PUBLISHED: 03-NOV-2015
2013.0 XJ RANGE (X351), 204-01

FRONT SUSPENSION [G1272168]

SPECIFICATIONS

Torque Specification

NOTE:

* Ensure new nut and/or bolt is fitted

DESCRIPTION	NM	LB-FT	LB-IN
Steering gear to subframe retaining bolts	100	74	-
* Toe link ball joint to wheel knuckle retaining nut	133	98	-
* Stabilizer bar link to stabilizer bar retaining nut	43	32	-
* Stabilizer bar link to lower arm retaining nut	70	52	-
Stabilizer bar clamp to subframe retaining bolts	55	41	-
* Rear lower arm to wheel knuckle ball joint retaining nut	133	98	-
* Rear lower arm to subframe retaining nut	175	129	-
* Front lower arm to subframe retaining nut	175	129	-
* Front lower arm to rear lower arm retaining nut and bolt	Stage 1 - 60 Stage 2 - 135 degrees	Stage 1 - 44 Stage 2 - 135 degrees	-
* Upper arm ball joint to wheel knuckle retaining nut	90	66	-
* Upper arm to body retaining nuts	70	52	-
Shock absorber and spring assembly upper mounting to body retaining nuts	30	22	-
Shock absorber and spring assembly to lower arm retaining nut and bolt	175	129	-
Shock absorber and spring assembly upper mounting retaining nut	27	20	-
* Wheel hub and bearing assembly to wheel knuckle retaining bolts	90	66	-
Wheel and tire to wheel hub retaining nuts	125	92	-

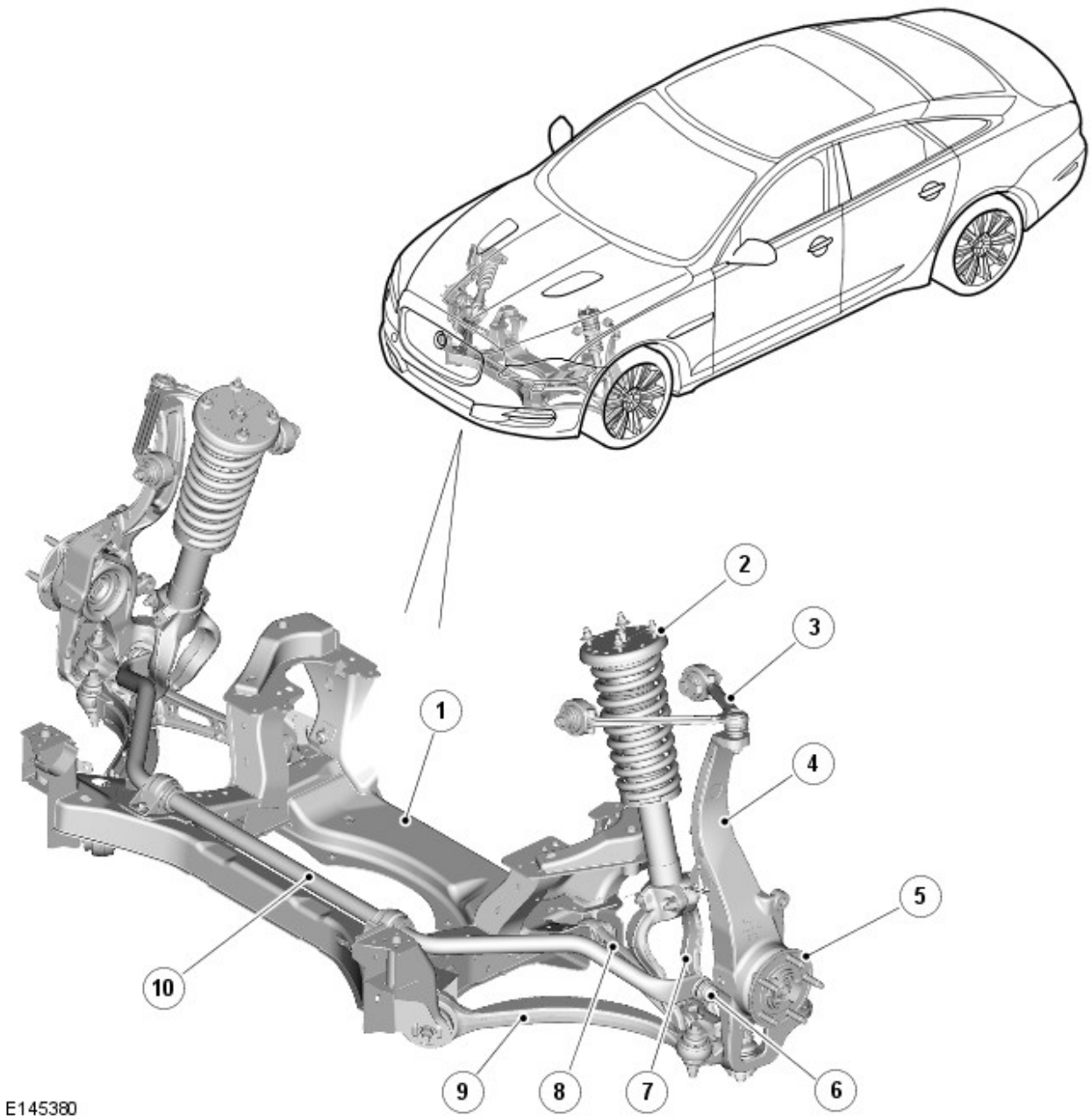
YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxMzo1ODoyOS4wNThaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 24-JUL-2012
2013.0 XJ RANGE (X351), 204-01

FRONT SUSPENSION [G1520003]

DESCRIPTION AND OPERATION

COMPONENT LOCATION - ALL WHEEL DRIVE (AWD)



ITEM	DESCRIPTION

ITEM	DESCRIPTION
1	Front subframe
2	Shock absorber and spring (2 off)
3	Upper control arm (2 off)
4	Wheel knuckle (2 off)
5	Wheel hub (2 off)
6	Stabilizer link (2 off)
7	Yoke (2 off)
8	Lower control arm - rear (2 off)
9	Lower control arm - front (2 off)
10	Stabilizer bar

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxMzo1OTozNS4xOTBaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 29-OCT-2012
2013.0 XJ RANGE (X351), 204-01

FRONT SUSPENSION [G1520005]

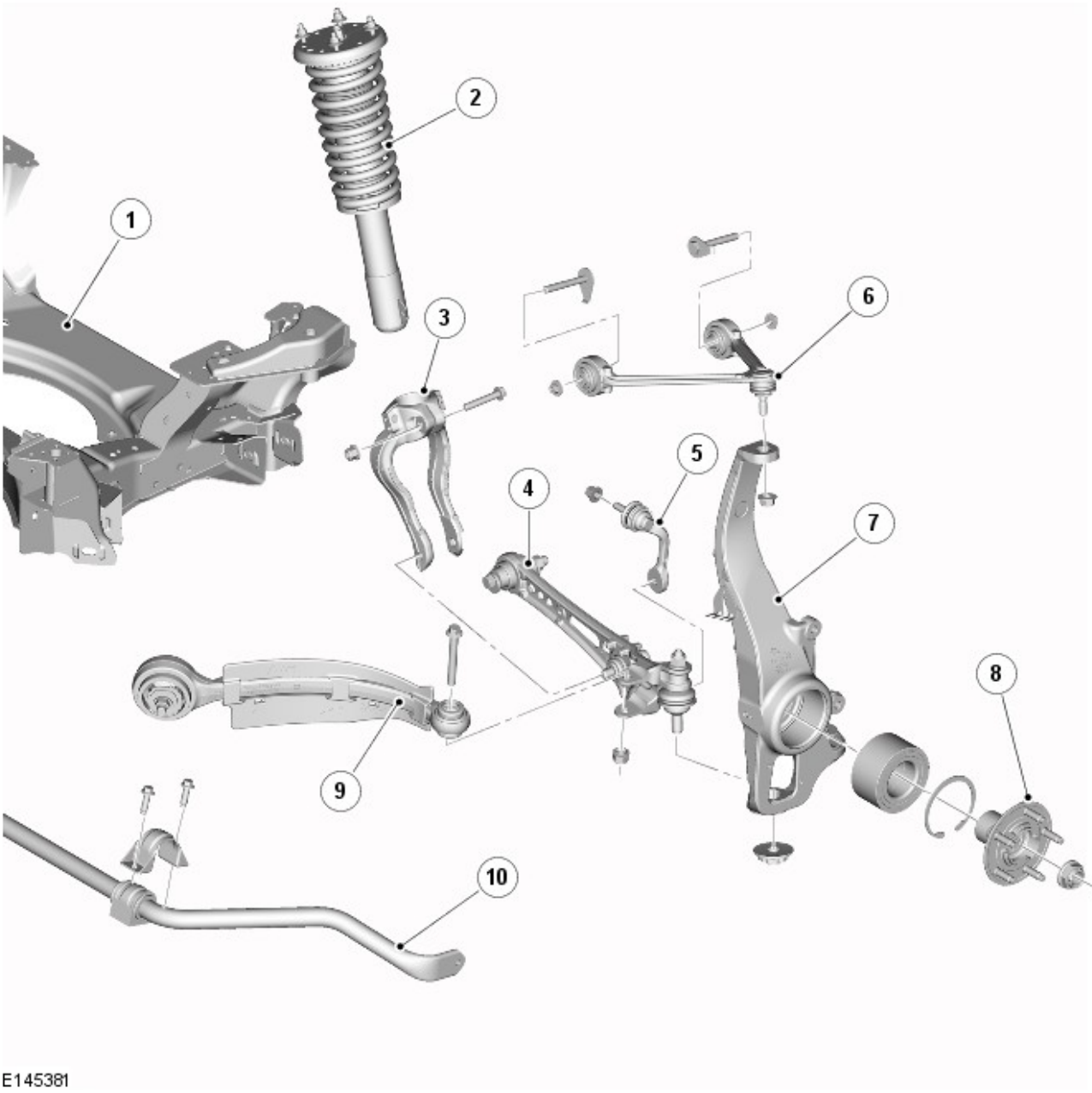
DESCRIPTION AND OPERATION

SYSTEM OPERATION

COMPONENT DESCRIPTION

DESCRIPTION

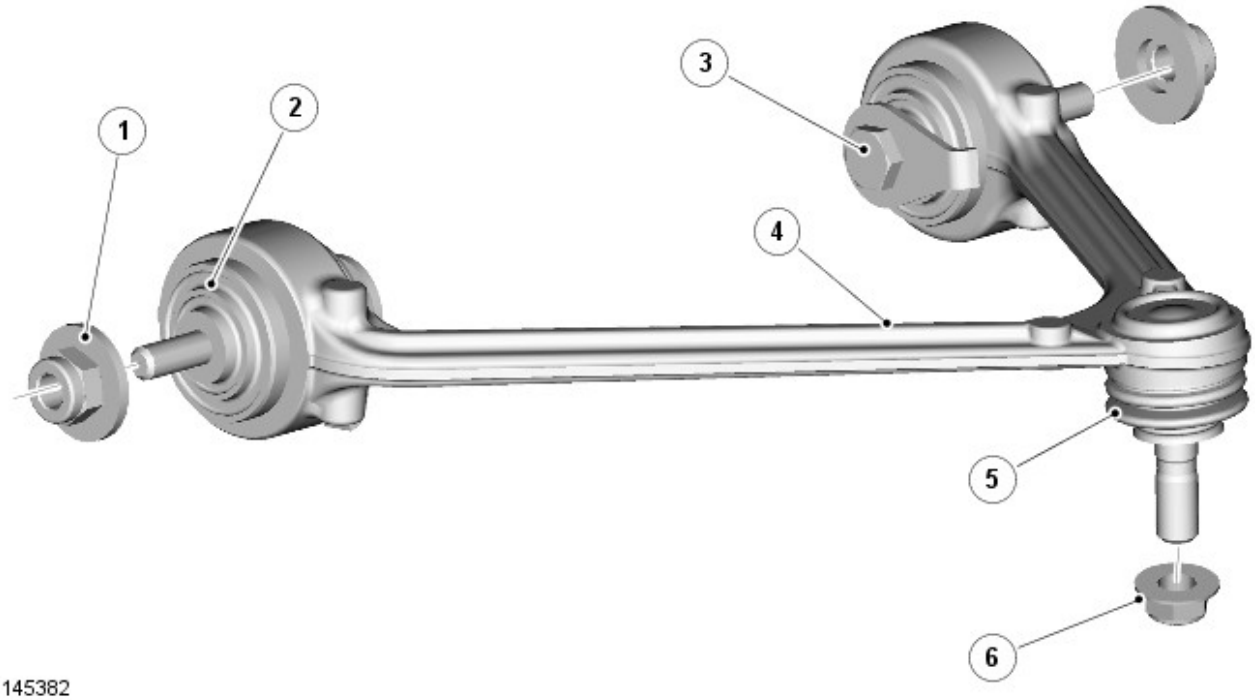
Front Suspension



ITEM	DESCRIPTION
1	Subframe
2	Shock absorber and spring assembly
3	Yoke
4	Lower control arm - rear
5	Stabilizer link
6	Upper control arm

ITEM	DESCRIPTION
7	Wheel knuckle
8	Wheel hub
9	Lower control arm - front
10	Stabilizer bar

Upper Control Arm



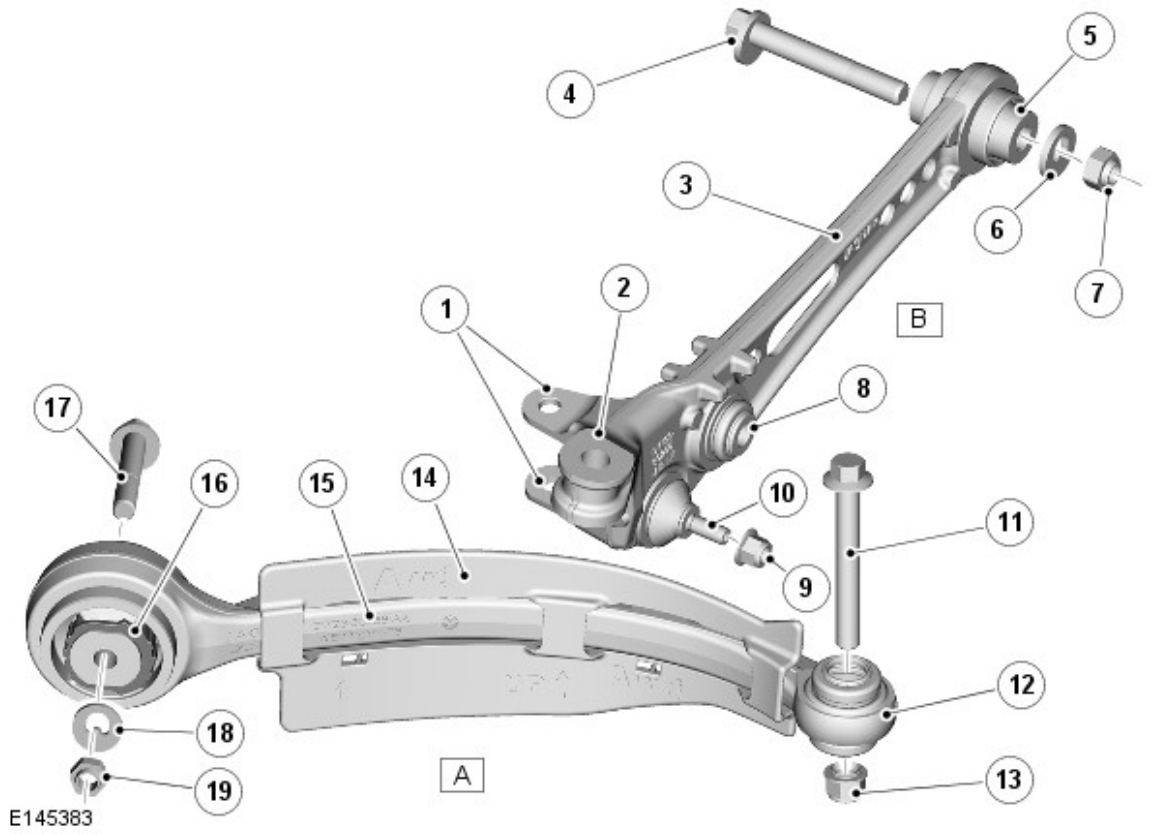
E145382

ITEM	DESCRIPTION
1	Nut and washer M10 (2 off)
2	Bush (2 off)
3	Bolt and retainer M10 x 80 (2 off)
4	Upper control arm
5	Ball joint
6	Nut M12

The forged-aluminum upper control arm is a wishbone design and connects to the vehicle body through two plain bushes, and links to the swan neck wheel knuckle by an integral ball joint.

The upper control arm is inclined to provide anti-dive characteristics under heavy braking, while also controlling geometry for vehicle straight-line stability.

Lower Control Arms



ITEM	DESCRIPTION
A	Lower control arm - Front
B	Lower control arm - Rear
1	Front lower control arm mounting
2	Wheel knuckle ball joint mounting
3	Lower control arm - rear
4	Eccentric bolt M14 x 96
5	Bush - mates with subframe
6	Eccentric washer

ITEM	DESCRIPTION
7	Nut M14
8	Ball joint - mates with shock absorber yoke
9	Nut M10
10	Ball joint - mates with stabilizer link
11	Bolt M12 x 90
12	Nut M12
13	Ball joint - mates with rear lower control arm
14	Brake caliper cooling duct
15	Lower control arm - front
16	Bush - mates with subframe
17	Eccentric bolt M14 x 102
18	Eccentric washer
19	Nut M14

The forged aluminum lower control arms are of the wishbone design; the arms separate to allow for optimum bush tuning.

Lower Control Arm Rear

The rear control arm is fitted with a bush at its inner end which locates between brackets on the subframe. The arm is secured with an eccentric bolt which provides the lateral adjustment of the suspension camber geometry.

The outer end of the control arm has a tapered hole which locates on a ball joint fitted to the wheel knuckle.

An integral clevis bracket on the forward face of the lateral control arm allows for the attachment of the forward control arm.

A ball joint is fitted below the clevis bracket to provide for the attachment of the stabilizer bar link.

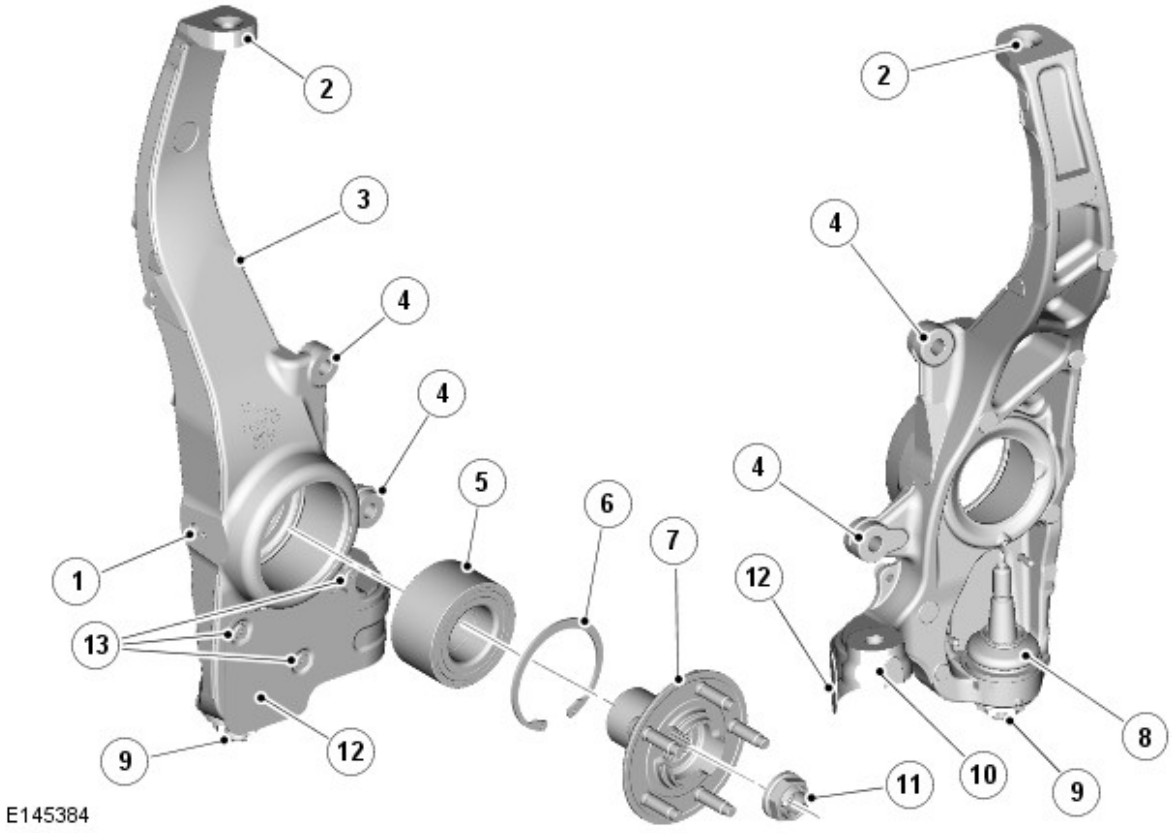
A cross-axis joint is fitted to a cross-hole in the control arm to provide the location for the clevis attachment of the yoke for the mounting of the spring and damper assembly.

Lower Control Arm Front

The front control arm is fitted with a fluid-block rubber bush at its inner end which locates between brackets on the subframe. The arm is secured with an eccentric bolt which provides adjustment of the castor and camber geometry.

The outer end of the control arm is fitted with a cross-axis joint and locates in the integral clevis bracket on the lateral control arm.

Wheel Knuckle



ITEM	DESCRIPTION
1	Anti-lock Brake System (ABS) wheel speed sensor location
2	Upper control arm mounting hole
3	Wheel knuckle
4	Brake caliper mounting holes
5	Wheel bearing
6	Circlip
7	Hub assembly
8	Ball joint
9	Ball joint nut
10	Steering gear tie-rod end mounting hole

ITEM	DESCRIPTION
11	Nut - halfshaft
12	Brake disc shield
13	Rivets for brake disc shield mounting

The cast aluminum wheel knuckle is a swan neck design and attaches to the upper control arm and rear lower control arm.

The rear lower control arm locates on a non serviceable ball-joint integral with the wheel knuckle.

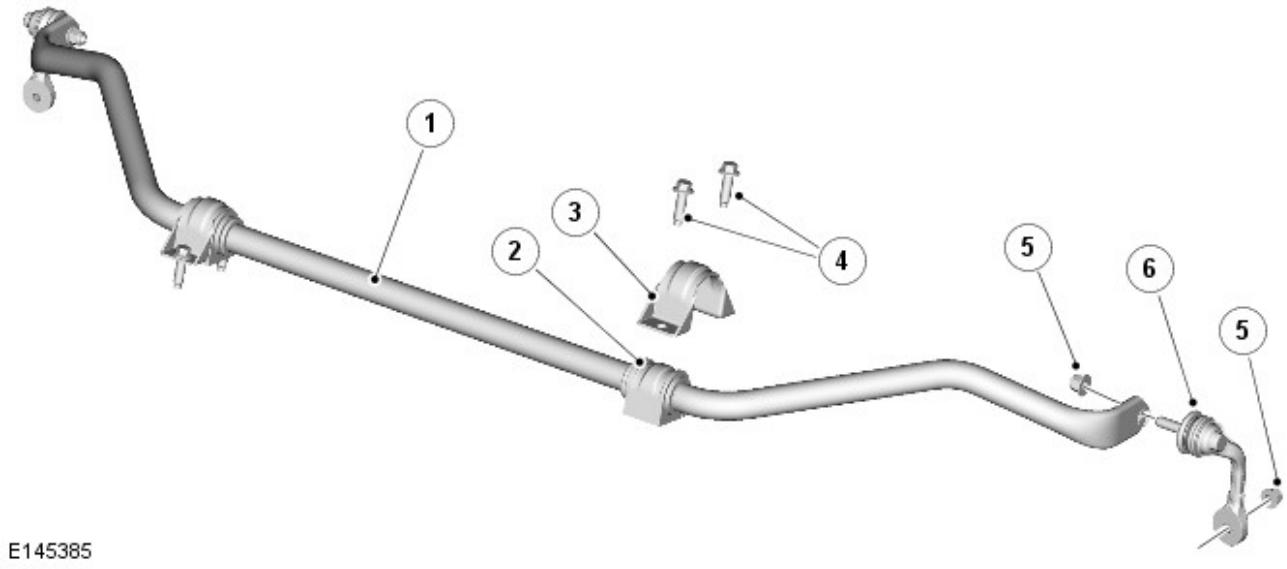
The lower boss on the rear of the knuckle provides for the attachment of the steering gear tie-rod ball joint.

A wheel bearing is pressed into the wheel knuckle and is secured with a circlip. The wheel hub assembly is pressed into the bearing.

The wheel knuckle also provides the mounting locations for the:

- Wheel hub and bearing assembly
- The wheel speed sensor (integral to the wheel hub and bearing assembly)
- Brake caliper and disc shield.

Stabilizer Bar



ITEM	DESCRIPTION

ITEM	DESCRIPTION
1	Stabilizer bar
2	Rubber bush (2 off)
3	Mounting bracket (2 off)
4	Bolt M10 x 30 (4 off)
5	Nut M10 (4 off)
6	Stabilizer link (2 off)

The tubular stabilizer bar helps to control the roll rate of the vehicle. The stabilizer bar on the 3.0L V6 S/C Petrol All Wheel Drive (AWD) is 30.5 mm diameter.

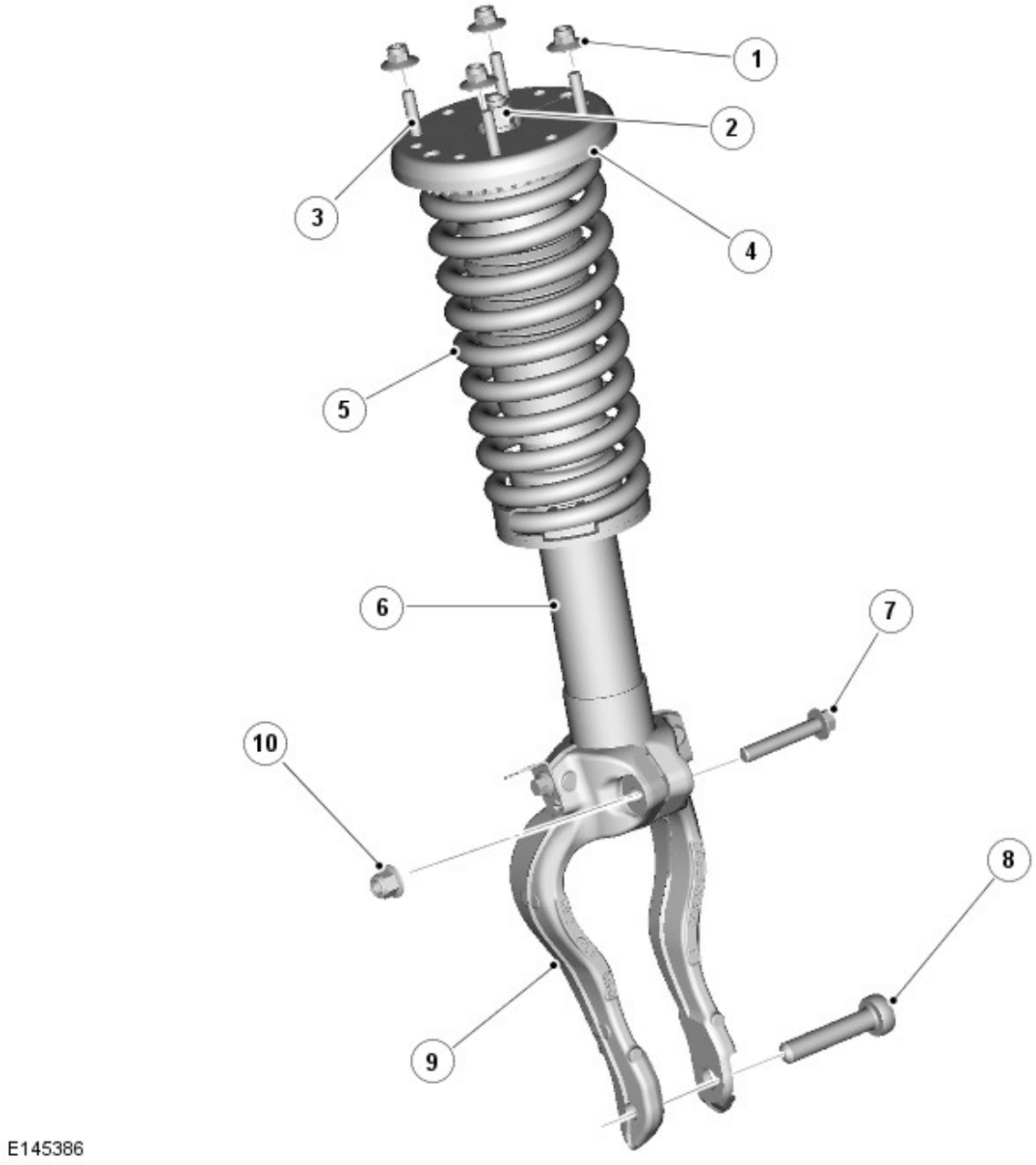
The stabilizer bar is attached to the front of the subframe with bushes and mounting brackets. The pressed steel mounting brackets locate over the bushes and are attached to the cross member with bolts screwed into threaded locations in the subframe. The stabilizer bar has collars crimped into the bar at the inside edges of the bushes. The collars prevent sideways movement of the stabilizer bar.

Each end of the stabilizer bar curves rearward to attach to a ball joint on each stabilizer link. Each stabilizer link is secured to a ball joint in the rear lower control arm and secured with a flanged nut. The links allow the stabilizer bar to move with the wheel travel providing maximum effectiveness.

Shock Absorber and Spring Assembly

NOTE:

Left shock absorber and spring assembly shown, right installation similar.



ITEM	DESCRIPTION
1	Flanged nut M8 (8 off)
2	Nut M12 - Shock absorber piston rod (2 off)
3	Stud M8 (8 off)
4	Top mount plate and spring isolator (2 off)
5	Coil spring (2 off)
6	Shock absorber (2 off)

ITEM	DESCRIPTION
7	Bolt M10 x 60 (2 off)
8	Bolt M14 x 71 (2 off)
9	Yoke (2 off)
10	Flanged nut M10 (2 off)

The shock absorber and spring assemblies are located between the rear lower control arm and the front suspension top mount. Each spring and damper assembly incorporates:

- An adaptive damping shock absorber, which enables the damping characteristics of the suspension to be electrically adjusted. Refer to: Vehicle Dynamic Suspension (204-05 Vehicle Dynamic Suspension, Description and Operation).
- A conventional coil spring, individually tuned to provide the required characteristics for the different engine variants. The spring rate of the coil spring differs between models and is color coded for identification.

The shock absorber is located in a yoke and is secured by a bolt and nut which clamps the shock absorber in the yoke. The yoke locates on either side of a cross-axis joint in the rear lower control arm and is secured with a bolt which screws into a threaded hole in the yoke. The yoke design allows for the fitment of the halfshaft on the AWD model, allowing the halfshaft to pass through the yoke to be connected to the wheel hub.

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDowMDo1My4yMTdaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 07-DEC-2017
2013.0 XJ RANGE (X351), 204-01

FRONT SUSPENSION

FRONT SHOCK ABSORBER - AWD [G2180708]

REMOVAL AND INSTALLATION

60.30.02	FRONT SHOCK ABSORBER - EACH - RENEW	4WD	0.80	USED WITHINS	+
60.30.01	FRONT SHOCK ABSORBER - BOTH SIDES - RENEW	4WD	1.60	USED WITHINS	+

PART[S]

STEP	PART NAME	QUANTITY
Removal Step 3	Ball joint nut(s) and washer(s)	1
Removal Step 7	Shock absorber mounting retaining nuts	1
Removal Step 10	Shock absorber nut and bolt	1
Removal Step 13	Shock absorber upper mounting nut	1
Removal Step 5	Stabilizer bar link lower nut	1
Removal Step 6	Wheel knuckle nut	1

REMOVAL

CAUTION:

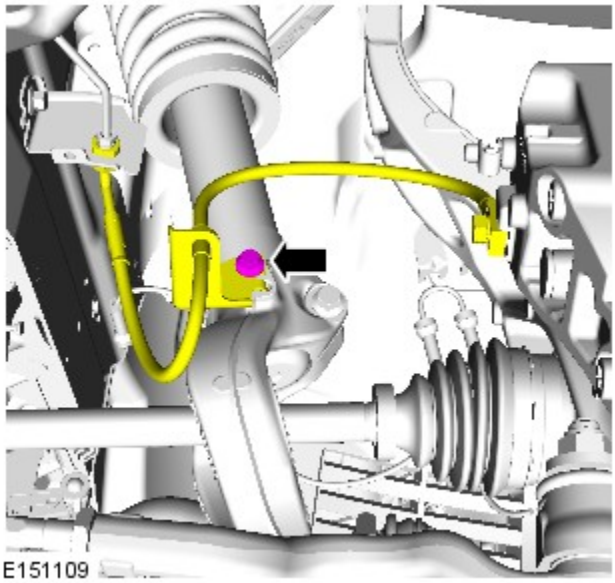
Nuts and bolts must be tightened with vehicle at normal ride height.

NOTES:

- Some variation in the illustrations may occur, but the essential information is always correct.
- Some illustrations may show the transmission removed for clarity.
- RH illustration shown, LH is similar.

1. Raise and support the vehicle using a suitable 2 post lift.
   Refer to: Lifting (100-02 Jacking and Lifting, Description and Operation).

2.



Torque: **20Nm**

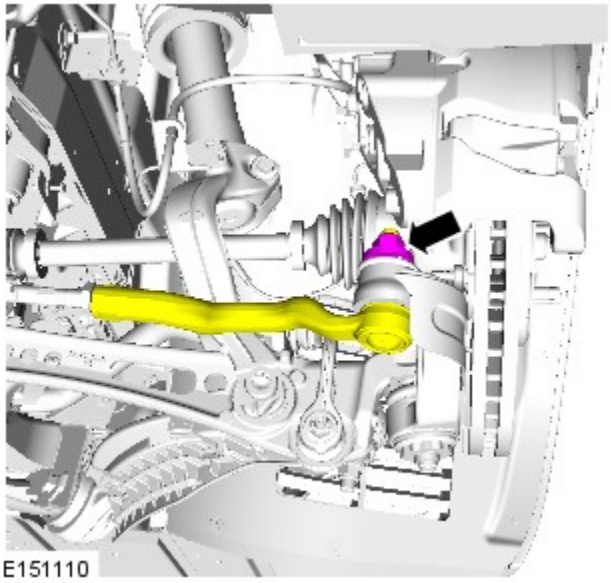
3.

CAUTIONS:

- Care must be taken not to damage the component.
- To prevent damage to the tie rods, use an additional wrench when loosening or tightening the components.

NOTE:

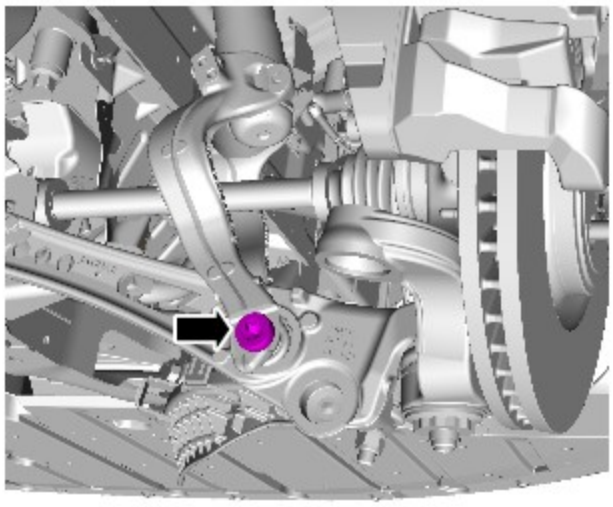
Remove and discard the nut.



Renew Part: *Ball joint nut(s) and washer(s)* *Quantity:* *1*.

Torque: **133Nm**

4.



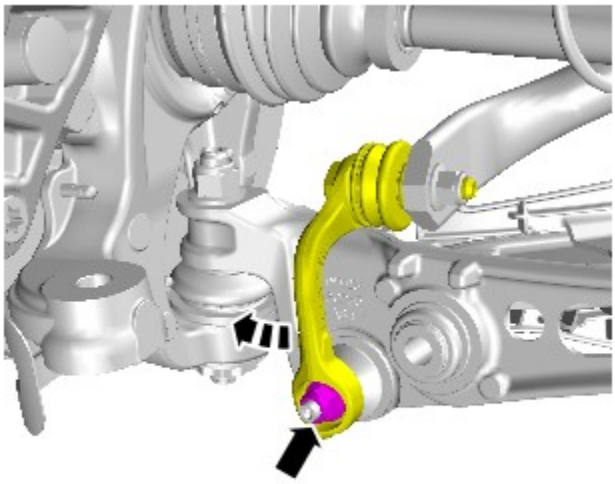
E151112

Torque: **130Nm**

5.

NOTE:

Remove and discard the nut.



E151423

Renew Part: Stabilizer bar link lower nut Quantity: 1.

Torque: **70Nm**

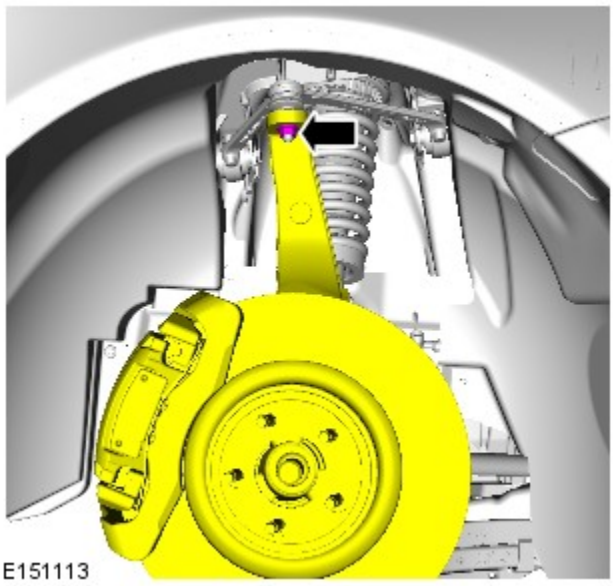
6.

WARNING:

Use a jack to support the hub and lower arm.

CAUTIONS:

- Discard the nut.
- Make sure that no load is placed on the brake hose.



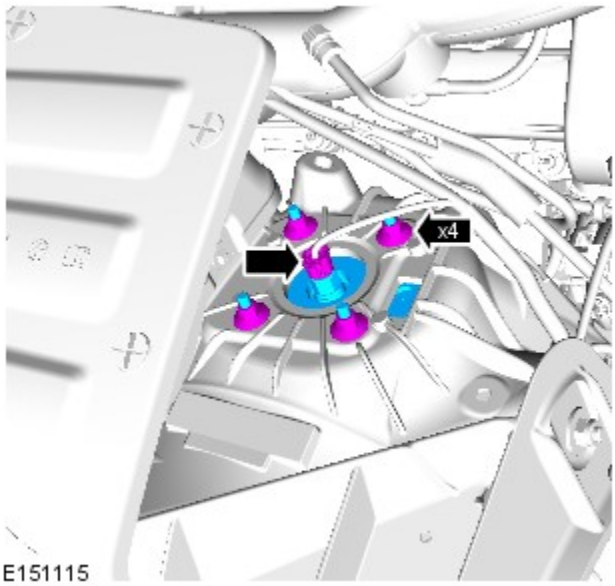
Renew Part: Wheel knuckle nut *Quantity:* 1.

Torque: **90Nm**

7.

CAUTION:

Discard the nuts.

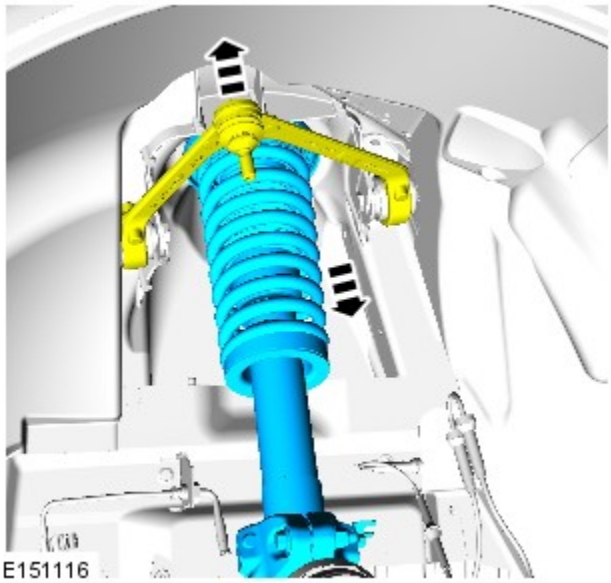


Renew Part: Shock absorber mounting retaining nuts Quantity: 1.

8.

WARNING:

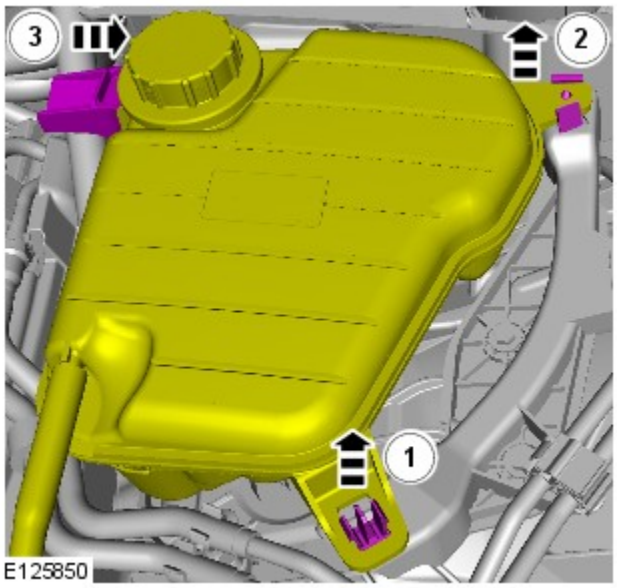
Make sure to support the shock absorber.



9.

NOTE:

LH side only.



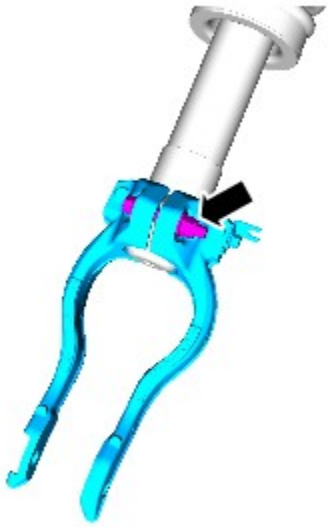
10.

CAUTION:

Discard the nut and bolt.

NOTE:

Using a suitable hammer and drift, remove the component.



E151402

Renew Part: Shock absorber nut and bolt *Quantity:* 1.

Torque: **48Nm**

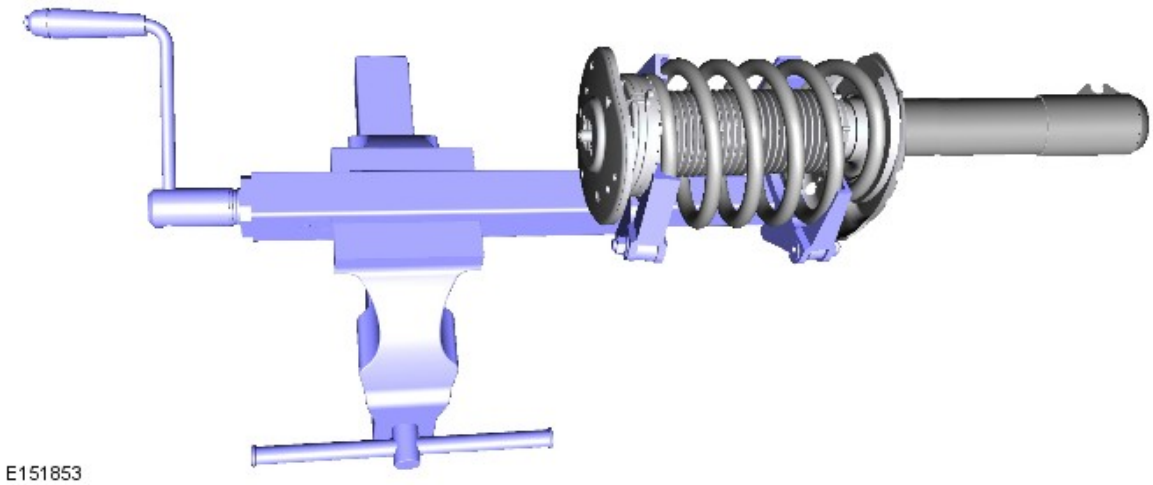
11.

WARNING:

As the spring is under extreme tension care must be taken at all times. Failure to follow these instructions may result in personal injury.

NOTE:

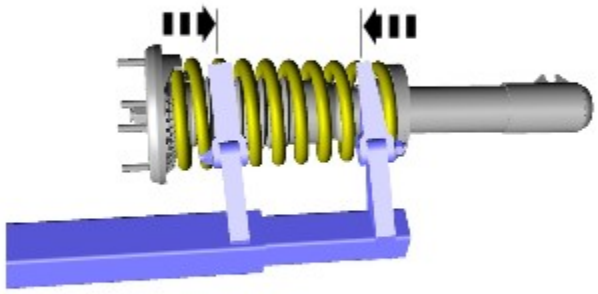
Do not disassemble further if the component is removed for access only.



E151853

Install the shock absorber and spring assembly in the spring compressor.

12.



E151855

Compress the spring.

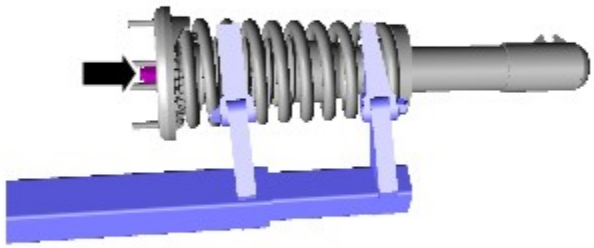
13.

CAUTION:

Mark the components to aid installation.

NOTES:

- Note the fitted position of the component/s prior to removal.
- Remove and discard the nut



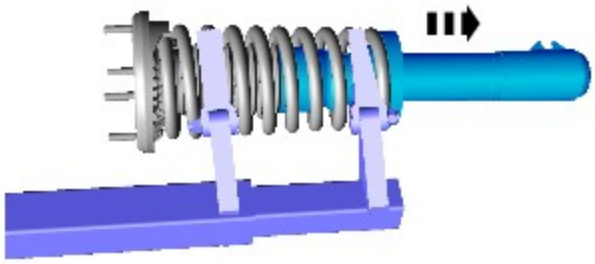
E151854

Release the tension spring.

Renew Part: *Shock absorber upper mounting nut* *Quantity:* *1*.

Torque: **27Nm**

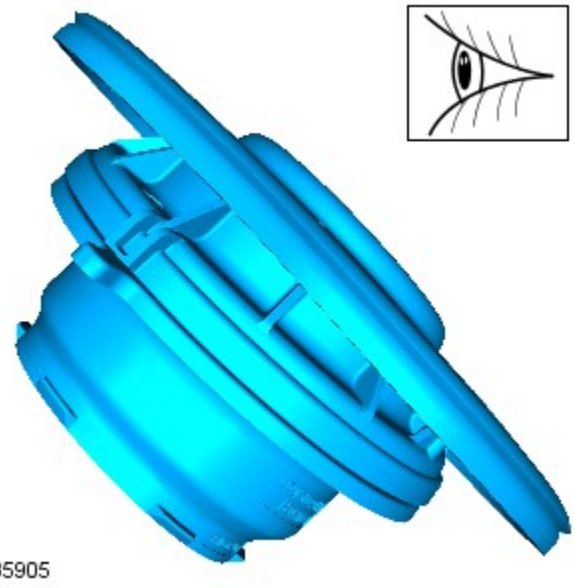
14.



E151856

Remove the shock absorber.

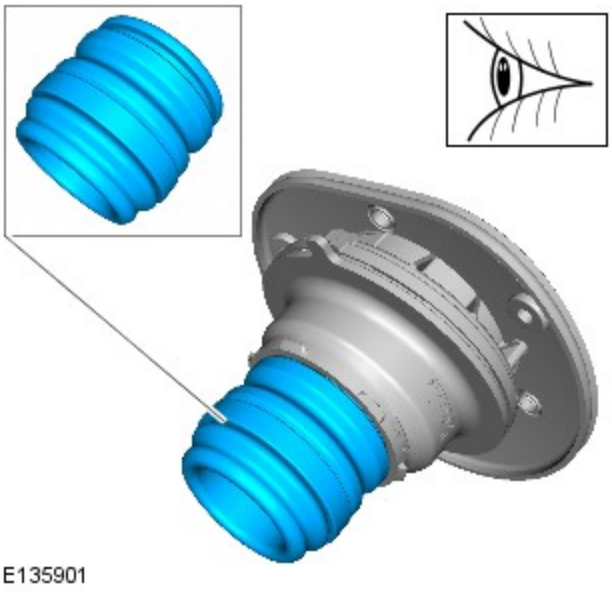
15.



E135905

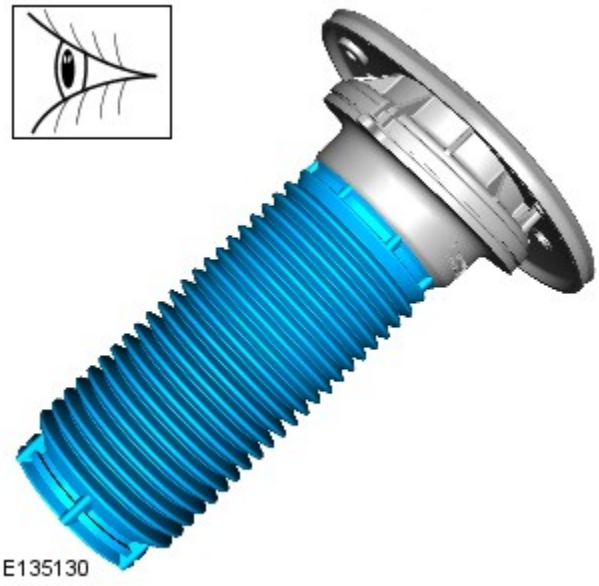
Inspect the components and renew if damaged or worn.

16.



Inspect the components and renew if damaged or worn.

17.



Inspect the components and renew if damaged or worn.

INSTALLATION

1.

CAUTION:

Nuts and bolts must be tightened with vehicle at normal ride height.

To install, reverse the removal procedure.

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDowNjowMi4wNzZaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 13-MAY-2021
2013.0 XJ RANGE (X351), 204-01

FRONT SUSPENSION

FRONT WHEEL BEARING AND WHEEL HUB - AWD [G1574318]

REMOVAL AND INSTALLATION

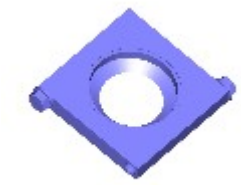
60.25.01	FRONT WHEEL BEARING AND WHEEL HUB - RENEW	3000 CC, AJ V6 (AJ126), SUPERCHARGED, 4WD	0.90	USED WITHINS	+

SPECIAL TOOL(S)


204-250

204-250

Wheel bearing install and removal tool


E117832

204-305

Remover, Wheel Bearing

204-327

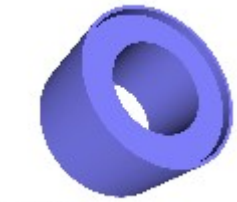
Remover, Ball Joint

204-726

Remover/Installer, Wheel Bearing

205-857

Remover, Halfshaft


E136166

JLR-204-807

Installer, Front Wheel Bearing


E136165

JLR-204-808

Installer, Front Wheel Bearing

E148962

JLR-204-811

Support, Hub

GENERAL EQUIPMENT

EQUIPMENT NAME
Center punch

EQUIPMENT NAME
Hydraulic press
Vise

PART(S)

STEP	PART NAME	QUANTITY
Installation Step 11	Front halfshaft nut	1

REMOVAL

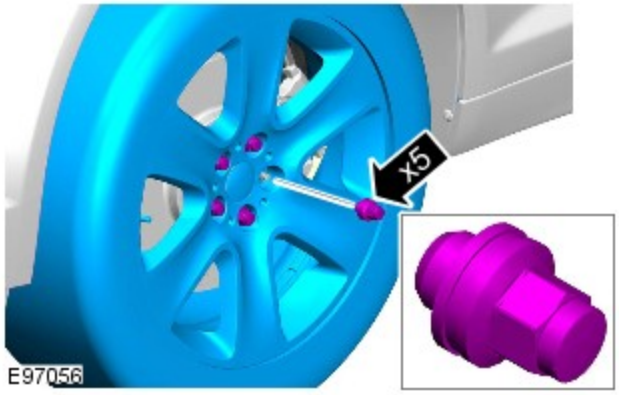
CAUTIONS:

- If a wheel bearing is damaged, both front wheel bearing and wheel hubs assemblies must be renewed as a pair.
- LH illustration shown, RH is similar.

NOTE:

Some variation in the illustrations may occur, but the essential information is always correct.

1.



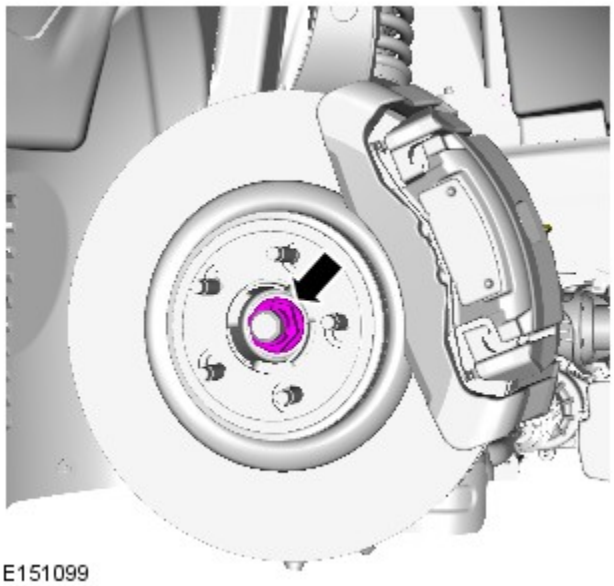
2.

WARNING:

This step requires the aid of another technician.

CAUTION:

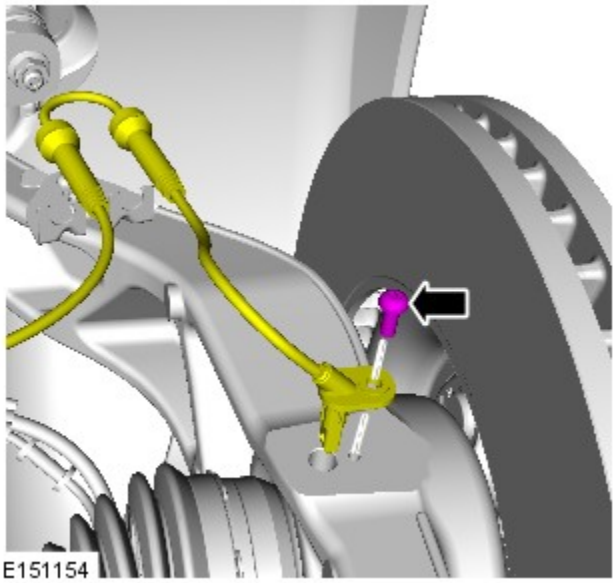
Care must be taken not to damage the component.



E151099

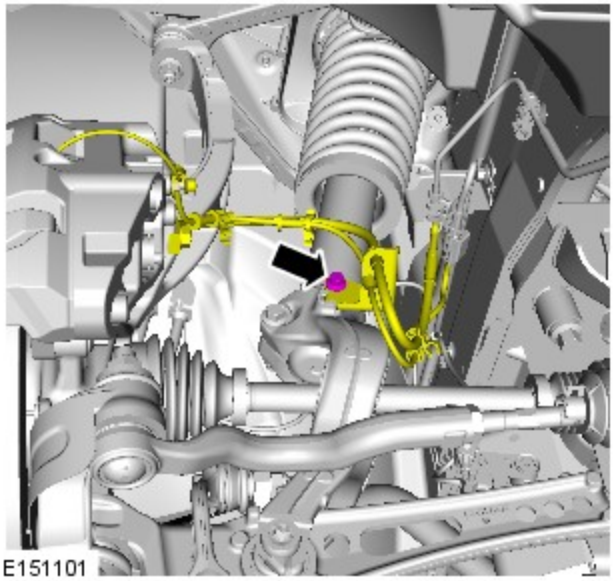
Remove and discard the nut.

3.

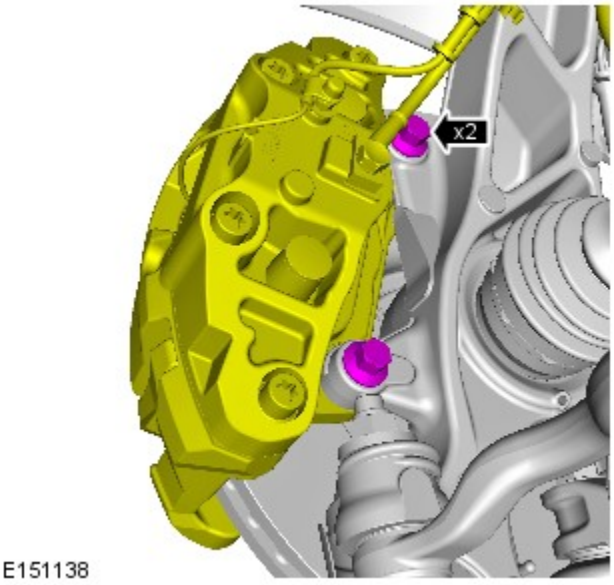


E151154

4.


E151101

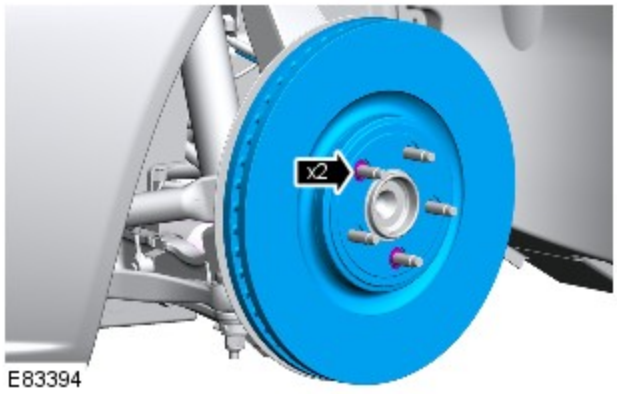
5.



E151138

- Remove and discard the 2 bolts.
- Position the brake caliper to one side.
- Secure with cable ties.

6.



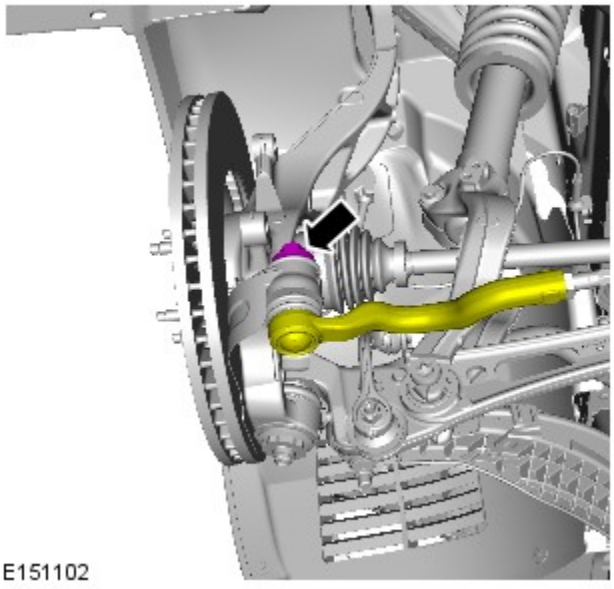
7.

CAUTIONS:

- Care must be taken not to damage the component.
- To prevent damage to the tie rods, use an additional wrench when loosening or tightening the components.

NOTE:

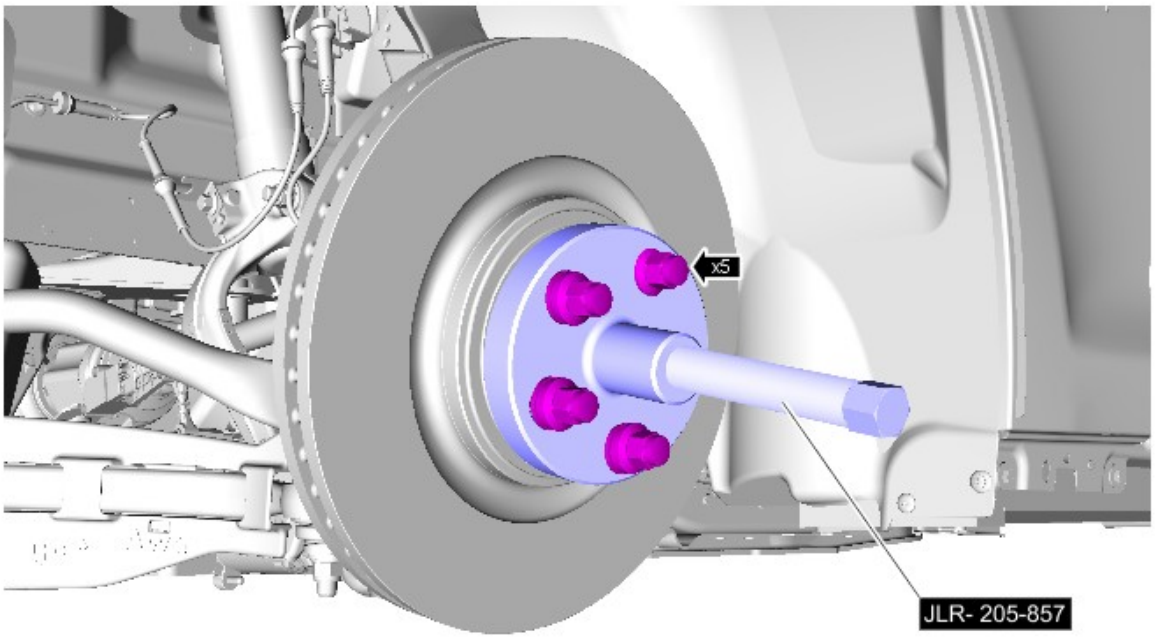
Discard the component.



8.

NOTE:

Using the wheel nuts, secure the special tool.



E152331

Special Tool(s): 205-857

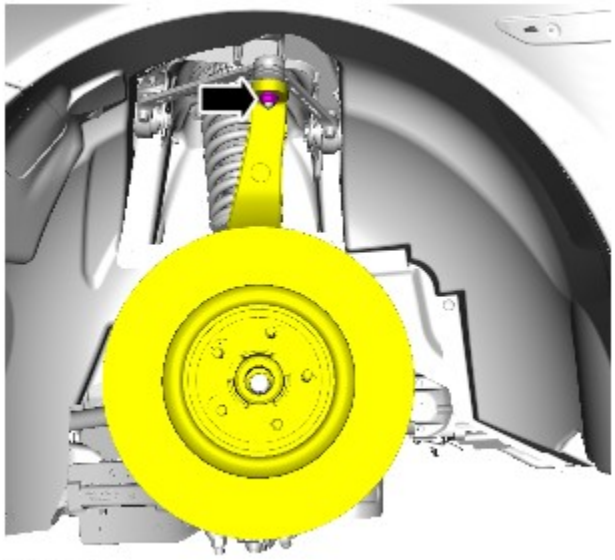
9.

CAUTIONS:

- Make sure the wheel knuckle is supported. Failure to follow these instructions may result in damage to the vehicle.
- Use a jack to support the hub and lower arm.

NOTE:

Remove and discard the nut.



E152332

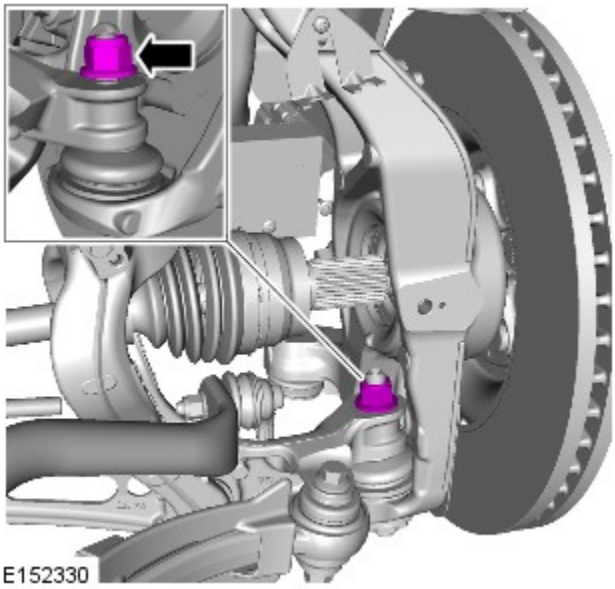
10.

CAUTION:

Prevent the rear lower arm ball joint ball pin hexagon from rotating. Failure to follow this instruction may result in damage to the lower ball joint boot.

NOTE:

Remove and discard the nut.



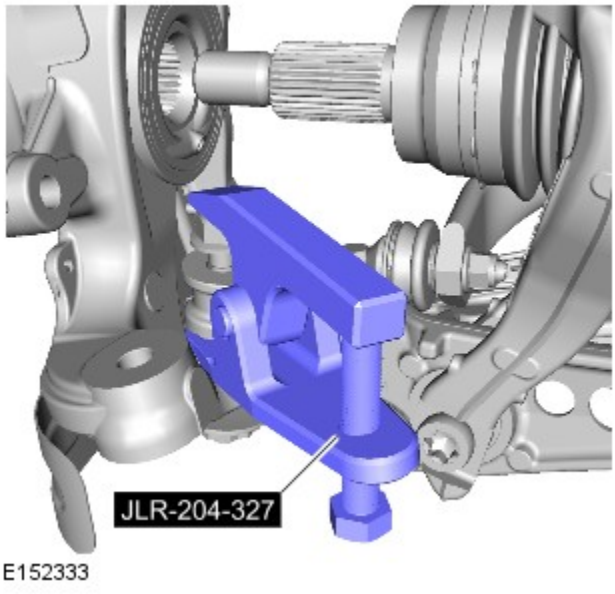
11.

WARNING:

Make sure the special tool is supported while carrying out the operation. Failure to follow this instruction may result in personal injury.

CAUTION:

Make sure the special tool is correctly located and the lower ball joint boot is not damaged while carrying out the operation. Failure to follow this instruction may result in damage to the component.



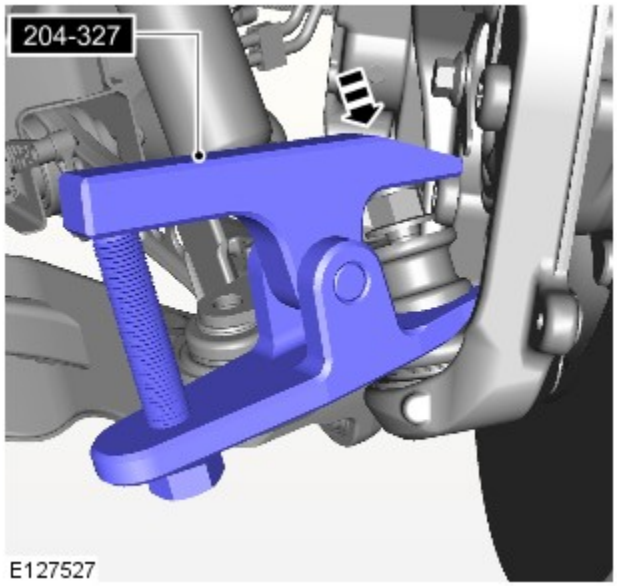
E152333

Special Tool(s): 204-327

12.

NOTE:

Do not do this step if the rear lower arm ball joint released from the wheel knuckle lower pivot in the step above.



- Strike the top surface of the special tool directly above the rear lower arm ball joint at the point indicated using a copper mallet.
  Special Tool(s): 204-327

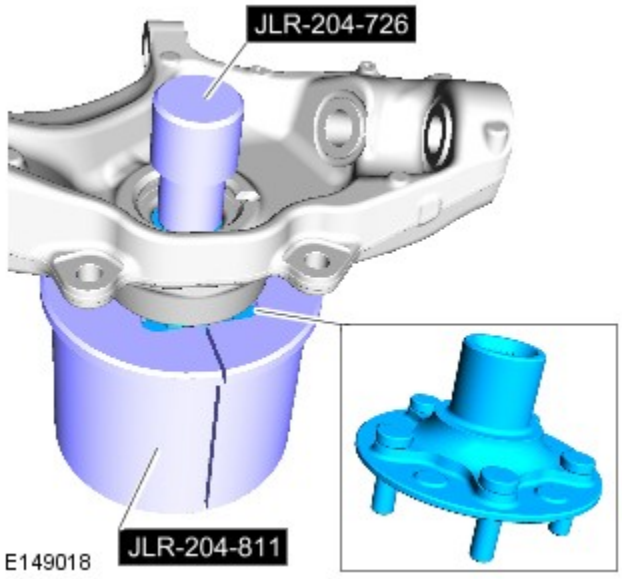
13.

WARNING:

Wear safety goggles.

CAUTION:

Do not attempt to release the wheel hub by hitting it with a hammer directly, loosen the wheel hub retaining bolts partially before applying an even amount of force to the head of each bolts to release the wheel hub from the wheel knuckle. Failure to follow this instruction may cause damage to the component.

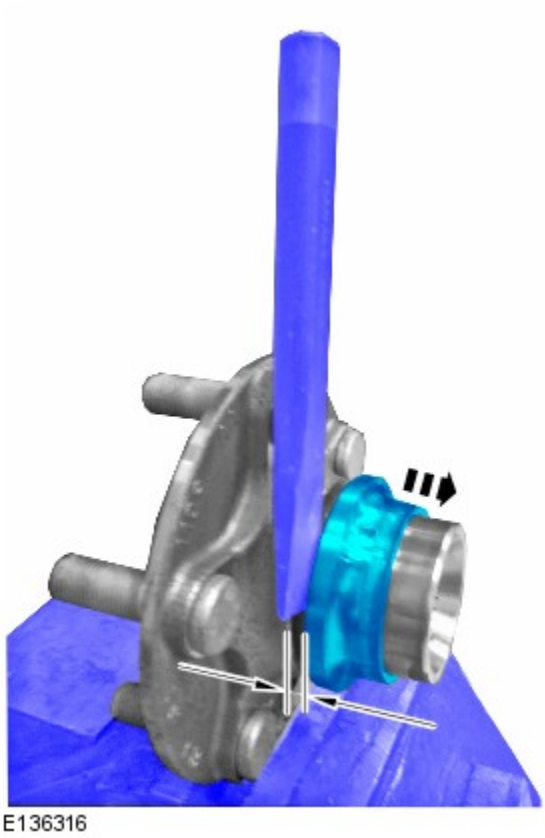


Special Tool(s): 204-726, JLR-204-811

14.

CAUTION:

Care must be taken not to damage the component.



E136316

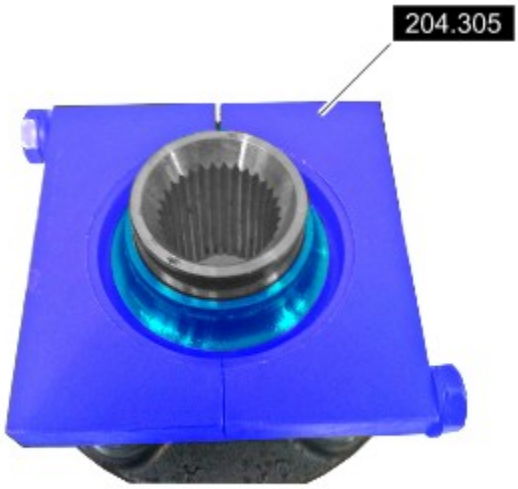
General Equipment: Vise

General Equipment: Center punch

15.

NOTES:

- Using the special tool press the race off the hub.
- Discard the component.



E136317

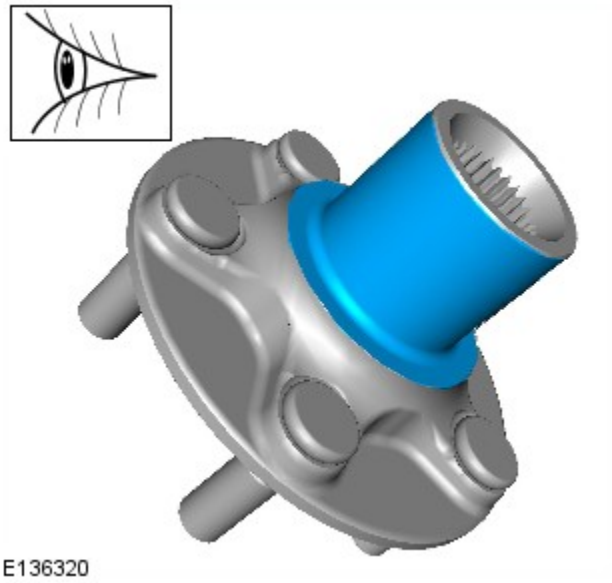
Special Tool(s): 204-305

General Equipment: Hydraulic press

16.

NOTE:

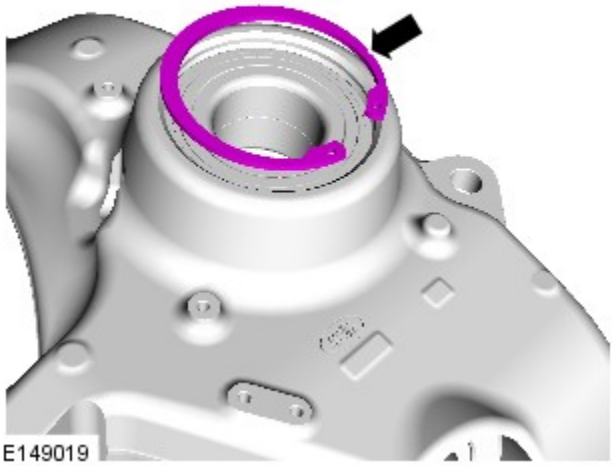
Clean all the mating faces and reusable parts thoroughly and check for damage.



17.

CAUTION:

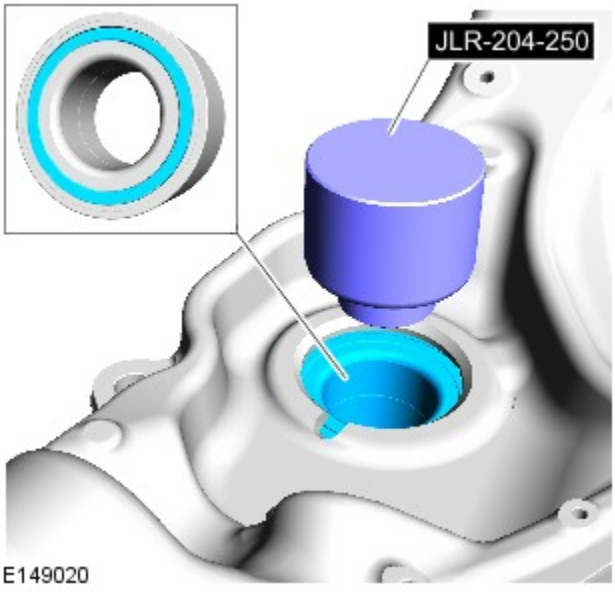
Discard the component.



18.

NOTES:

- Note the fitted position of the component/s prior to removal.
- Discard the component.



Special Tool(s): 204-250

INSTALLATION

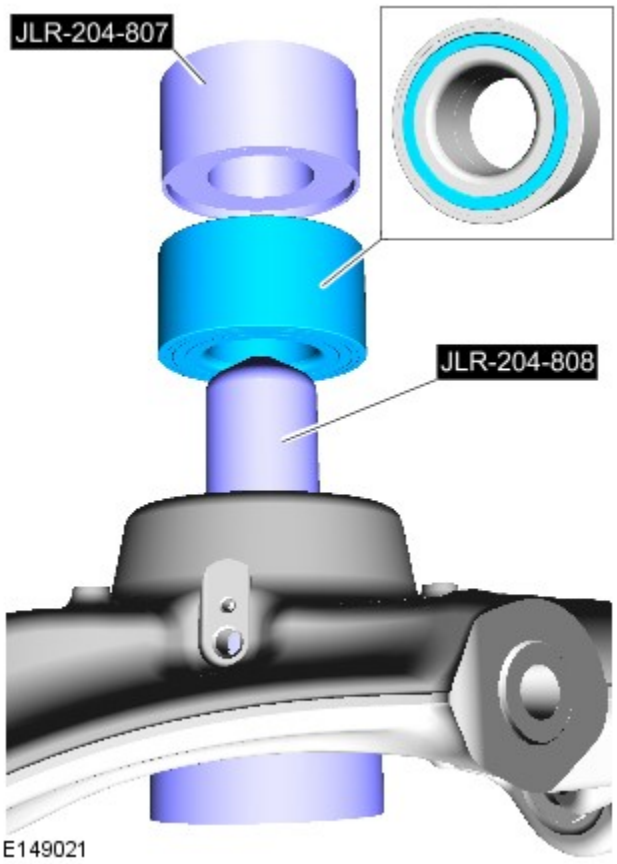
1.

CAUTION:

Make sure that the area around the component is clean and free of foreign material.

NOTE:

Make sure that this component is installed to the noted removal position.

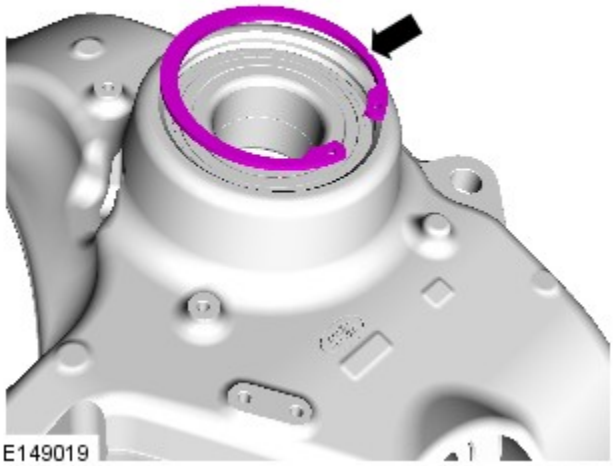


- *Special Tool(s):* JLR-204-807
- *Special Tool(s):* JLR-204-808

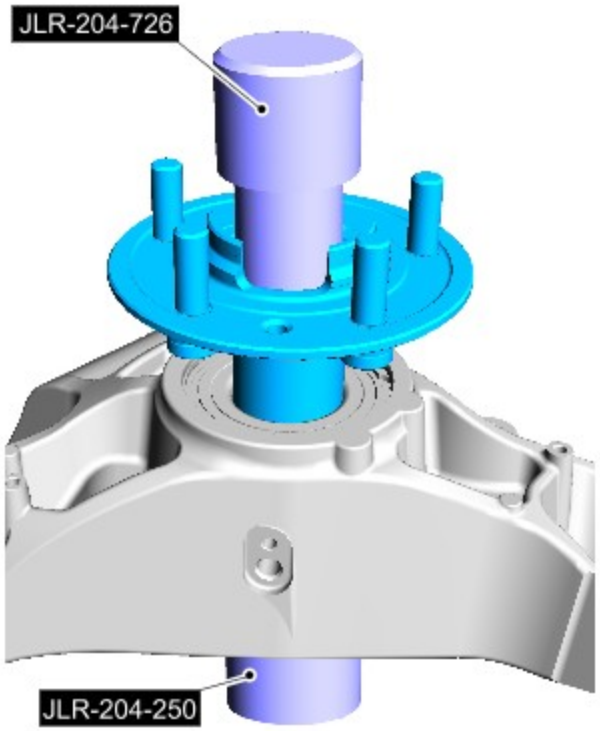
2.

CAUTION:

Make sure that a new component is installed.



3.



E152319

- *Special Tool(s):* 204-726, 204-250

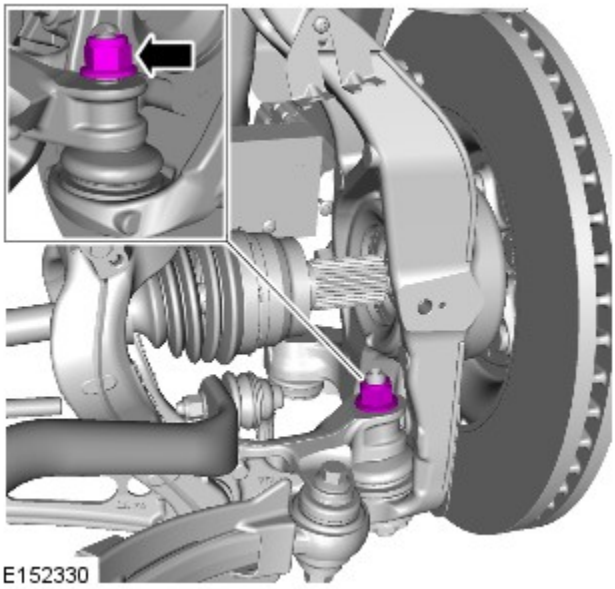
4.

WARNING:

Make sure that a new nut is installed.

CAUTION:

Prevent the rear lower arm ball joint ball pin hexagon from rotating. Failure to follow this instruction may result in damage to the lower ball joint boot.



Torque: **133Nm**

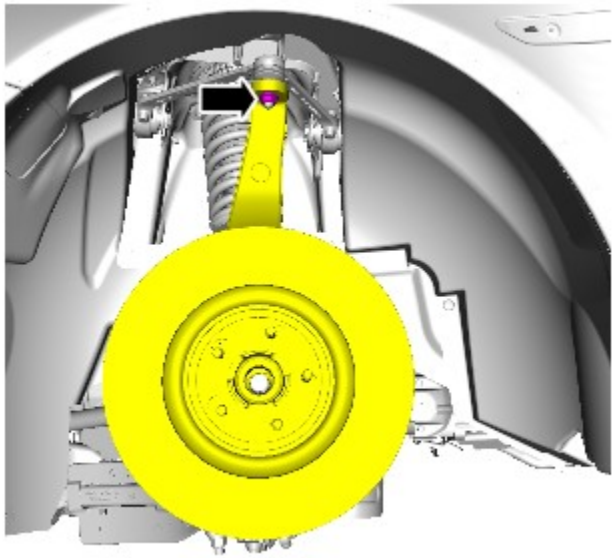
5.

WARNINGS:

- Make sure that a new nut is installed.
- Use a jack to support the hub and lower arm.

CAUTION:

Make sure the wheel knuckle is supported. Failure to follow these instructions may result in damage to the vehicle.



E152332

Torque: **90Nm**

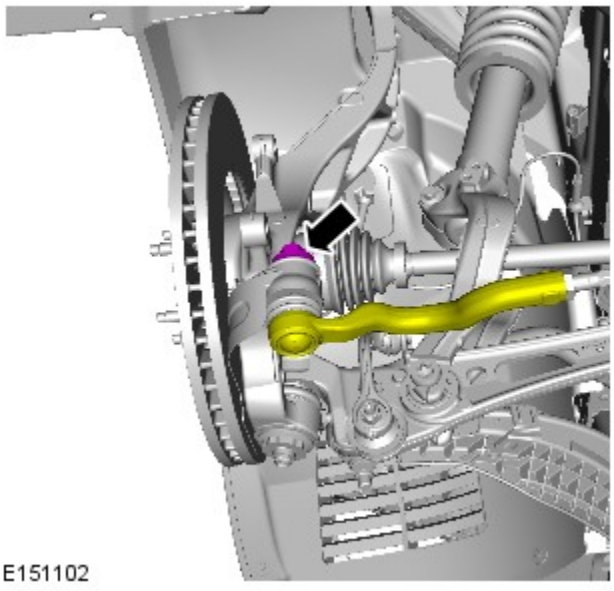
6.

WARNING:

Make sure that a new nut is installed.

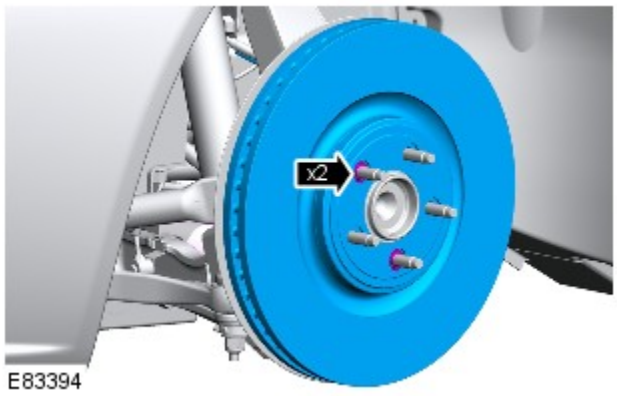
CAUTIONS:

- Care must be taken not to damage the component.
- To prevent damage to the tie rods, use an additional wrench when loosening or tightening the components.

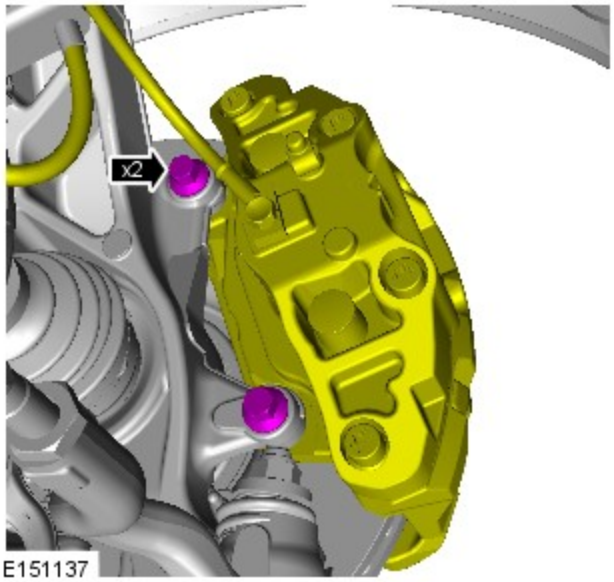


Torque: **133Nm**

7.



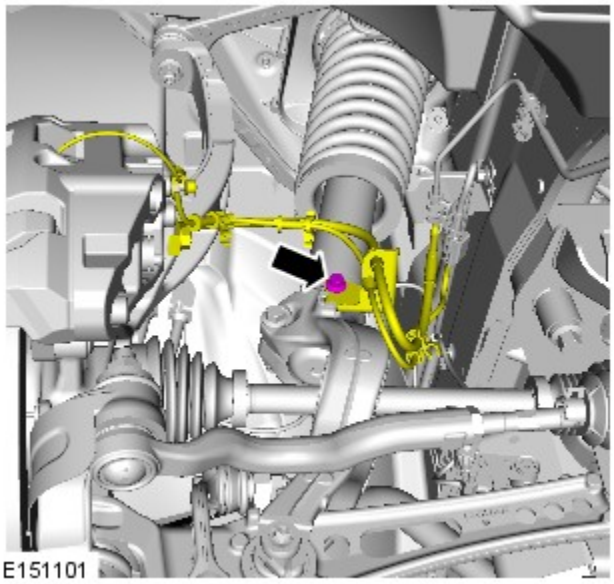
8.



- Install the brake caliper.
- Install and tighten the 2 new bolts.

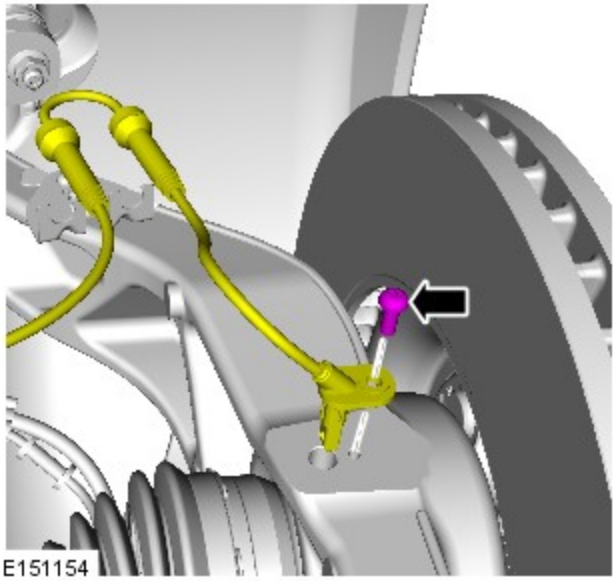
  Torque: **115Nm**

9.



Torque: **20Nm**

10.



Torque: **6Nm**

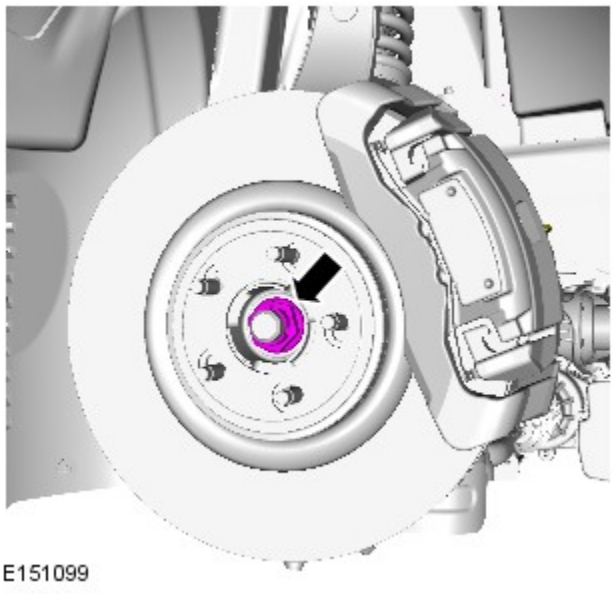
11.

WARNING:

This step requires the aid of another technician.

CAUTION:

Do not use air tools to install the nut. Failure to follow this instruction may result in damage to the component.

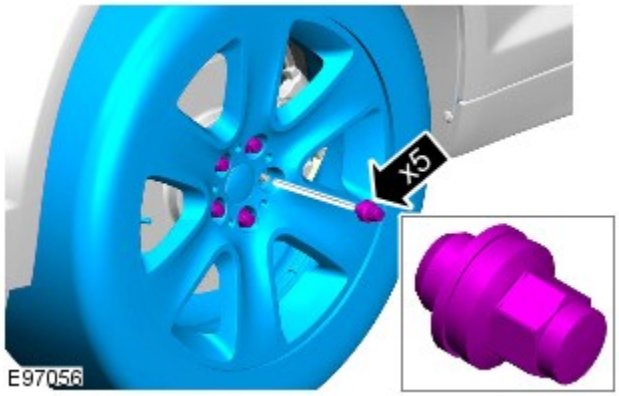


Install and tighten a new nut.

Renew Part: *Front halfshaft nut* *Quantity:* *1*.

Torque: **300Nm**

12.



Torque: **125Nm**

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDowNToxMi4yODZaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 26-OCT-2018
2013.0 XJ RANGE (X351), 204-01

FRONT SUSPENSION

REAR LOWER ARM [G1281641]

REMOVAL AND INSTALLATION

60.35.54	LATERAL LOWER CONTROL ARM - RENEW	ALL DERIVATIVES	0.70	USED WITHINS	+

SPECIAL TOOL(S)

204-327

Remover, Ball Joint

PART(S)

STEP	PART NAME	QUANTITY
Removal Step 9	Front lower control arm nut and bolt	1
Removal Step 14	Rear lower arm to subframe nut and bolt	1
Removal Step 11	Rear lower control arm ball join nut	1

REMOVAL

CAUTIONS:

- The final tightening of the suspension components must be carried out with the vehicle on its wheels.
- LH illustration shown, RH is similar.

NOTE:

Removal steps in this procedure may contain installation details.

1. Raise the vehicle on a 4 post lift.
   Refer to: Lifting (100-02 Jacking and Lifting, Description and Operation).

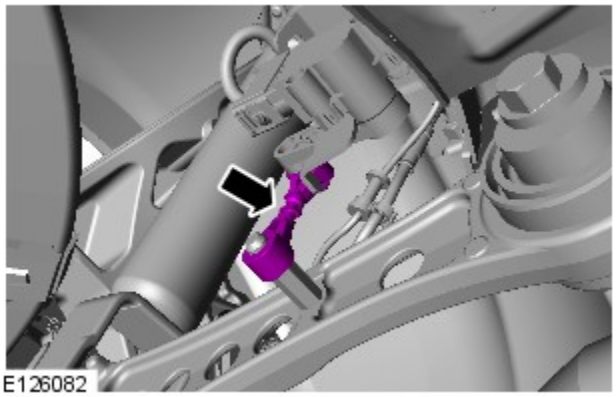
2. Refer to: Engine Undershield (501-02 Front End Body Panels, Removal and Installation).

3. **WARNING:**

   Make sure to support the vehicle with axle stands.

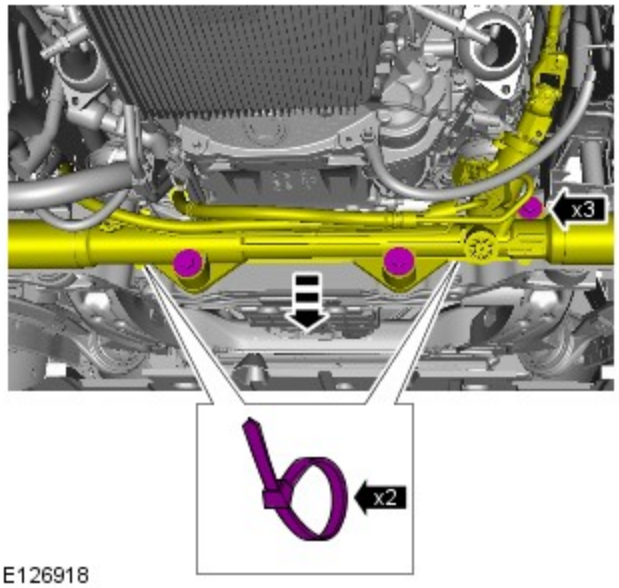
   Raise and support the body.

4. Refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

5. 
   E126082

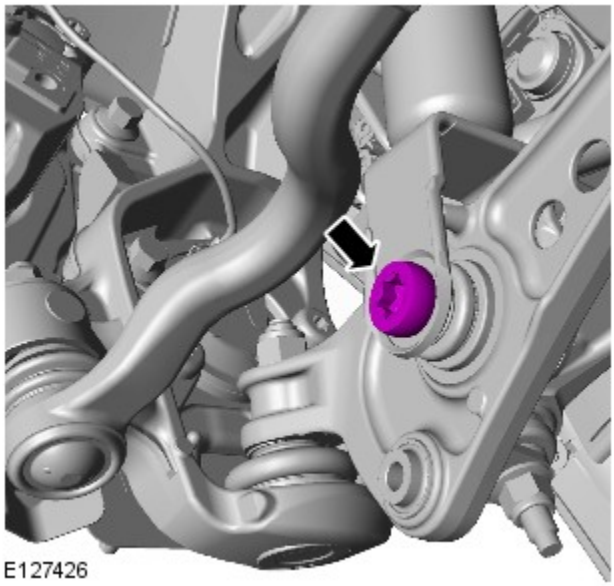
6. Refer to: Front Stabilizer Bar Link (204-01 Front Suspension, Removal and Installation).

7.



Torque: **100Nm**

8.

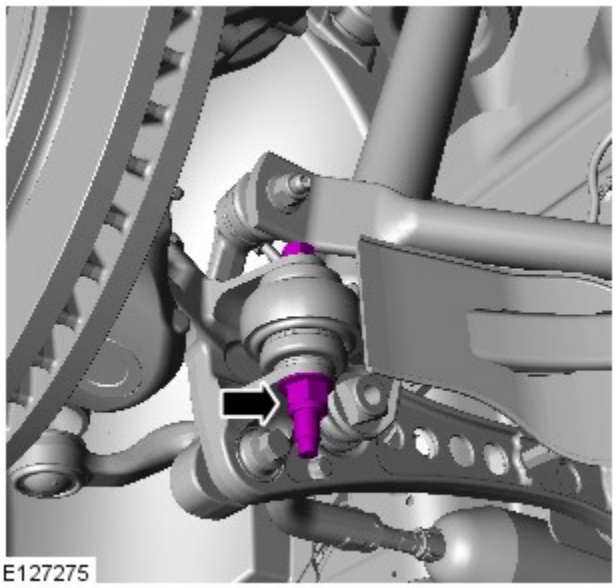


Torque: **175Nm**

9.

NOTE:

Install a new retaining nut and bolt.



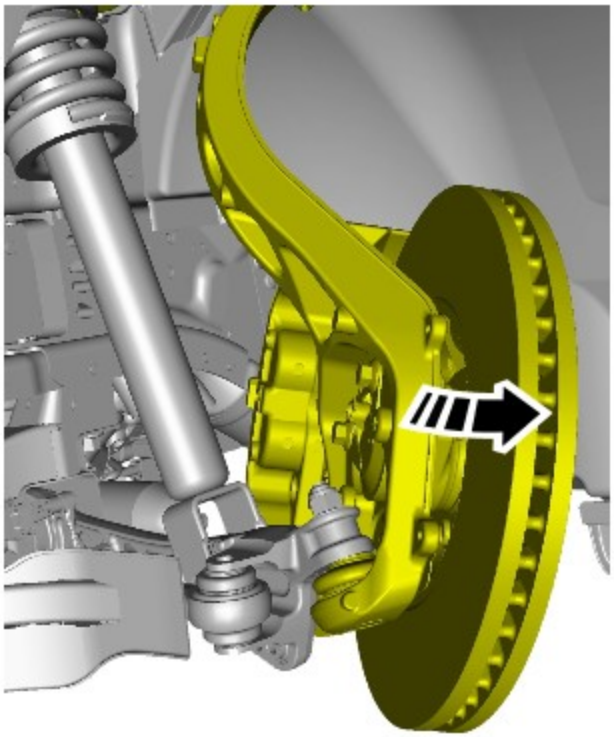
Renew Part: *Front lower control arm nut and bolt* *Quantity:* *1*.

Torque

Stage 1: **60Nm**

Stage 2: **135°**

10.

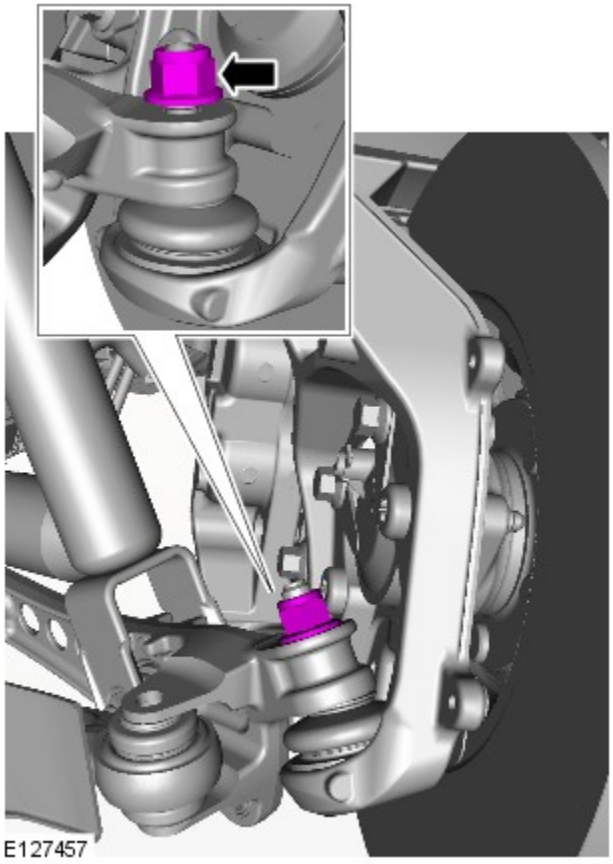


E127461

11.

CAUTION:

Prevent the rear lower arm ball joint ball pin hexagon from rotating. Failure to follow this instruction may result in damage to the lower ball joint boot.



Renew Part: *Rear lower control arm ball join nut* *Quantity:* *1*.

Torque: **133Nm**

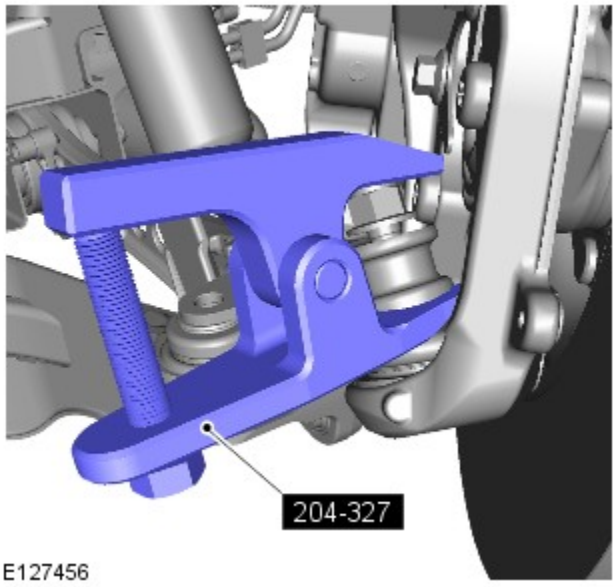
12.

WARNING:

Make sure the special tool is supported while carrying out the operation. Failure to follow this instruction may result in personal injury.

CAUTIONS:

- Make sure the special tool is supported while carrying out the operation. Failure to follow this instruction may result in damage to the special tool.
- Make sure the special tool is correctly located and the lower ball joint boot is not damaged while carrying out the operation. Failure to follow this instruction may result in damage to the component.



Special Tool(s): 204-327

13.

WARNING:

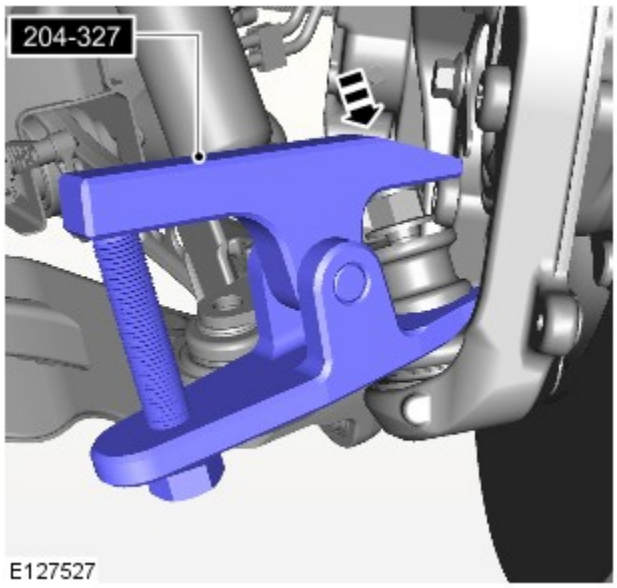
Make sure the special tool is supported while carrying out the operation. Failure to follow this instruction may result in personal injury.

CAUTIONS:

- Make sure the special tool is supported while carrying out the operation. Failure to follow this instruction may result in damage to the special tool.
- Make sure the special tool is correctly located and the lower ball joint boot is not damaged while carrying out the operation. Failure to follow this instruction may result in damage to the component.

NOTE:

Do not carry out this step if the rear lower arm ball joint released from the wheel knuckle lower pivot in the step above.

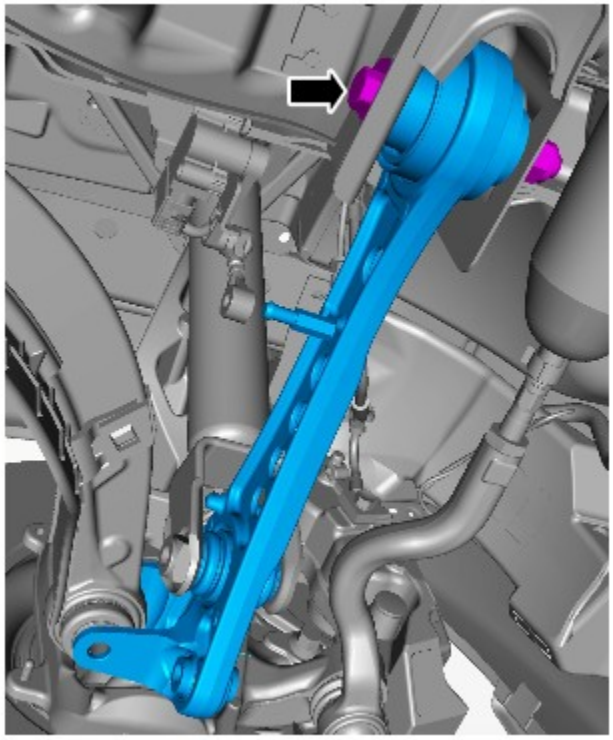


Strike the top surface of the special tool directly above the rear lower arm ball joint at the point indicated using a copper mallet.
Special Tool(s): 204-327

14.

WARNING:

Make sure that a new nut is installed.



E127460

Renew Part: *Rear lower arm to subframe nut and bolt* *Quantity:* *1*.

Torque: **175Nm**

15.

NOTE:

Do not disassemble further if the component is removed for access only.

Torque: **10Nm**

INSTALLATION

1.

WARNING:

Make sure that a new lower arm ball joint nut is installed.

To install, reverse the removal procedure.

2.

NOTE:

Using Jaguar Land Rover approved equipment, check and if necessary adjust the wheel alignment. SRO must be claimed separately.

Refer to: Four Wheel Alignment (204-00 Suspension System - General Information, General Procedures).

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDowMzo1NS42MDIaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 10-AUG-2022
2013.0 XJ RANGE (X351), 204-01

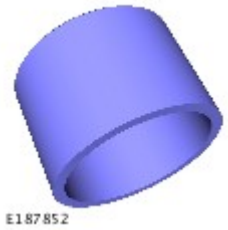
FRONT SUSPENSION

FRONT LOWER ARM BUSH - ALL WHEEL DRIVE [G3266370]

REMOVAL AND INSTALLATION

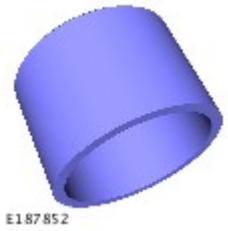
60.35.45	LOWER WISHBONE FRONT BUSHING - ONE SIDE - RENEW	ALL DERIVATIVES	0.40	USED WITHINS	+

SPECIAL TOOL(S)



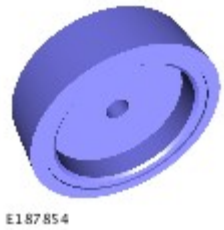
204-300

Bush Remover/Installer



JLR-204-828

Remover/Installer, Lower Arm Bush



JLR-204-830

Remover/Installer, Lower Arm Bush

GENERAL EQUIPMENT

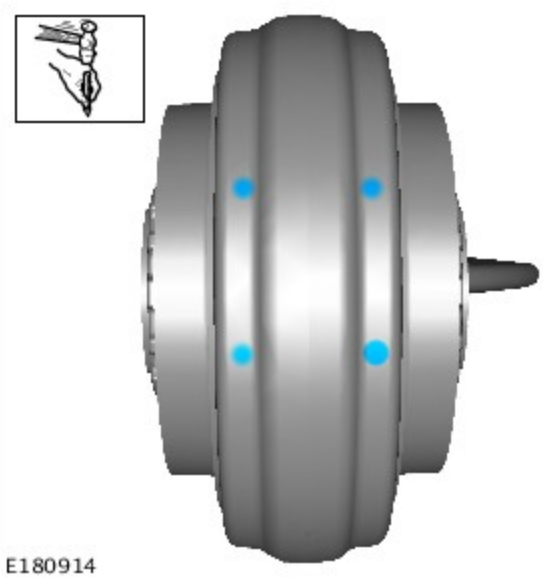
EQUIPMENT NAME
Center punch
Hydraulic press

REMOVAL

NOTE:

Removal and installation of the bush requires the use of a press.

1.



Visually inspect the lower arm for signs of a center punch mark. If four marks are located on the lower arm in the area illustrated, install a new front lower arm.

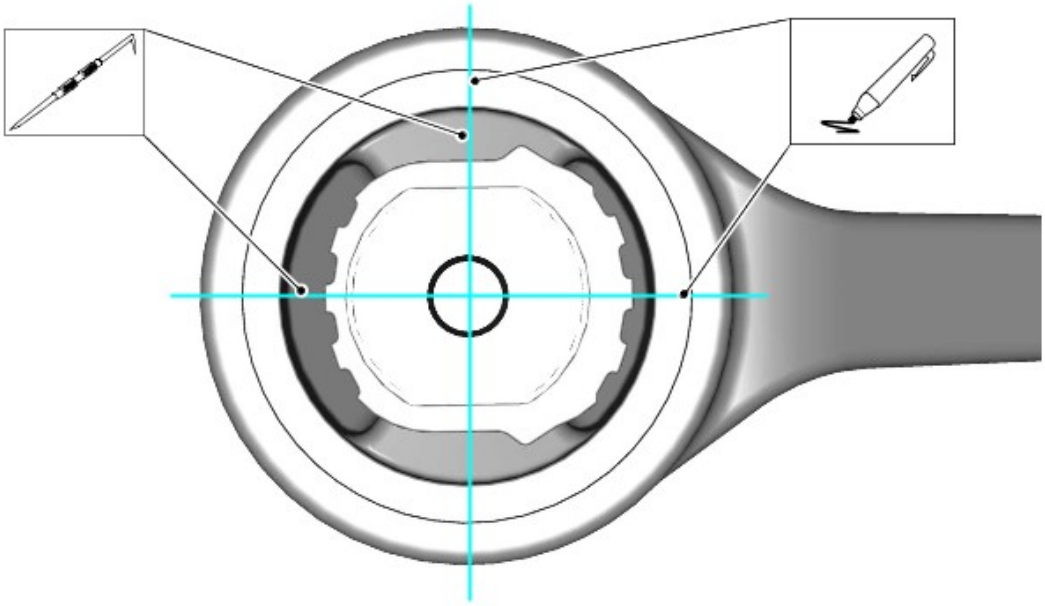
---

2. Only continue with the procedure below if there is less than four marks on the lower front arm.
Refer to: Front Lower Arm (204-01 Front Suspension, Removal and Installation).

3.

CAUTION:

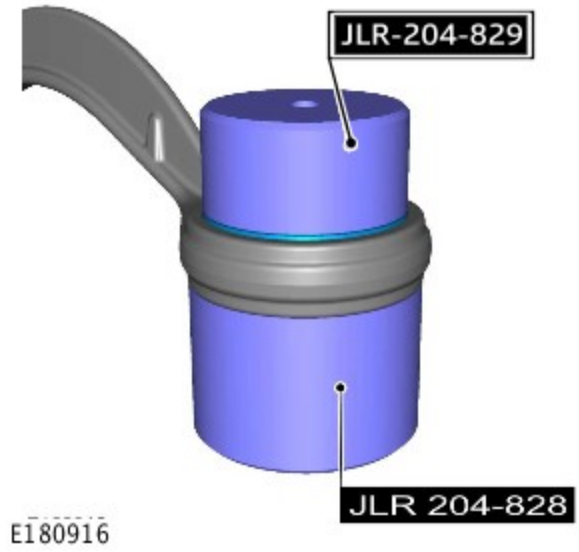
Note the orientation of the bush prior to removal.



E154197

Using suitable marking tools, mark the bush and lower arm prior to removal.

4.



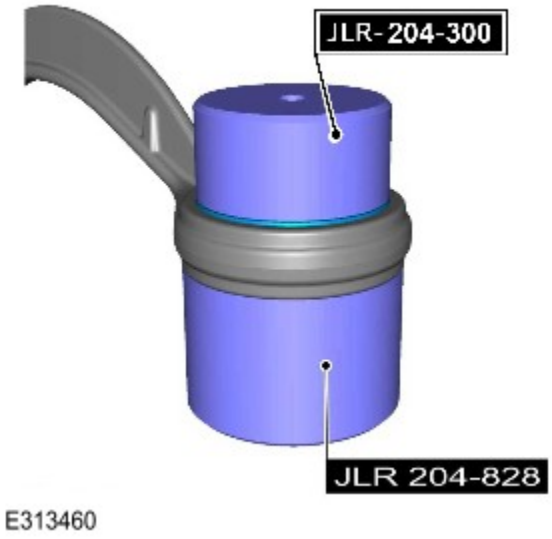
Using the special tools, remove the bush.

Special Tool(s): JLR-204-828, JLR-204-830

General Equipment: Hydraulic press

INSTALLATION

1.

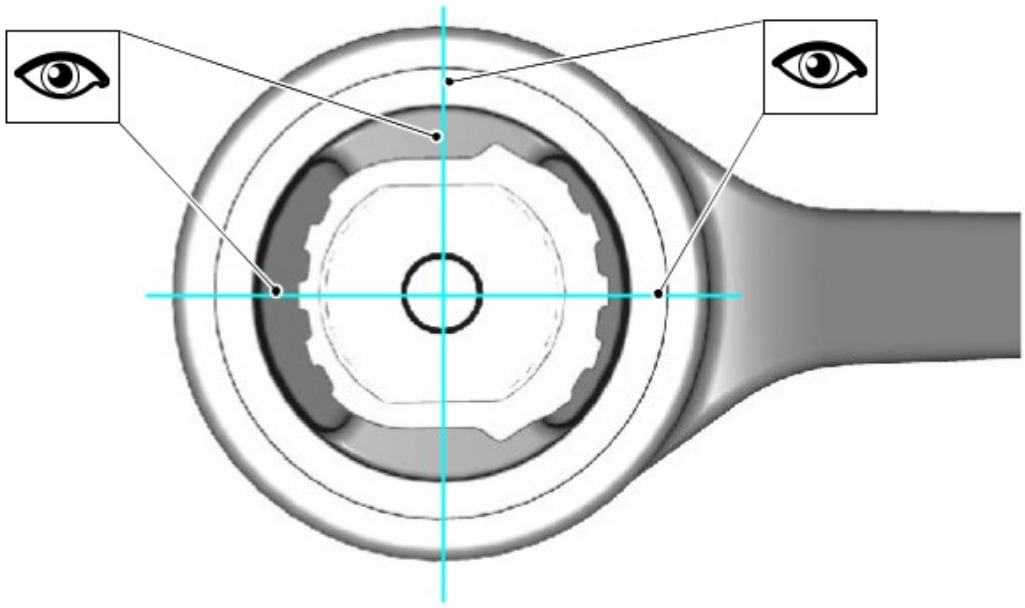


Using the special tools, install the bush.

Special Tool(s): 204-300, JLR-204-828

General Equipment: Hydraulic press

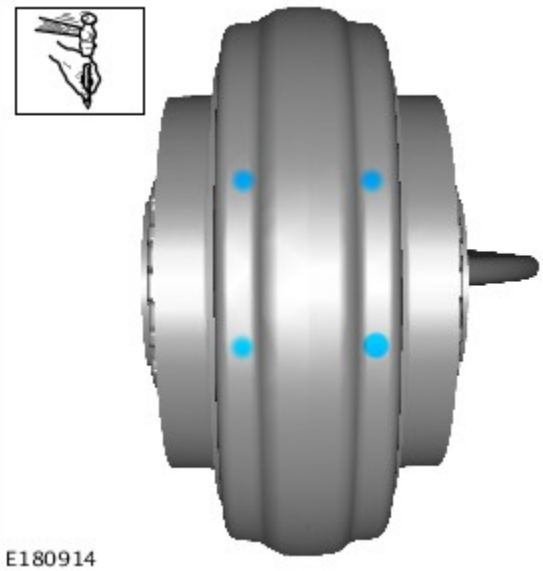
2.



E154277

Make sure that the bush has been installed to the noted removal position.

3.



E180914

Mark the front lower arm with a center punch, when the procedure has been completed.

General Equipment: Center punch

4. Refer to: Front Lower Arm (204-01 Front Suspension, Removal and Installation).

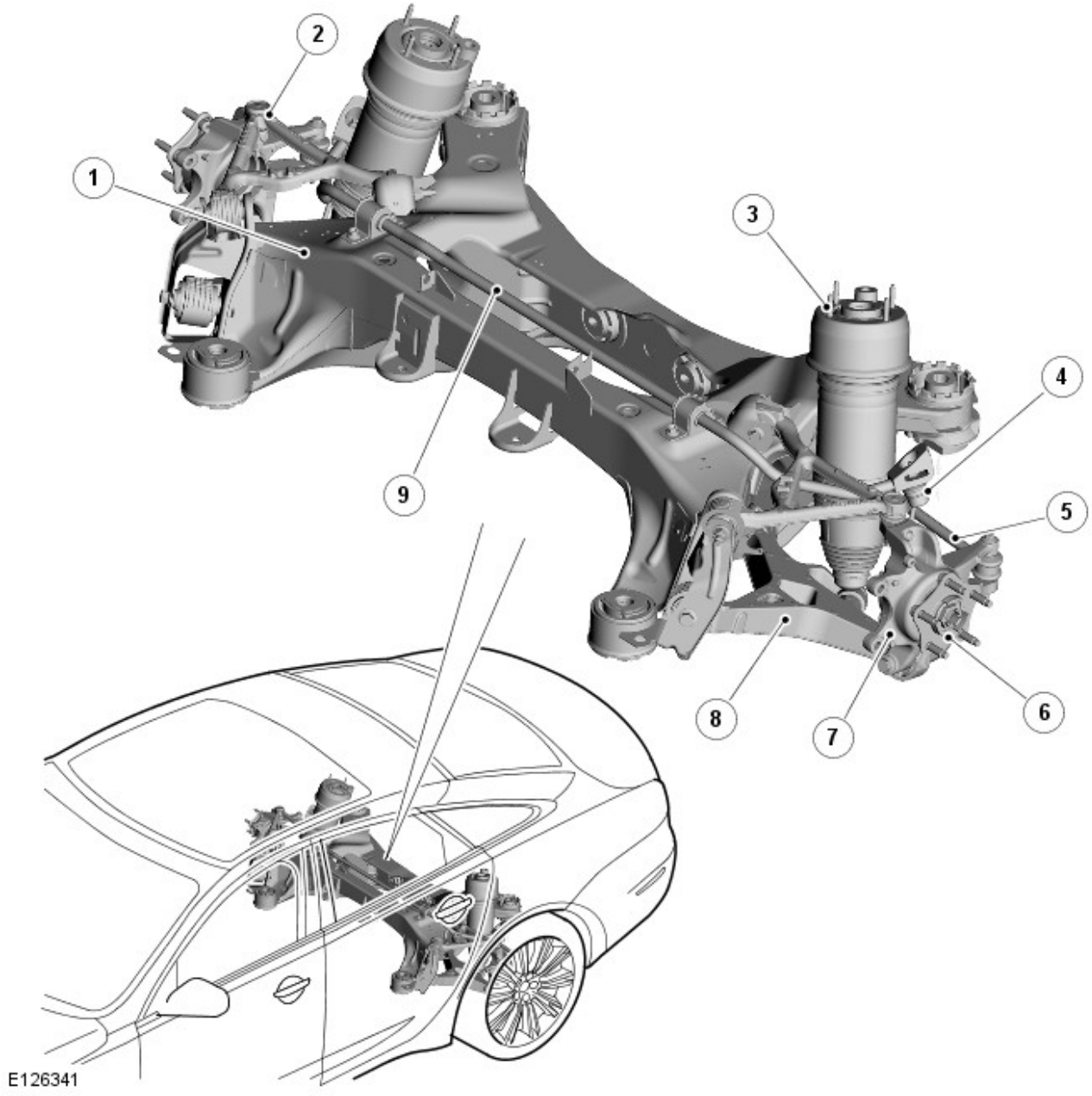
YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDowMjo0NC42NjNaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 31-OCT-2012
2013.0 XJ RANGE (X351), 204-02

REAR SUSPENSION [G1520009]

DESCRIPTION AND OPERATION

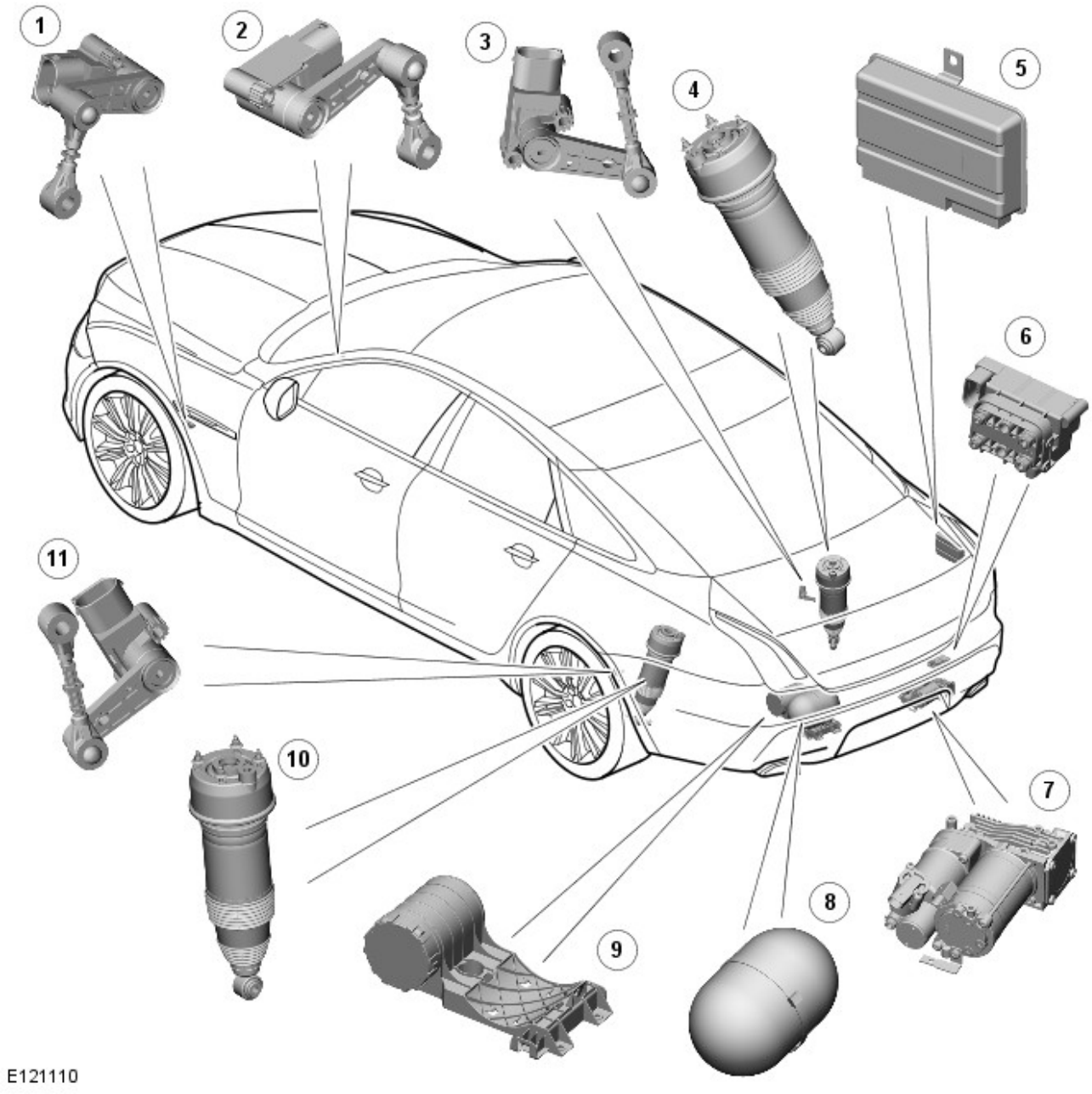
COMPONENT LOCATION - SHEET 1 OF 3



ITEM	DESCRIPTION

ITEM	DESCRIPTION
1	Rear subframe (reference)
2	Upper control arm
3	Spring and damper assembly
4	Stabilizer bar link
5	Toe link
6	Wheel hub and bearing assembly
7	Wheel knuckle
8	Lower control arm
9	Stabilizer bar

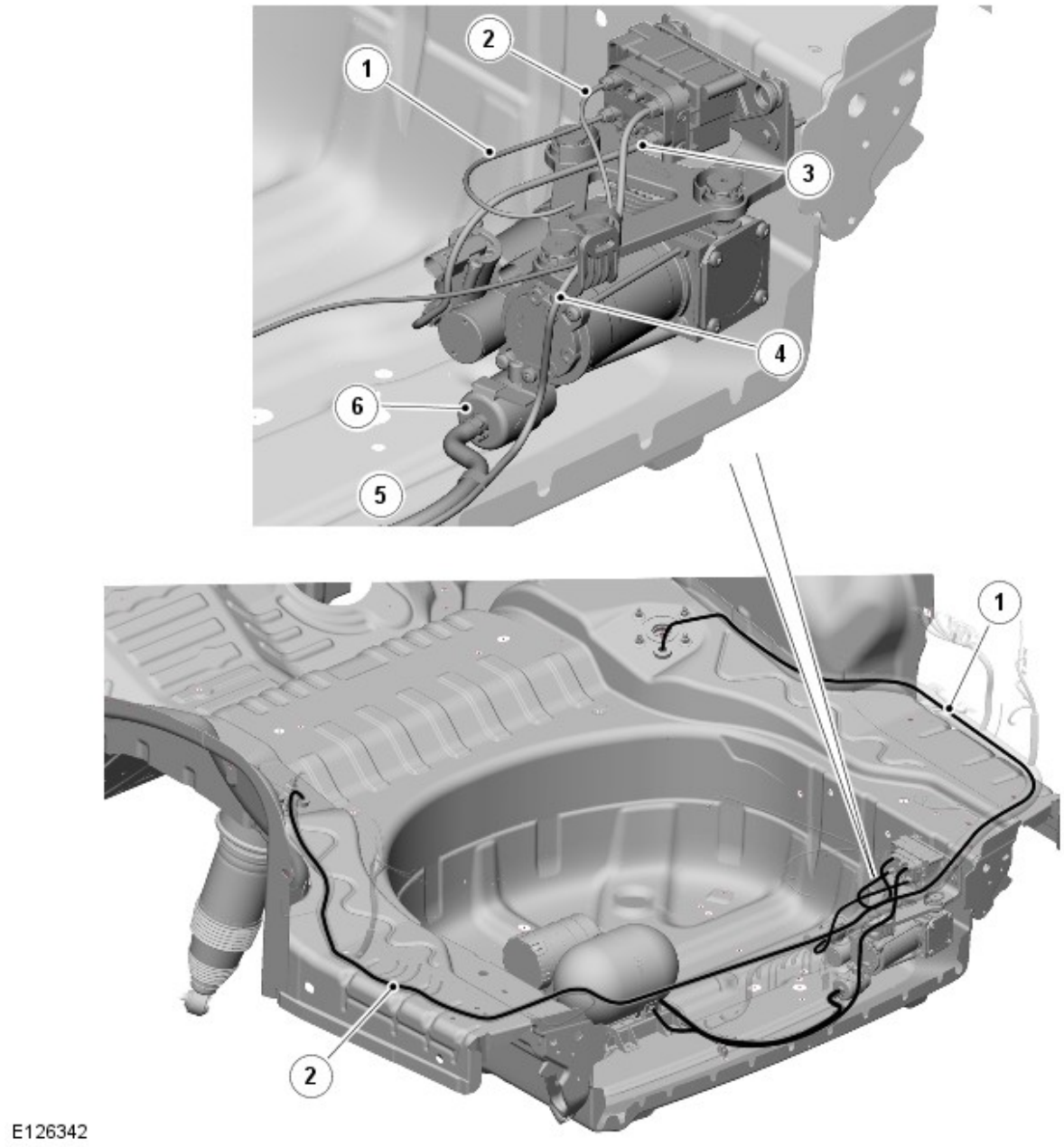
COMPONENT LOCATION - SHEET 2 OF 3



ITEM	DESCRIPTION
1	Front left suspension height sensor
2	Front right suspension height sensor
3	Rear right suspension height sensor
4	Rear right spring and damper assembly
5	Air suspension module
6	Valve block

ITEM	DESCRIPTION
7	Air compressor assembly
8	Reservoir
9	Silencer
10	Rear left spring and damper assembly
11	Rear left suspension height sensor

COMPONENT LOCATION - SHEET 3 OF 3



ITEM	DESCRIPTION
1	Valve block to right air spring pipe
2	Valve block to left air spring pipe
3	Compressor to valve block pipe
4	Valve block to reservoir pipe
5	Compressor inlet/exhaust pipe
6	Filter

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDowNzowMC4yNjBaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 20-NOV-2012
2013.0 XJ RANGE (X351), 204-02

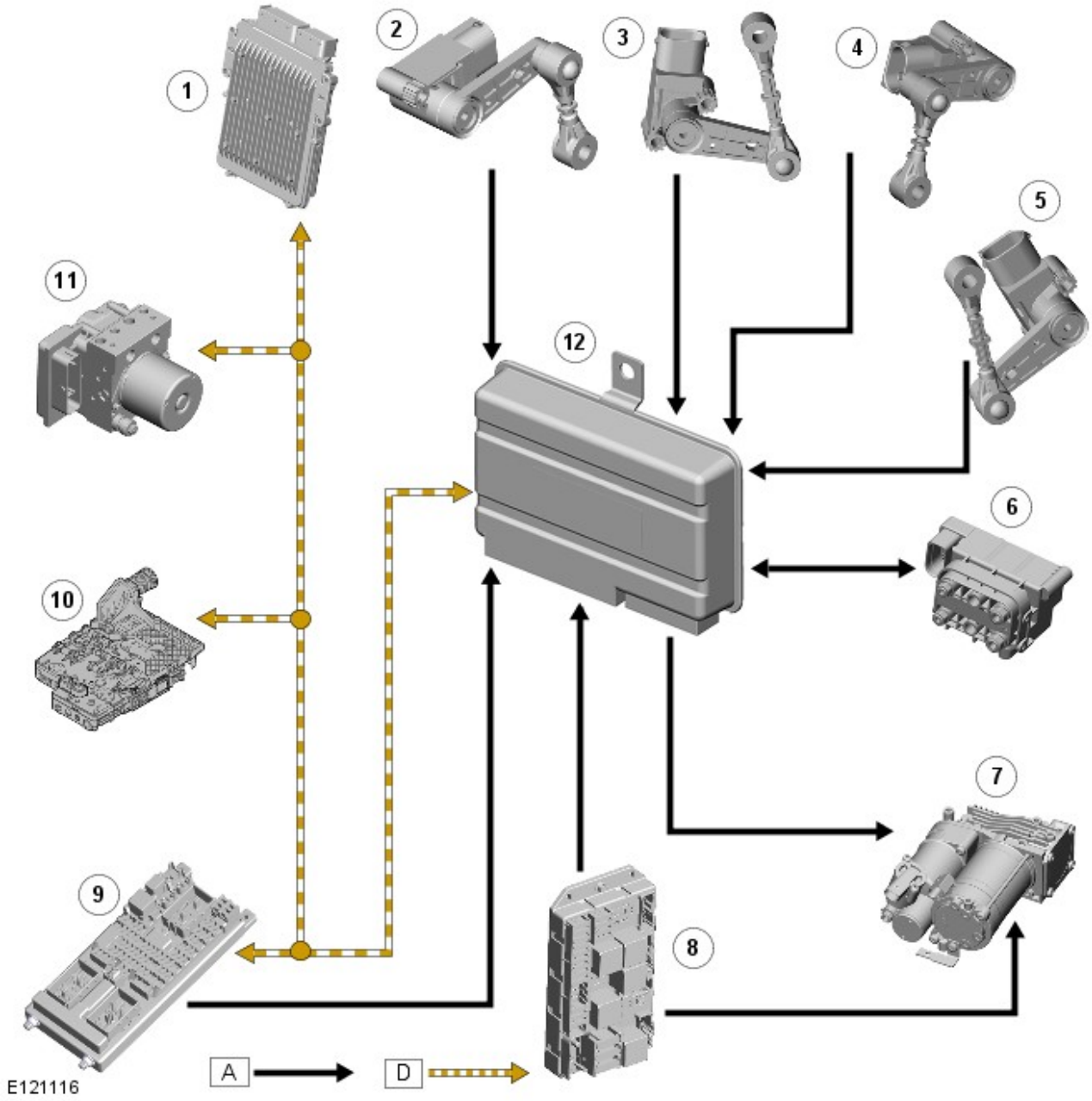
REAR SUSPENSION [G1520011]

DESCRIPTION AND OPERATION

CONTROL DIAGRAM

NOTE:

A = Hardwired; **D** = High speed CAN (controller area network)



ITEM	DESCRIPTION
1	ECM (Engine Control Module)
2	Front right height sensor
3	Rear right height sensor
4	Front left height sensor
5	Rear left height sensor
6	Valve block

ITEM	DESCRIPTION
7	Air compressor assembly
8	RJB (Rear Junction Box)
9	CJB (Central Junction Box)
10	TCM (Transmission Control Module)
11	ABS (Anti-lock Brake System) module
12	Air suspension module

SYSTEM OPERATION

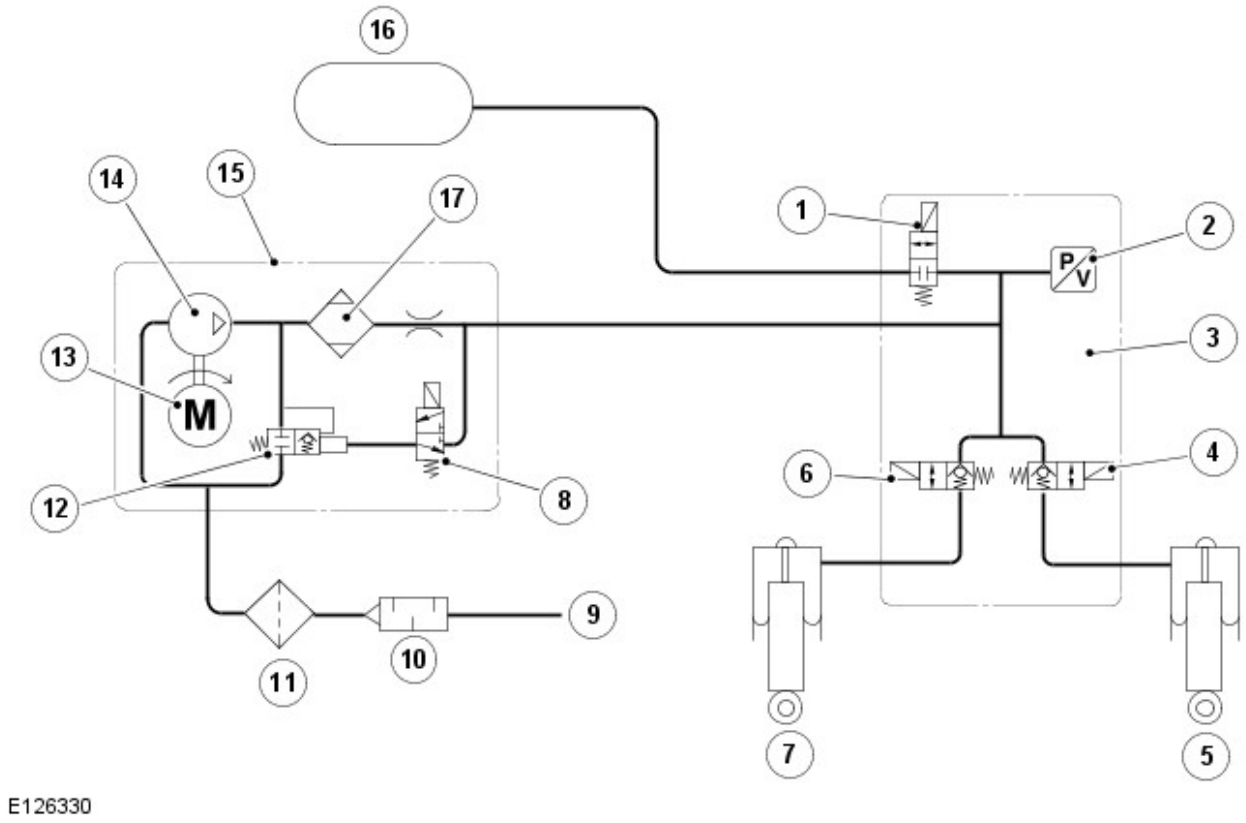
PRINCIPLES OF OPERATION - AIR SUSPENSION SYSTEM

The air suspension module adjusts the quantity of air in the springs to maintain the rear suspension at the required height. The air suspension module calculates a target height for the rear suspension based on the average height of the front suspension. If the actual height of the rear suspension is outside the tolerance band for the target height, for a given length of time, the air suspension module then adjusts the actual height to the target height. The normal tolerance band is ±9 mm (0.35 in.). This changes to ±3 mm (0.12 in.) when the vehicle is parked for 5 minutes with the engine running and all doors closed, or by putting the air suspension module into a special mode using Jaguar approved diagnostic equipment. When a door is open the tolerance band changes to -5/+20 mm (-0.20/+0.79 in.).

To decrease suspension height, the air suspension module opens the exhaust valve in the air compressor assembly and the air spring valves in the valve block to release air from the air springs. To raise the suspension height , the module opens the air spring valves to introduce air into the air springs using air from the reservoir and/or the compressor.

When vehicle speed is 22 mph (35 km/h) or less, the air suspension module normally uses air from the reservoir when it needs to raise the rear suspension. This ensures that the occupants are not disturbed by noise from the air compressor assembly. However, if the rear suspension is more than 30 mm (1.18 in.) below the target height, and there is insufficient pressure in the reservoir, the air suspension module uses the compressor to lift the suspension. When the rear suspension is more than 50 mm (2 in.) low, the air suspension module also sends a signal to the instrument cluster on the high speed CAN bus to display a Suspension Too Low message. If the vehicle is stationary the message is displayed with an amber triangle warning indicator; if the vehicle is moving a red triangle warning indicator is displayed with the message.

Air Suspension System Schematic



E126330

ITEM	DESCRIPTION
1	Reservoir valve
2	Pressure sensor
3	Valve block
4	Right air spring valve
5	Right air spring
6	Left air spring valve
7	Left air spring
8	Pilot exhaust valve
9	Inlet/Exhaust
10	Silencer
11	Filter
12	Main exhaust valve
13	Electric motor

ITEM	DESCRIPTION
14	Compressor
15	Air compressor assembly
16	Reservoir
17	Air drier

System Inhibits

The air suspension module is programmed to inhibit normal height change operation under conditions where it is undesirable.

To reduce the trap hazard, height changes are restricted when any of the vehicle doors are open. This restriction is removed if the vehicle speed exceeds 5 mph (8 km/h).

If the vehicle is jacked, the air suspension module detects the condition a few seconds after starting to correct the suspension height. The same logic also detects if the rear of the vehicle is grounded. If it detects one of these conditions, the air suspension module inhibits normal leveling control. If the rear wheels subsequently start to spin, the air suspension module raises the rear suspension to help release the vehicle from grounding. Normal leveling control resumes when the engine is running and the rear suspension is more than 30 mm (1.18 in.) below the nominal kerb weight height, or the vehicle speed exceeds 10 mph (15 km/h).

Diagnostics and Maintenance

When vehicles are set to transportation mode the air suspension system adopts different functionality to optimize the rear suspension height for loading and off-loading clearances. The vehicle can be switched in and out of transportation mode using Jaguar approved diagnostic equipment. In transportation mode, the rear suspension height is set to 25 mm (1 in.) above the nominal design height. If the suspension height is lower than the transportation mode set point, the message Vehicle Too Low is also displayed in the message center. When the correct height is reached (engine running) the Vehicle Too Low message is switched off.

The air suspension system has a number of special modes that may be used during vehicle servicing or repair. These modes can disable the air suspension system, make it operate within tighter tolerances or deflate the air springs and/or reservoir. While one of these modes is active the message Air Suspension Not in Customer Mode is displayed in the instrument cluster. The air suspension system is set in and out of these modes using Jaguar approved diagnostic equipment.

If a fault occurs in the air suspension system, a related DTC (Diagnostic Trouble Code) is stored in the air suspension module. The air suspension module adopts a default leveling strategy which is most appropriate for the fault and vehicle safety. This reduces the functionality of the air suspension system depending on the type and severity of fault. A message is displayed, and an amber or red warning indicator is illuminated, in the instrument cluster. A warning chime may sound when the fault message is displayed.

The following table lists the air suspension system warning indicators, messages and chimes:

TRIANGLE WARNING INDICATOR	MESSAGE	CHIME	FAULT	ACTION
Amber	Suspension Fault	Alert chime when message first displayed	Fault detected that may result in some reduction in system performance or refinement	Rectify fault
Amber	Vehicle Too Low	Vehicle in transportation mode: Information chime repeated while vehicle is too low; chime stops when transportation height achieved	Vehicle rear too low when loading. Displayed when vehicle at rest if too low	Wait until vehicle has risen before driving
Amber	Vehicle Too Low	Vehicle not in transportation mode: No chime	The rear suspension is more than 50 mm (2 in.) below nominal height and the vehicle is at rest	Wait until vehicle has risen before driving
Red	Vehicle Too Low	Vehicle in transportation mode: Information chime repeated while vehicle is too low; chime stops when loading height achieved	Vehicle rear too low when loading and vehicle is moving	Stop until vehicle has risen
Red	Vehicle Too Low	Vehicle not in transportation mode: No chime	The rear suspension is more than 50 mm (2 in.) below nominal height and the vehicle is moving.	Stop or proceed cautiously until vehicle has risen
Amber	Air Suspension Not In Customer Mode	No chime	Air suspension system is in special mode used for vehicle servicing or repair	Change to customer mode with Jaguar approved diagnostic equipment

The following system fault will not necessarily cause a DTC to be set:

SYMPTOM	POSSIBLE CAUSE
Vehicle leans / tilts after being left overnight or for some days	Leak from air spring or air spring valve

Calibration or height setting is the process of adjusting the values stored in the air suspension module for the suspension height sensor offsets for each of the four corners. Each of the suspension height sensors measures the position of the associated wheel with respect to the vehicle chassis and generates a corresponding voltage signal. Each of these voltage signals is read by the module and converted to a height value in millimeters. Ideally this height value would exactly match the actual value for each wheel, however, due to build and component tolerances there can be an offset between these two sets of values.

The calibration process sets the necessary value for this offset for each suspension height sensor so that the actual and calculated values are equal. System calibration is required in the following cases:

- A suspension height sensor is removed or replaced.

- A replacement air suspension module is fitted.
- If the suspension on any corner is dismantled and rebuilt.

The calibration procedure is carried out using Jaguar approved diagnostic equipment and a suspension height measurement tool.

The air suspension module contains a self test function, that can be activated by Jaguar approved diagnostic equipment. The test is primarily an electrical test. Checks for stuck valves or leaking valves etc. are not included.

The test routine activates each output (valves and compressor) in turn, and monitors electrical connections. The routine takes approximately 30 seconds to complete, but may be terminated immediately by switching the ignition off. Operation of the valves during this test may cause small quantities of air flow into or out of the air springs. As a result the vehicle may make small changes in height.

The self test operates in the following sequence:

- Opens exhaust valve 100%, then closes valve.
- Turns compressor on and off.
- Opens rear left air spring valve 100%, then closes valve.
- Opens rear right air spring valve 100%, then closes valve.
- Opens the reservoir valve 100% for 2 seconds, then closes valve.

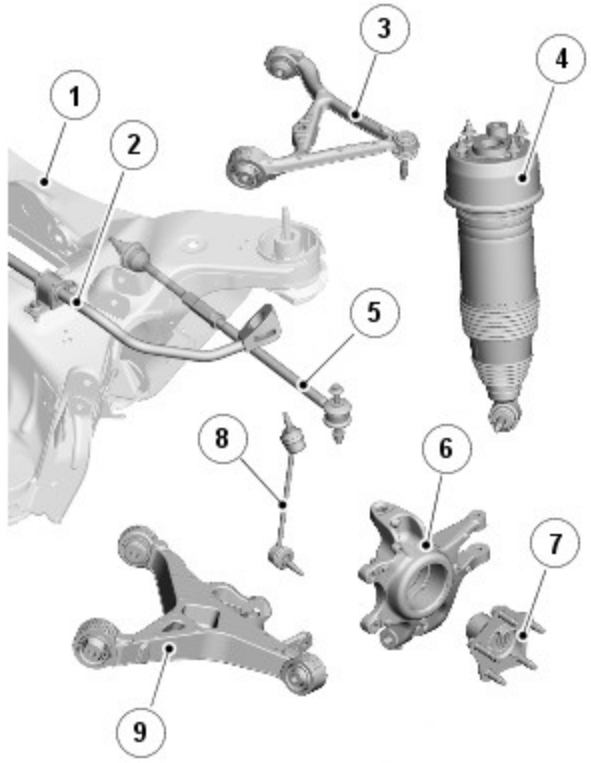
To de-pressurize the system air is vented through the valve block, the air compressor assembly (which regenerates the air drier), the filter and the silencer to atmosphere. The system is pressurized using the air compressor assembly. The de-pressurization and pressurization of the air suspension system is initiated using Jaguar approved diagnostic equipment.

COMPONENT DESCRIPTION

Authoring Template

DUMMY COMPONENT TITLE

REAR SUSPENSION



E126331

ITEM	DESCRIPTION
1	Rear subframe
2	Stabilizer bar
3	Upper control arm
4	Spring and damper assembly
5	Toe link
6	Wheel knuckle
7	Wheel hub and bearing assembly
8	Stabilizer bar link
9	Lower control arm

Upper Control Arm

The cast aluminum upper control arm locates to the subframe via one cross-axis joint and one plain rubber bush, and links to the wheel knuckle via an integral ball joint.

Lower Control Arm

The aluminum lower arm locates to the subframe via one cross-axis joint and one plain rubber bush, and to the wheel knuckle via a second plain rubber bush.

The rear of the control arm has mounting points for the damper and the stabilizer link.

Toe Link

Each toe link is located between the wheel knuckle and a bracket on the subframe.

The toe links comprise an inner rod with integral axial ball joint. The inner ball joint has a threaded spigot which locates in the bracket on the subframe and is secured with a locknut. The rod has an internal thread which accepts the outer rod.

The outer rod has a cross-axis joint at its outer end which is located in a clevis on the wheel knuckle, and is secured with a bolt and locknut.

The length of the toe link can be adjusted by rotating the inner rod. This allows for adjustment of the toe angle for the rear wheel. Once set, the inner rod can be locked in position by tightening a locknut on the outer rod against the inner rod.

Wheel Knuckle

The cast aluminum wheel knuckle attaches to:

- The upper control arm via a ball-joint located in the arm.
- The lower control arm via a plain rubber bush located in the arm.
- The toe link via a cross-axis joint located in the toe link.

The wheel knuckle also provides the mounting locations for the:

- Wheel hub assembly.
- Wheel bearing.
- Wheel speed sensor.
- Brake caliper.
- Brake disc shield.

Stabilizer Bar

All vehicles have a 17 mm stabilizer bar installed to help control the roll rate of the vehicle.

The stabilizer bar is attached to the top of the subframe with two bushes and mounting brackets. The stabilizer bar has collars crimped into the bar at the inside edges of the bushes. The collars prevent sideways movement of the stabilizer bar.

Each end of the stabilizer bar curves rearward to attach to a ball joint on each stabilizer link. Each link is attached via a second ball joint to a cast bracket on the lower control arm. The links allow the stabilizer bar to move with the wheel travel providing maximum effectiveness.

Spring and Damper Assembly

Each spring and damper assembly is attached to a cast bracket on the lower control arm and to the vehicle body by four studs secured by torque retaining nuts.

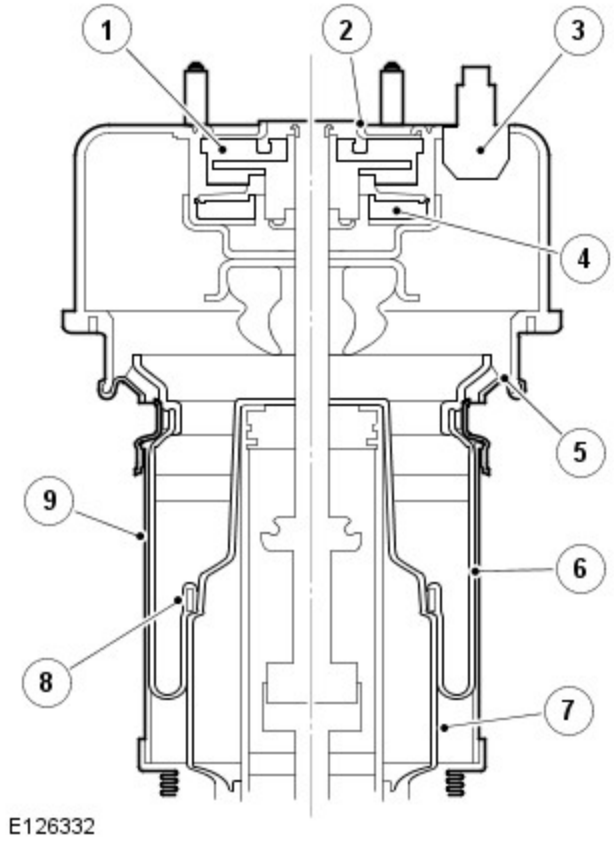
Each spring and damper assembly incorporates:

- An adaptive dynamics damper, which enables the damping characteristics of the suspension to be adjusted.Refer to: Vehicle Dynamic Suspension (204-05 Vehicle Dynamic Suspension, Description and Operation).
- An air spring, controlled by the air suspension system.

AIR SUSPENSION SYSTEM

Air Springs

Section Through Air Spring



ITEM	DESCRIPTION
1	Top mount assembly
2	Polyurethane damper mounting
3	Pressure retaining valve
4	Damper mounting seal
5	Air spring isolator
6	Air spring rolling sleeve
7	Air spring piston
8	Air spring rolling sleeve to piston crimp ring
9	Decoupled air spring guide

The air springs take the place of conventional coil springs on the rear suspension. In the air spring, a piston compresses the air as the suspension moves into bump/jounce, which cushions the movement. A rubber rolling sleeve is guided by an outer metal support sleeve and assembled around the damper. The metal support sleeve is decoupled from the top mount assembly, which allows greater damper articulation without trapping the air sleeve. This design delivers improved

ride characteristics compared to a non-guided air spring, and reduces high frequency generated inputs such as those produced by a coarse road surface, for example.

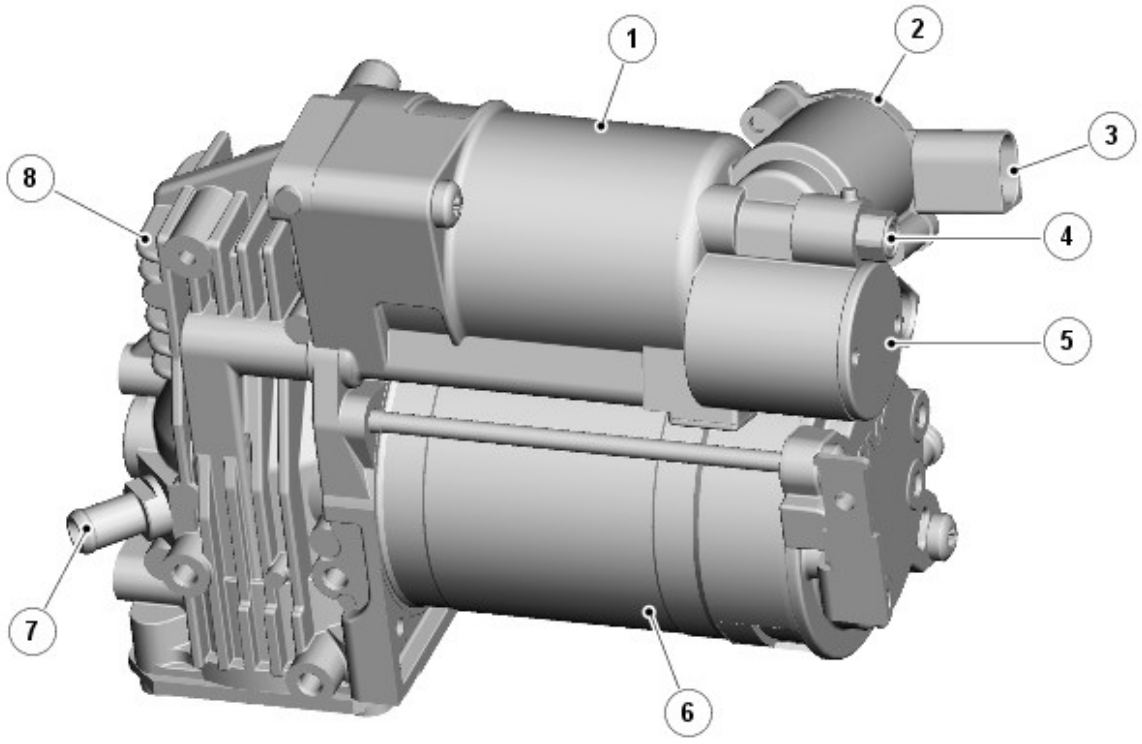
The key sealing points for the air spring are between the:

- Piston and damper body.
- Spring unit and top mount.

The method of achieving a pressure-tight seal between the air spring and the damper means that spring and damper assemblies must be replaced as a complete unit.

The air-tight top mount assembly isolates the damper from the body structure while maintaining pressure within the spring. A pressure retaining valve in the top mount ensures that air cannot be exhausted from the air spring when the pressure is less than 3.0 bar (43.5 lbf/in2). This ensures that the rolling sleeve does not crease and become damaged. The maximum pressure in the full-bump condition at GVW (gross vehicle weight) is approximately 20 bar (290 lbf/in2).

Air Compressor Assembly



E126333

ITEM	DESCRIPTION

ITEM	DESCRIPTION
1	Air drier
2	Pilot exhaust valve
3	Electrical connector
4	HP (High Pressure) outlet port (to valve block)
5	Main exhaust valve
6	Electric motor
7	Air intake/exhaust port
8	Compressor housing

The air compressor assembly is installed in the luggage compartment, on a bracket in the rear right corner of the spare wheel well. For NVH (noise, vibration and harshness) reasons, the air compressor assembly is attached to the bracket by three isolator mountings, each incorporating a rubber snubbing bush and a metal spring.

The air compressor assembly incorporates:

- A two stage compressor driven by an electric motor.
- An air drier.
- A main exhaust valve.
- A pilot exhaust valve.
- An air intake / exhaust port.
- A HP outlet port.

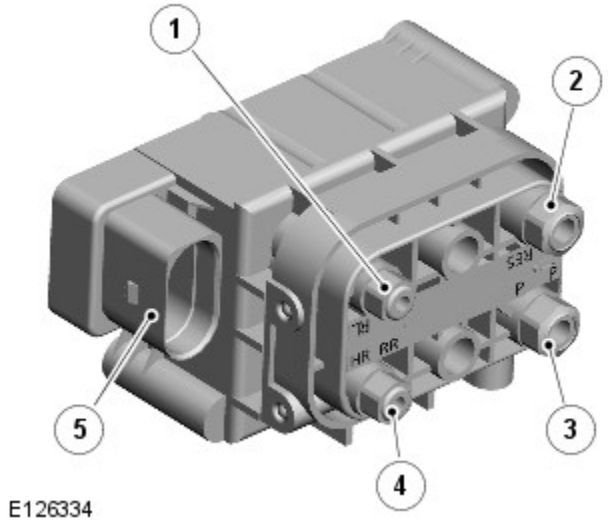
The compressor motor is operated by power from the air suspension relay in the RJB, which is controlled by the air suspension module. To prevent damage caused by overheating, the temperature of the compressor and motor is calculated by a software model in the air suspension module. The calculated temperature is based on compressor operating pressure, voltage, time and ambient air temperature. The air suspension module discontinues compressor operation if the calculated temperature increases to 100 °C (212 °F). Compressor operation resumes when the air suspension module calculates the temperature has decreased to 80 °C (176 °F).

The air drier removes moisture from the air delivered by the compressor to the HP outlet port, and consists of a chamber that contains water absorbing desiccant beads. When the air suspension system is depressurized, air is vented back through the air compressor assembly, to initiate air drier regeneration. The clean dry air vented from the system re-activates the desiccant beads.

The main exhaust valve controls the release of air from the air suspension system through the air intake / exhaust port. It also acts as a PRV (pressure relief valve) and minimum pressure retention valve. The PRV function limits the maximum pressure from the compressor to 17.5 bar (254 lbf/in2). The minimum pressure retention function limits the minimum pressure in the system to between 0.25 and 1.00 bar (3.75 and 14.5 lbf/in2).

The pilot exhaust valve is a solenoid operated valve that controls the operation of the main exhaust valve. A PWM (pulse width modulation) signal from the air suspension module controls the pilot exhaust valve to apply system pressure to the pilot chamber of the main exhaust valve.

Valve Block



ITEM	DESCRIPTION
1	Left air spring pipe connector
2	Reservoir pipe connector
3	Compressor pipe connector
4	Right air spring pipe connector
5	Electrical connector

The valve block is used by the air suspension module to control the flow of air between the air compressor assembly, the reservoir and the two air springs. The valve block is installed in the luggage compartment spare wheel well, on the same bracket as the air compressor assembly. Three isolator grommets locate the valve block mounting plate on the bracket.

The valve block incorporates:

- Three normally closed solenoid valves, one for each of the rear air springs and one for the reservoir.
- A pressure sensor to monitor the pressure in the line between the air compressor assembly and the three solenoid valves.

The solenoid valves control the air flow into and out of the air springs and the reservoir, and are operated by PWM signals from the air suspension module.

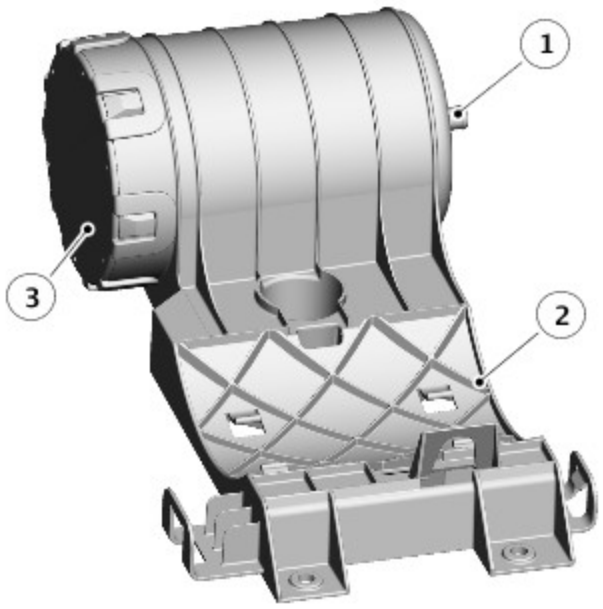
The air suspension module uses the pressure sensor signal to decide when to pressurize the air springs directly from the air compressor assembly, or from the pressurized air stored in the reservoir.

Reservoir

E126335

The reservoir stores a supply of pressurized air for immediate use by the system, which enables quiet system operation at low speeds. The reservoir is installed in the luggage compartment, on a bracket under the spare wheel, and has a capacity of 3.7 liters (226 in.3). Pressure in the reservoir is controlled by the air suspension module at a nominal maximum of 16.5 bar (239 lbf/in.2).

Silencer



E126336

ITEM	DESCRIPTION
1	Air intake/exhaust pipe connector
2	Reservoir bracket
3	Air intake/exhaust cap

The silencer is integrated into the reservoir bracket, and functions as an air intake and exhaust silencer. Air is exhausted as the system is leveling down.

Air Distribution Pipes

A series of pipes carry pressurized air between the system components. The air spring pipes are integrated into the electrical harnesses. The air compressor assembly to valve block pipe is separate from the other pipes, while the valve block to reservoir pipe is clipped together with the intake/exhaust pipe. A filter, attached to the underside of the air compressor assembly, is installed in the intake/exhaust pipe.

E126559

The air suspension module uses a combination of information from other system modules and data from the suspension height sensors to measure the vehicle and suspension states. Using this information, the air suspension module applies algorithms to control the rear suspension height required for the current driving conditions.

The air suspension module is installed on the right side of the luggage compartment, together with the adaptive damping module, on a bracket attached to the rear quarter panel.

The air suspension module receives the following signals on the high speed CAN bus:

- Vehicle speed - ABS module.
- Wheel speed sensors - ABS module.
- Lateral acceleration - ABS module.
- Steering wheel angle - ABS module.
- Steering wheel angle status - ABS module.
- Engine speed - ECM.
- Gear position target - TCM.
- Vehicle information parameters - CJB.
- CCF (Car Configuration Files) - CJB.
- Power mode (ignition signal) - CJB.

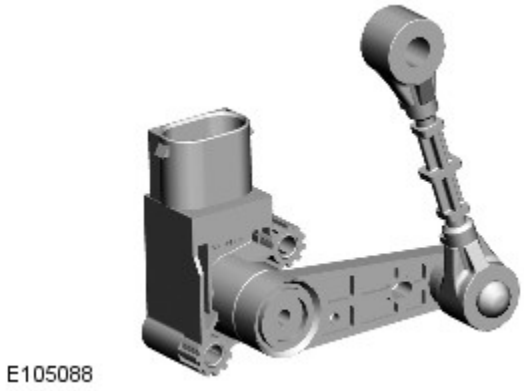
The air suspension module outputs information on the high speed CAN bus for use by other systems as follows:

- Fault message - Instrument Cluster (IC).

- Individual suspension heights - other systems as required.

Suspension Height Sensors

> **NOTE:**
>
> Rear sensor shown, front sensors similar.



Four suspension height sensors are used in the air suspension system, two for the front suspension and two for the rear suspension. A front suspension height sensor is attached to each side of the front subframe and connected by a sensor arm and sensor link to the related lower lateral arm of the front suspension. A rear suspension height sensor is attached to each side of the rear subframe and connected by a sensor arm and sensor link to the related upper control arm of the rear suspension. On each suspension height sensor, the sensor arm and sensor link convert linear movement of the suspension into rotary movement of the sensor shaft.

Each suspension height sensor contains two independent sensors:

- Sensor 1 is used by the air suspension system.
- Sensor 2 is used by the adaptive dynamics system. Refer to: Vehicle Dynamic Suspension (204-05 Vehicle Dynamic Suspension, Description and Operation).

The suspension height sensors measure suspension displacement at each corner of the vehicle and output a corresponding analogue signal to the air suspension module. The data from the sensors is filtered and processed by the air suspension module, and used to ensure that the vehicle remains level and at the correct height at all times by regulating the supply of air to each rear air spring unit.

Each suspension height sensor is connected to the air suspension module via three wires, which supply ground, 5 V supply and signal return.

Each sensing element consists of an array of Hall effect devices arranged to measure the direction of the magnetic field of a small magnet attached to the end of the sensor shaft. As the sensor shaft rotates, so do the lines of magnetic flux

from the attached magnet. The signals from each of the Hall effect elements are processed by means of a dedicated integrated circuit, to generate an output voltage that varies as the sensor shaft is rotated. The sensor has a measurement range of ± 40° around its nominal position and the nominal sensitivity is 57 mv/° of shaft rotation.

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDowNzo1OS42MjZaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 13-MAY-2021
2013.0 XJ RANGE (X351), 204-02

REAR SUSPENSION

LOWER ARM [G1274504]

REMOVAL AND INSTALLATION

64.35.43	LOWER WISHBONE - RENEW	ALL DERIVATIVES	0.40	USED WITHINS	+

REMOVAL

CAUTIONS:

- LH illustration shown, RH is similar.
- The final tightening of the suspension components must be completed with the vehicle on its wheels.

NOTES:

- Before commencing work on the vehicle make sure the park brake is in the off position.
- Removal steps in this procedure may contain installation details.

1. Raise and lower the vehicle on a 4 post ramp.

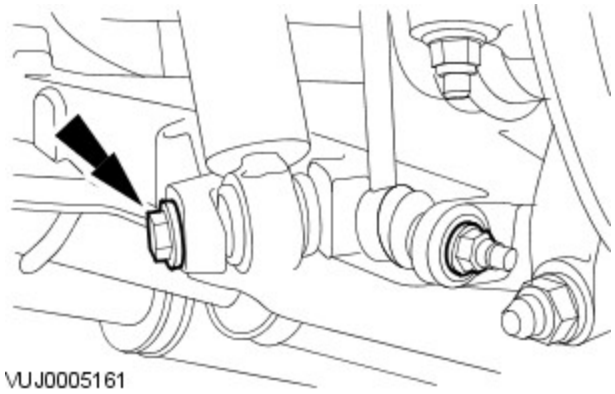
2. **WARNING:**

   Make sure to support the vehicle with axle stands.

   Raise and support the vehicle.

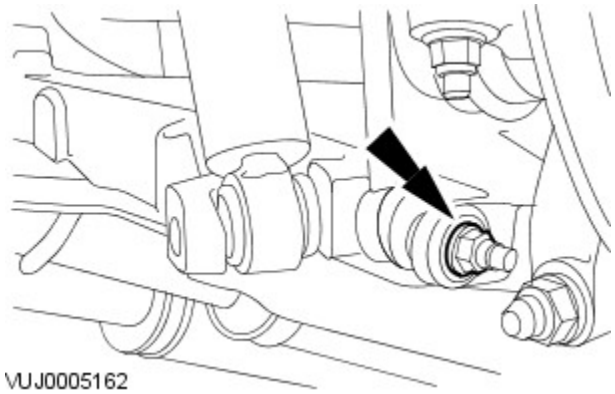
3. Remove the wheel and tire. For additional information, refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

4.



Release the spring and damper assembly from the lower arm.

5.

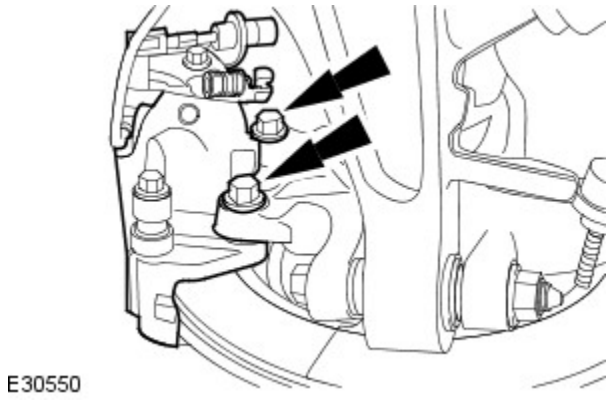


Release the stabilizer bar link.

6.

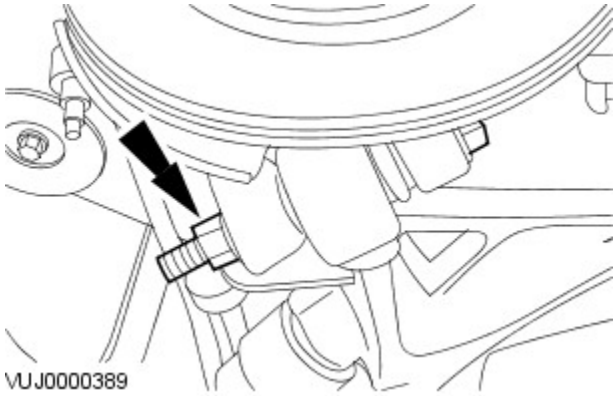
CAUTIONS:

- Do not allow the brake caliper to hang on the brake hose.
- Discard the bolts.



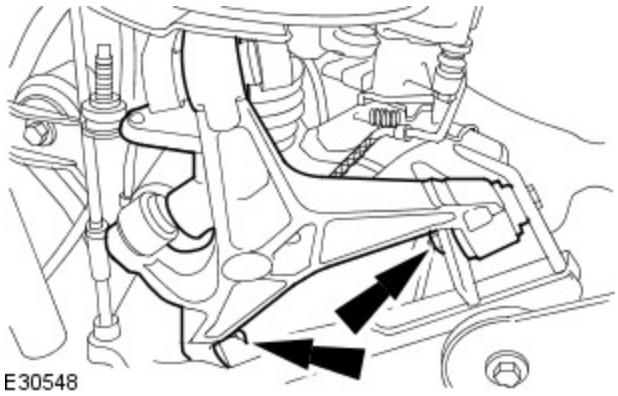
Remove and discard the bolts and tie the brake caliper aside.

7.



Release the lower arm from the wheel hub assembly.

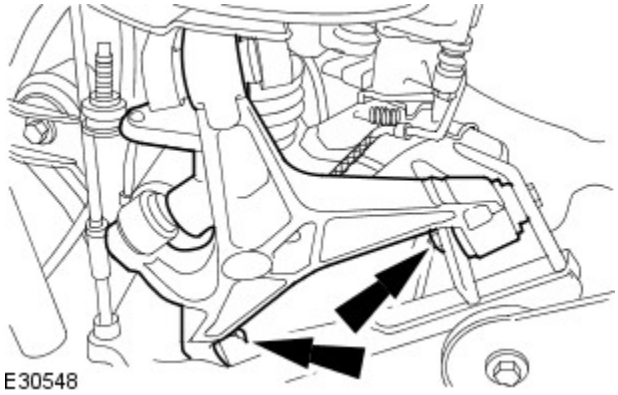
8.



Remove the lower arm.

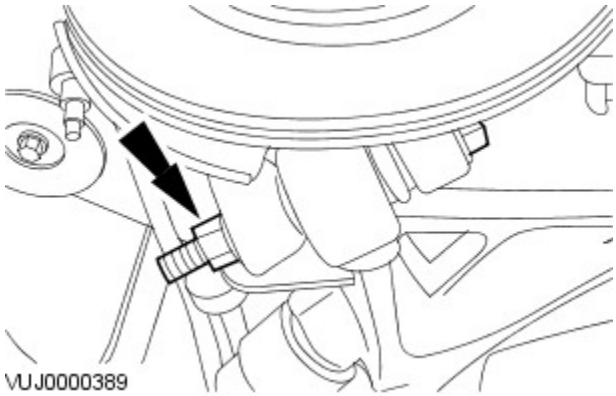
INSTALLATION

1.



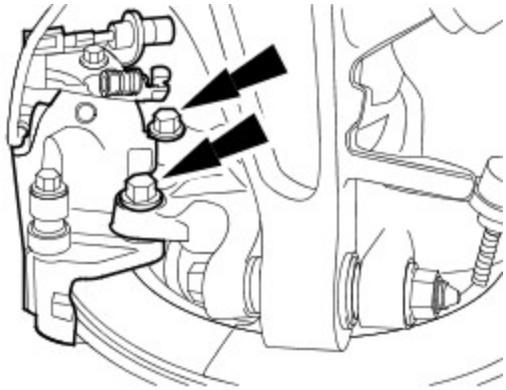
Install the lower arm.

2.



Secure the lower arm to the wheel hub assembly.

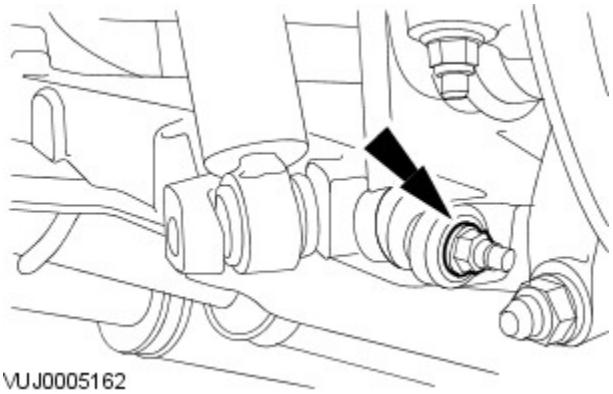
3.


E30550

Install and tighten 2 new bolts.

- Tighten the bolts to 103 Nm.

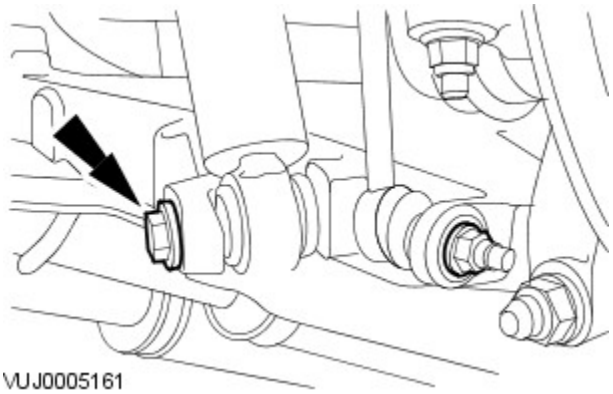
4.


VUJ0005162

Secure the stabilizer bar link.

- Tighten the nut to 48 Nm.

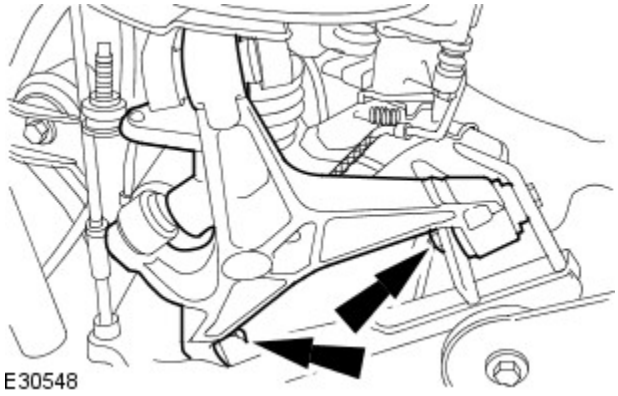
5.


VUJ0005161

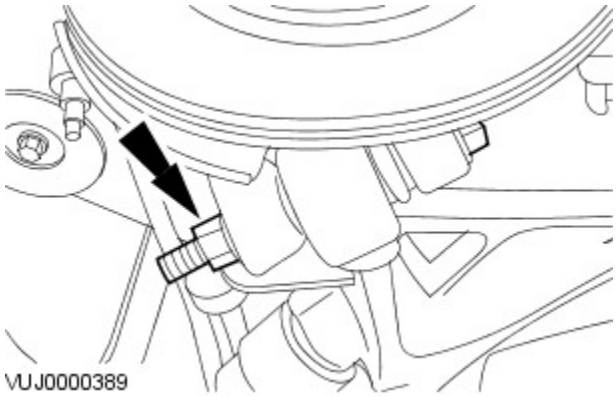
Secure the spring and damper assembly to the lower arm.

6. Install the wheel and tire. For additional information, refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

7. Lower the vehicle.

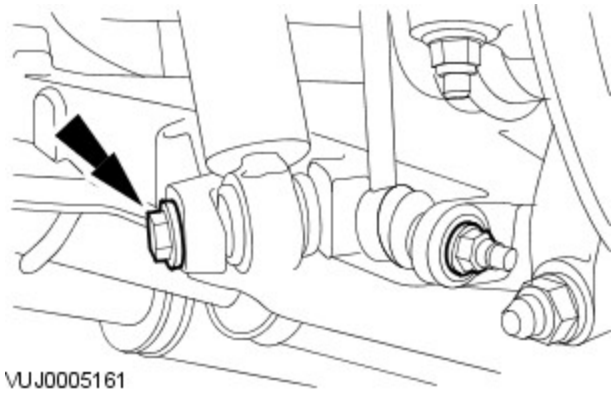
8. 

Tighten to 192 Nm.

9. 

Tighten to 192 Nm.

10.



Tighten to 133 Nm.

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDowOTo0OC42NDZaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 17-NOV-2017
2013.0 XJ RANGE (X351), 204-02

REAR SUSPENSION

UPPER ARM [G1274518]

REMOVAL AND INSTALLATION

64.25.31	UPPER CONTROL ARM - RENEW	ALL DERIVATIVES	1.50	USED WITHINS	+

PART[S]

STEP	PART NAME	QUANTITY
Removal Step 8	Upper control arm nut(s)	1

REMOVAL

CAUTION:

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

NOTES:

- Removal steps in this procedure may contain installation details.
- RH illustration shown, LH is similar.

1. Raise and lower the vehicle on a 4 post ramp.

2. **WARNING:**

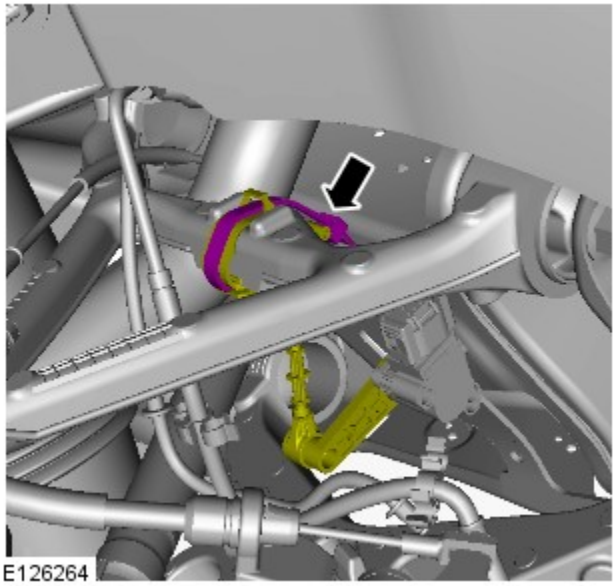
   Make sure to support the vehicle with axle stands.

   Raise and support the vehicle.

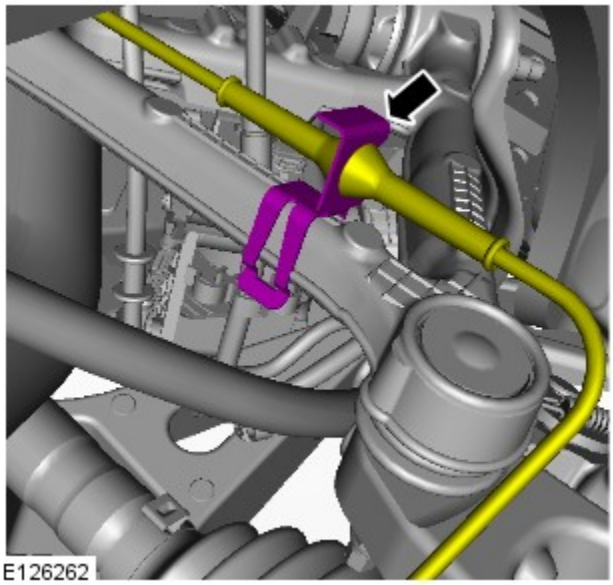
3. Refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

4. Refer to: Shock Absorber and Spring Assembly (204-02 Rear Suspension, Removal and Installation).

5.



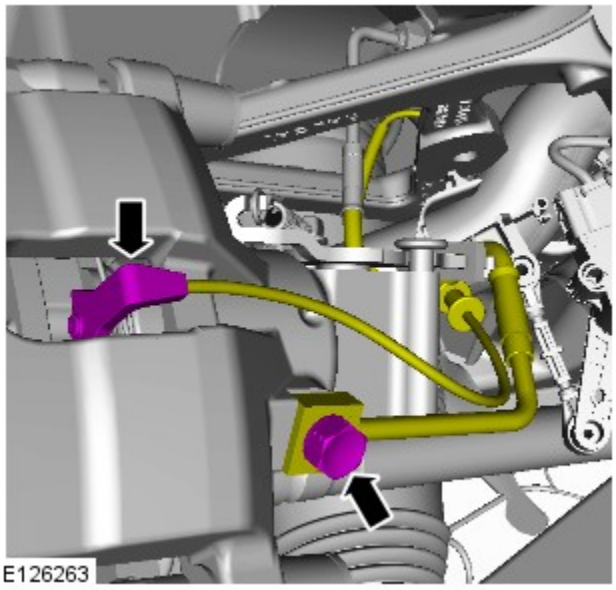
6.



7.

CAUTIONS:

- Be prepared to collect escaping fluids.
- Make sure that the area around the component is clean and free of foreign material.
- Before disconnecting any components, make sure the area is clean and free from foreign material. When disconnected all openings must be sealed.

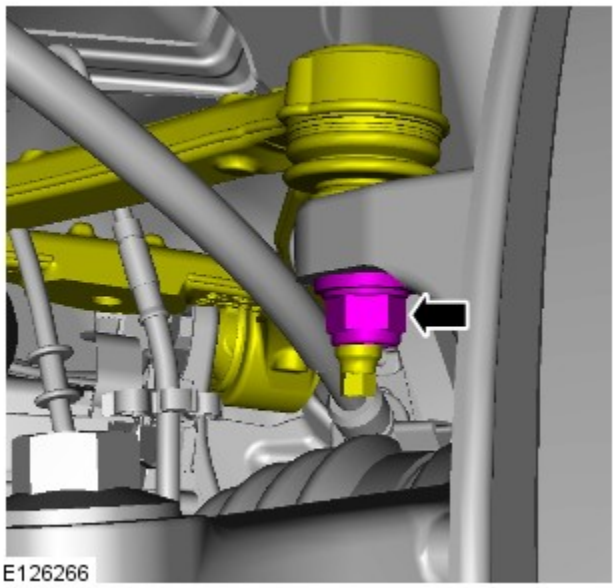


Torque: **38Nm**

8.

NOTE:

Discard the nut.



Renew Part: Upper control arm nut(s) *Quantity:* 1.

Torque

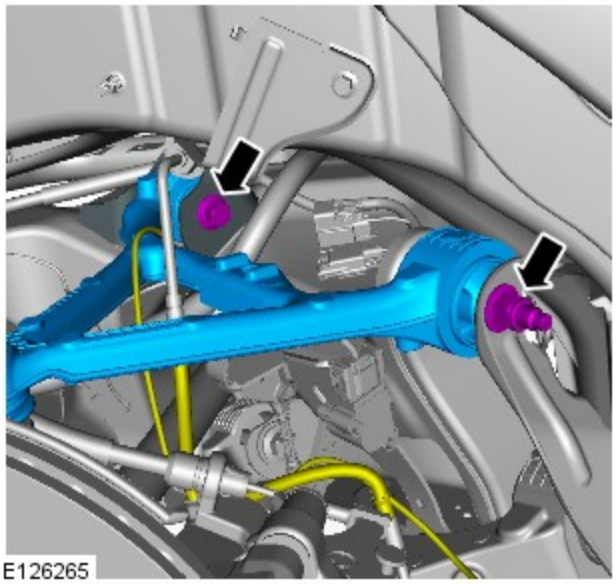
Non XJR version only: **96Nm**

XJR version only

Stage 1: **48Nm**

Stage 2: **60°**

9.



Torque: **115Nm**

INSTALLATION

1. To install, reverse the removal procedure.

2. Refer to: Brake System Bleeding (206-00 Brake System - General Information, General Procedures).

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDowODo1Ny4yMzJaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1

PUBLISHED: 02-AUG-2017
2013.0 XJ RANGE (X351), 204-02

REAR SUSPENSION

SHOCK ABSORBER AND SPRING ASSEMBLY

[G1274519]

REMOVAL AND INSTALLATION

64.32.01	**REAR AIR SPRING - RENEW**	**ALL DERIVATIVES**	**0.80**	**USED WITHINS**	**+**

PART[S]

STEP	PART NAME	QUANTITY
Installation Step 7	Air line connector(s)	1

REMOVAL

CAUTION:

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

NOTES:

- Removal steps in this procedure may contain installation details.
- RH illustration shown, LH is similar.
- Some variation in the illustrations may occur, but the essential information is always correct.

1. **WARNING:**

   Make sure to support the vehicle with axle stands.

   Raise and support the vehicle.

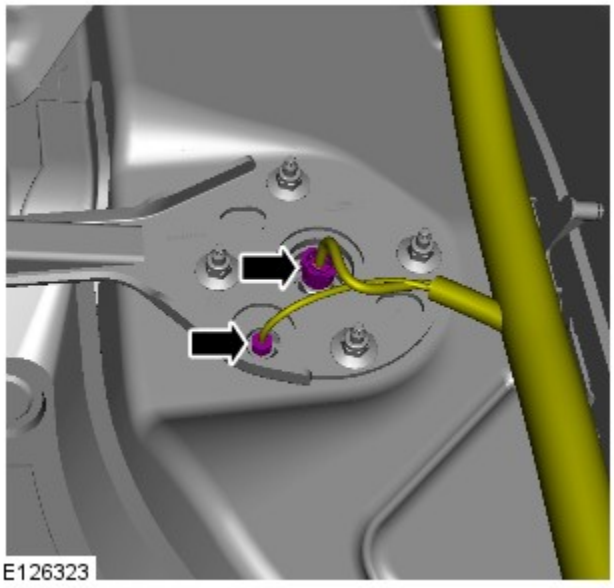
2. Refer to: Air Suspension System Depressurize and Pressurize (204-05 Vehicle Dynamic Suspension, General Procedures).

3. Refer to: Right Loadspace Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
Refer to: Left Loadspace Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

4. Refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

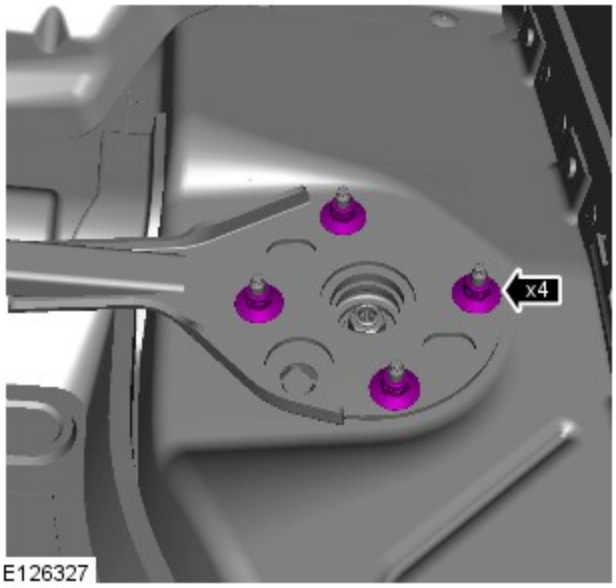
5. **CAUTION:**

Using a suitable blanking plug, blank off the end of the air pipe to prevent dirt ingress.

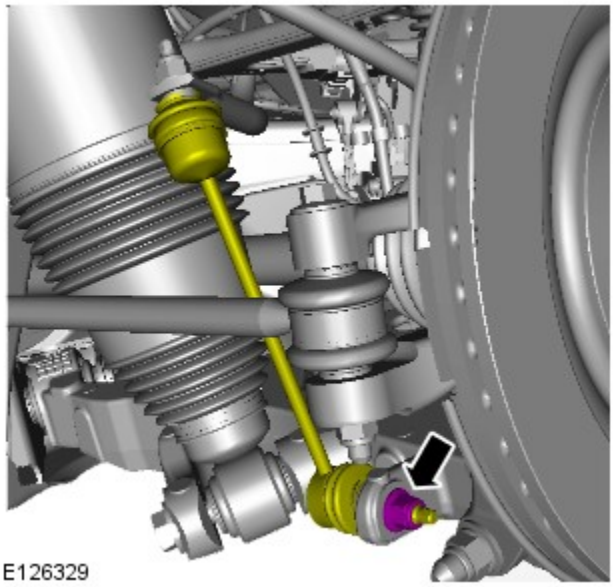


Discard the air line connector.
Refer to: Air Line Connector (204-05 Vehicle Dynamic Suspension, General Procedures).

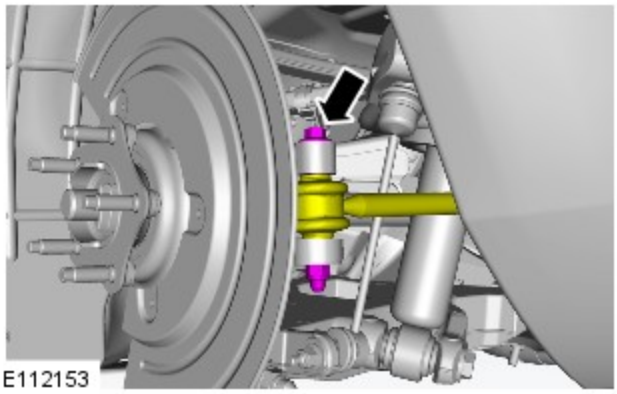
6.



7.



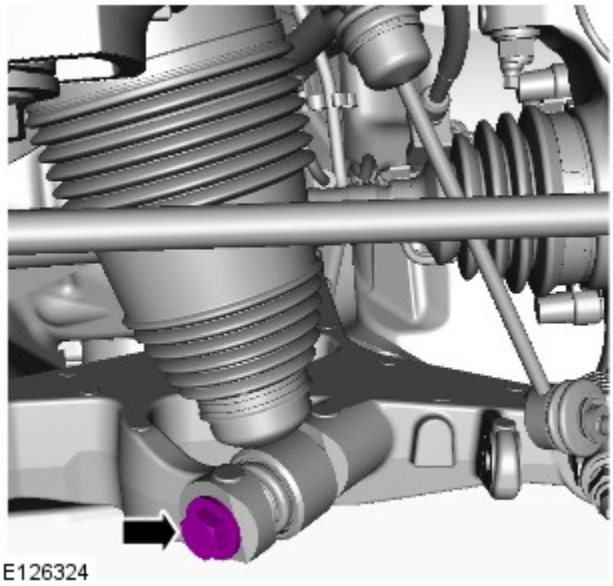
8.


E112153

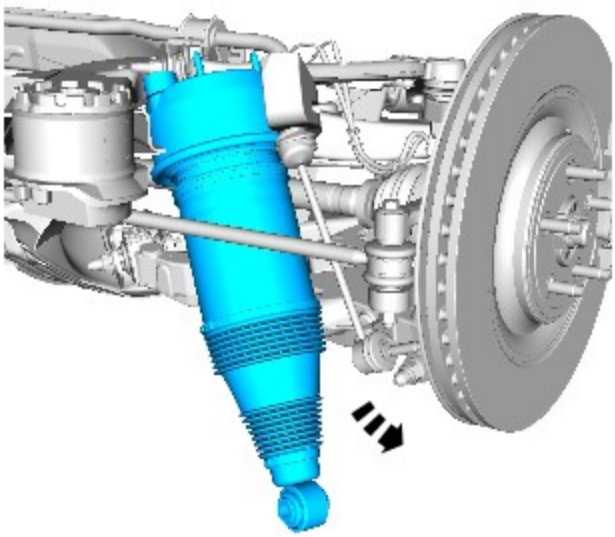
9.

CAUTIONS:

- Mark the components to aid installation.
- Note the fitted position of the component prior to removal.


E126324

10.



E152369

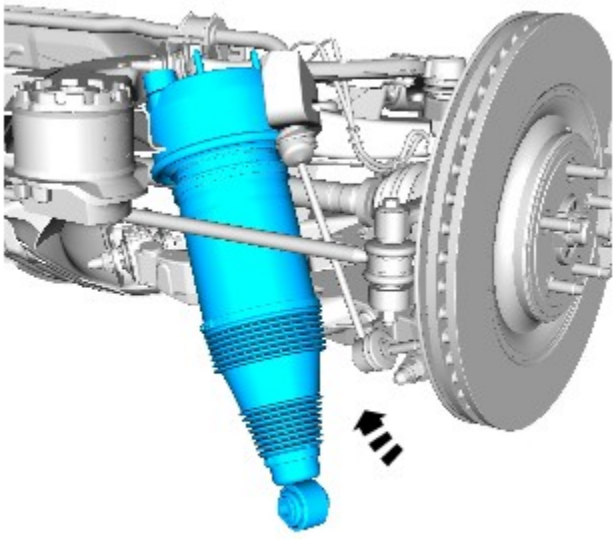
INSTALLATION

1.

NOTE:

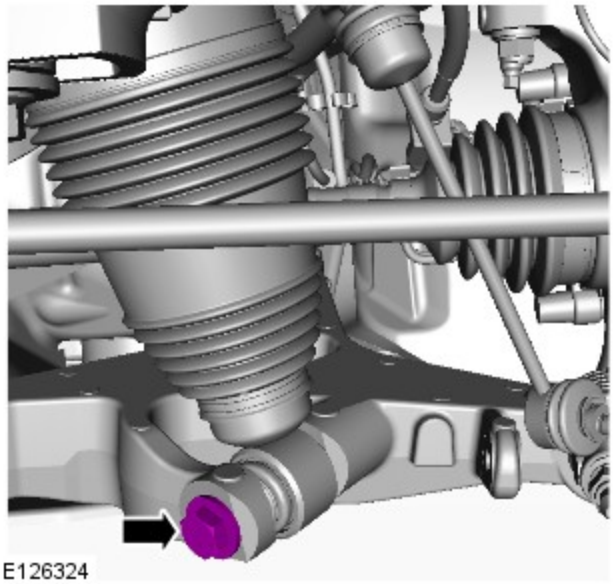
Make sure that these components are installed to the noted removal position.

2.



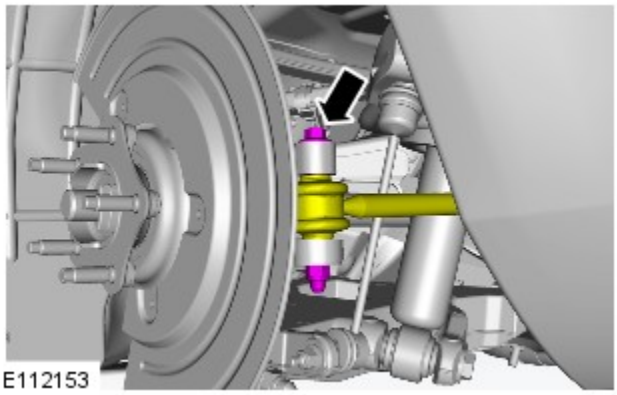
E152370

3.



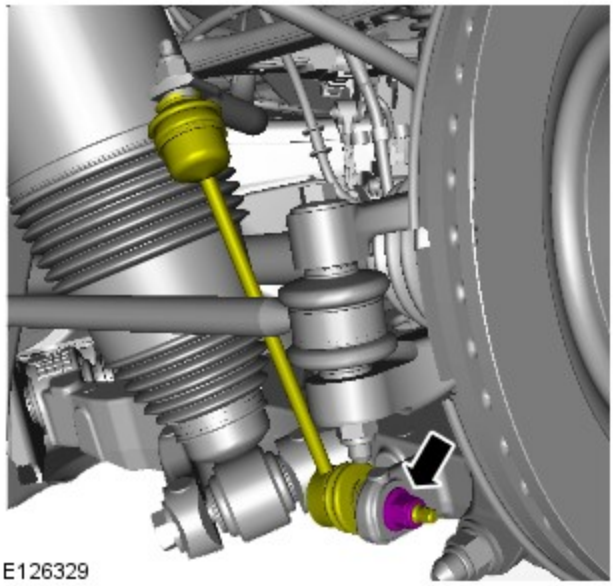
Do not fully tighten at this stage.

4.



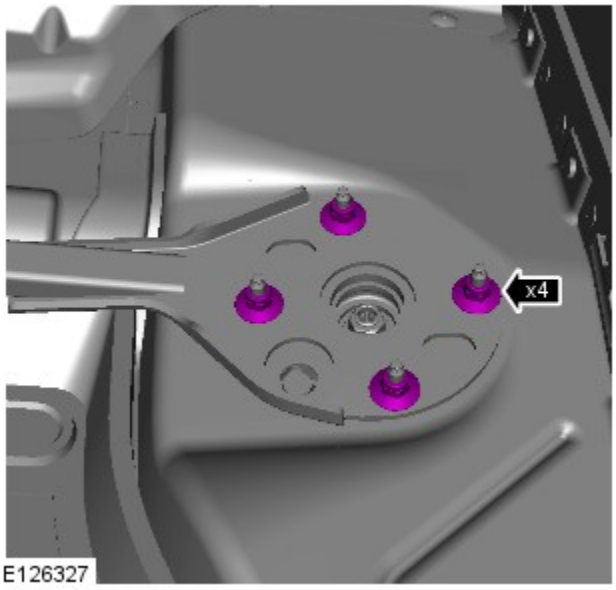
Torque: **63Nm**

5.



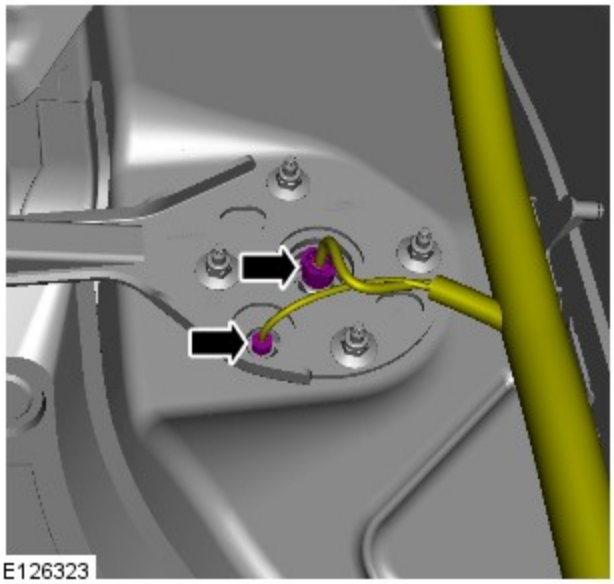
Torque: **48Nm**

6.



Torque: **30Nm**

7.



Install a new air line connector.

Refer to: Air Line Connector (204-05 Vehicle Dynamic Suspension, General Procedures).

Renew Part: Air line connector(s) Quantity: 1.

Torque: **5Nm**

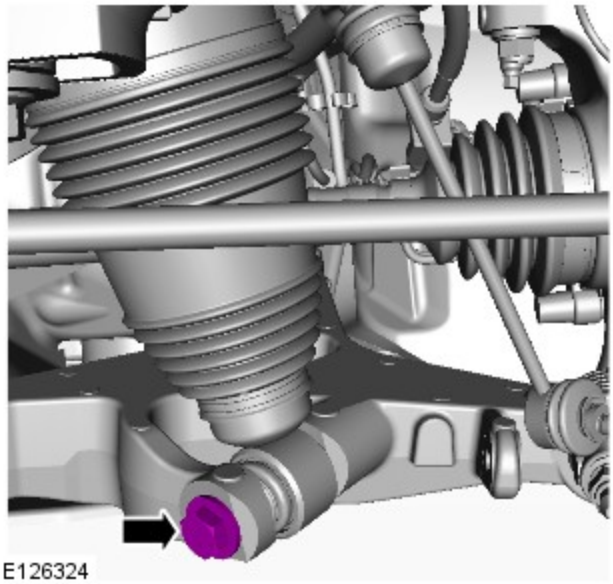
---

8. Refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

---

9. Refer to: Air Suspension System Depressurize and Pressurize (204-05 Vehicle Dynamic Suspension, General Procedures).

10.



Tighten the bolt at normal ride height.

Torque: **133Nm**

---

11. Refer to: Right Loadspace Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

Refer to: Left Loadspace Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

YmFyYWsuZ3JpZmZpbkBnbWFpbC5jb207MjAyMy0wMi0yMFQxNDoxMDo0MC4xODIaOzEwNC4yLjM5LjExO1NBSldKMUNENEQ4VjUyNDc1