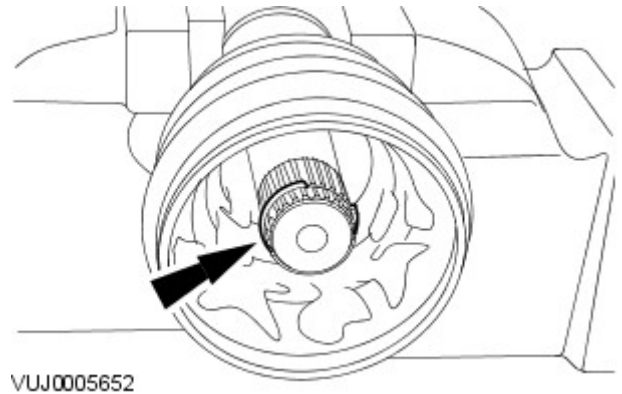
Using a suitable brass drift, remove the outer CV joint.

- Repeat operation for the other side.



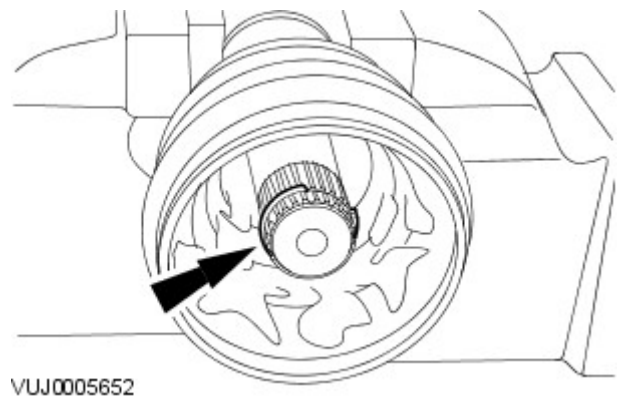
77. Remove the retaining clip.

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



78. Install the new retaining clip.

- Repeat operation for the other side.



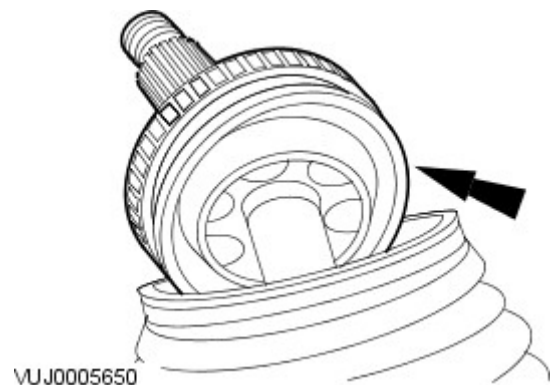
79.  **CAUTION: Make sure the CV joint ball bearings do not drop out of the CV joint.**

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

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

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

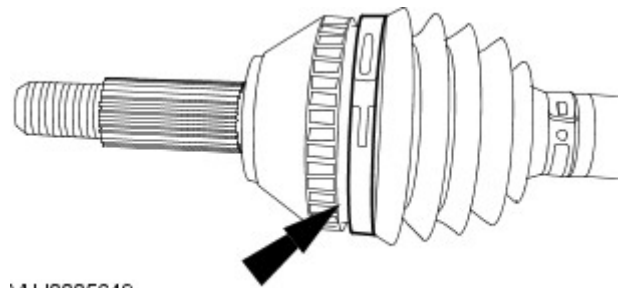
- Fill the CV joint with 50% grease and the CV boot with 50% grease.
- Repeat operation for the other side.



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

Install the new retaining clip.

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

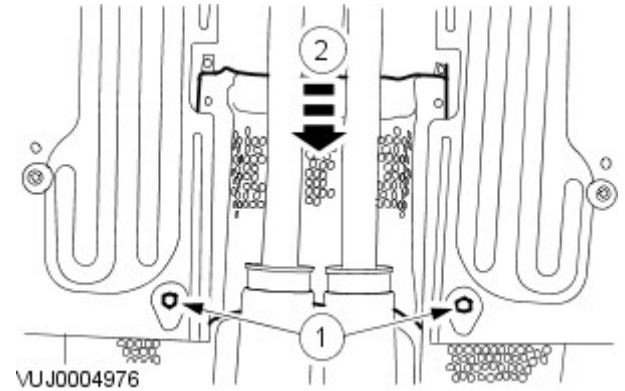


VUJ0005649

81.  **NOTE: All Vehicles.**

Remove the driveshaft heat shield.

1. Remove the 4 bolts.
2. Remove the driveshaft heat shield.



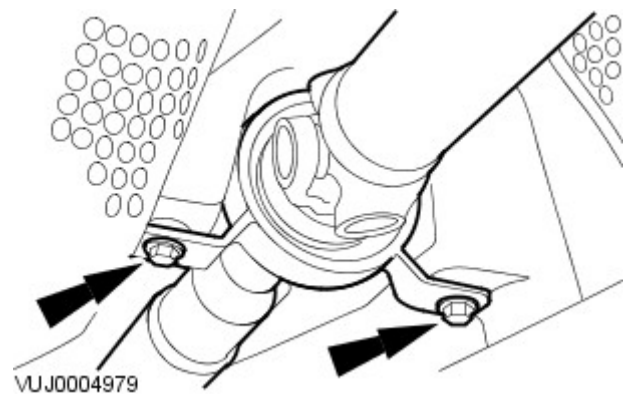
VUJ0004976

82.  **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.

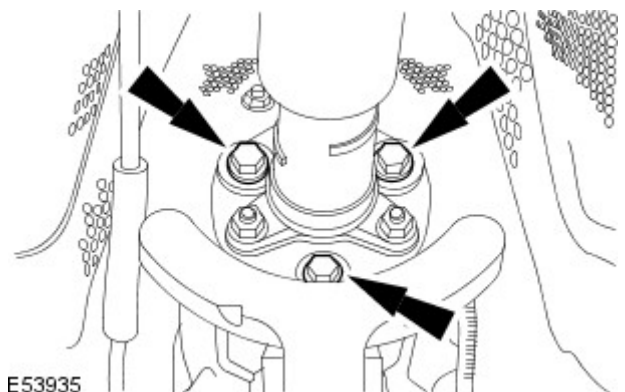
- Remove and discard the driveshaft centre bearing spacers.



VUJ0004979

83.  **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.

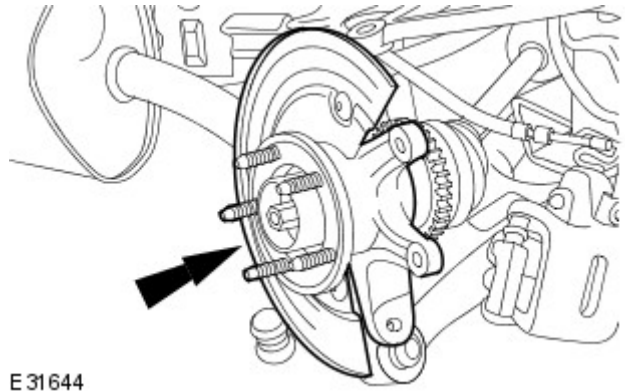


E53935

84.  **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 .



85.  **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.

- Lift axle assembly towards rear subframe.

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

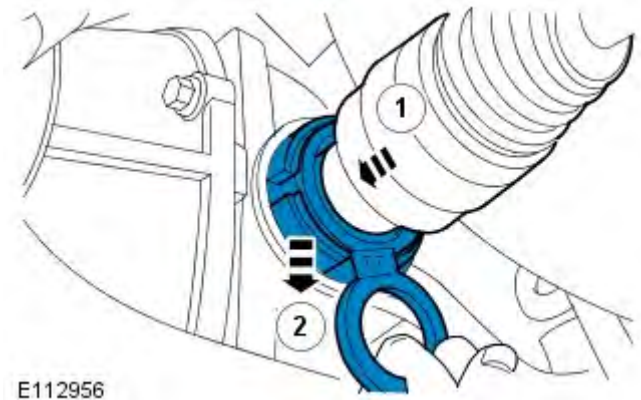
 **CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

 **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.

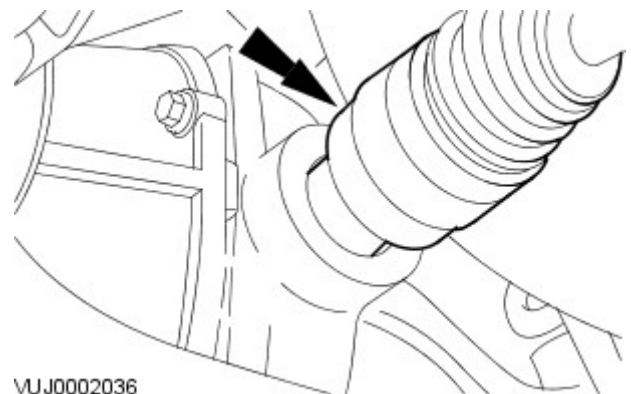


87.  **CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

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

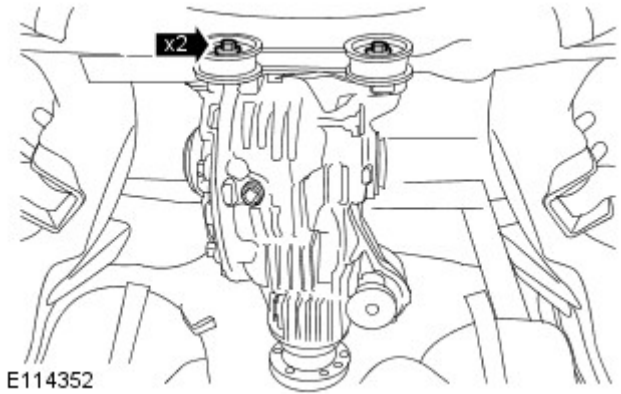
 **NOTE: Make sure the retaining clip is correctly seated.**

Attach the LH halfshaft.



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

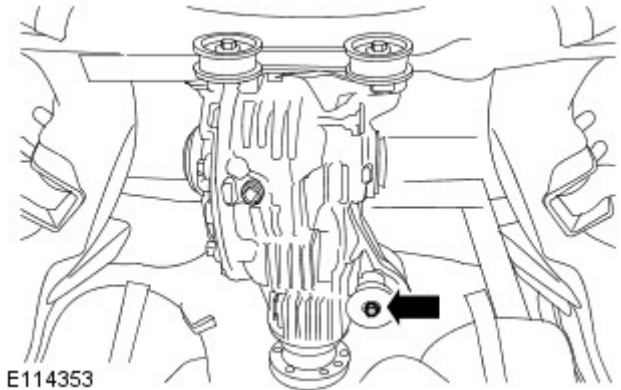
Install new bolts(C2P14155) Install the axle assembly.



89.  **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.**

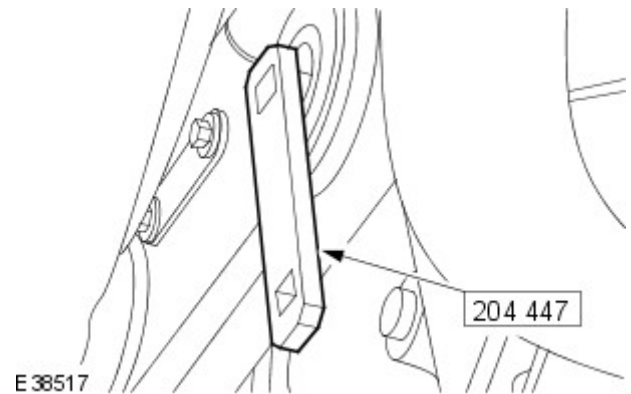
Loosely install the axle assembly front retaining bolt and new mounting bush.




90.  **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.

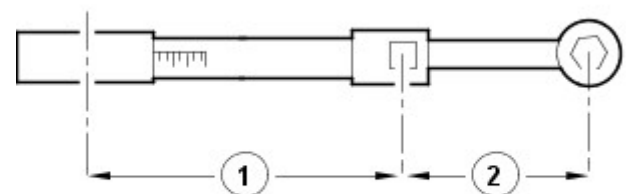
91. Install the special tool.



92.  **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.**

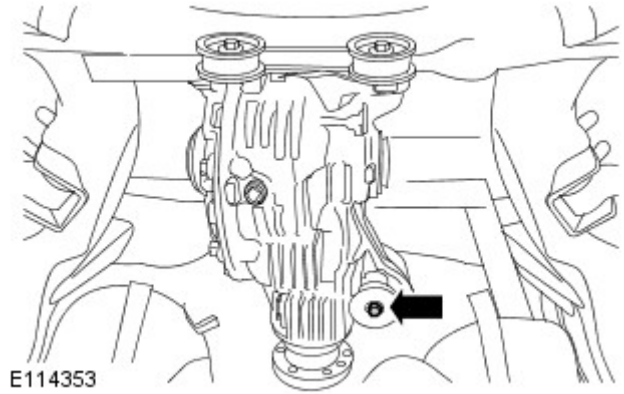
Using the special tool and a torque wrench, tighten the axle rear retaining bolts.


- Tighten to 200 Nm.
- 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.

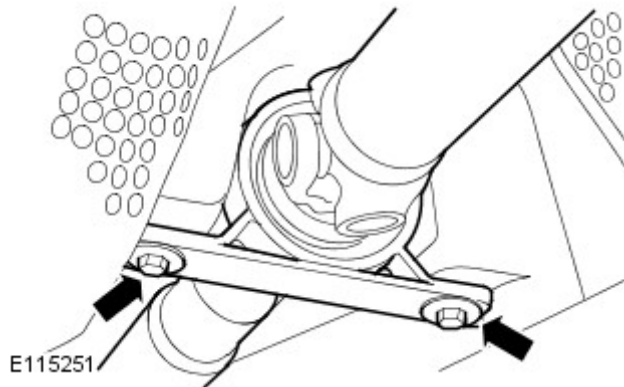
93. Tighten to 90 Nm.



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

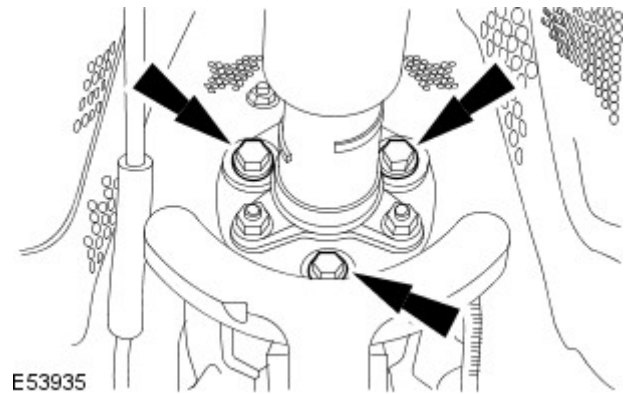
With assistance, install the driveshaft and secure the center bearing.

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



95. Attach the driveshaft to the transmission flange.

- Tighten to 108 Nm.

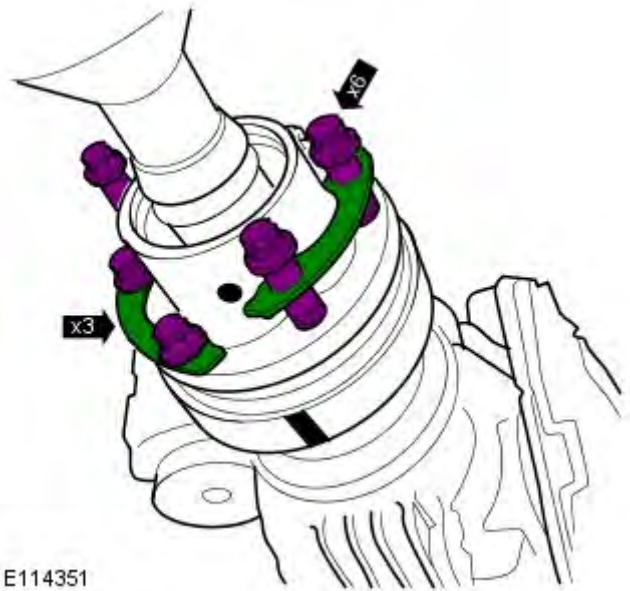


96.  **NOTE: Make sure the driveshaft bolts are correctly installed.**

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

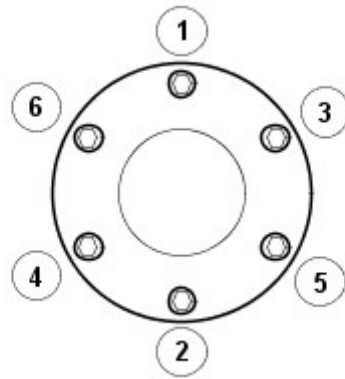
Secure the driveshaft to the rear axle drive flange.

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



E114351

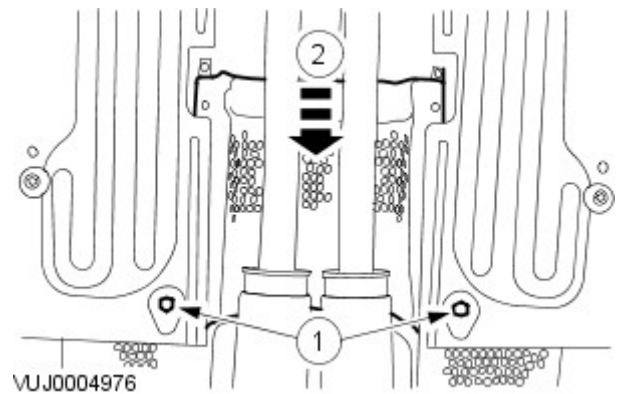
97. Tighten the bolts in the sequence shown to 73 Nm (33 lb.ft).



E112957

98. Install the center heat shield.

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



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

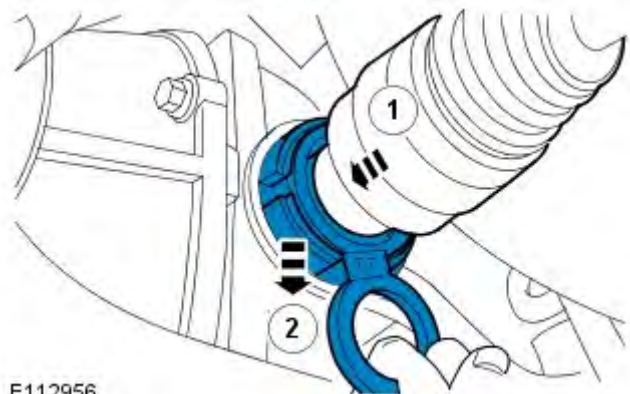
 **CAUTION: To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.**

 **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.



E112956

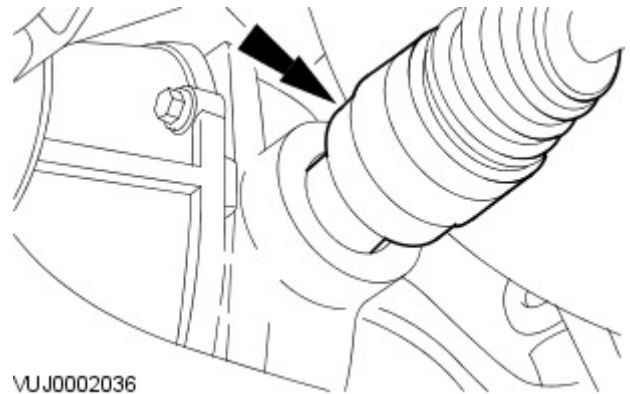
2. Remove and discard centre disc.
3. Lubricate the seal and the bearing running surfaces with clean axle oil.
4. Install the halfshaft.
5. Pull oil seal protector clear of oil seal.
6. Break the halfshaft seal protector in to two pieces and remove the halfshaft seal protector.
7. Make sure the snap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

100.  **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.



101.  **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.

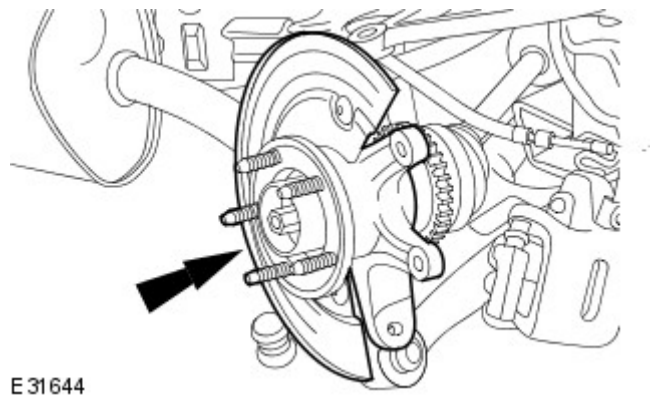
Fill the differential case with the recommended lubricant until a thread of oil runs from the level/filler plug.

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

- Tighten to 34 Nm.

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

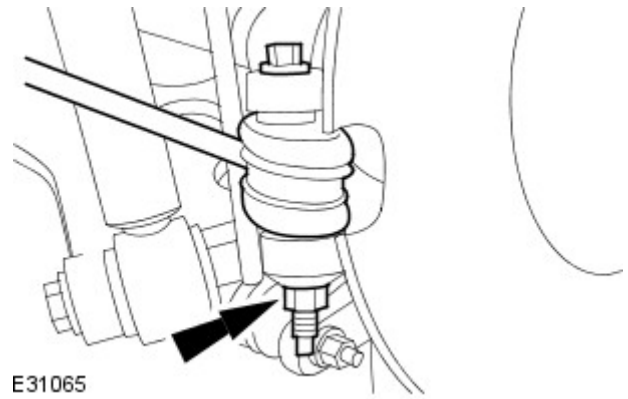
Attach the RH wheel knuckle to the halfshaft.



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



104. Install the RH outer tie rod retaining nut.



105. Install the RH brake disc. Ref TOPIx 206-04 Rear Disc Brake

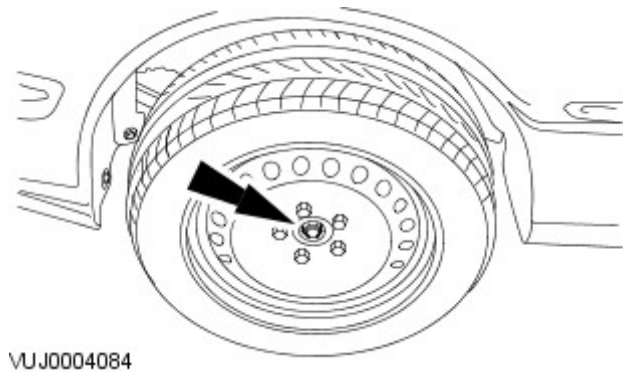
106. Install the exhaust system. Ref TOPIx 309-00

107. Install rear wheels and tires. Ref TOPIx 204-04

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

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

- Tighten to 300 Nm.



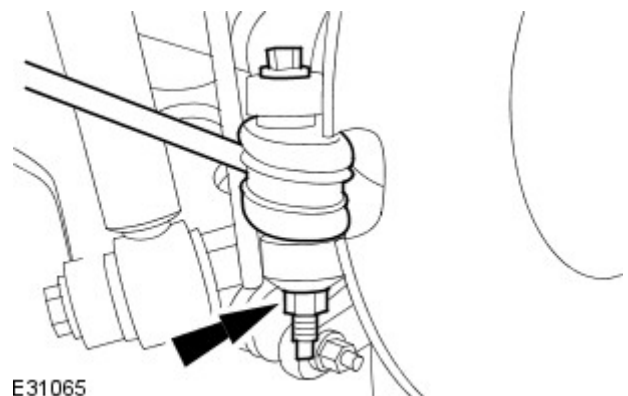
109.  **CAUTION: The final tightening of the rear suspension components must be carried out with the vehicle on its wheels.**

Tighten the RH lower arm bolt to 150 Nm.



110.  **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.



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

Appendix 3:XF Only.

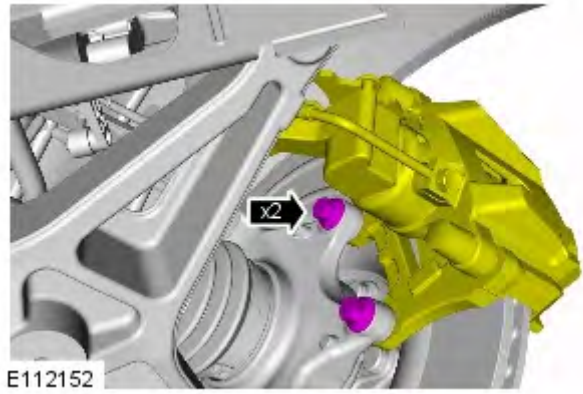
112. Raise and support the vehicle. Refer to TOPIx 100-02 Jacking and Lifting

113. Remove rear wheels and tires. Refer to TOPIx 204-04

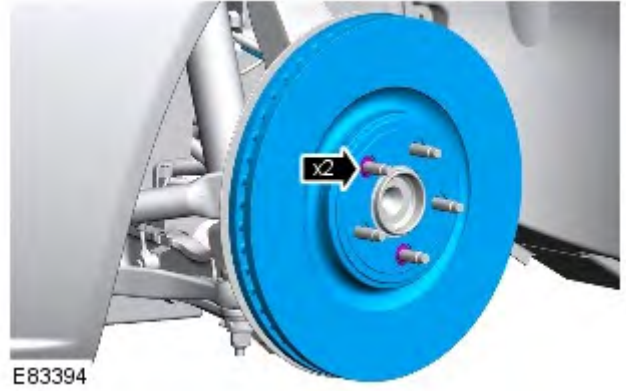
114.



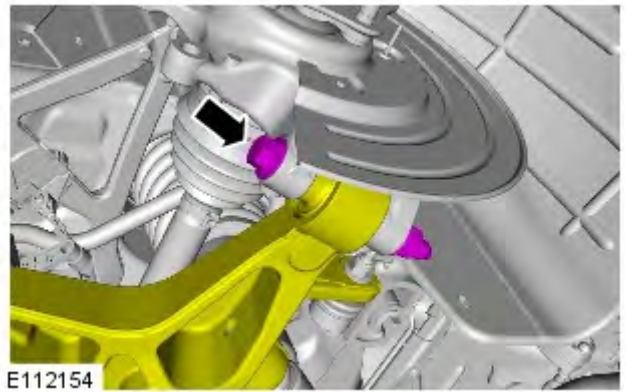
115.



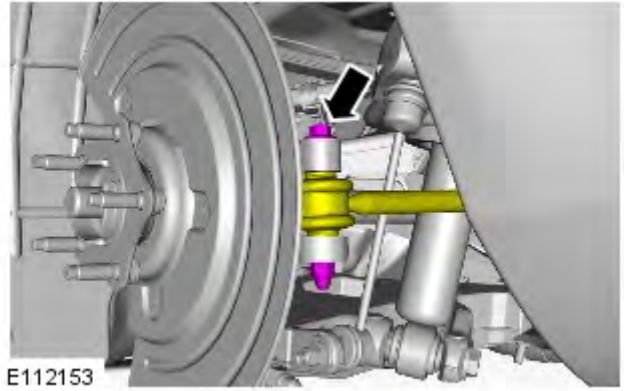
116.



117.



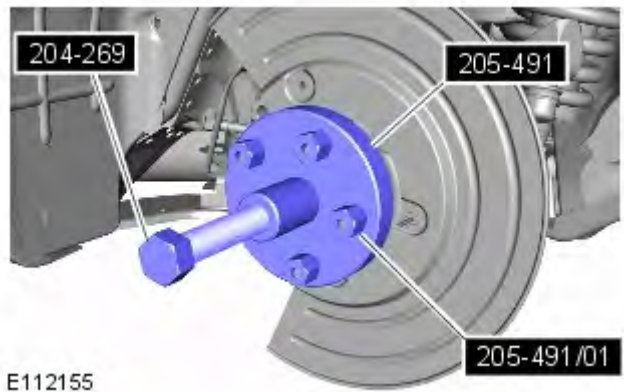
118.




119.

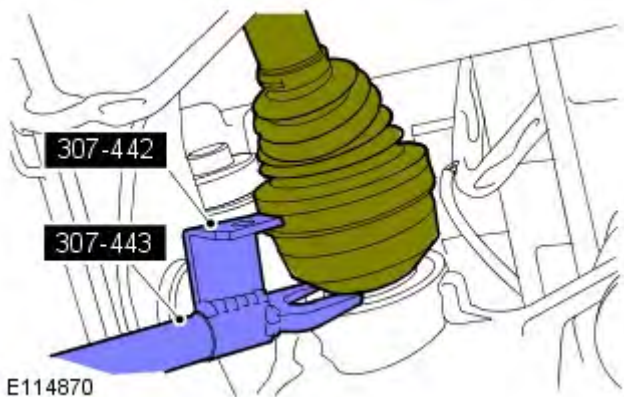


120.  CAUTION: LH illustration shown, RH is similar.



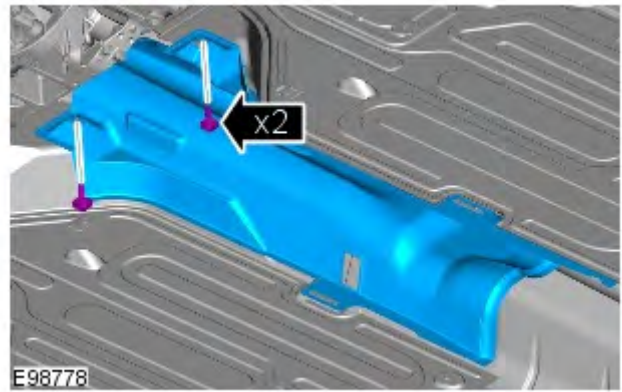
121.  CAUTION: To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

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




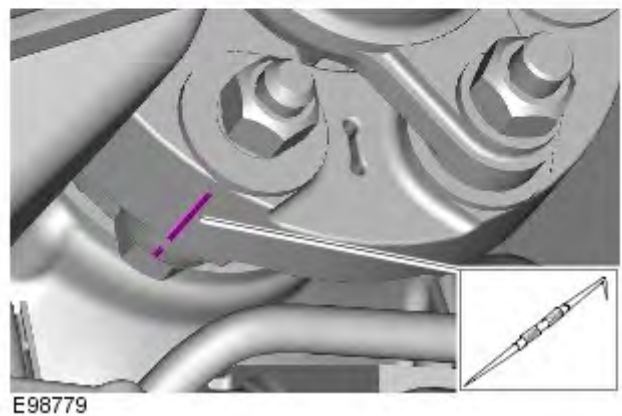
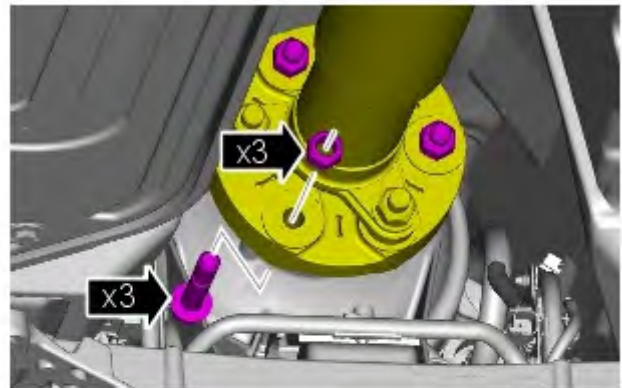
122. Remove Exhaust Ref TOPIx 309-00.

123. Torque 9Nm




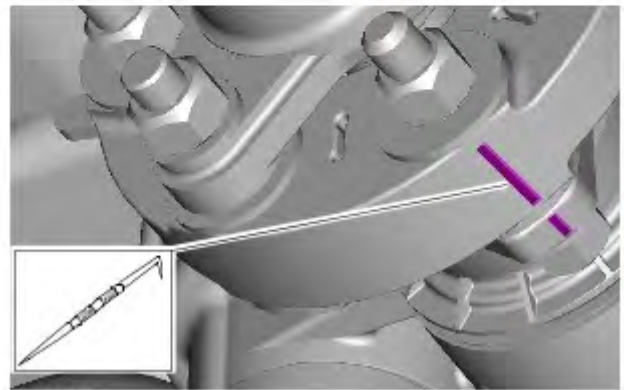
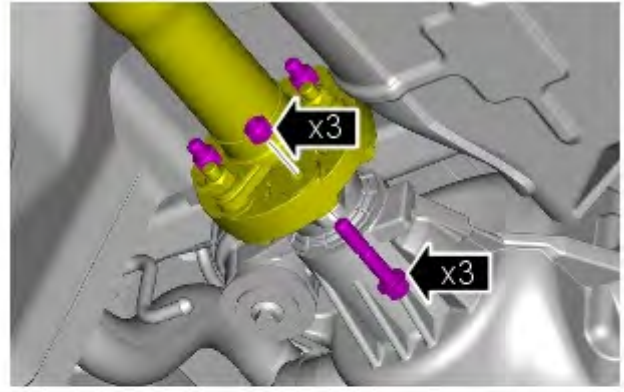
124.  **CAUTION:** Under no circumstances must the flexible coupling (or its fixings) be loosened or removed from the driveshaft.

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



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

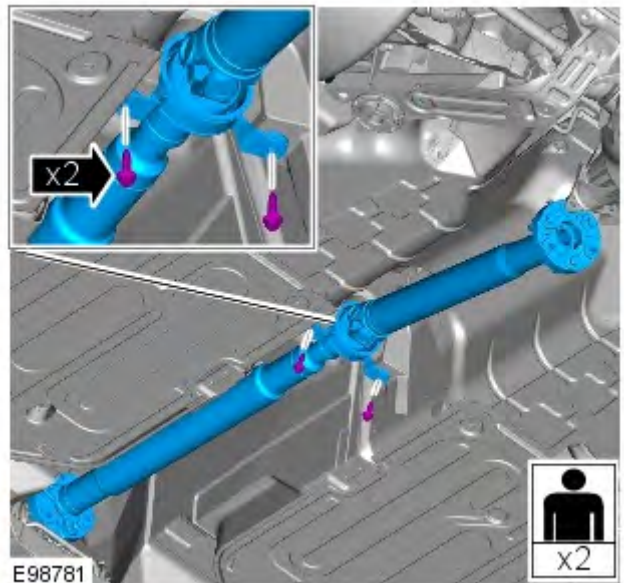
 **CAUTION:** Make sure that the driveshaft is supported with suitable retaining straps.



E98780

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

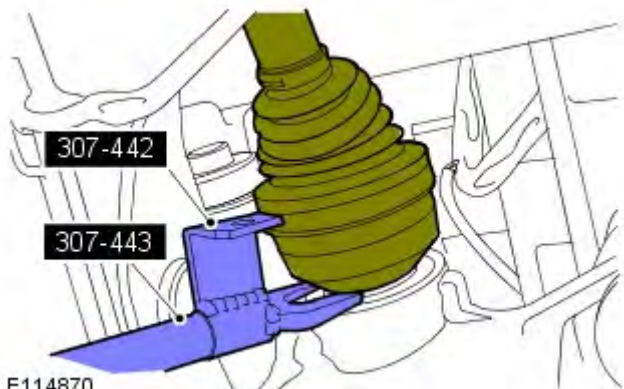
 **NOTE:** Remove and discard spacers and bolts.



E98781

127.  **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.



E114870

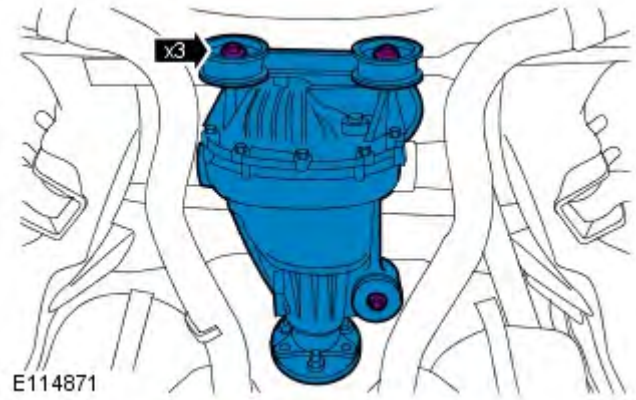
128. Using the special tool, support the axle assembly.



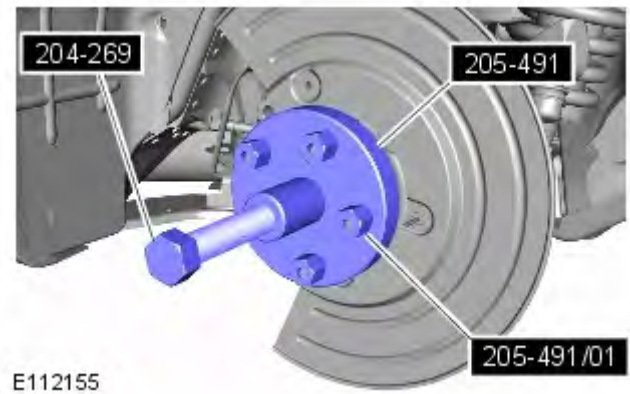
129.  **NOTE: Discard the axle front spacer.**

Release the LH halfshaft from the axle assembly.

1. With assistance lower and remove axle assembly.



130.




131.  **NOTE: Installation**

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

Attach the LH halfshaft to the wheel knuckle.




132.  **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.

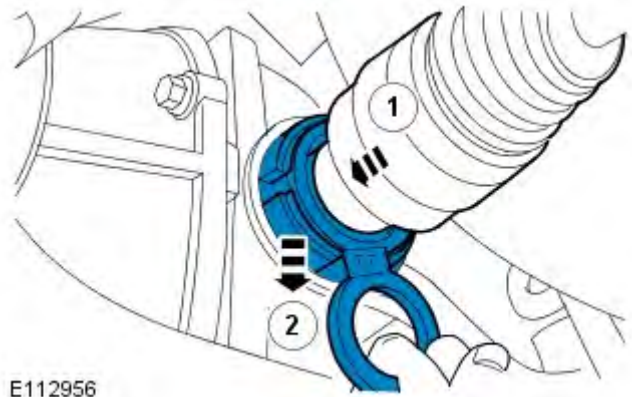


133.  **CAUTION:** Do not damage the axle shaft seal.

 **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.

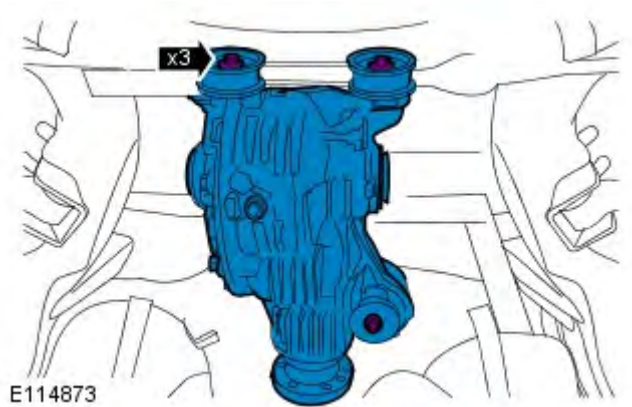


E112956

134.  **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.

Install new bolts(C2P14155) M12 torque 90 NM M14 torque 200Nm




E114873

135. Remove the transmission jack.

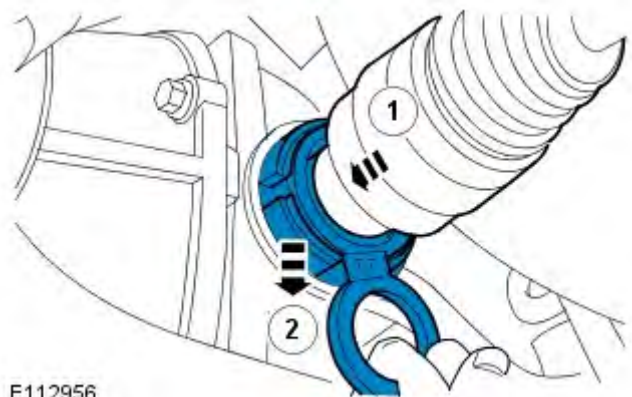


136.  **CAUTION:** Do not damage the axle shaft seal.

 **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.




E112956

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

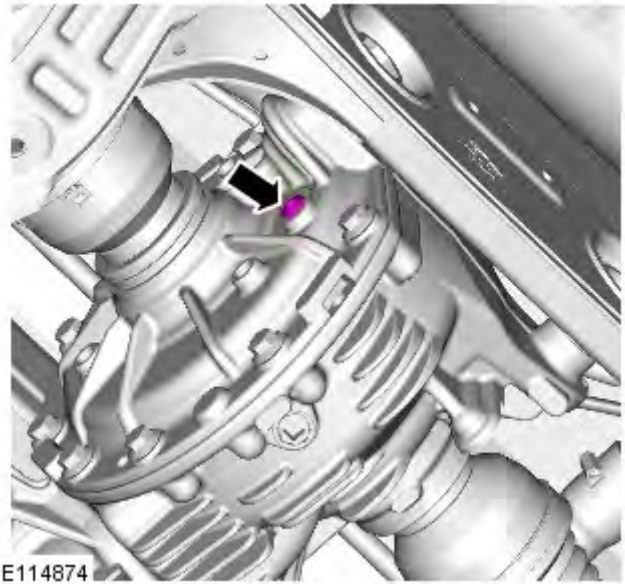


138.  **CAUTION:** Only use lubricants meeting the Jaguar specification.

 **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.

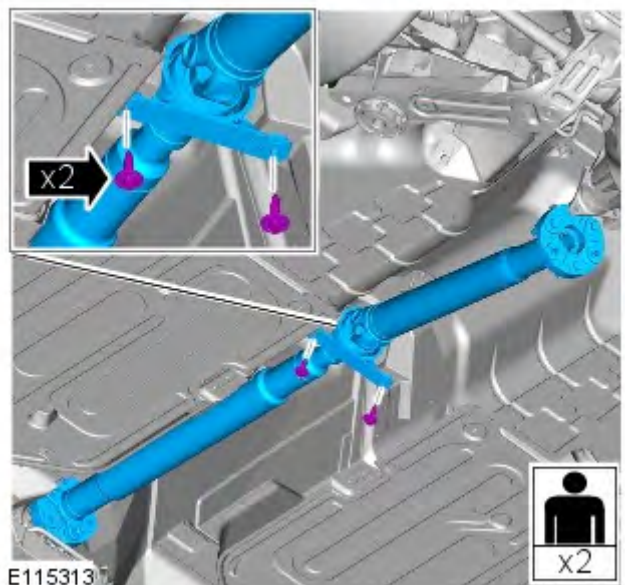
 **NOTE:** Install a new fluid level filler plug.

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.




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

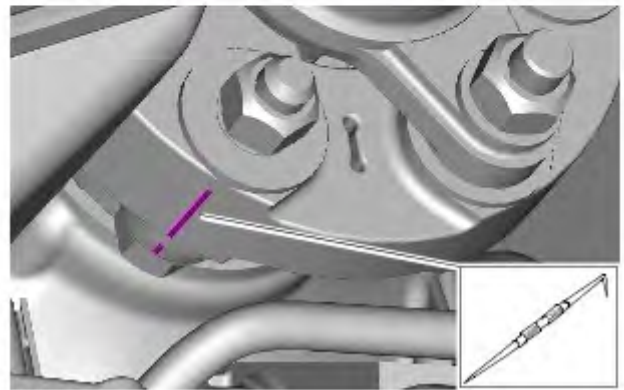
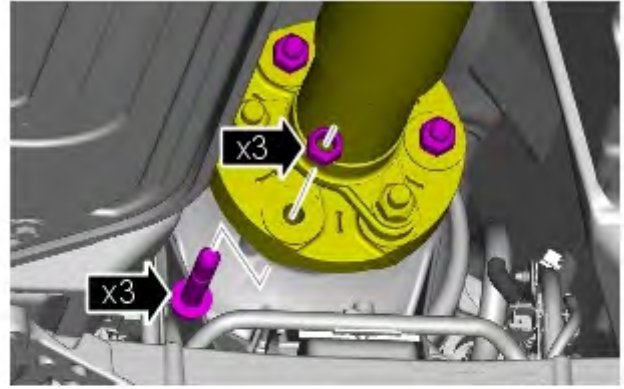
Tighten to 47Nm.



140.  **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.

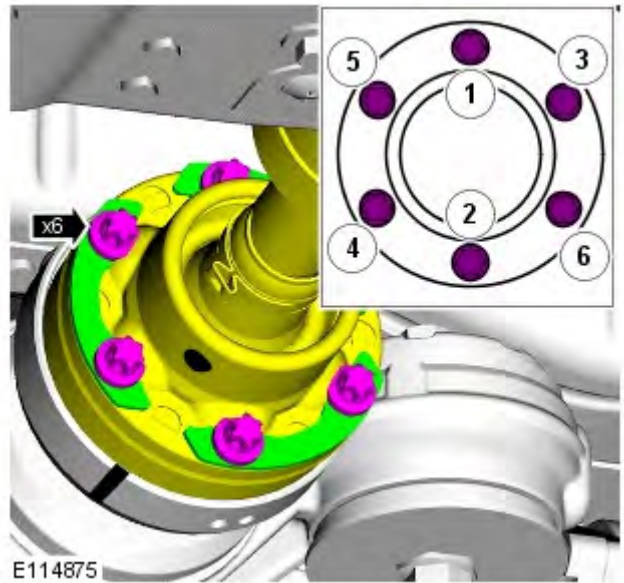
Tighten to 108Nm.



E98779

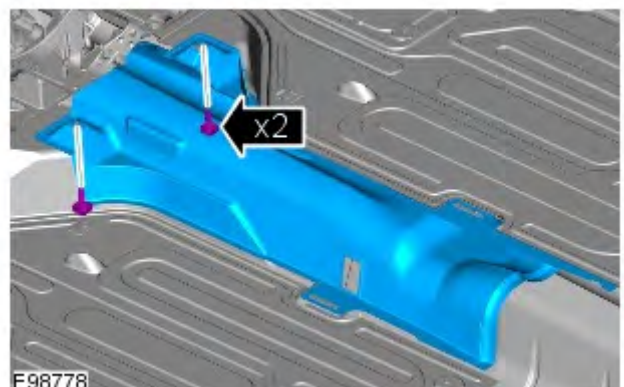
141.  **CAUTION:** Tighten the bolts in the sequence shown.

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



E114875

142. Tighten to 9Nm.

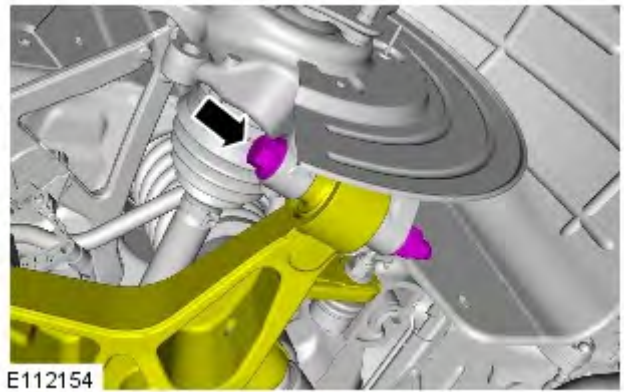


E98778

143. Install Exhaust system TOPIx reference 309-00

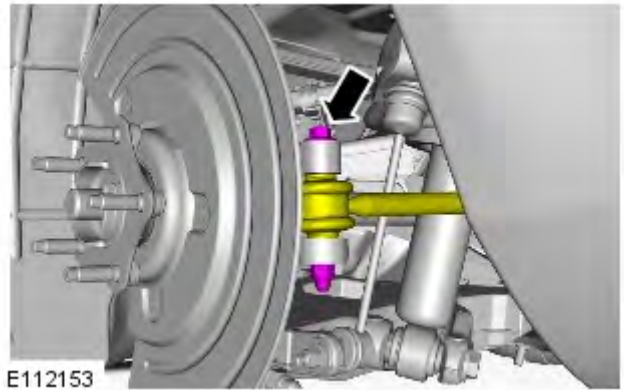
144.  **CAUTION: The final tightening of the suspension components must be carried out with the vehicle on its wheels.**

Tighten to 150Nm.

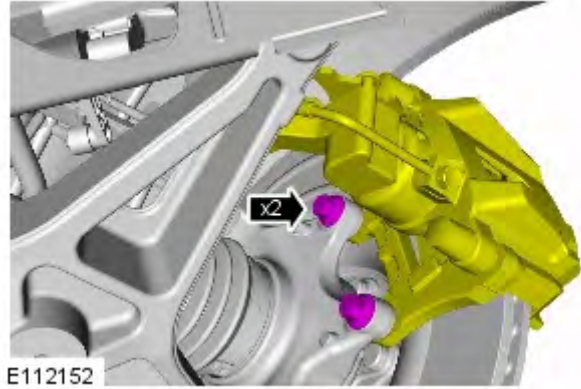


145.  **CAUTION: The final tightening of the suspension components must be carried out with the vehicle on its wheels.**

Tighten to 55Nm.



146. Tighten to 134Nm.



147. Install the wheel and tire ref TOPIx procedure 204-04.

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

Tighten to 300Nm.



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

Appendix 4: XK Range Only.

 **CAUTION:** Angularly Adjusted Roller (AAR) joints, used at the inboard end of some halfshafts have no internal retaining mechanism and can separate.

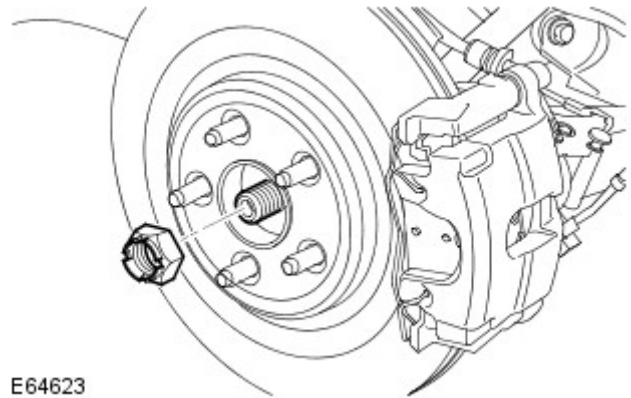
 **CAUTION:** Do not allow halfshafts to hang unsupported at one end or joint damage will occur.

150.  **WARNING:** Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.

Raise and support the vehicle.

151. Remove the rear wheels and tires.

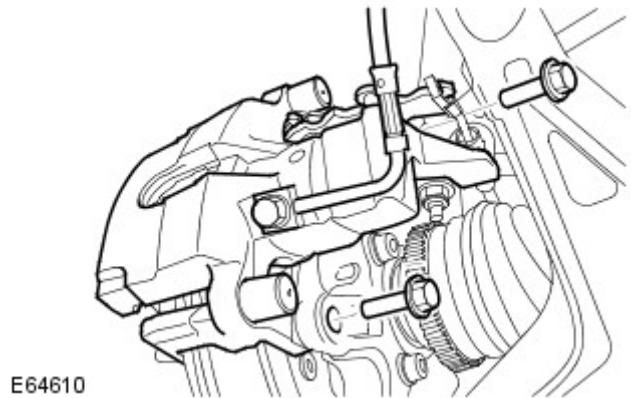
152. With assistance, remove the halfshaft retaining nuts, and retain it for the install procedure.



E64623

153. Release the RH rear brake caliper.

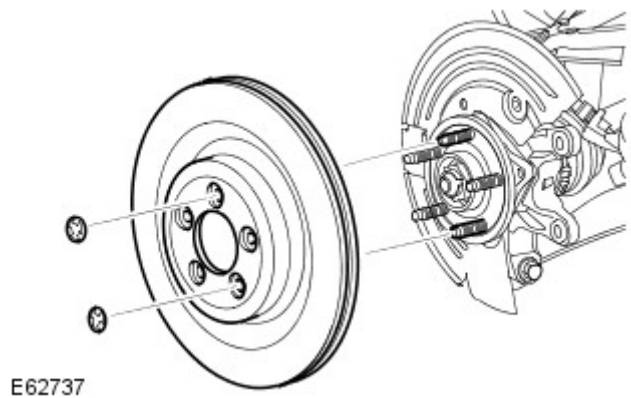
- Remove and discard the 2 bolts.
- Tie the brake caliper aside.



E64610

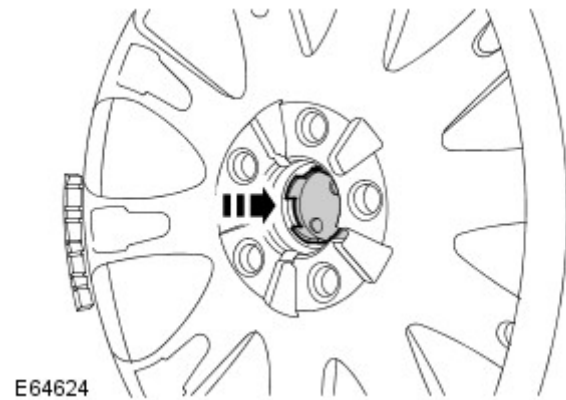
154. Remove the RH rear brake disc.

- Remove the 2 clips.



E62737

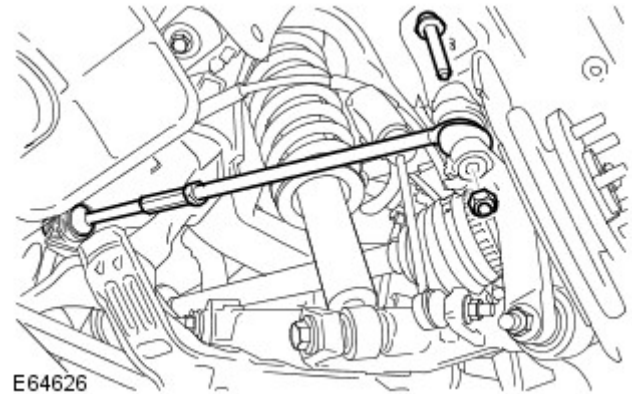
155. Remove the rear wheel trims.



E64624

156. RH rear: Disconnect the toe link.

- Remove the bolt and discard the nut.



E64626

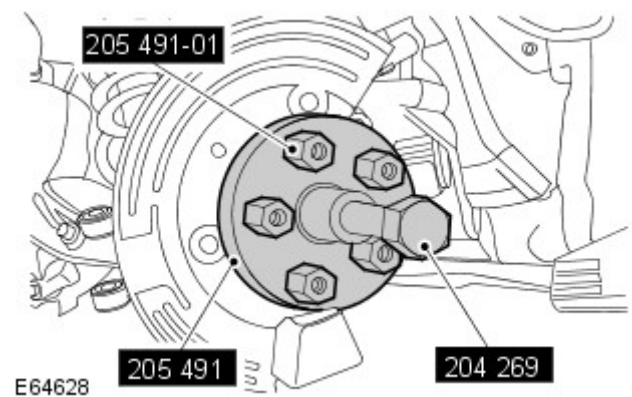
157. Release the RH rear lower arm.

- Remove the bolt and discard the nut.



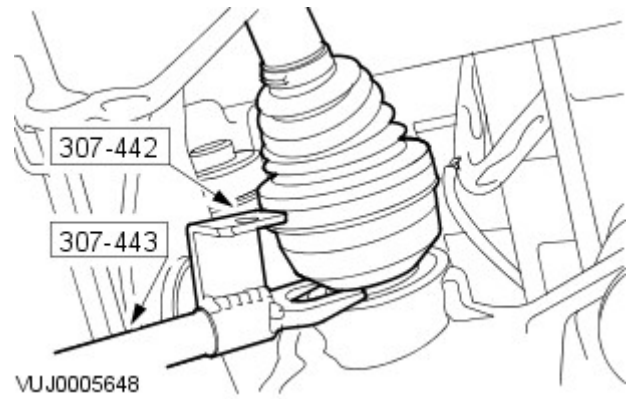
E64627

158. Using the special tools, release the RH halfshaft from the drive flange.



E64628

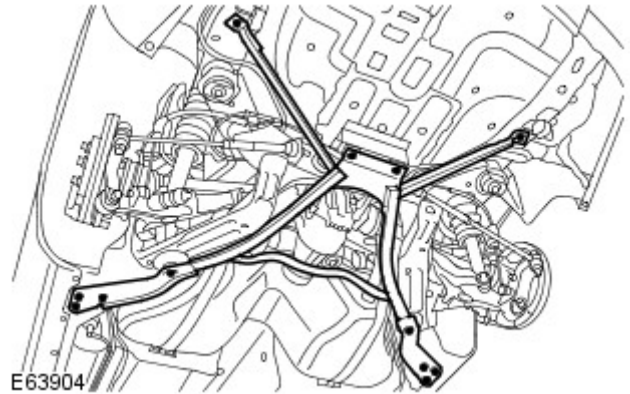
159. Using the special tools, remove the RH halfshaft.



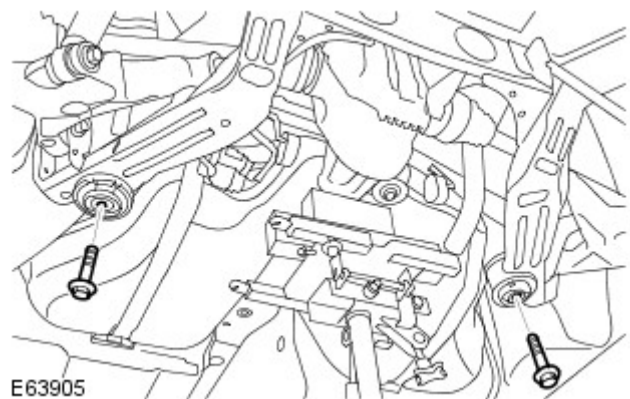
160. Remove the exhaust system Ref TOPIx procedure 309-00.

161. With assistance: Remove the body K-frame.

- Using a jack, support the differential.
- Remove the 8 bolts.
- Remove the 4 Torx bolts.



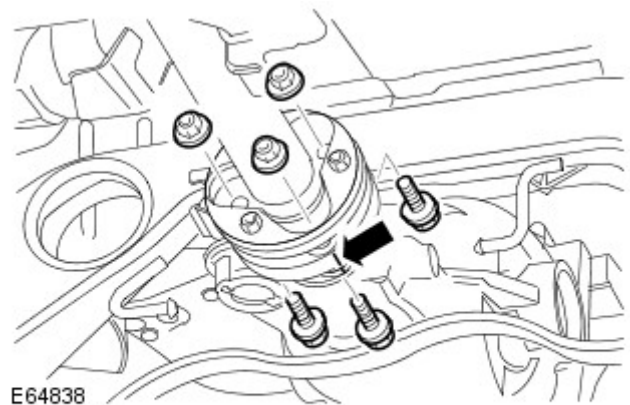
162. Install the 2 subframe mounting bolts and remove the jack.



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

Release the driveshaft from the rear axle drive flange.

- Remove the 3 nuts and bolts.

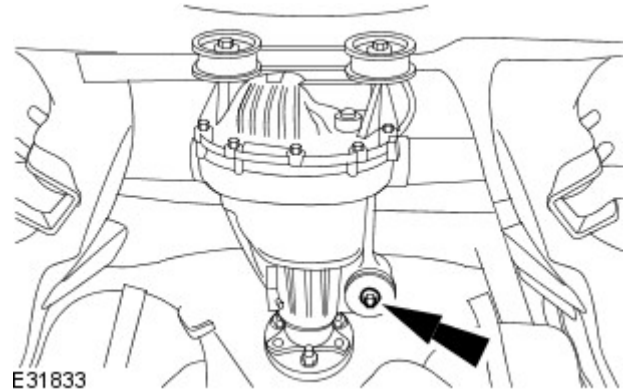



164.  **CAUTION:** When supporting the axle assembly, use a suitable packing material to prevent damage to the axle assembly.

Using a transmission jack, support the differential.

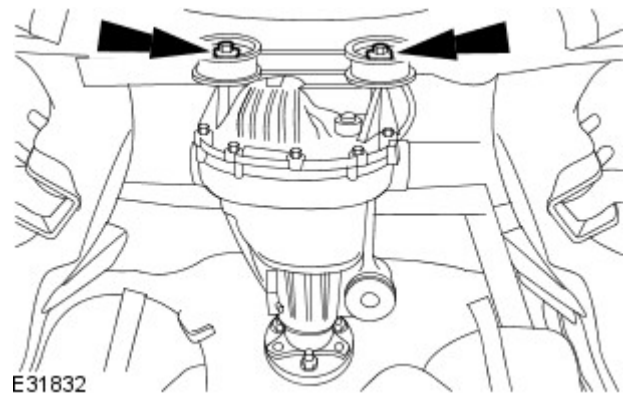
165. Remove the axle assembly front retaining bolt.


- Remove and discard front mounting spacer.



166.  **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.

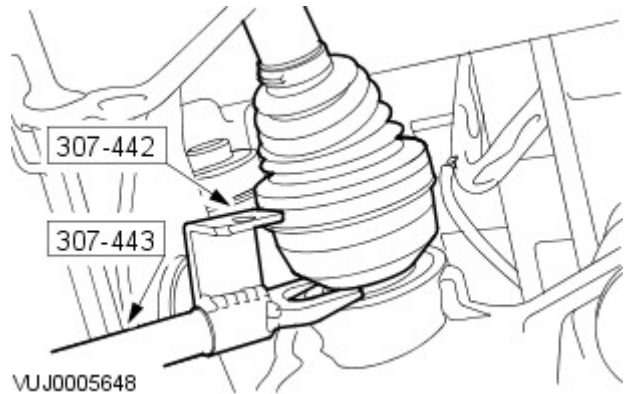


167.  **CAUTION:** To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

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

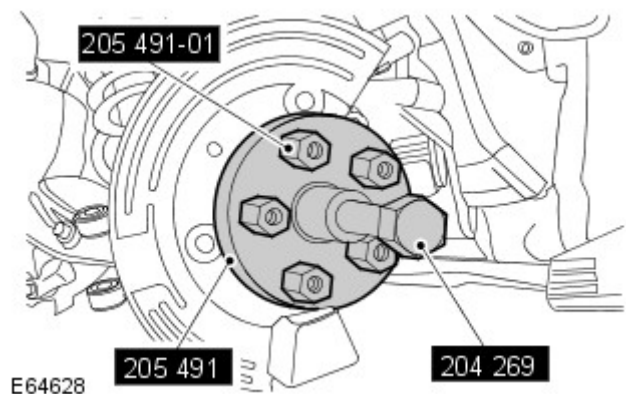
Using the special tools, remove the LH halfshaft.

- With assistance lower and remove axle assembly.



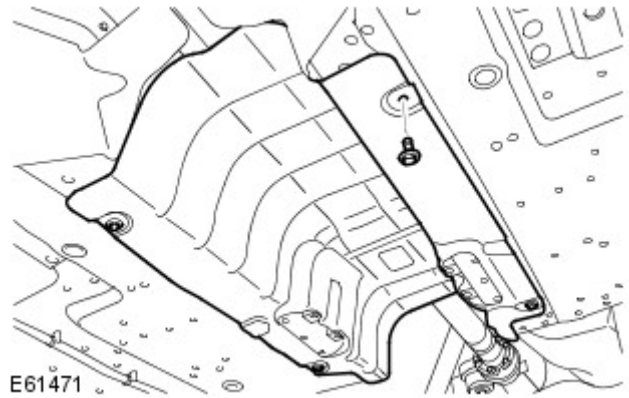
168. Using the special tools, release the LH halfshaft from the drive flange.

- Remove the LH halfshaft.



169. Remove the center heat shield.

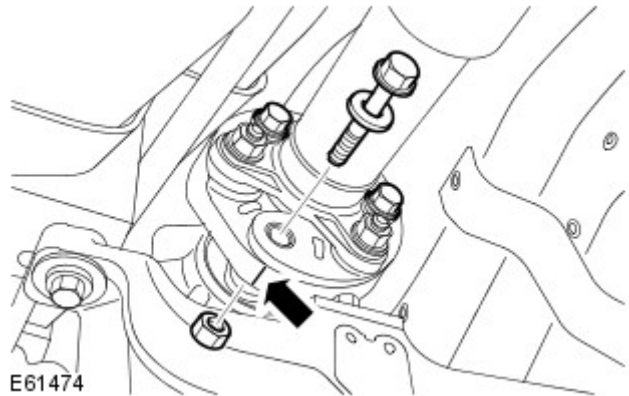
- Remove the 4 bolts.



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

Release the driveshaft from the transmission drive flange.

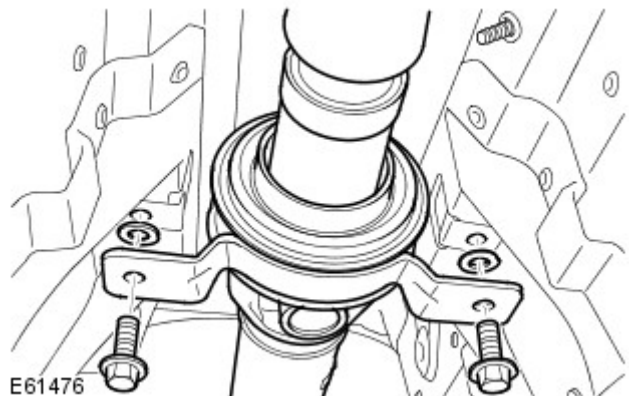
- Remove the 3 nuts and bolts.




171.  **NOTE: Spacers are fitted between the centre bearing and the body.**

With assistance, remove the driveshaft.

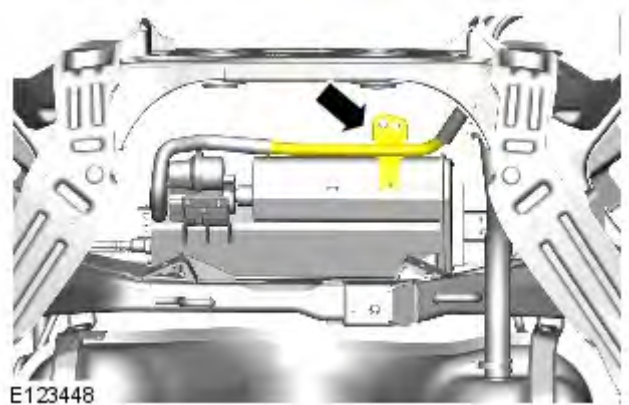
- Remove and discard the 2 driveshaft center bearing mount bolts.
- Remove and discard the driveshaft centre bearing spacers




172.  **CAUTION: Do not use excessive force on the carbon can hose bracket. Failure to follow this instruction may result in damage to the vehicle.**

 **NOTE: For Japan and NAS spec only.**

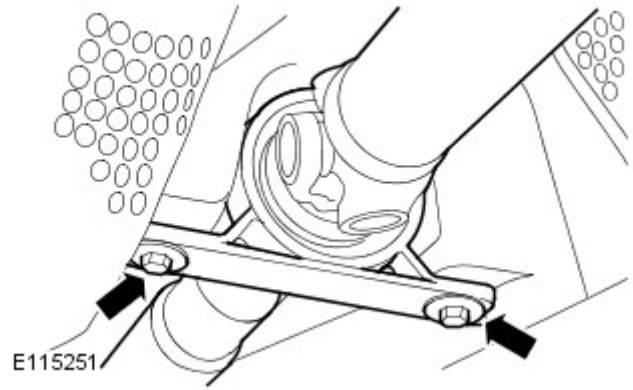
Push the carbon can hose bracket (approximately 5mm to 10 mm (3/16 inch to 3/8 inch)) towards the vehicle underfloor to increase differential clearance.



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

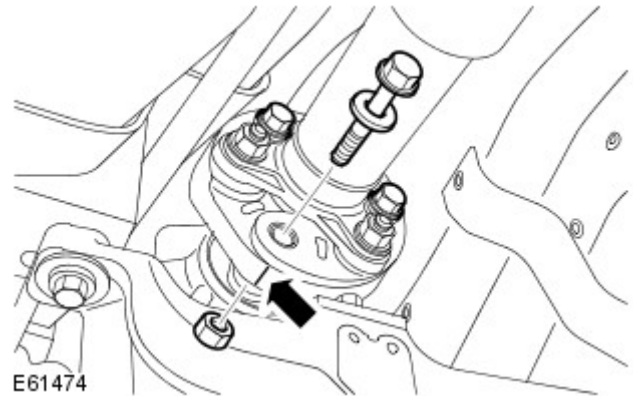
With assistance, install the driveshaft and secure the center bearing.

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



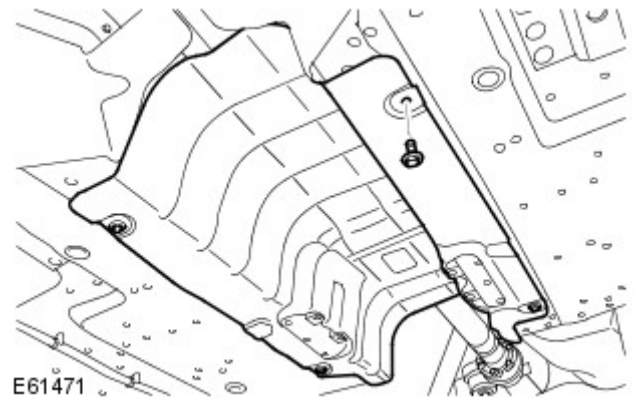
174. Attach the driveshaft to the transmission flange.

- Tighten the nuts and bolts to 110 Nm (81 lb.ft).



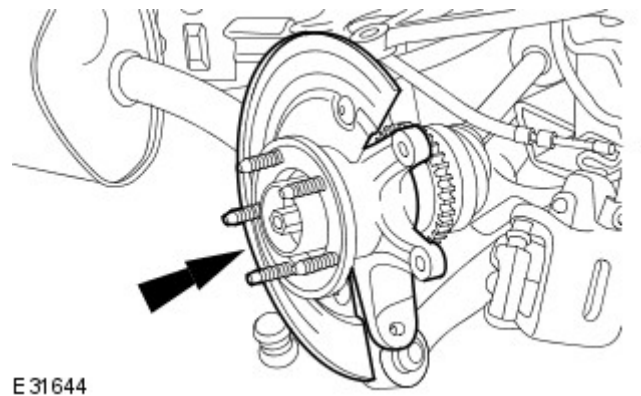
175. Install the center heat shield.

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



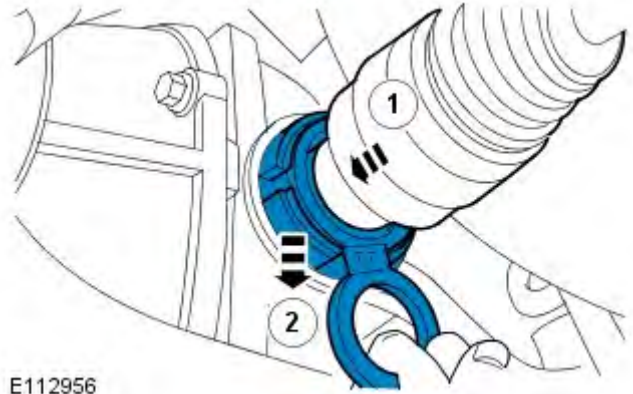
176. Attach the LH halfshaft to the wheel knuckle.

- Lightly tighten the old nut.



177. Using a transmission jack, support the differential case.

- Open the halfshaft oil seal protector.
- Remove and discard the centre disc.
- Lubricate the seal and the bearing running surfaces with clean axle oil.
- Install the halfshaft.
- Pull the oil seal protector clear of the oil seal.
- Break the halfshaft seal protector in to two pieces, by using the pull ring as shown, and remove the halfshaft seal protector.
- Make sure the snap ring is fully engaged and retains the halfshaft.

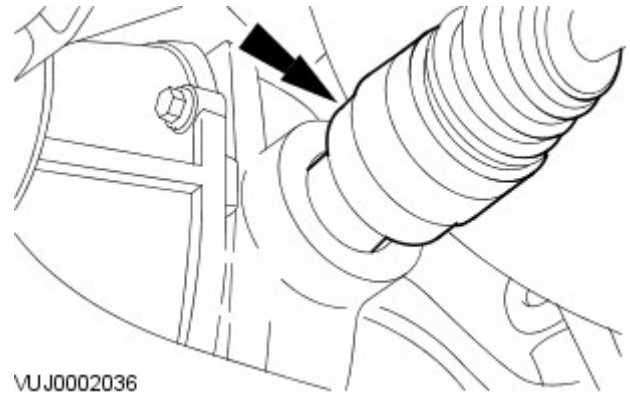


178.  **CAUTION:** To avoid damage to the halfshaft CV joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

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

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

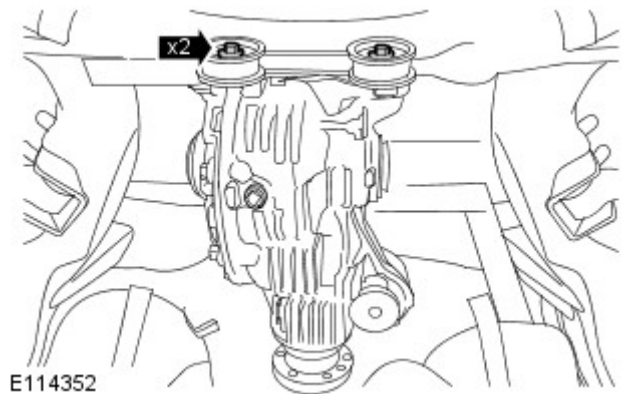
Attach the LH halfshaft.




179.  **NOTE:** Align to the position noted on removal.

Install the rear differential.

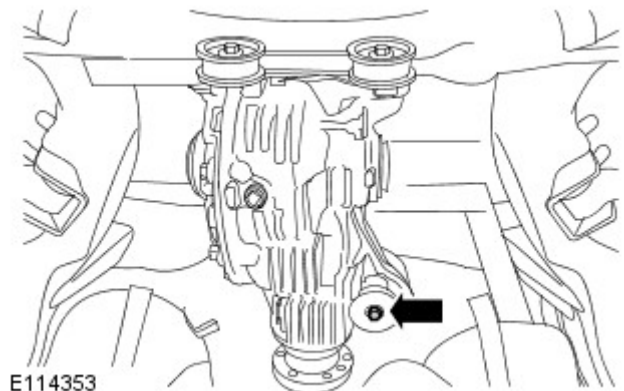
- Install new bolts (C2P14155) Tighten the 14mm bolt to 163 Nm (120 lb.ft).



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

Install the rear differential.

- Tighten the 12mm bolt to 90Nm (66 lb.ft).



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

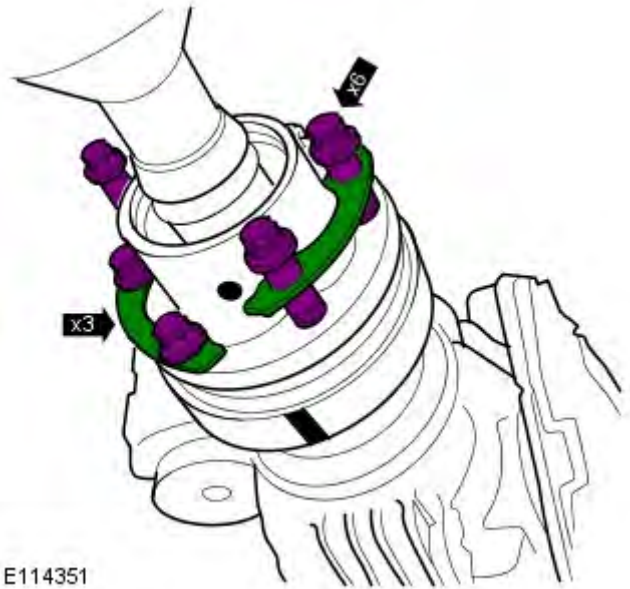
Remove the special tool HTJ1200-02, supporting the axle assembly.

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

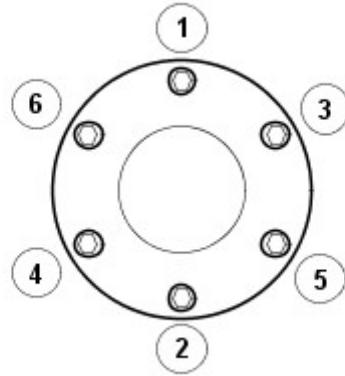
 **NOTE: Some differences in the illustrations may occur but the essential information is correct.**

Secure the driveshaft to the rear axle drive flange.

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

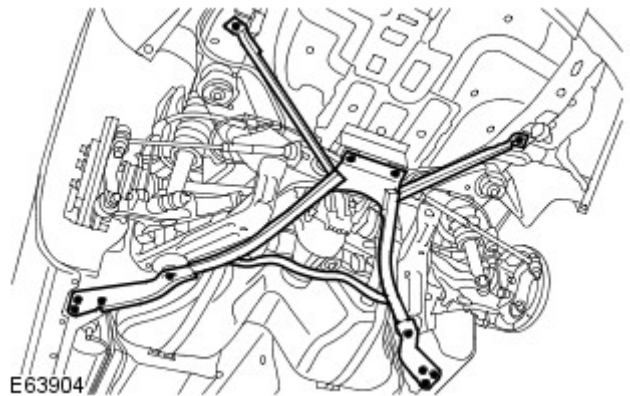


183. Tighten the bolts in the sequence shown to 73 Nm (33 lb.ft).



184. With assistance, install the K-frame.


- Remove the 2 bolts.
- Tighten the M10 bolts to 40 Nm (30 lb.ft).
- Tighten the M12 bolts to 133 Nm (98 lb.ft).
- Tighten the sub frame bolts to 60 Nm (44 lb.ft), then a further 240 degrees.



185. Remove the transmission jack.

186. Install the exhaust system refer to TOPIx 309-00.

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

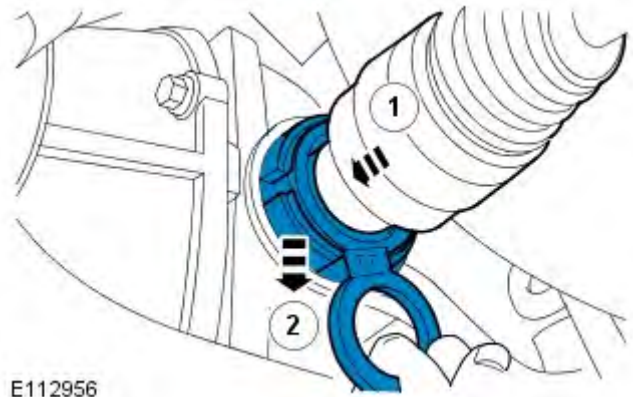
 **CAUTION:** To avoid damage to the halfshaft constant velocity (CV) joints and boots, do not allow the CV joints to exceed 18 degrees of travel.

 **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.

Install the RH halfshaft.

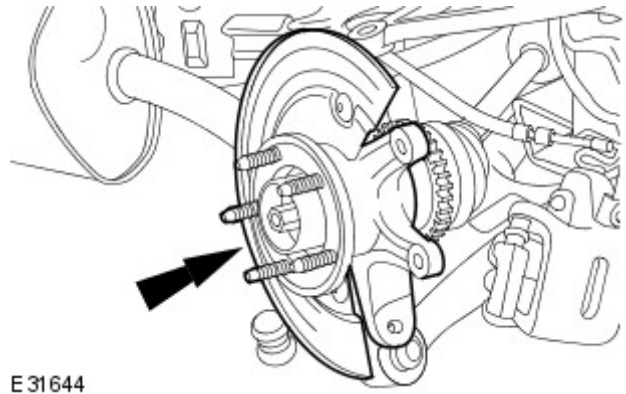
- Open the halfshaft oil seal protector.
- Remove and discard the centre disc.
- Lubricate the seal and the bearing running surfaces with clean axle oil.
- Install the halfshaft.
- Pull the oil seal protector clear of the oil seal.
- Break the halfshaft seal protector in to two pieces, by using the pull ring as shown, and remove the halfshaft seal protector.
- Make sure the snap ring is fully engaged and retains the halfshaft.



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

Attach the RH halfshaft to the wheel knuckle.

- Lightly tighten the old nut.



189.  **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.

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

- Tighten to 34 Nm.

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

Install the lower arm nut and bolt.

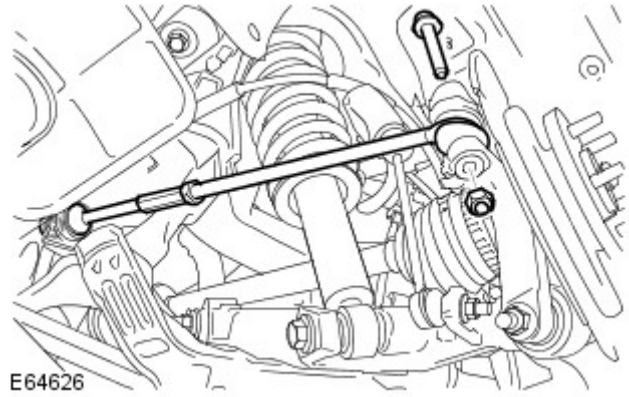
- Tighten the nut and bolt to 150 Nm (110 lb.ft).



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

Connect the toe link.

- Tighten the nut and bolt to 55 Nm (40 lb.ft).



- 192.** Install the RH rear brake disc.

- Secure the clips.

- 193.** Install the RH brake caliper.

- Tighten the bolts to 103 Nm (76 lb.ft).

- 194.** Install the rear wheels and tires.

- 195.** Lower the vehicle.

- 196.** Remove the old halfshaft nuts and install the new ones, tighten to 300 Nm (222 lb.ft).

- Install the wheel trims.

- 197.** Install the wheel trim.