

EN

FITTING INSTRUCTIONS

making everyday smoother



FIAT DUCATO X250/X290 GEN. III
PEUGEOT BOXER X250/X290 GEN. III
CITROËN JUMPER X250/X290 GEN. III

VB-FullAir 2C/4C
front and / or rear axle

FOR KIT: 1051807201, 1051807401



REVISION TABLE

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Release date (yyyy-mm-dd):	2022-06-30		
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9, 10	Updated: 4.2 Step 12, 13		
32	Updated: 6.2 step 5		
45	New: drawing		

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1. SAFETY INSTRUCTIONS

PERSONAL SAFETY RULES

- Always wear suitable protective clothing and safety boots.
- Do not wear rings, watches or loose clothing.
- Do not carry loose items in your pockets.
- Tie back long hair.
- Never use broken tools. Only use tools for their intended purpose.
- Wear safety goggles.

GENERAL SAFETY RULES

- If possible, always use a hydraulic ramp while working.
- Ensure the vehicle is properly supported when necessary.
- Ensure the vehicle is not able to roll away.
- Improper installation may result in a hazardous situation.



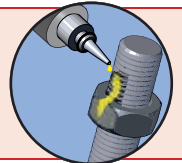
Where the warning symbol is displayed, information is given which is very important for the safety and/or health of those involved. This symbol is also used for procedures critical for the correct installation of the air suspension kit.



Important: for installation/removal, check the manufacturer's workshop manual.
If in doubt, always follow the vehicle manufacturer's instructions.



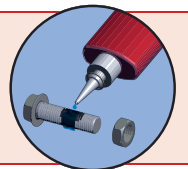
Each bolt connection in this manual contains a tightening torque with which the bolt connection must be secured and then marked with a safety paint for screws. When reusing the original bolts and nuts, follow the vehicle manufacturer's guidelines for proper tightening torques.



Important: all parts that are removed and reinstalled must be checked to ensure they are working properly.



If thread locking is specified, use Loctite 243 as a minimum or a similar thread locker with the same characteristics.



2. FITTING INSTRUCTIONS

- This manual has been put together with great care and contains a description of all the steps required to install the air suspension as stated on the front page. The content of this manual is a snapshot view of the situation as at the time it was written. VB-Airsuspension reserves the right to introduce technical changes at any time without warning.
- The warranty is only valid if installation is carried out by a specialist workshop. The VB-FullAir-/VB-NivoAir kit may only be fitted by persons who have been authorised by VB-Airsuspension. Staff must be experienced in working on light commercial vehicles, particularly in relation to electrics/electronics, pneumatic technology and general vehicle mechanics.
- Your vehicle may differ from the one shown in the fitting instructions.

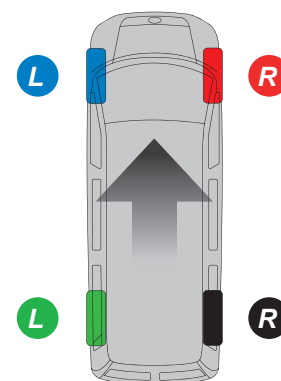
VB-Airsuspension is not liable for any damage resulting from not following these fitting instructions.

- Take the vehicle for a test drive before installing the air suspension.
- Check whether the TÜV documentation is valid for the vehicle.
- Ensure the correct calibration supports are available.
- Keep the work site clean and tidy.
- Use vehicle workshop manuals where necessary.
- The air suspension kit is supplied for four corners. If a part is intended for one specific corner, it is identified with a coloured sticker. Fit the air tubes in accordance with the colour code system used by VB-Airsuspension.
- Always follow the vehicle manufacturer's conversion instructions, unless expressly stated otherwise in this manual.
- Mark the removed parts to ensure they are refitted back in the right vehicle.
- All parts that are removed and reinstalled must be checked to ensure they are working properly.
- Always tighten the supplied nuts and bolts to the specified torque, unless expressly stated otherwise in this manual. In this case, follow the vehicle manufacturer's guidelines.
- Mark the bolted joint using security check paint marker.
- If alterations are made to the original anti-corrosion system, this must be rectified immediately. Use spray wax or a protective coating for this purpose.
- Always refit pipes and wires that have been removed in the same way as they were originally fitted.
- Secure pipes and wires with a sufficient number of tie-wraps. Ensure that no tension can be applied to the wires.
- Ensure there are no tight bends in air tubes and they cannot be kinked or chafe against other parts.
- Never attach air tubes, wires or other parts to the vehicle's brake lines.
- The supply cable must be at least 100 mm away from the ABS/ESP block, the sensors and other control equipment.
- Wires must not be routed above or across the battery.
- Do not leave any tools, cleaning cloths or other materials behind after completing work.
- Check the system for air tightness after fitting.
- Check that the air springs always have an all-round clearance of at least 10 mm at maximum pressure.
- After fitting, check the air suspension against the checklist. (This checklist should be retained by the dealer and must be available to VB-Airsuspension for inspection on request.)
- Follow the vehicle manufacturer's instructions, including when parking the vehicle.
- Take the vehicle for a test drive after fitting.

Axle:	Calibration height:	Order number:
Front axle	SHF = 199 MM	009 000 00 62
Rear axle	X = 125MM	009 006 00 13

- The air suspension kit is supplied for four corners. If a part is specifically for one corner, it is identified with a coloured sticker.

Colour	Description	Colour	Description
Green	Rear left	Blue	Front left
Black	Rear right	Red	Front right



3. EXPLANATORY NOTES TO THIS MANUAL

This manual is intended for the air suspension kit generation III for the:

- Fiat Ducato X250 & X290
- Peugeot Boxer X250 & X290
- Citroën Jumper X250 & X290

This manual describes the steps for fitting the air suspension to the front and/or rear axle. Read through the appropriate sections for the kit ordered.

If you have a rear axle air suspension kit with item number 10518072XX, skip section 6.

If you have a front axle air suspension kit with item number 10518071XX, skip section 5.

If you have a front and rear axle air suspension kit with item number 10518074XX, read through all sections in this manual for fitting the front and rear axle air suspension.

Which axle?	Kit number	Section
Front axle	10518071XX	4, 6, 7
Rear axle	10518072XX	4, 5, 7
Front and rear axle	10518074XX	4, 5, 6, 7

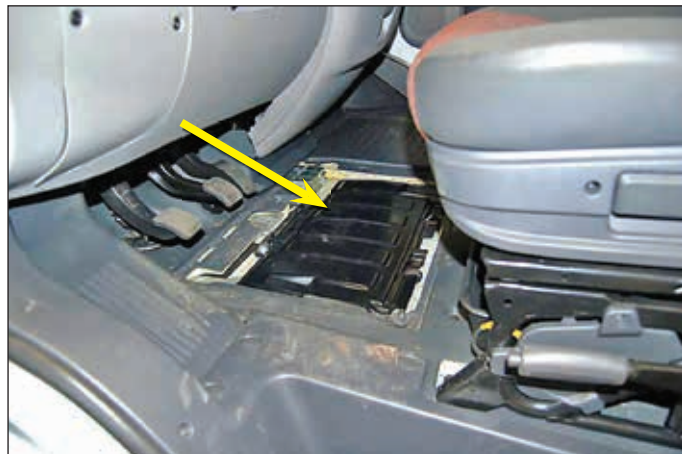
This manual describes the steps for fitting the air suspension to X250 and X290 vehicles.. If the mounting steps required for a X250 differ from those for a X290 they will be clearly indicated with either **X250** or **X290**.



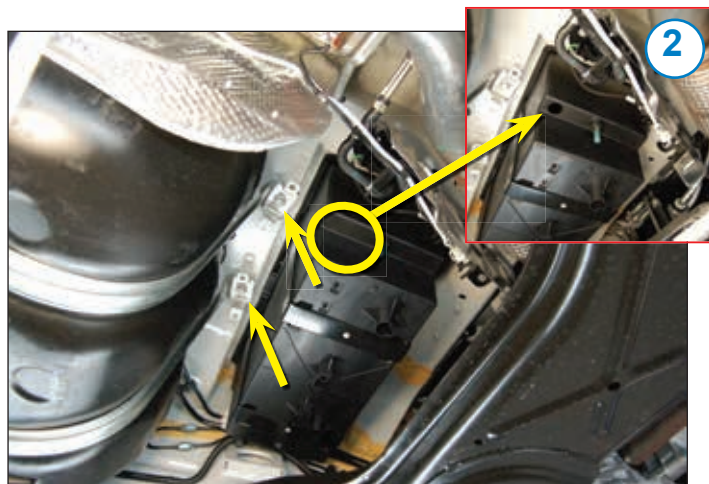
4. COMPRESSOR BOX AND WIRING HARNESS

4.1 COMPRESSOR BOX

1. Open the battery housing under the driver's seat floor mat.

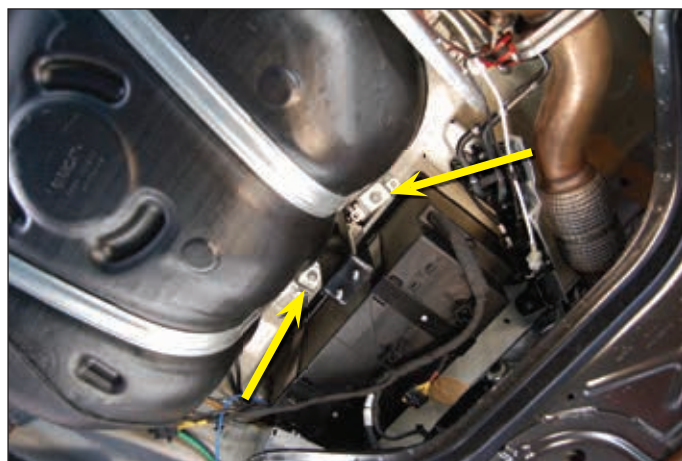


2. Loosen the marked bolts. Do not remove them.
3. Drill a $\varnothing 22$ mm hole in the place indicated.



Ensure that no parts in the battery housing are damaged by drilling the hole.

4. Mount the compressor bracket below the bolts loosened in step 2. Slide the bracket under the bolts, looking from the rear.

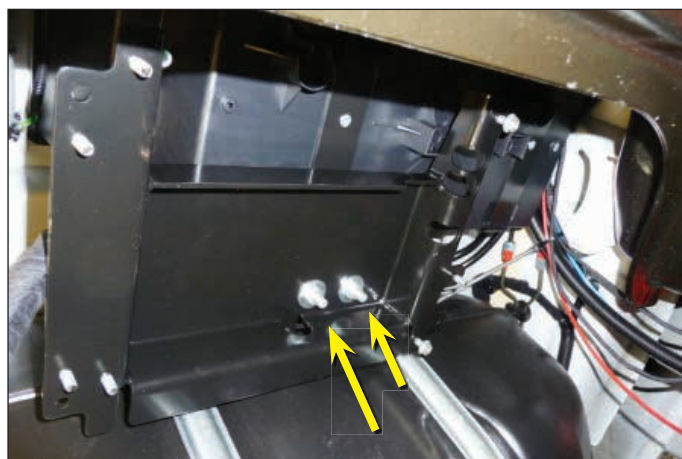


Original fasteners



41 Nm

5. Fit the compressor bracket to the compressor suspension brackets.



2 x lock nut

M8

2 x large washer

M8



15 Nm

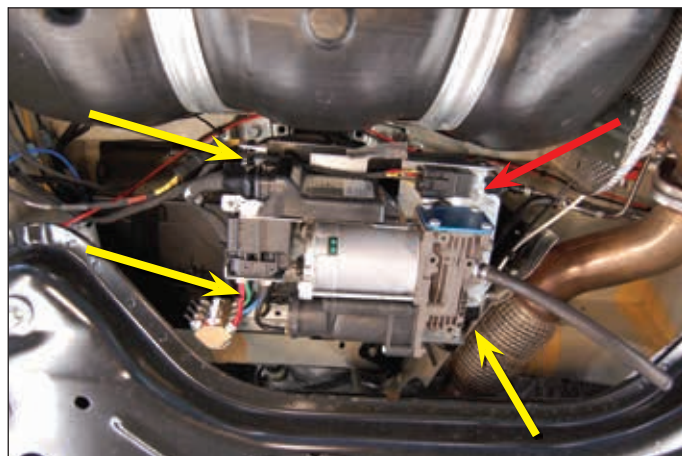
6. Remove the cover from the compressor box.
7. Fit the compressor box to the bracket.
8. Tighten the nuts.

4 x flange lock nut

M6



8 Nm



4.2 WIRING HARNESS

1. Remove the cover.
2. Remove the entry trim.



3. Remove the B-pillar cover on the right by unscrewing the marked bolts.



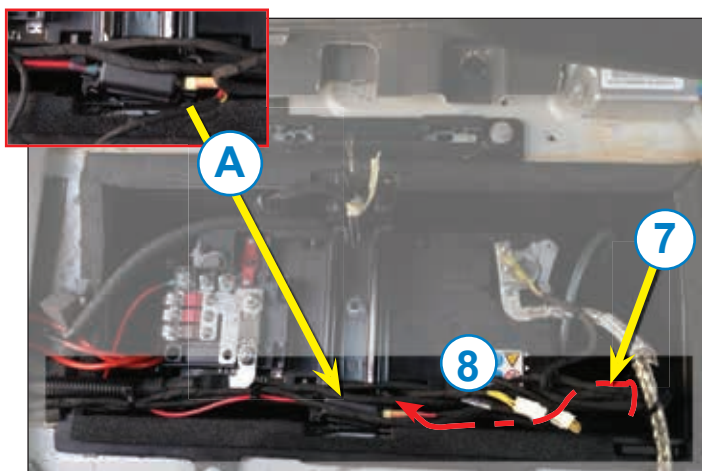
4. Remove the cover.
5. Remove the entry trim on the right-hand side.



6. Route the VB wiring harness inside through the hole drilled in **section 4.1** point 3.



7. Carefully pull the wire into the battery housing.
8. Route the two cables with white connectors to the left around the battery.

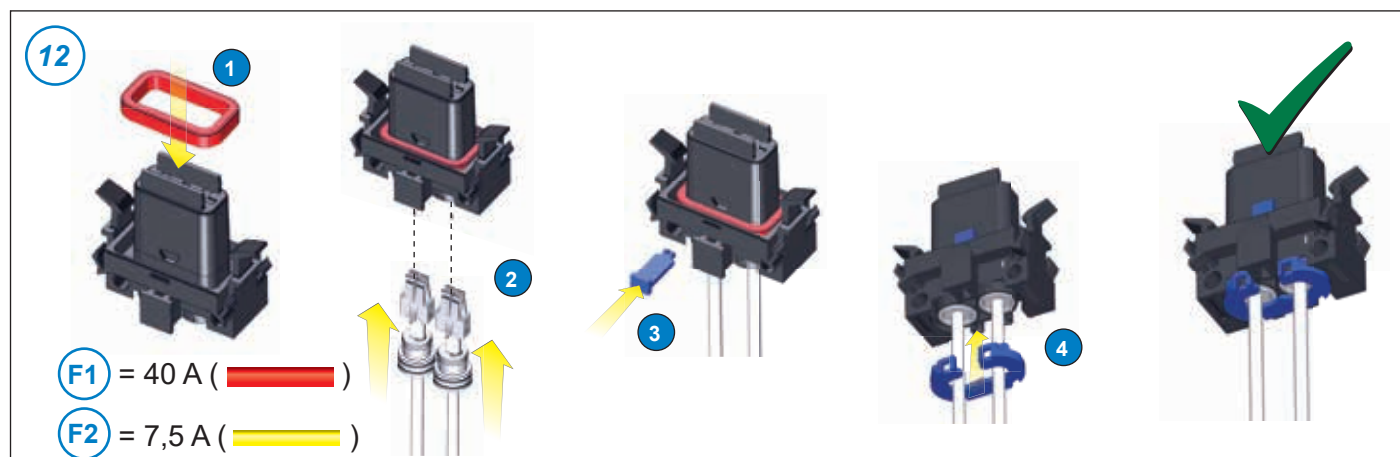
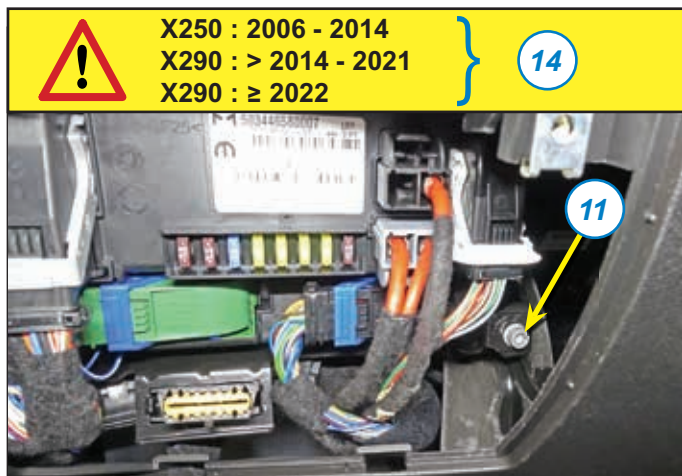


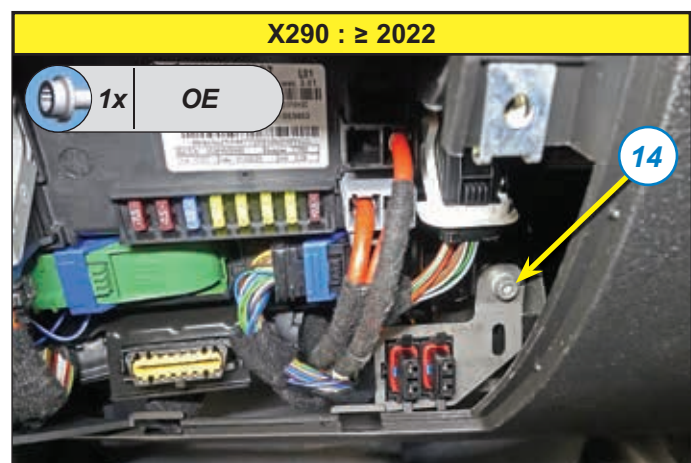
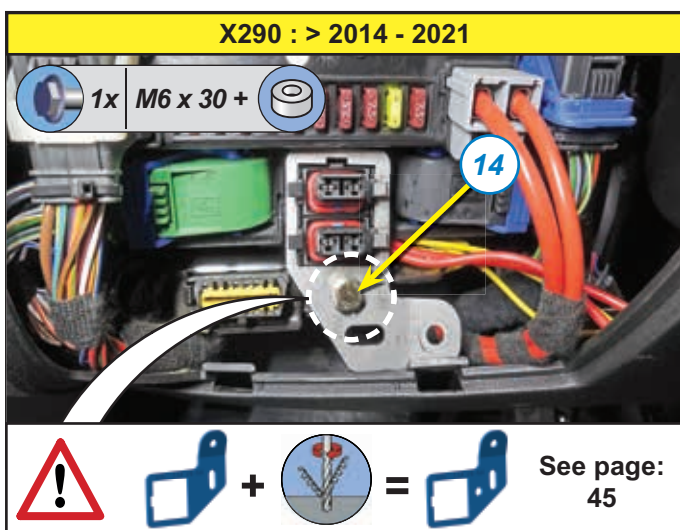
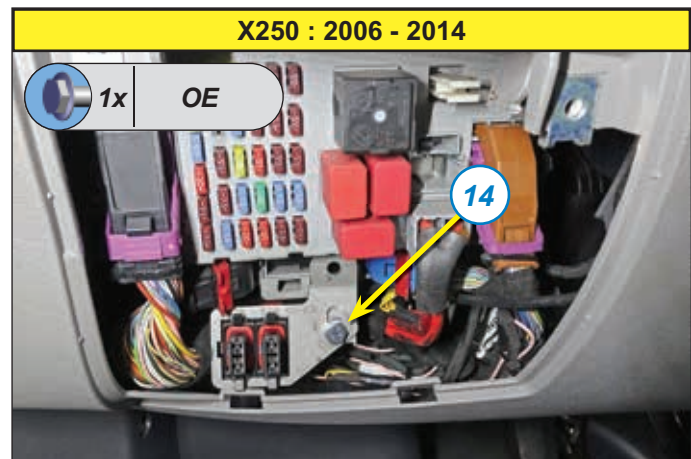
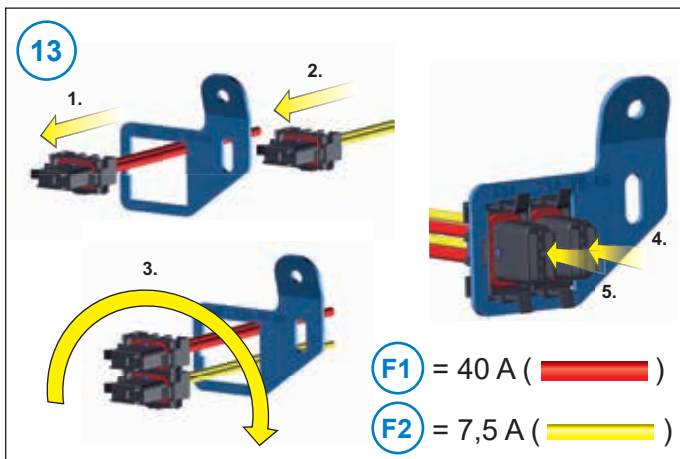
	Use sufficient tie-wraps to secure the fuse block (A).
	Use sufficient tie-wraps to secure the wires.
	Ensure that tubes cannot be placed under tension or become damaged.

9. Route the red and yellow cables to the fuse box at front left.
10. Route the white connector for the remote control through into the fuse box.
11. Unscrew and remove the bolt.

	Use sufficient tie-wraps to secure the wires.
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	The fuse block may differ from the fuse block in the picture
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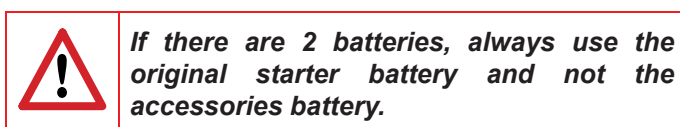
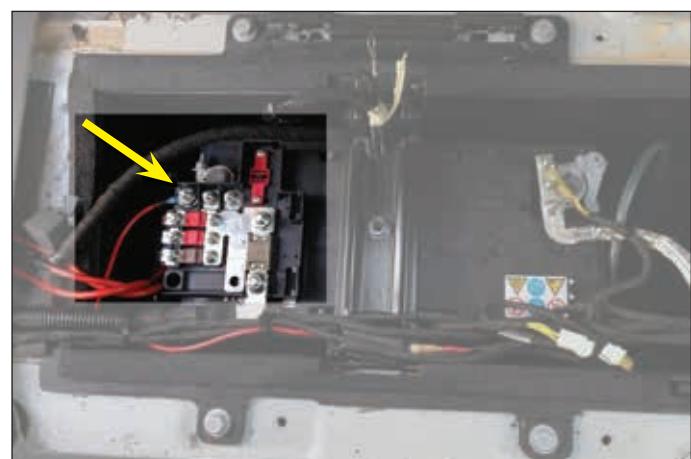




14. (For 4C Air suspension: do not install yet):
Install the fuse block in the fuse box using the
supplied distance bushes.

15. Do not fit the fuses yet.

16. Connect the red wire to the connection marked on
the positive battery terminal. (+).



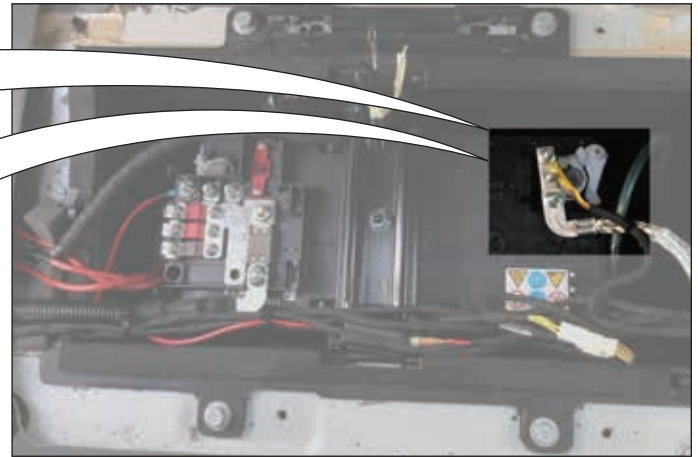
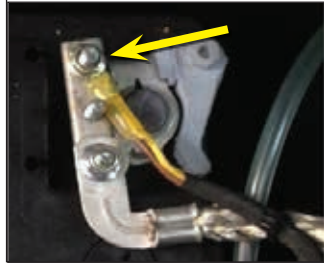
17. Connect the yellow and brown wires to the negative battery terminal (-)

With Relais:

+ 8 mm



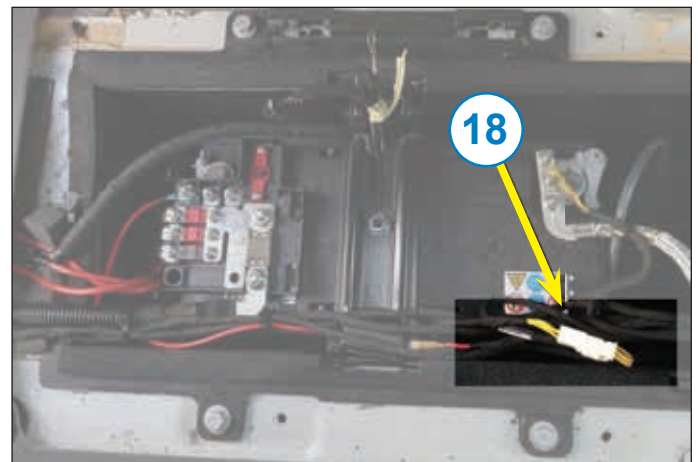
Without relais:



18. Connect the supply cable to the white connector.

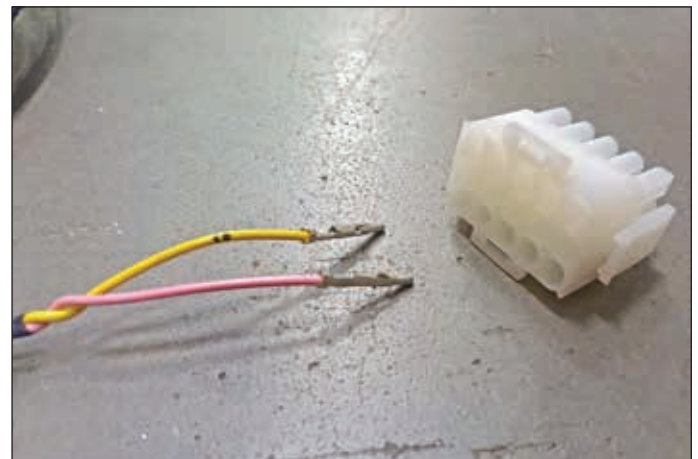


The vehicle must be fitted with factory option:
If this is the case, go to step 20.
If not, go to chapter 9 and 10.

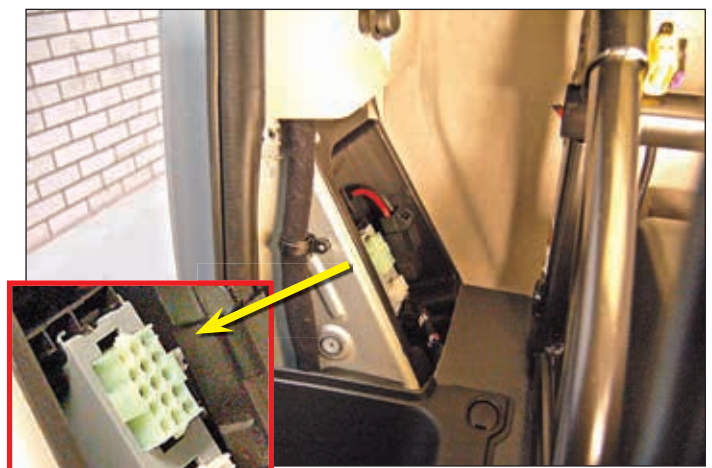


19. Route the supply cable under the trim to the right-hand side of the vehicle.

20. Connect the yellow wire to position **3** of the white connectors supplied for option **081**.
 21. Connect the red wire to position **13** of the white connectors supplied for option **081**.

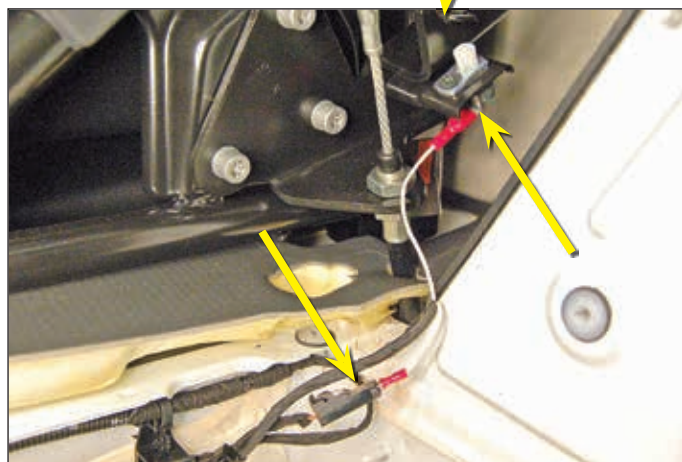


22. The white connector for option **081** is in the B-pillar on the right.
 23. Connect the white connector supplied for option **081** to the white connector.



4.3 HANDBRAKE SIGNAL

1. Remove the handbrake cover.
2. Route the white wire of the supply cable to the handbrake.
3. Remove the connector from the handbrake.
4. Fit the connector of the supply cable to the handbrake.
5. Fit the connector of the handbrake to the supply cable.
6. Route the wire as shown.
7. Fit the handbrake cover.



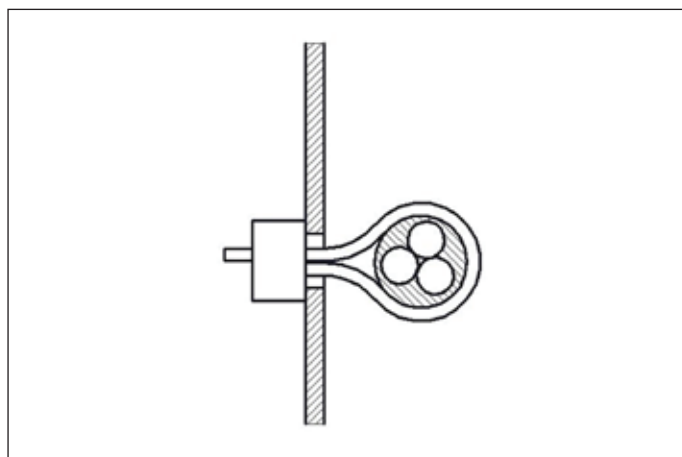
4.4 REMOTE CONTROL

1. In consultation with the customer, identify a suitable location to install the remote control.
2. Mount the remote holder.



Make sure that no underlying parts can be damaged during installation.

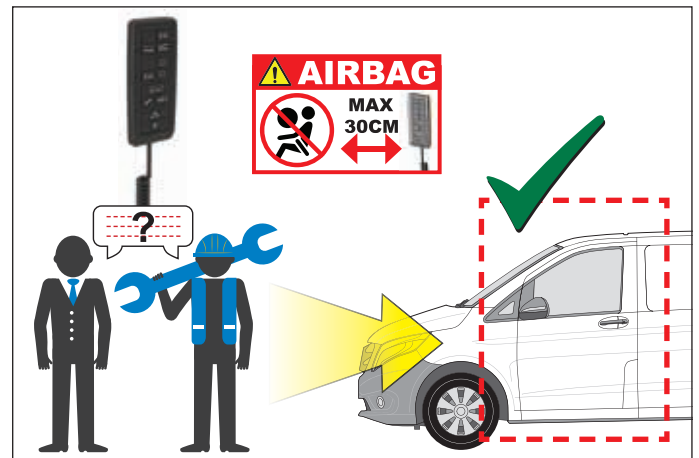
3. Place the remote control in the holder.
4. Ensure the connector is not under tension.
5. Secure the end of the wire with a tie-wrap.





Ensure that the remote control is never in the way of the airbags.

6. Route the remote-control wire to the VB wiring harness under the seat console.
7. Connect the remote control wire to the VB wiring harness.
8. Refit the interior components removed earlier.



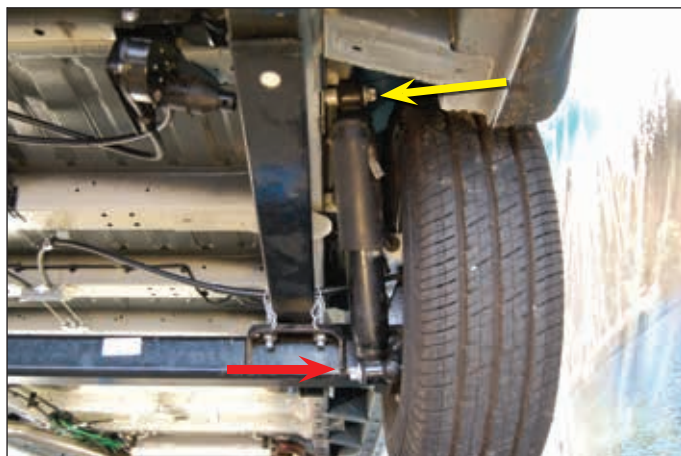
5. FITTING THE AIR SUSPENSION KIT FOR THE REAR AXLE

5.1 PREPARATIONS

1. Support the vehicle and the axle properly.
2. Remove the spare wheel.
3. Remove the shock absorbers.



***The nuts and bolts
will be re-used.***



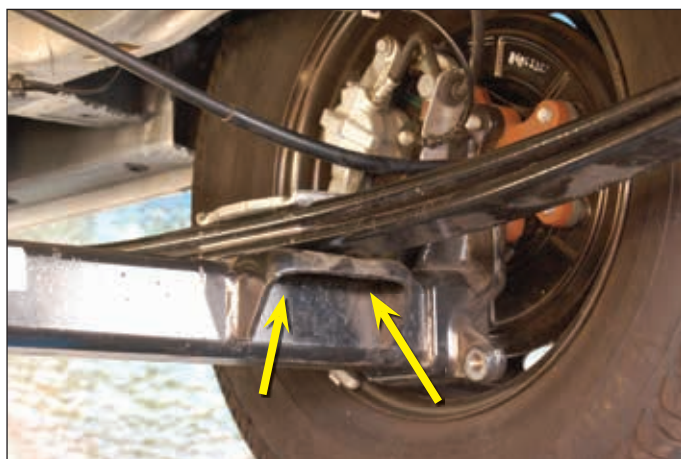
4. Remove the bump stops.



5. Remove the handbrake cable bracket.



6. Remove the U-bolts.
The nuts and U-bolts will not be re-used.



***To stop the rear axle moving, it is advisable
to replace one leaf spring first.
Then replace the other leaf spring.***

7. Remove the topmost bolt from the spring shackle.



Lower the rear axle slightly to make this easier.

8. Lower the axle.
9. Remove the bolt from the front leaf-spring bracket. The bolts will be re-used.
10. Remove the leaf springs.



Protect the exposed surface with an anti-corrosion agent. Use spray wax or a protective coating for this purpose.

11. Remove the spring carrier arm bushes to the rearmost spring arm carrier. These parts are now no longer necessary for this vehicle.



5.2 MAIN SPRING

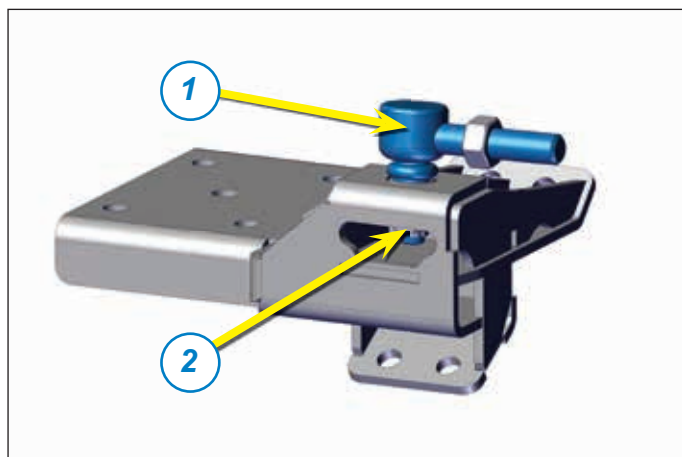
1. Fit the Panhard rod ball-joint to the top left leaf-spring seat bracket.
2. Secure the castellated nut with a split pin.

1 x castellated nut	M14 x 1,5
1 x washer	M14
1 x split pin	M14



75-85 Nm

Then tighten until split pin fits.



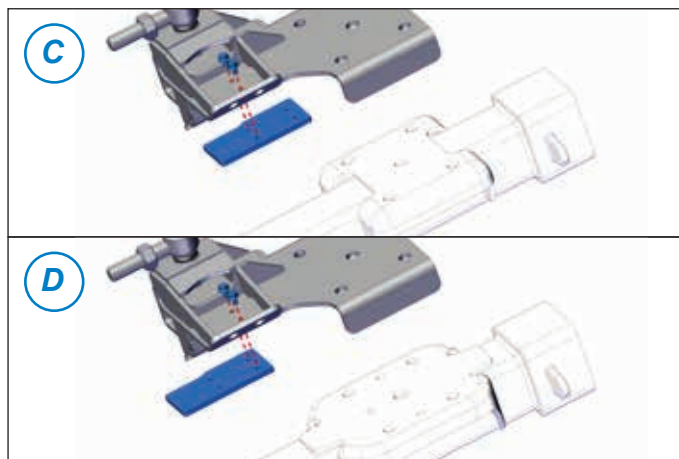
3. Fit the distance plate to the leaf-spring seat bracket.
Observe the spring-seat-dependent positions.

C: narrow spring seat
D: wide spring seat

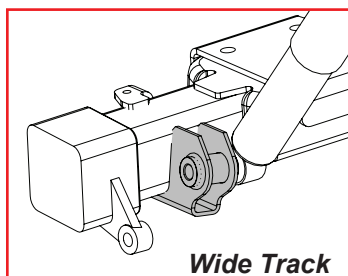
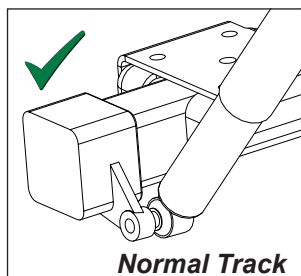
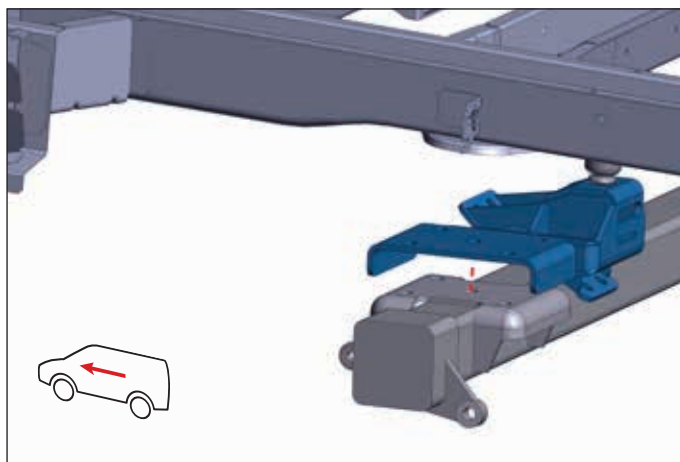
2 x flange bolt **M6 x 10**



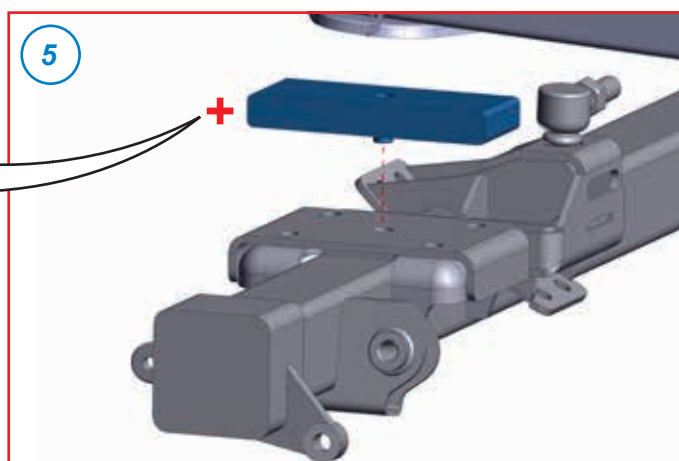
8 Nm



4. Fit the upper left leaf-spring seat bracket with the Panhard rod ball-joint to the spring seats on the left-hand side of the vehicle.



5. Fit the extra spacer block only for wide track vehicles.

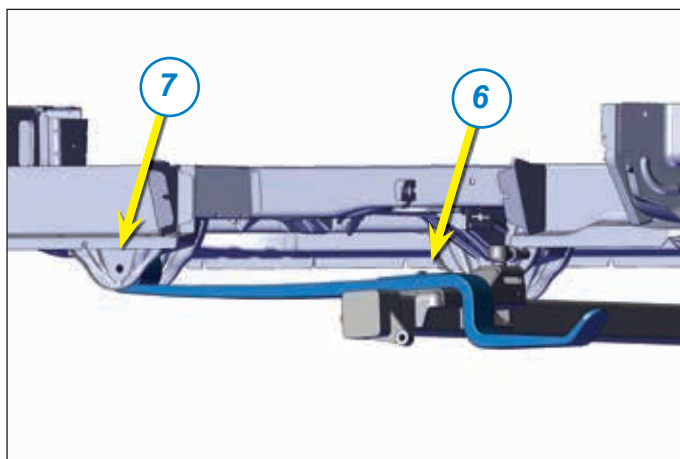


6. Place the main spring on the spring seat.
7. Fit the main spring in the frontmost leaf-spring bracket.
Use the original bolt and a new nut.
**** Do not tighten the nuts yet. Tighten them once the vehicle is at the ride height.**

1 x original bolt
1 x steel lock nut** **M16**



185 Nm



8. Fit the ball-joints to the ball-joint brackets.

2 x ball joint	M6
2 x washer	M6
2 x steel lock nut	M6



5 Nm

9. Place the ball-joint bracket on the main spring.
10. The ball-joint bracket ball-joints must point towards the outside of the vehicle.



If the vehicle had composite leaf suspension or OEM air suspension, continue from section 11.

11. Place the original spring clamping plates on the main spring.
12. Fit the new U-bolts.

2 x U-bolt	M14
------------	-----

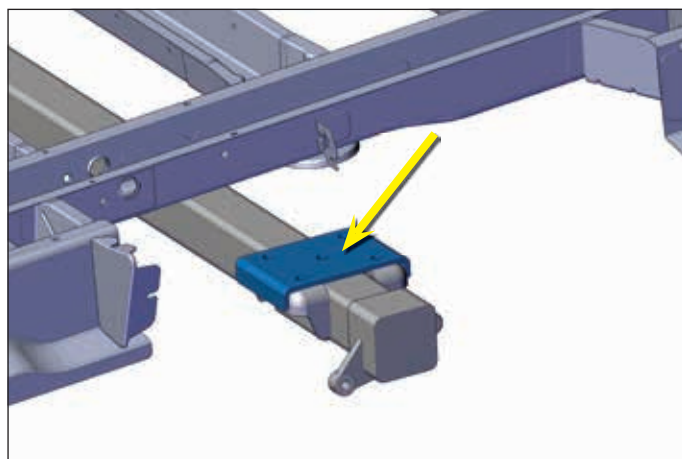
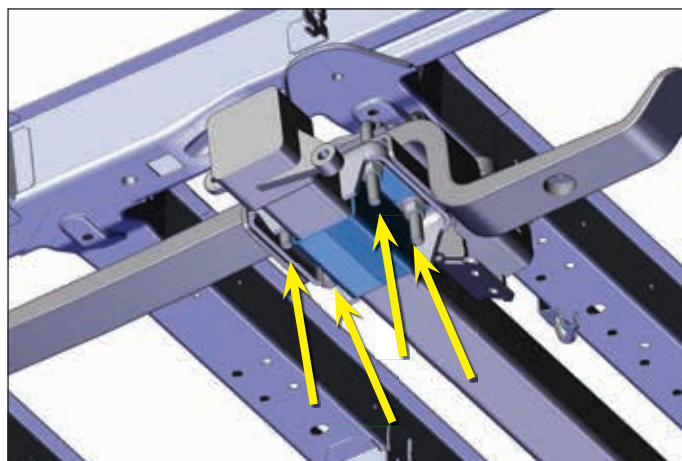
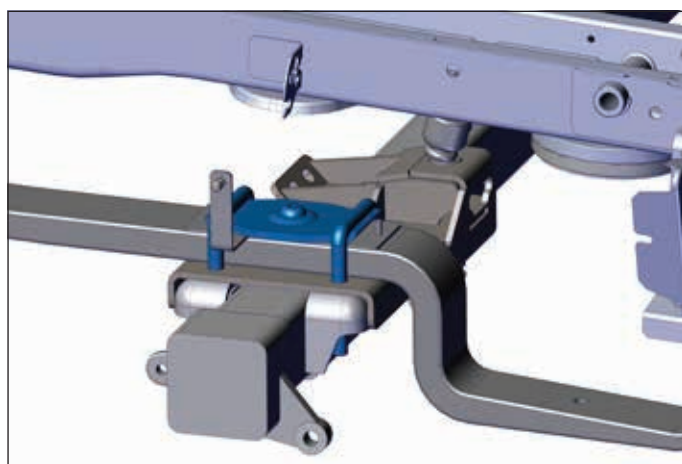
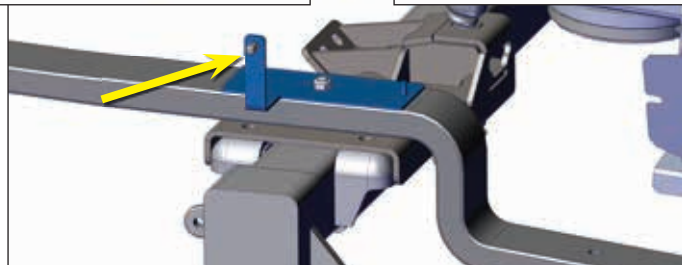
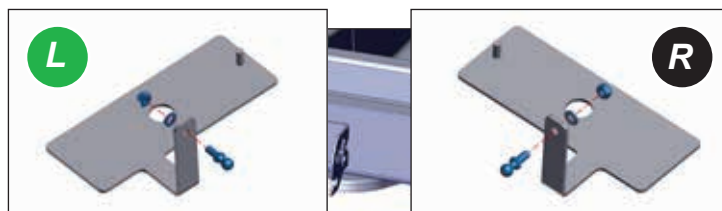
13. Fit the bottom left leaf-spring seat bracket under the spring seat.
14. Fit the new leaf-spring U-bolt nuts.
**** Do not tighten the nuts yet. Tighten them once the vehicle is at the ride height.**

4 x flange nut **	M14
8 x original washer	M14



130 Nm

15. Fit the upper right leaf-spring seat bracket.



16. Place the right hand main spring on the right hand spring seat.
17. Fit the main spring in the frontmost leaf-spring bracket.

Use the original bolt and a new nut.

**** Do not tighten the nuts yet. Tighten them once the vehicle is at the ride height.**

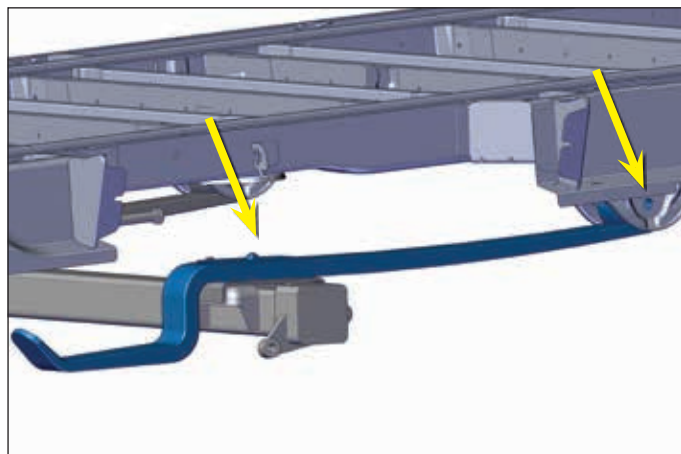
1 x original bolt

1 x steel lock nut**

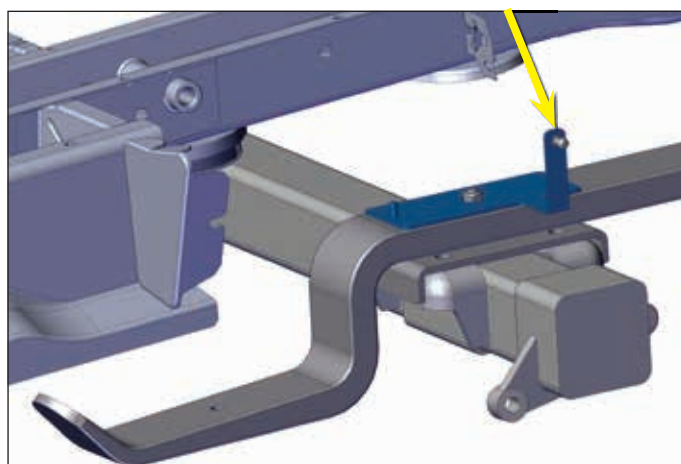
M16



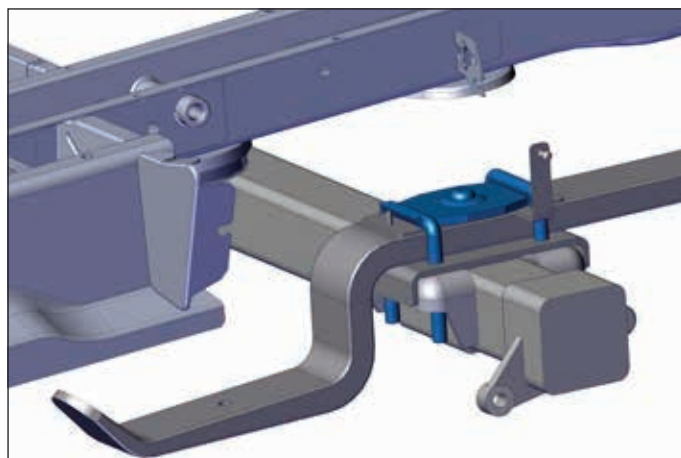
185 Nm



18. Place the ball-joint bracket on the main spring.
19. The ball-joint bracket ball-joints must point towards the outside of the vehicle.



20. Place the original spring clamping plates on the main spring.
21. Fit the new U-bolts.



2 x U-bolt

M14

22. Fit the new leaf-spring U-bolt nuts.
- ** Do not tighten the nuts yet. Tighten them once the vehicle is at the ride height.**

4 x flange nut**

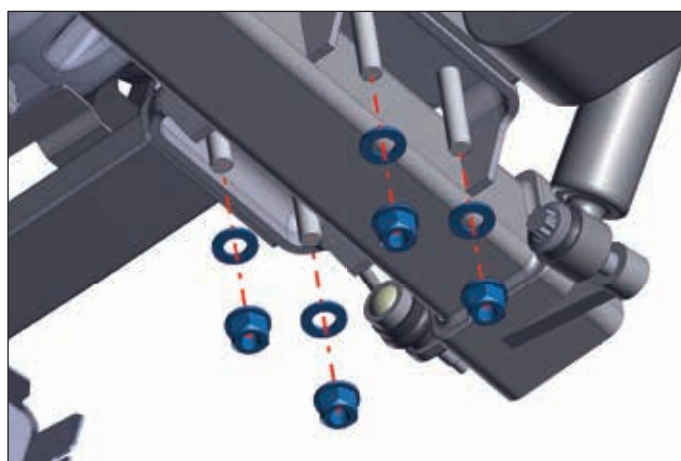
M14

8 x original washer

M14



130 Nm



23. Fit the handbrake cables to the ball-joint brackets.



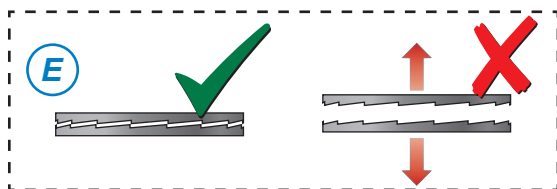
2 x pipe clamp	Ø20 - 15
2 x washer	M6
2 x lock nut	M6



8 Nm

5.3 UPPER CROSS BEAM

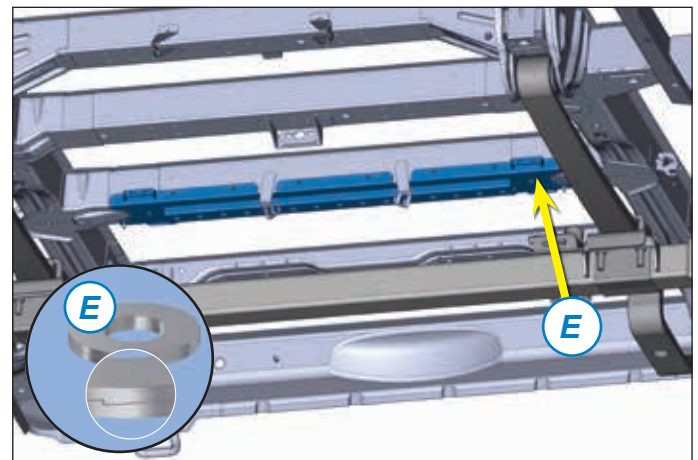
1. Fit the upper crossbeam to the chassis.
Fit only the left-hand bolt.



1 x bolt	M14 x 40 x 1.5
1 x Nord-Lock washer (E)	M14



185 Nm



2. Fit the Panhard rod bracket to the upper cross beam. Use screw thread locking agent (F).

1 x bolt	M14 x 40 x 1.5
1 x Nord-Lock washer (E)	M14

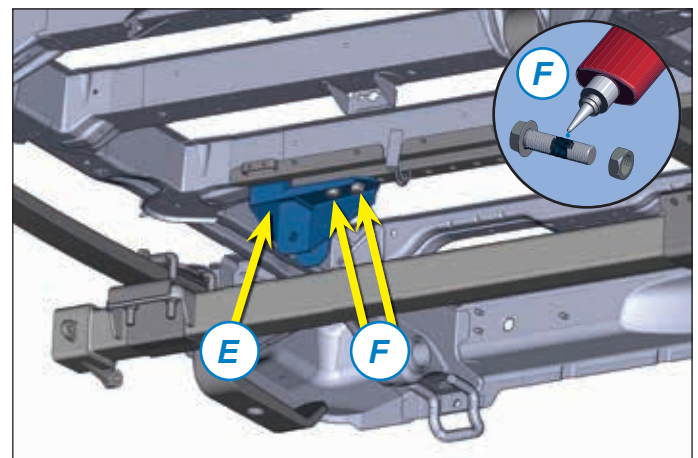


185 Nm

2 x bolt (F)	M14 x 20
2 x washer	M14



130 Nm

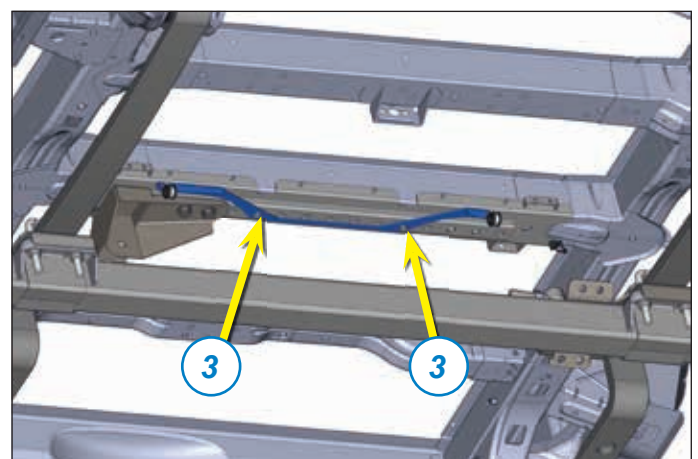


3. Fit the handbrake cable bracket to the upper cross beam.

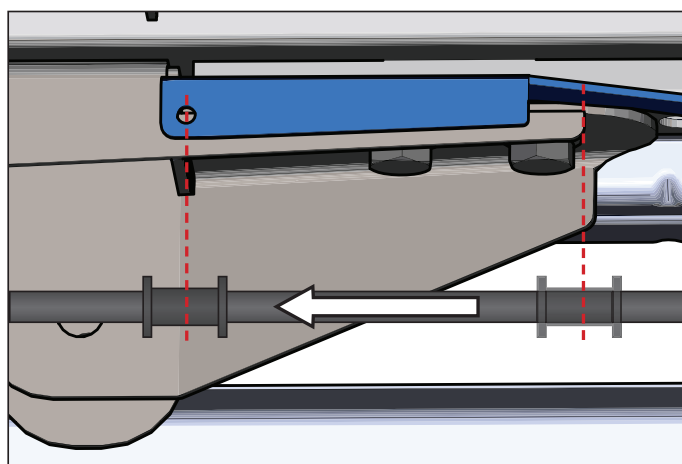
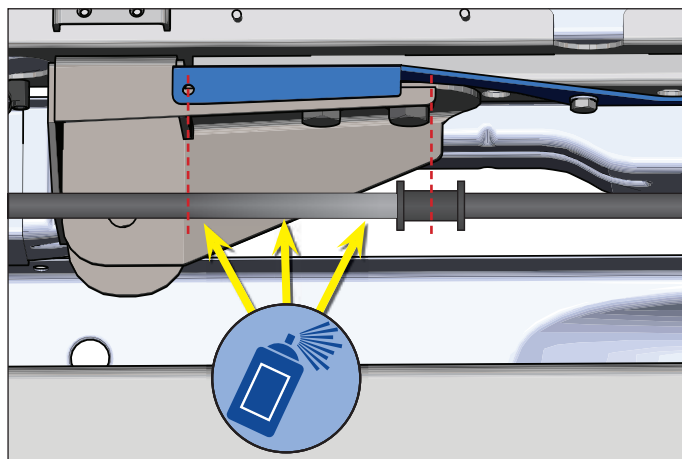
2 x bolt	M8 x 20
2 x washer	M8



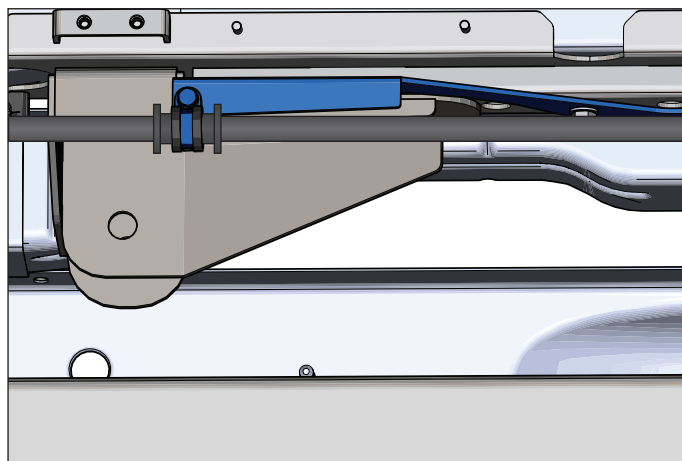
20 Nm



4. Use brake cleaner.



5. Fit the handbrake cables to the handbrake cable bracket.



2 x pipe clamp	Ø20 - 15
2 x bolt	M6 x 20
4 x washer	M6
2 x lock nut	M6



8 Nm

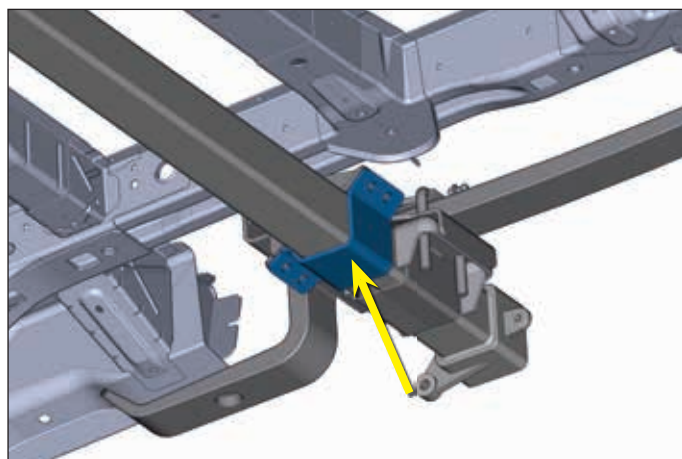
5.4 PANHARD ROD

1. Fit the lower clamp plate to the top-left spring seat.

4 x bolt	M14 x 35
8 x washer	M14
4 x lock nut	M14



140 Nm

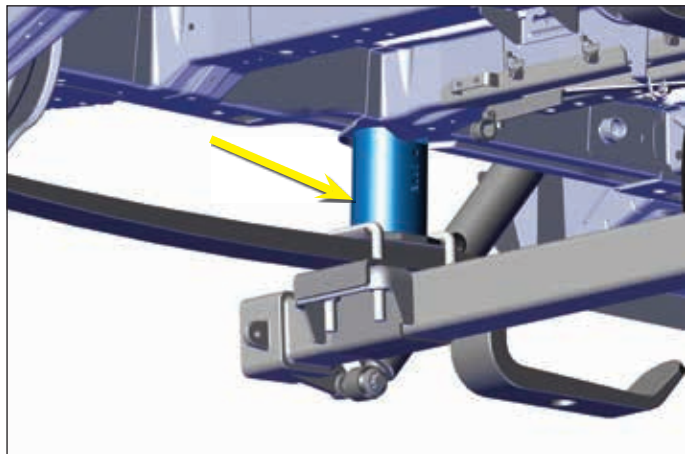


2. Lower the vehicle onto the calibration supports.

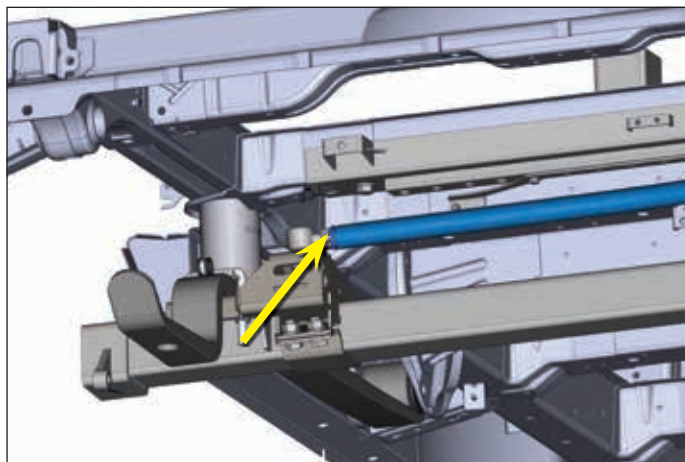


Go to section 2 for details of the correct calibration supports for this kit.

3. Secure the bolt from sections 5.2 and 5.3.

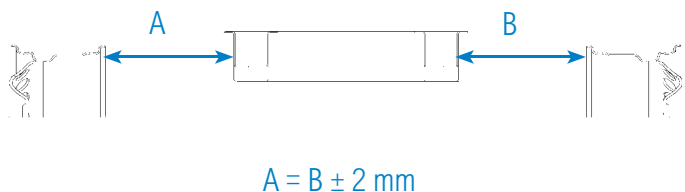


4. Screw the Panhard rod onto the ball joint.
**** Do not tighten the nut yet.**



Apply grease to the thread.

5. Measure the distance (**A**) between the chassis and rim edge on the left-hand side.
6. Measure the distance (**B**) between the chassis and rim edge on the right-hand side.
7. If there is a difference larger than 2 mm between the left and right measurements, correct it by pressing the chassis to one side relative to the rear axle.
8. Measure the distance (**A**) and (**B**).
9. If the difference is > 2 mm, adjust!
If the difference is < 2 mm, continue!
10. Turn the Panhard rod on the ball head until the bolt of the Panhard rod bracket fits.
11. Fit the curved Panhard rod to the Panhard rod bracket.



When making adjustments: 1 turn is equivalent to 1.5 mm of movement.

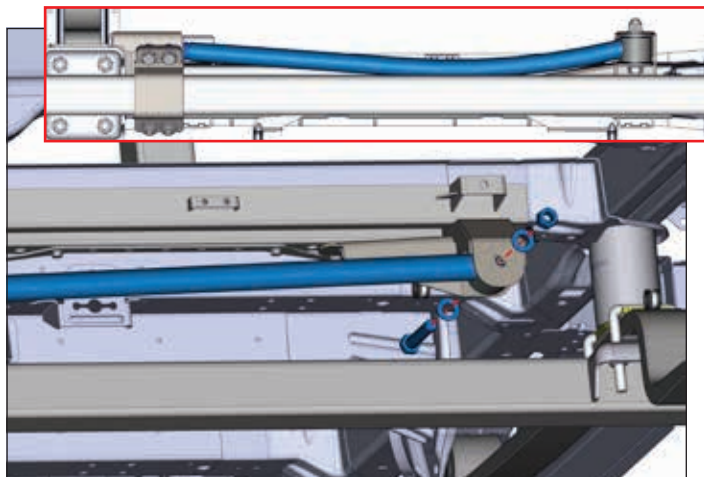


Ensure the correct curvature of the Panhard rod. It must point forward.

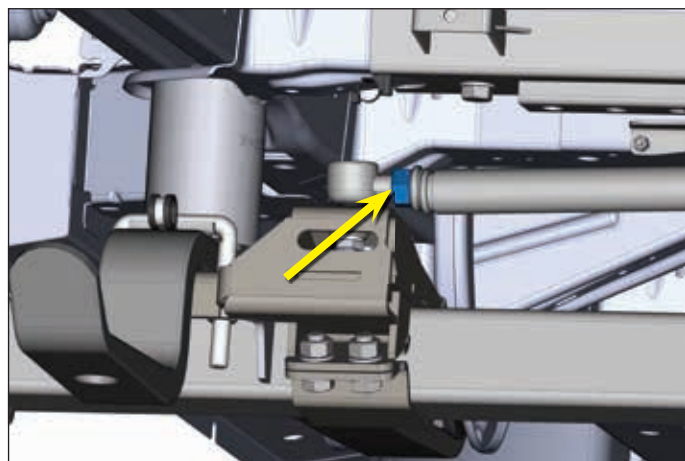
- | | |
|---------------------|-----------------|
| 1 x bolt | M16 x 90 |
| 2 x washer | M16 |
| 1 x lock nut | M16 |



200 Nm



12. Ensure the ball joint is straight relative to the bracket when tightening the lock nut.
13. Tighten the lock nut.



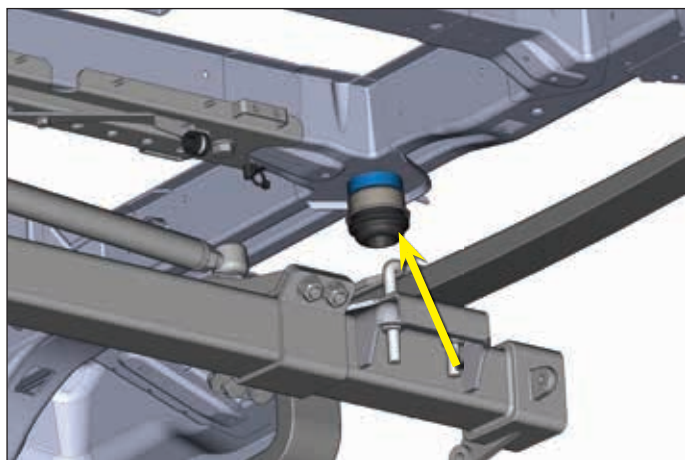
nut supplied



65 Nm

5.5 BUMP STOPS

1. Mount the bump stop on the left-hand side using the shim.

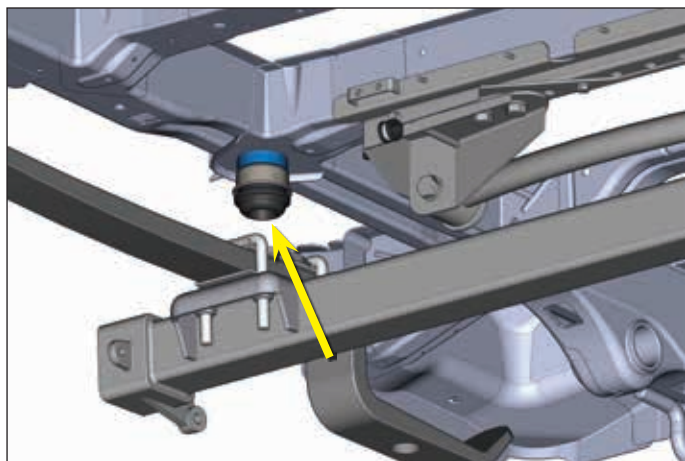


1 x bolt Tuflok	M10 x 50 x 1.25
1 x washer	M10



41 Nm

2. Mount the bump stop on the right-hand side with the shim.



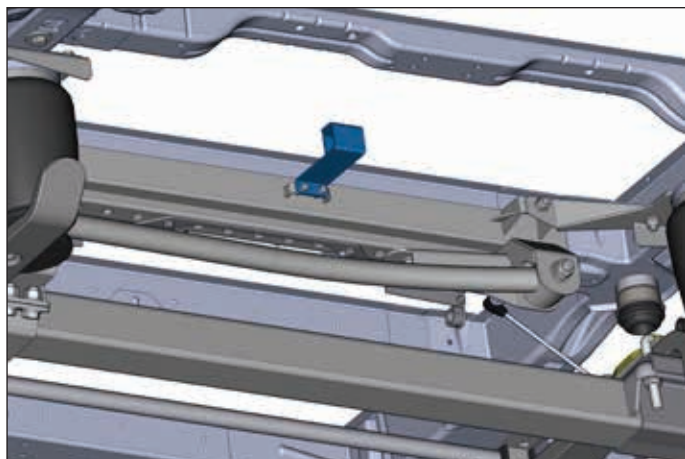
1 x bolt Tuflok	M10 x 50 x 1.25
1 x washer	M10



41 Nm

5.6 SPARE WHEEL BRACKET

1. Fit the spare wheel bracket (if available).




2 x bolt	M6 x 20
2 x washer	M6

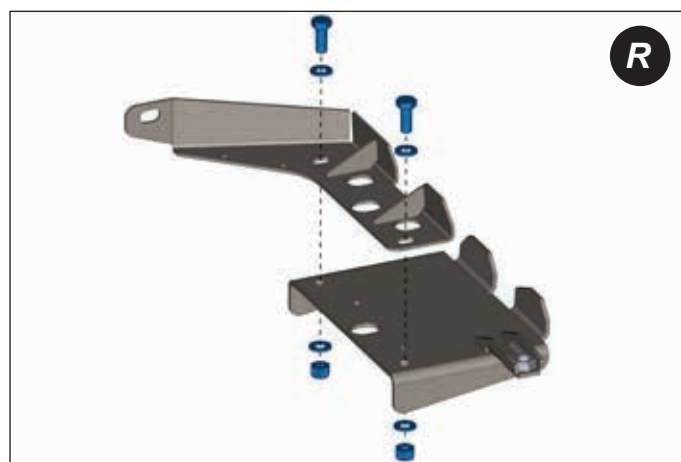
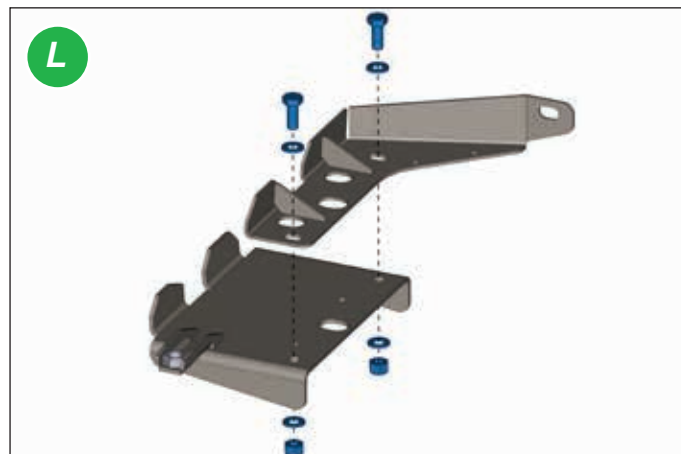


6 Nm


5.7 AIR SPRINGS

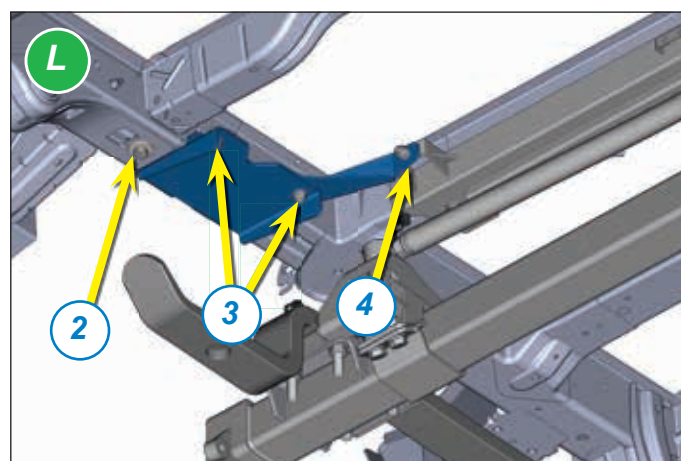
1. Fit the upper bellows support to the mounting plate.
Do this on both sides.
Do not tighten the nuts and bolts yet.

4 x bolt	M10 x 25
8 x washer	M10
4 x steel lock nut	M10
	65 Nm




2. Fit the upper bellows supports to the chassis.

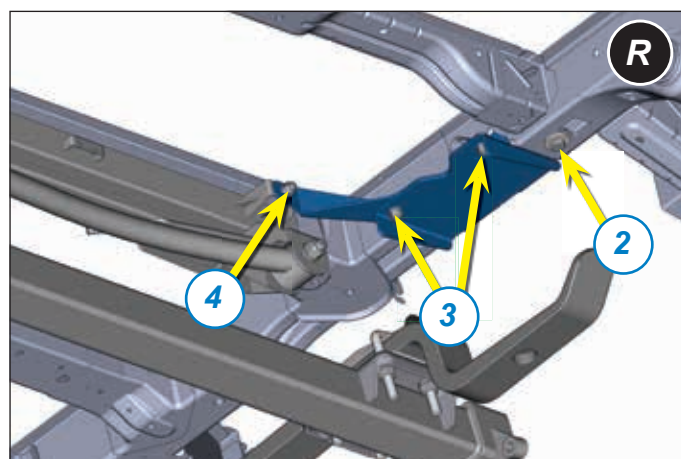
2 x bolt	M12 x 25
2 x washer	M12 x 37 x 3
	60 Nm





3. Clamp mounting plate onto the chassis. Tighten the nuts and bolts from step 1.

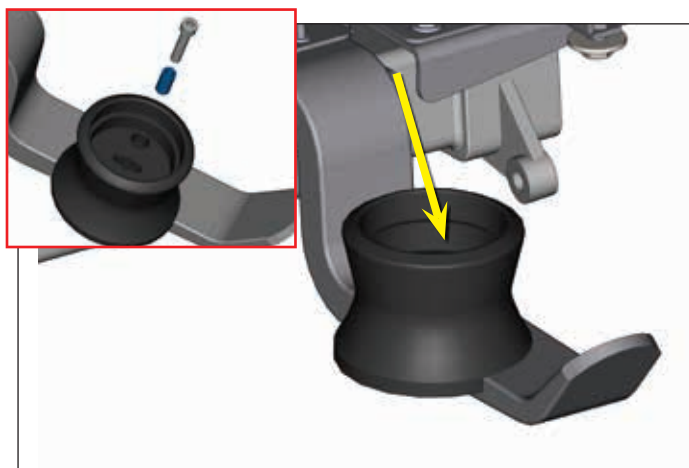
4. Fit the mounting plate to the upper cross beam.

2 x bolt	M10 x 25
4 x washer	M10
2 x steel lock nut	M10
	65 Nm




5. Slide the shim into the gap in the piston.
6. Fit the piston to the main spring.

 Fit the bolts from the top	
2 x Allen screw Tuflok	M10 x 50
2 x washer	M10
2 x steel lock nut	M10
	35 Nm





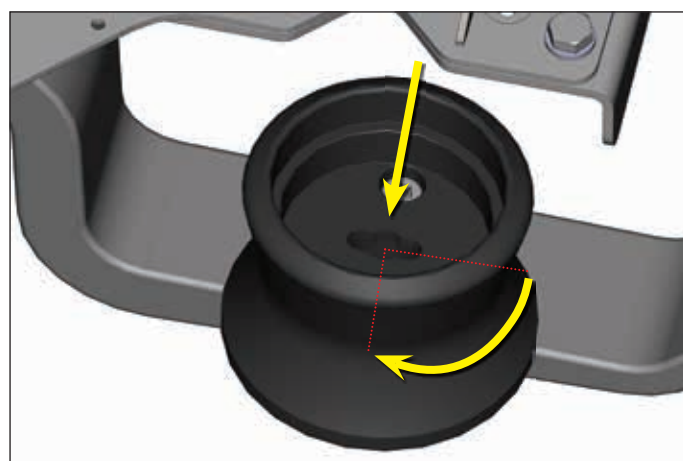
7. Fit the air couplings to the air springs.

air coupling

3 Nm




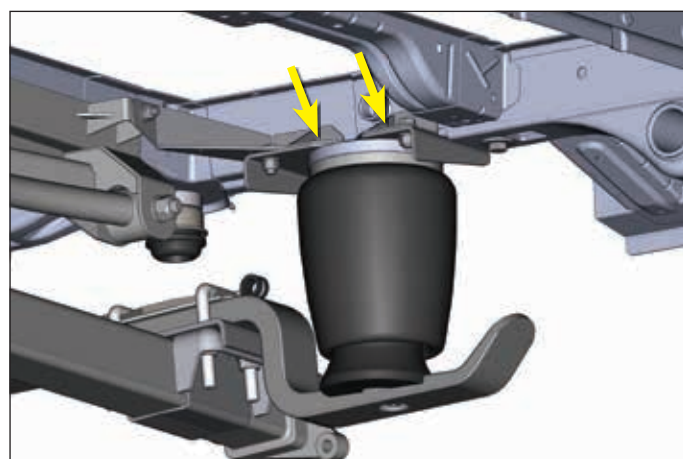
8. Fit the air springs to the piston.

	The air coupling must face towards the inside of the vehicle.
	Rotate the air spring one quarter turn in the piston.



9. Fit the air springs to the upper bellows supports.

4 x flange bolt	M6 x 10
	6 Nm



5.8 HEIGHT SENSORS

1. Fit the height sensors to the height sensor brackets as shown in the figure.

4 x bolt	M5 x 10
4 x washer	M5
 6 Nm	

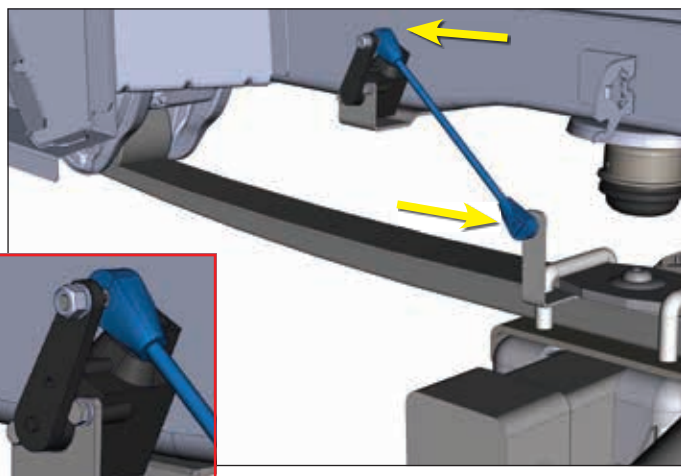
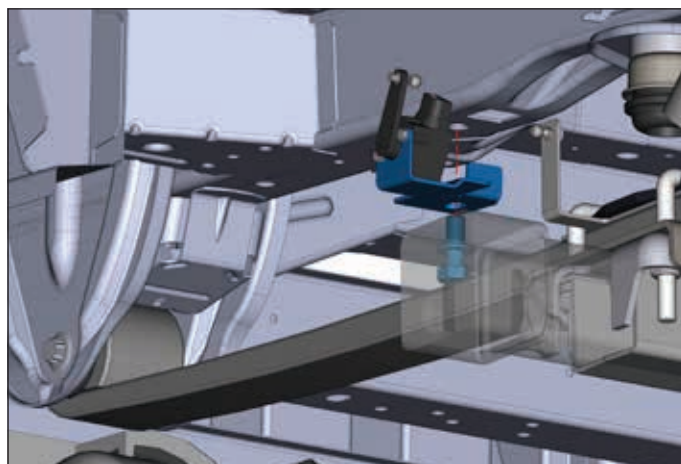
2. Fit the height sensor brackets.

2 x bolt	M14 x 40
2 x washer	M14
 50 Nm	

3. Check the length of the height sensor rods **200 mm** - measured centre to centre.
4. Mount the height sensor rods on the height sensors and ball joints.
5. Secure the height sensor rods by pushing in the clips.



The height sensor arms must point upwards.



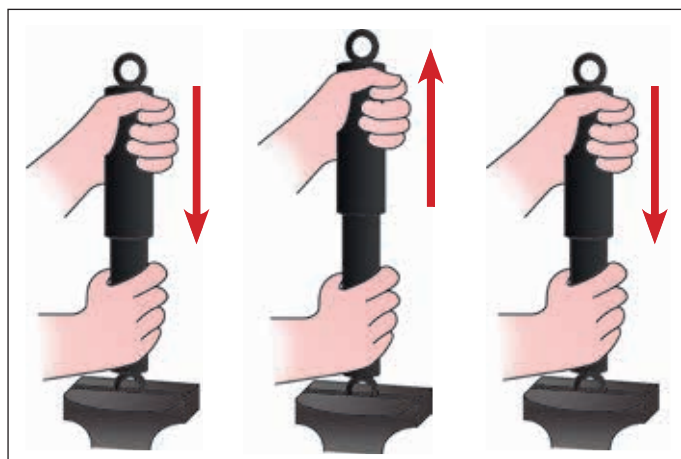
5.9 SHOCK ABSORBERS


1. Bleed the shock absorbers before being fitted.
2. Clamp the shock absorbers vertically in a bench vice.



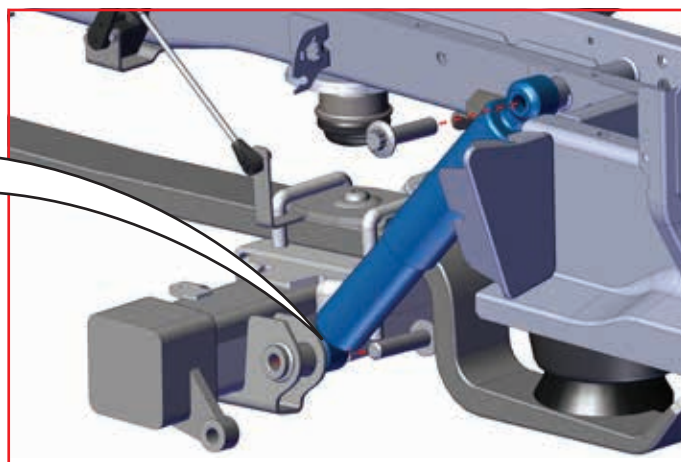
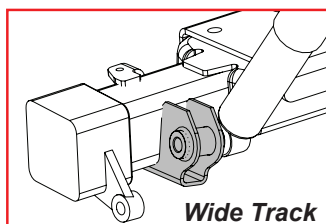
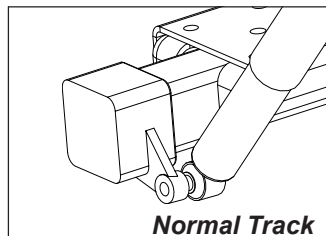
The wide end of the shock absorbers is viewed as the top.

3. Gently push the top down and then slowly pull it up again.
4. A slurping noise may be heard at the end of the stroke; this indicates the presence of air.
5. Continue this pumping action until the slurping noise is no longer heard.



6.  **Always hold the shock absorber with the top pointing up to prevent air re-entering the shock absorbers.**

**** Do not tighten the bolts yet. Tighten them once the vehicle is at the ride height.**



 **Use screw thread locking when tightening the bolt.**

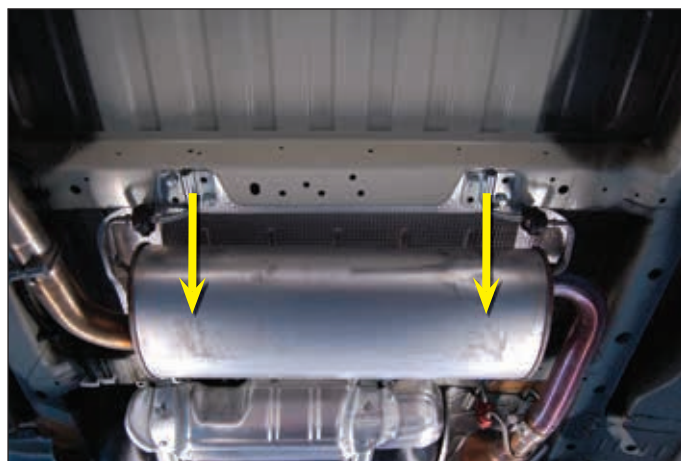
Original fasteners **



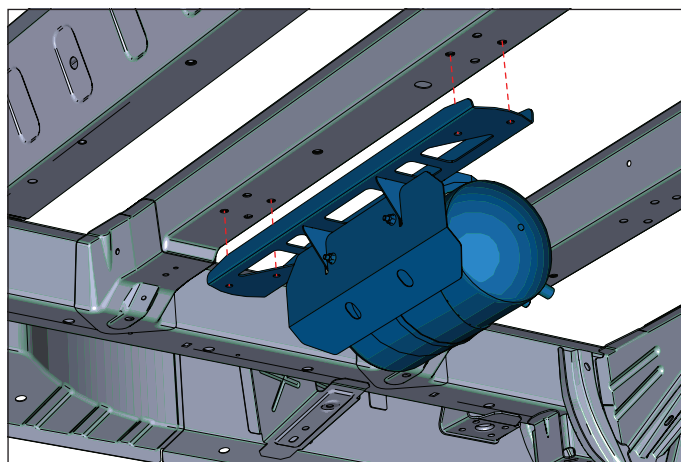
145 Nm


5.10 AIR TANK

1. Remove both exhaust brackets.
2. Pull the head shield with the exhaust brackets downwards slightly so that the air tank mounting bracket can be placed on the chassis.



3. Fit the air tank mounting bracket in the position indicated.



 **Fit the air tank mounting bracket between the chassis and heat shield.**

Original fasteners

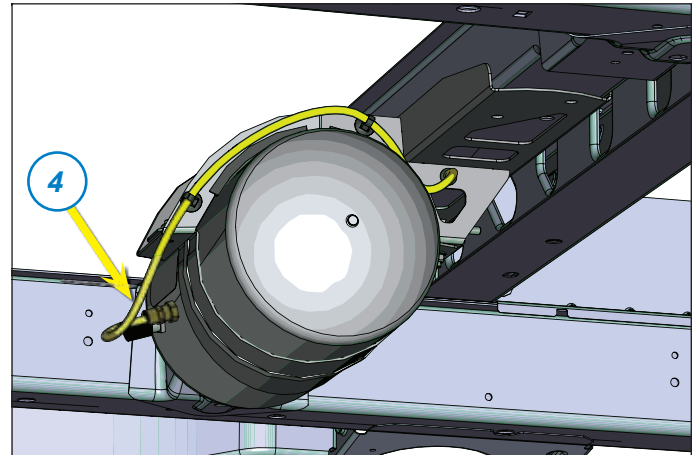


30 Nm

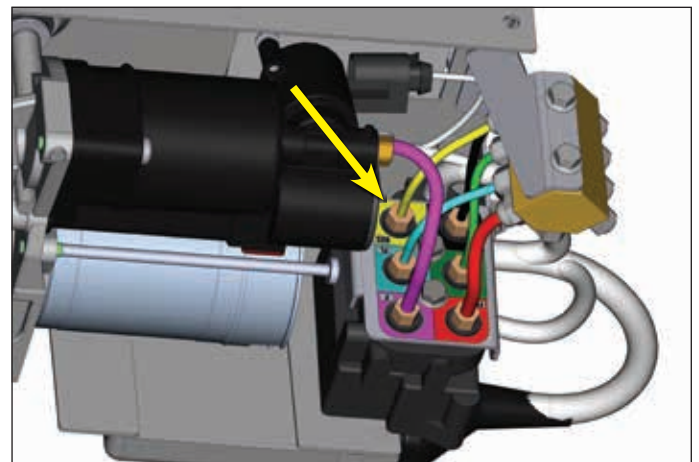
4. Fit the yellow air tube to the air tank.
5. Route the yellow air tube to the compressor box.



Use sufficient tie-wraps to secure the air tubes and wires!

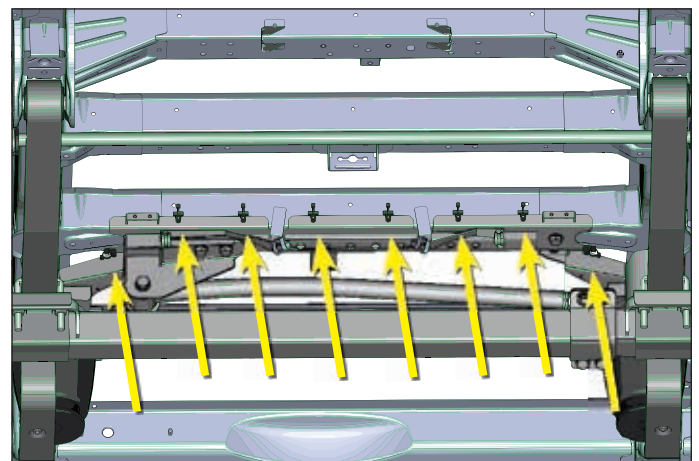


6. Fit the yellow air tube to the valve block.
7. Ensure that the colour markings match.

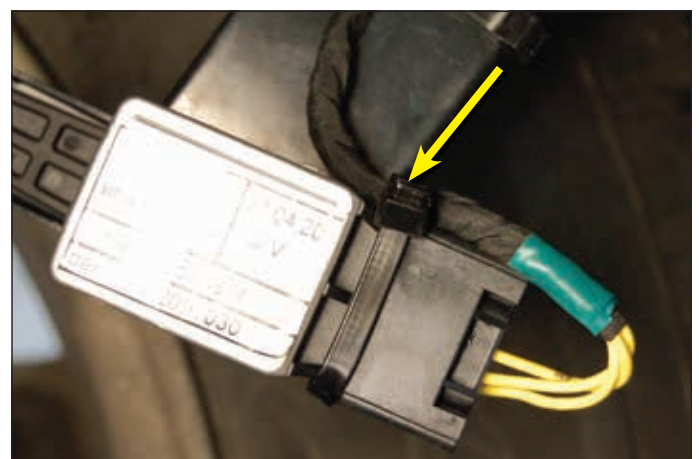


5.11 AIR TUBES AND HEIGHT SENSOR CABLES

1. Connect the **green** air tube to the left air spring.
2. Connect the **black** air tube to the right air spring.
3. Route the black air tube with the height sensor cable along the upper cross-beam to the left-hand side of the chassis.



4. Connect the cables to the height sensors. The illustration is for indicative purposes only for showing the height sensor cable mounting bracket.



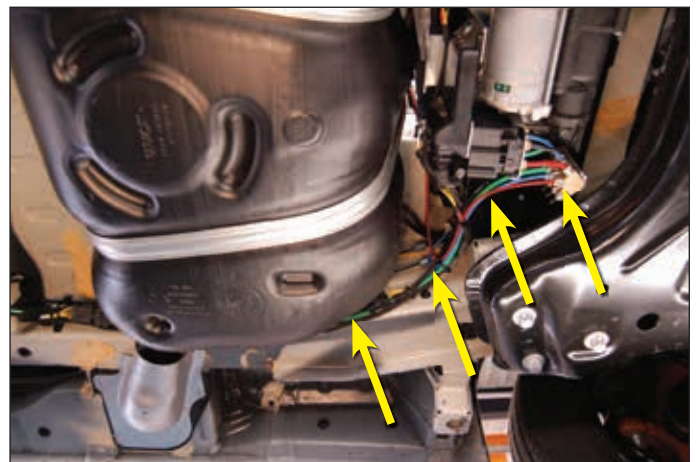
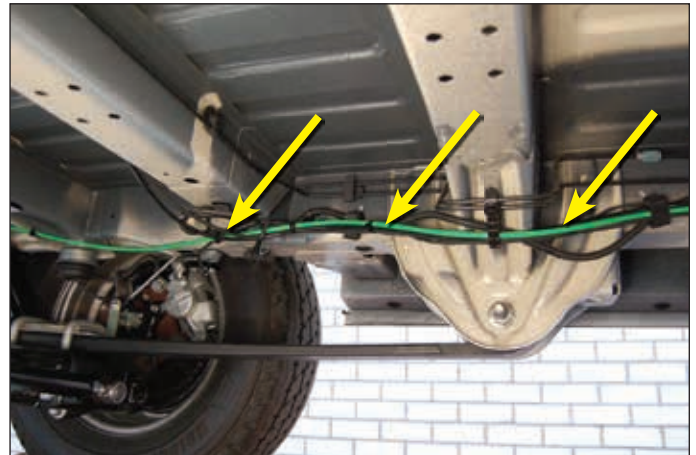
5. Route the air tubes along the left-hand side of the chassis to the compressor box.



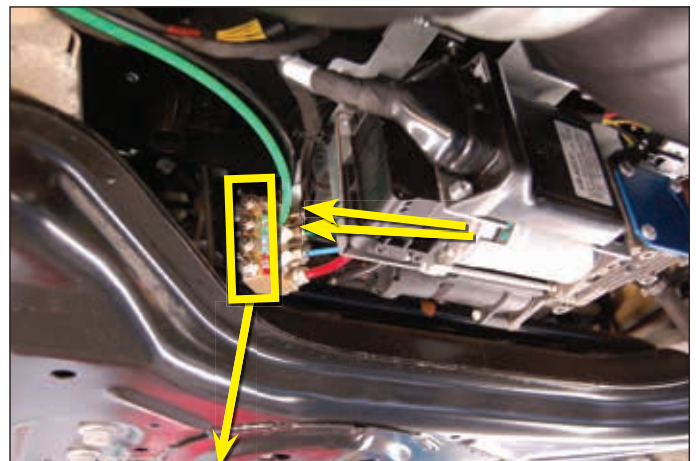
Never attach air tubes, wires or other parts to the vehicle's brake lines.



Use sufficient tie-wraps to secure the air tubes and wires!

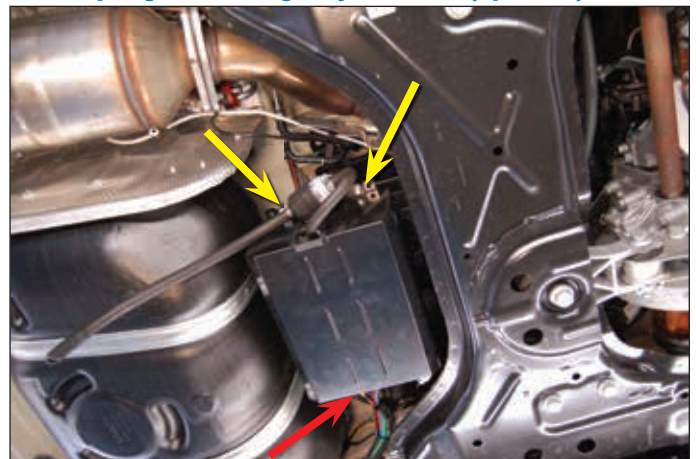


6. Fit the **green** air tube to the air coupling on the junction block on the outside of the compressor box.
7. Fit the **black** air tube to the junction block air coupling on the outside of the compressor box.
8. Ensure that the colour markings match.
9. If no emergency valve set is available, seal the unused air couplings with the supplied end plugs.
10. If kit 105 18 07 4XX for the front and rear axle has been fitted, continue from section 6.



Air couplings for emergency valve kit (optional)

11. Fit the cover to the compressor box.



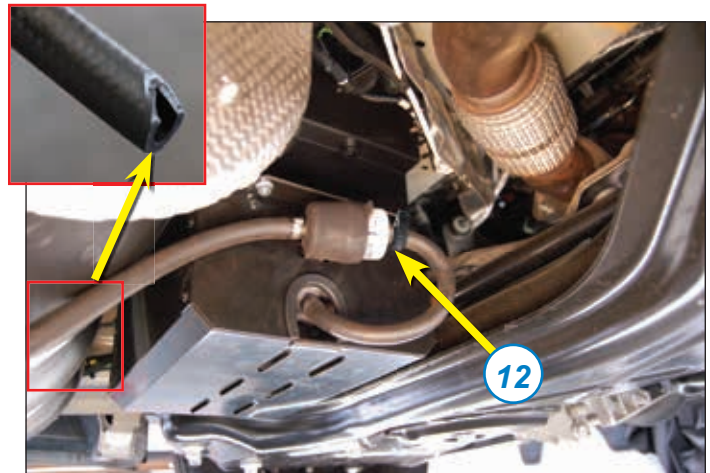
3 x flange lock nut

M6

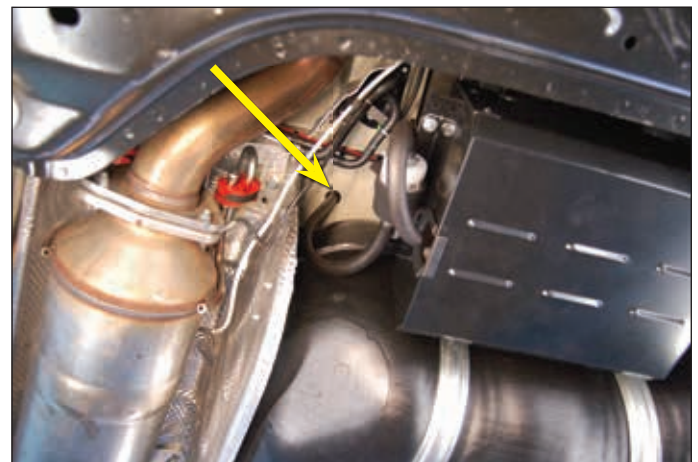


8 Nm

12. Fit the suction filter to the inlet line.

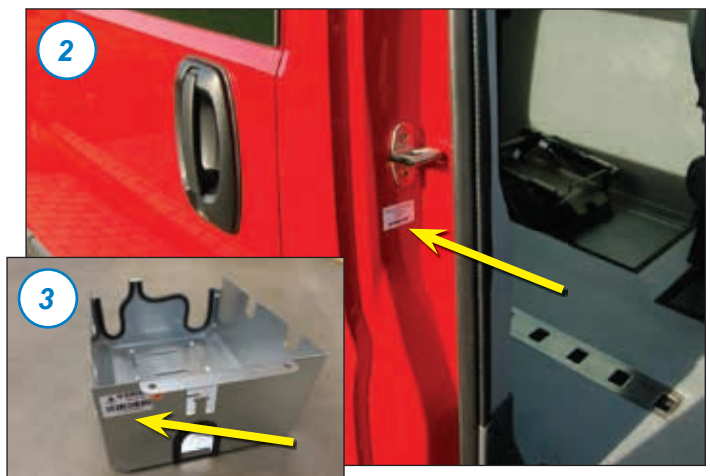


13. Fit the rubber grommet to the chassis.
14. Route the inlet line with the rubber grommet into the chassis.



5.12 WARRANTY STICKERS

1. Fit the spare wheel.
2. Affix the supplied warranty stickers **A + B** to the B-pillar on the passenger's side.
3. Apply the protective film over the stickers.
4. Affix sticker **A** to the compressor box next to the part number sticker.
5. Apply the protective film over the sticker.



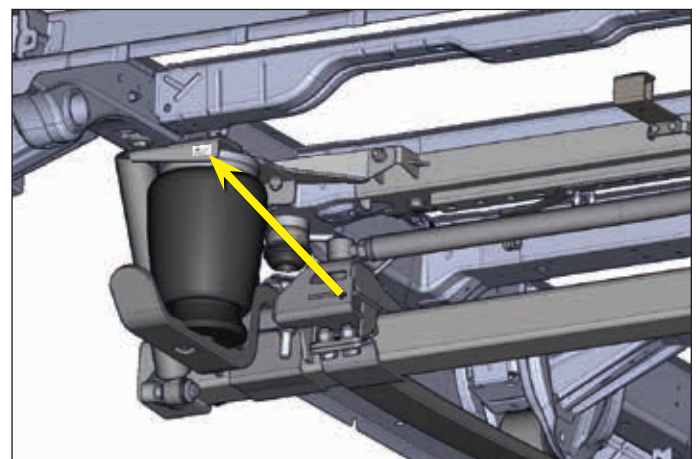
6. Affix sticker **B** to the left spring plate.
7. Apply the protective film over the sticker.

A

B



8. If kit 105 18 07 2XX for the rear axle has been fitted, continue from chapter 7.
9. If kit 105 18 07 4XX for the front and rear axle has been fitted, continue from chapter 6.



6. FITTING THE AIR SUSPENSION KIT TO THE FRONT AXLE

6.1 PREPARATIONS

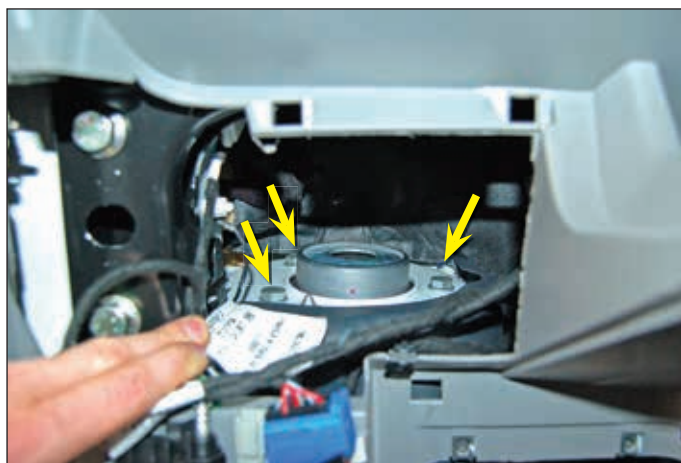
1. Support the vehicle and the axle properly.
2. Remove the wheels.



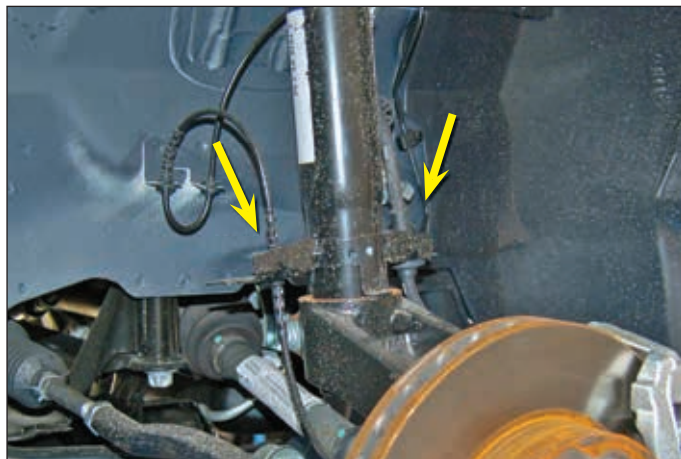
3. Remove the plastic cover.
4. Do this on both sides.
5. Remove the fuse box.



6. Remove the insulating material.
7. Undo the bolts, leave 1 bolt loosely in place (a few turns).



8. Take the tubes off the bracket.



9. Undo the bolts.
The nuts and bolts will be re-used.

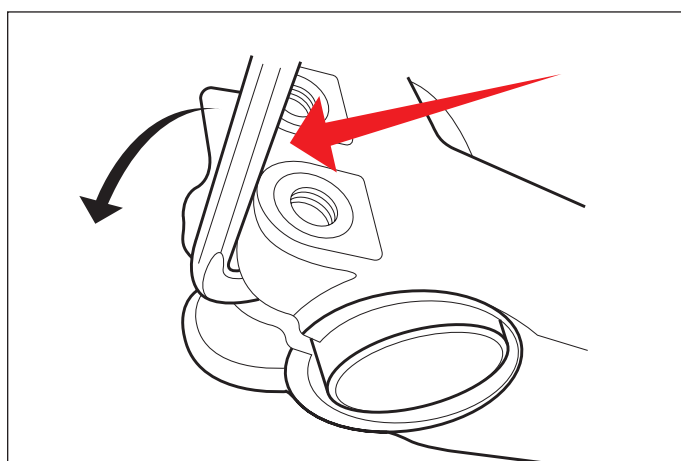


10. Unscrew the stabiliser arm.



11. Use a tyre lever on the inside of the stub axle to remove the suspension strut.
12. Remove the suspension strut.

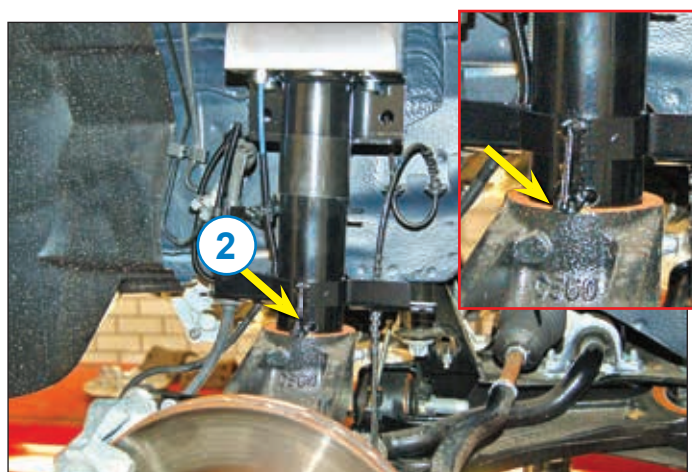
	Ensure the drive shaft is not pulled out of the gearbox.
	Ensure that tubes cannot be placed under tension or become damaged.



6.2 SUSPENSION STRUT

1. Place the new suspension strut in the stub axle.
2. Ensure that the lip abuts the stub axle.
3. Fit the bolt.
**** Do not tighten the bolts yet. Tighten them once the vehicle is at the ride height.**

2 x original bolt** 2 x original nut	
	X250: 120 Nm X290: 170 Nm
	The colour markings indicate which part is for the left and which for the right. See 'Fitting instructions'.



4. Check that the locating pins drop into the holes.
5. Fit the top of the suspension strut.

**** Do not tighten the bolts yet. Tighten them once the vehicle is at the ride height.**

6 x bolt**	M10 x 30 x 1.25
6 x lock washer	M10

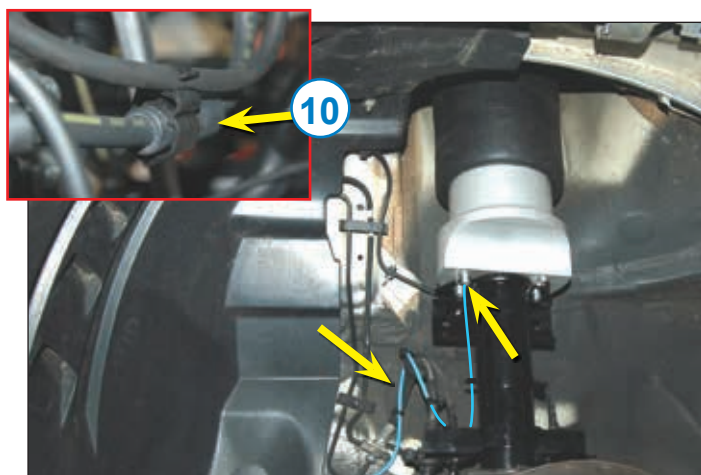
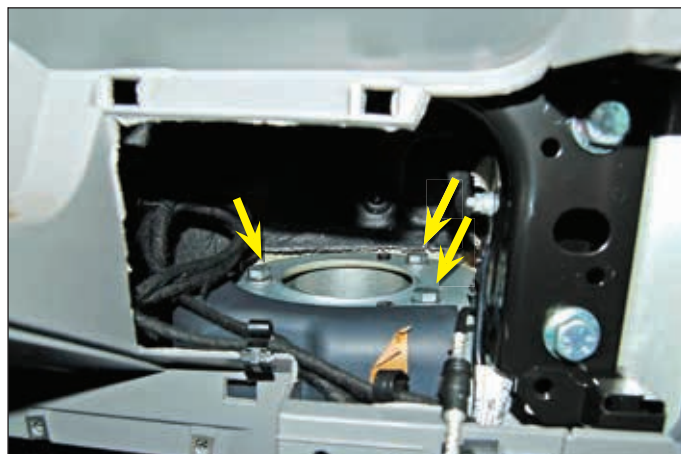


60 Nm



Mount the fuse box together with the fuse holder bracket with the OE bolt (see section 4.2 step 14). Replace the plastic covers (see 6.1 step 3).

6. Fit all tubes and wires to the suspension strut.
7. Connect the **red** air tube to the right air spring.
8. Connect the **blue** air tube to the left air spring.
9. Lay the air tube along the route indicated to the compressor box.
10. Secure the air tube with the special clips.



Push the tube at least 80 mm into the air coupling.

6.3 HEIGHT SENSORS

1. Fit the height sensors to the height sensor brackets as shown in the figure.
2. Be careful to check whether it is the left or right bracket.

4 x bolt	M5 x 10
4 x washer	M5



6 Nm



The colour markings indicate which part is for the left and which for the right. See 'Fitting instructions'.

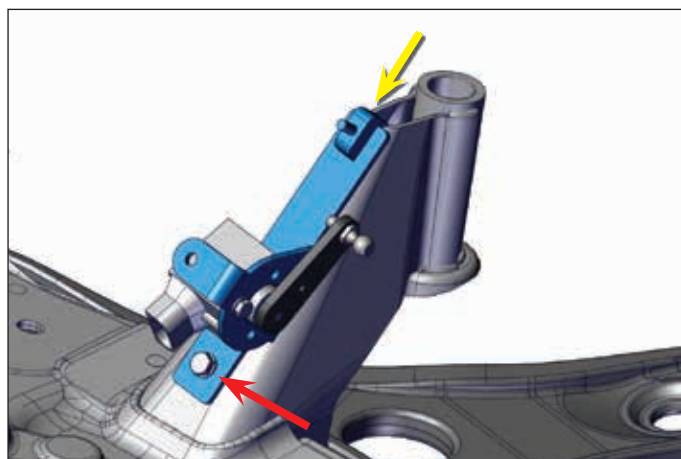


3. Mount the height sensor brackets in the position indicated.


2 x bolt	M6 x 50
4 x washer	M6
2 x lock nut	M6




8 Nm



4. Fit the ball-joints to the ball-joint brackets.

2 x ball joint	M6
2 x washer	M6
2 x lock nut	M6
 5 Nm	



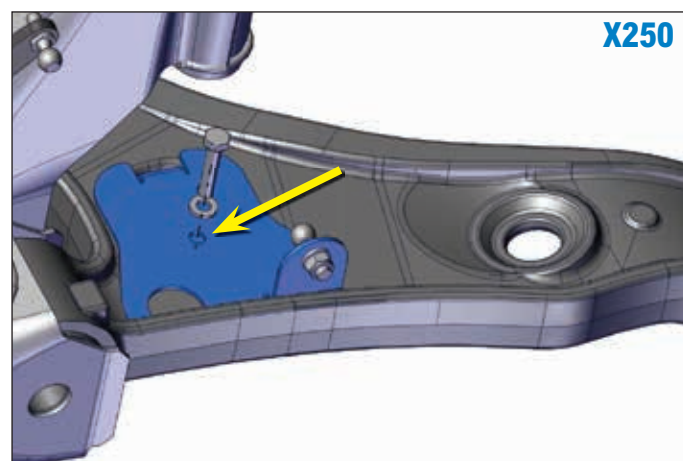
The colour markings indicate which part is for the left and which for the right. See 'Fitting instructions'.




5. If the vehicle model year is up to 2014, continue from point 7.
6. If the vehicle model year is from 2014 onwards, continue from point 11.

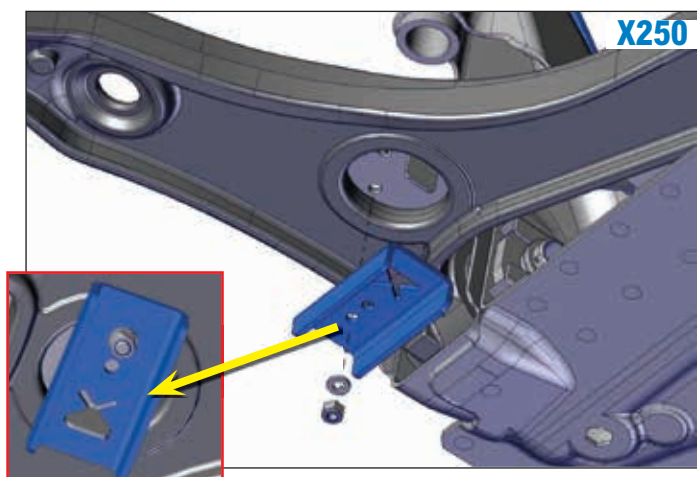


7. Place the ball-joint brackets on the suspension arm.

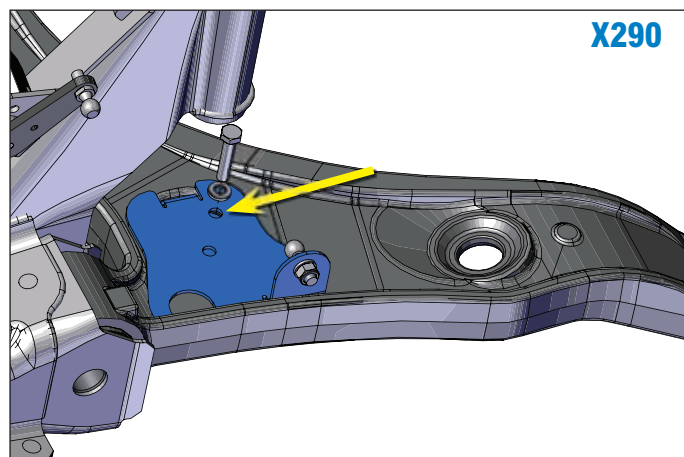


8. Fit the plate on the underside.
9. Tighten the bolts.
10. Continue from point 14.

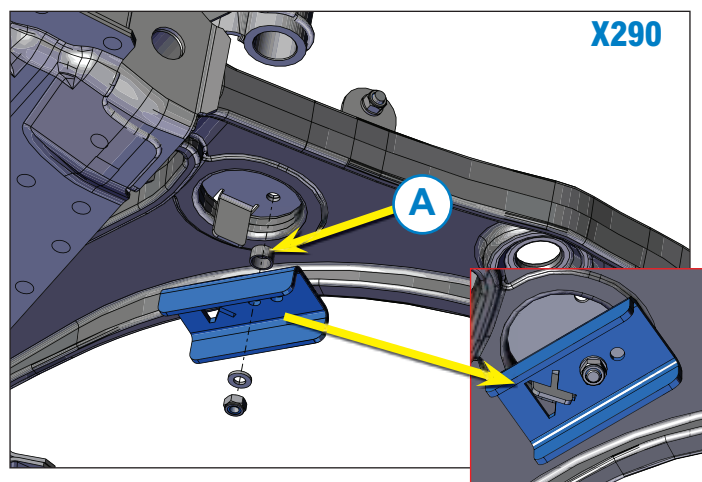
2 x bolt	M6 x 30
4 x washer	M6
2 x lock nut	M6
 8 Nm	



11. Place the ball-joint brackets on the suspension arm.



12. Fit the plate on the underside. Use spacer bush (A).
13. Tighten the bolts.

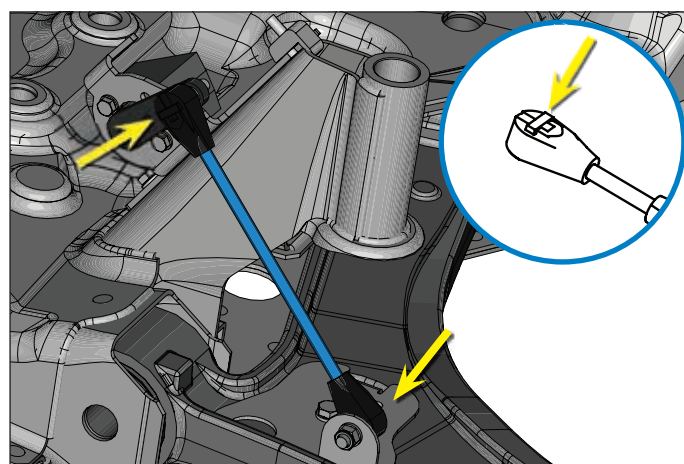


2 x bolt	M6 x 30
4 x washer	M6
2 x lock nut	M6
2 x distance bush	

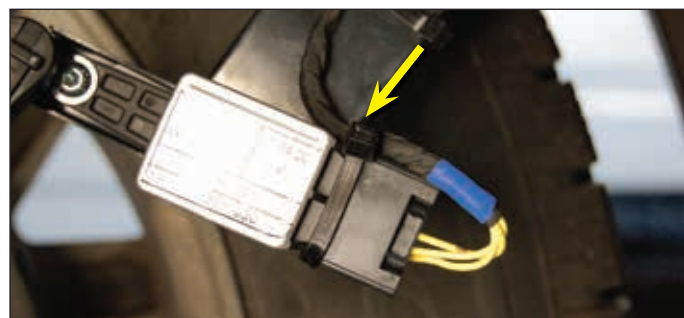


8 Nm

14. Check the length of the height sensor rods **165 mm** - measured centre to centre.
15. Mount the height sensor rods on the height sensors and ball joints.
16. Secure the height sensor rods by pushing in the clips.



17. Connect the front axle height sensor cable using the connector marked in brown.
18. Route the tubes to the compressor box.
19. Route the left height sensor cable along the **blue** air tube to the front left height sensor.
20. Route the right height sensor cable along the **red** air tube to the front right height sensor.
21. Connect the connectors. The illustration is for indicative purposes only for showing the height sensor cable mounting bracket.
22. Fit the wheels.¹

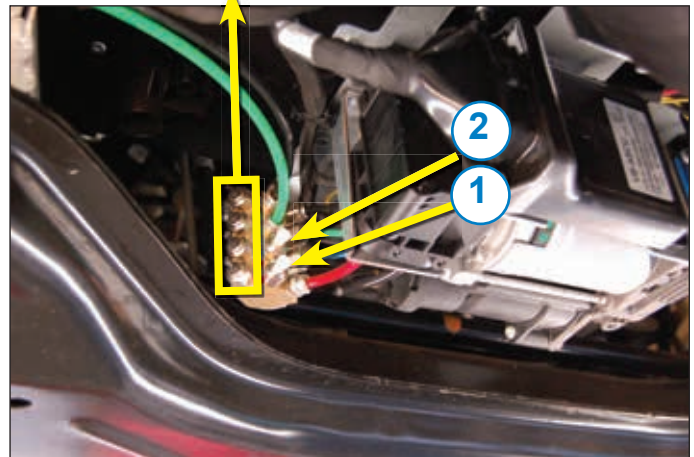


¹ **Vehicle manufacturer guidelines.**

6.4 AIR TUBES

1. Fit the **red** air tube to the air coupling marked red on the junction block on the outside of the compressor box.
2. Fit the **blue** air tube to the air coupling marked blue on the junction block on the outside of the compressor box.
3. Ensure that the colour markings match.
4. If supplied, fit the emergency valve kit.
5. Seal the unused air couplings with the supplied end plugs.

Air couplings for optional emergency valve kit



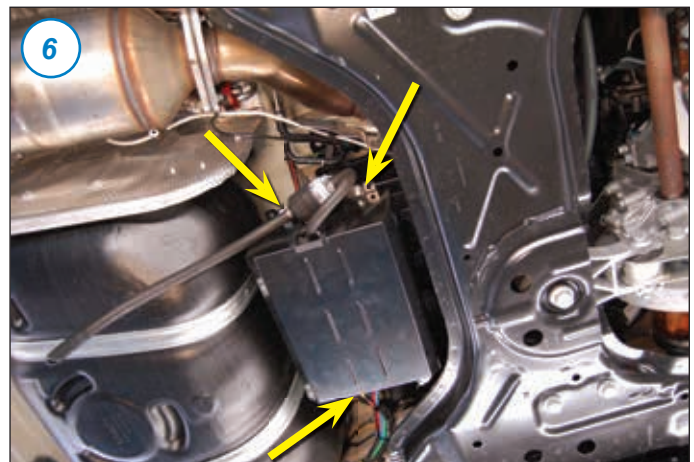
6. Fit the cover to the compressor box.

3 x flange lock nut

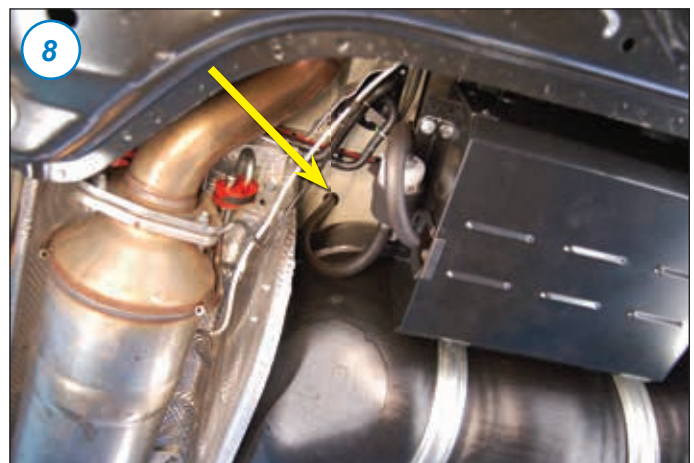
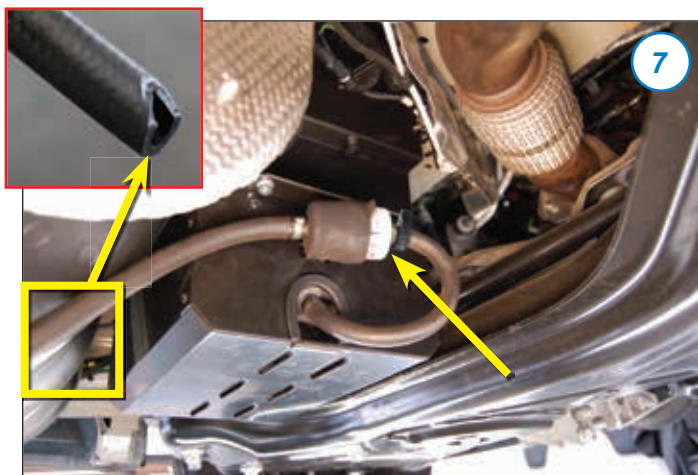
M6



8 Nm



7. Fit the suction filter to the inlet line.
8. Fit the rubber grommet to the chassis.
9. Route the inlet line with the rubber grommet into the chassis.



6.5 WARRANTY STICKERS

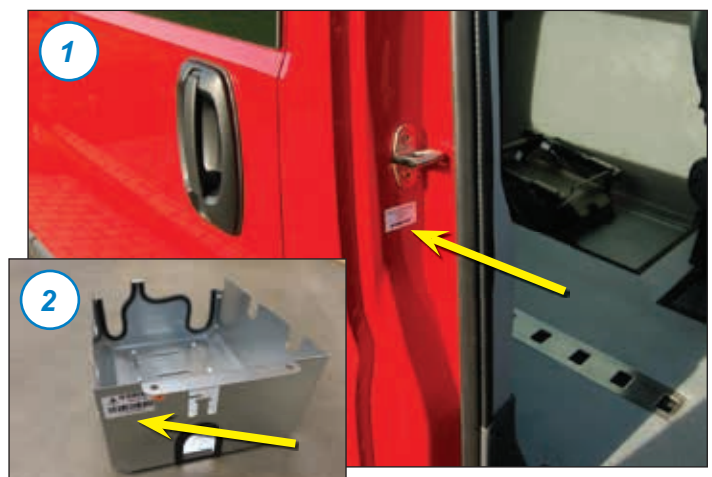
1. Affix the supplied warranty stickers **A + B** to the B-pillar on the passenger's side.
2. Apply the protective film over the stickers.

A

B



3. Affix sticker **A** to the compressor box next to the part number sticker.
4. Apply the protective film over the sticker.

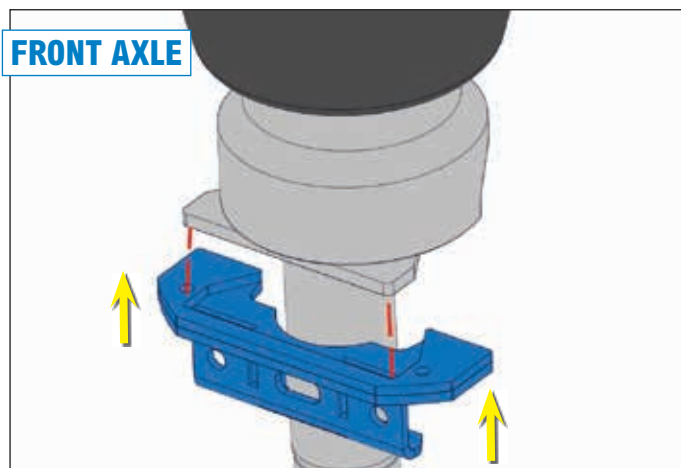


7. CALIBRATION

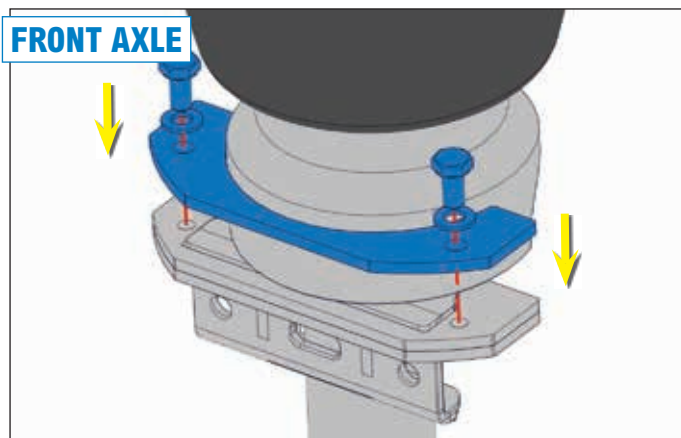


Go to chapter 2 for details of the correct calibration supports for this kit.

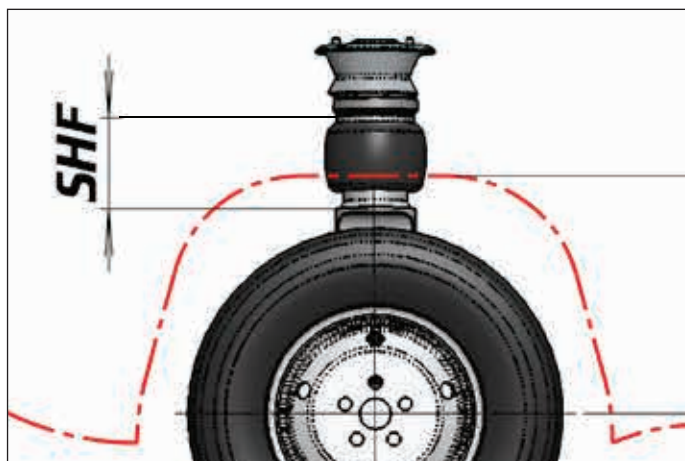
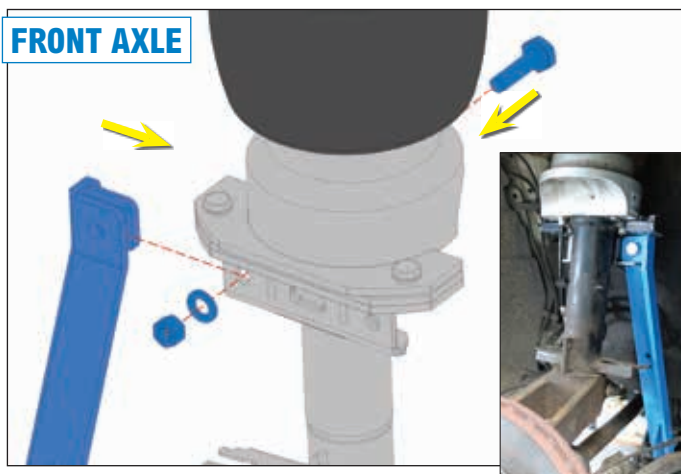
FRONT AXLE



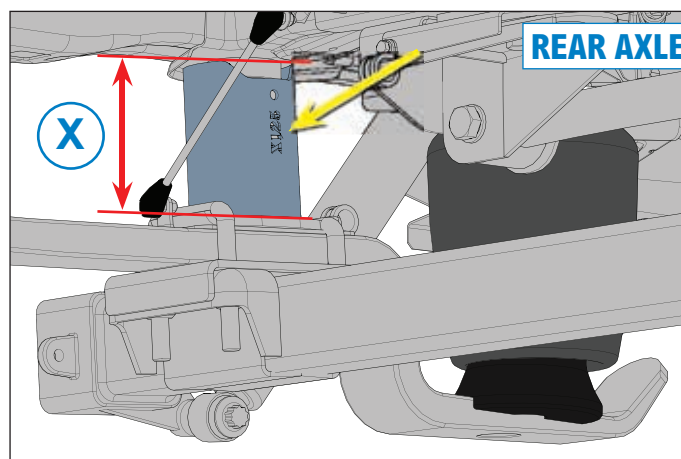
FRONT AXLE



FRONT AXLE



REAR AXLE



- Place the fuses in the fuse blocks.
(F1 = 40 A + F2 = 7.5A).
- Program the VB-ASCU via the SMT according to manual 733105000001 in the SMT.
- Calibrate the vehicle via the SMT, or via the steps below:



		LCV 2C / 4C
		Camper 2C
		Camper 3C / 4C

- Turn the ignition on.
- Pull the handbrake slightly.
- Ensure that the vehicle is resting on the wheels on a flat surface.
- Briefly press the -button once (LED lights up). Enter the following code within 10 seconds:

1 – **3** – **4** – **2**

The LEDs on the remote control will go out.

- Press the -button within 3 seconds and hold down the button until a long tone is heard.
- Enter the following code within 20 seconds:

2 – **4** – **3** – **1**

Calibration mode has been activated.

- The -LED and the -LED will start to flash.
- Press button **2** or to raise the vehicle.
- Place the calibration supports under the vehicle.
- Hold down button **1** or to allow all the air to vent from the air-springs.
The air-springs are empty once the hissing sound can no longer be heard.
The calibration height has been reached.
- Hold down the -button until the long tone is heard.
The ride height has been stored.



2C calibration: Continue at step 14.
4C calibration: Continue at step 12.

- Briefly press the -button once (LED lights up).
The system restarts.
- Repeat steps 8 through 11
- Briefly press the -button once.
calibration mode is closed.
The system restarts.
- Briefly press the -button once.
-mode is closed.
- Press button **2** or to raise the vehicle.
- Remove the calibration supports from under the vehicle.
- Set the vehicle to the ride-height.
- Turn the ignition off.
- Tighten all nuts and bolts indicated in the manual with ******.

- Have the headlamp adjustment checked by a dealer.
- Check the vehicle using the checklist in the manual.

8. CHECKLIST

Final checks

- 1.1 ☐ Safety rules and fitting instructions read and followed.
- 1.2 ☐ Ride height correctly calibrated.
- 1.3 ☐ Front axle/rear axle aligned.
- 1.4 ☐ Height sensors correctly fitted.
- 1.5 ☐ Shock absorbers vented.
- 1.6 ☐ Bolted joints tightened to the correct torque and marked with security check paint marker.
- 1.7 ☐ Air tubes, wires and connectors properly secured.
- 1.8 ☐ All parts that were removed have been refitted and checked to ensure they are working properly.
- 1.9 ☐ System checked for air tightness.
- 1.10 ☐ Clearance around air springs checked.
- 1.11 ☐ Identification stickers, plus protective film, affixed to the vehicle.
- 1.12 ☐ Headlamp adjustment checked.
- 1.13 ☐ If required, have ADAS (Advanced Driver Assistance Systems) recalibrated.
- 1.14 ☐ VB-ID card inside cover of user manual.
- 1.15 Documentation present in vehicle:
 - ☐ - User manual
 - ☐ - TÜV/ABE documentation
 - ☐ - Original vehicle documentation
- 1.16 ☐ Battery voltage (<12.4 volt = charge).
- 1.17 ☐ Tyre pressures correct.

System functions

- 2.1 ☐ * Raise manually.
- 2.2 ☐ * Lower automatically.
- 2.3 ☐ * Lower manually.
- 2.4 ☐ * Raise automatically.
- 2.5 ☐ Test drive carried out.

☐ **SYSTEM OK**

* Not for VB-NivoAir

Completed as a true and accurate record:

Date: - -

VIN:

Dealer: _____ VB-ID-no.: - -

Kit numbers(s):

Fitting instructions no.:

Version:

This checklist should be retained by the dealer and must be available to VB-Airsuspension for inspection on request.

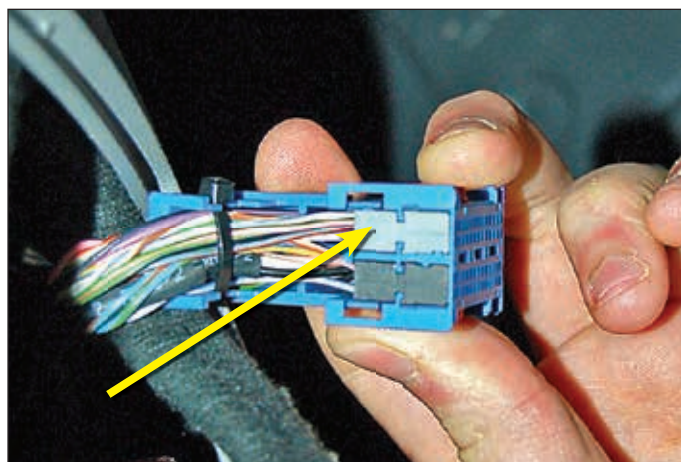
9. APPENDIX, OTHER SIGNALS WHEN EURO 4 MODEL FACTORY OPTION IS NOT PRESENT

9.1 SPEED SIGNAL

1. Remove the blue connector from the fuse box.



2. This connector has a black and a grey section
3. Remove the grey/green wire in position ten on the grey part.

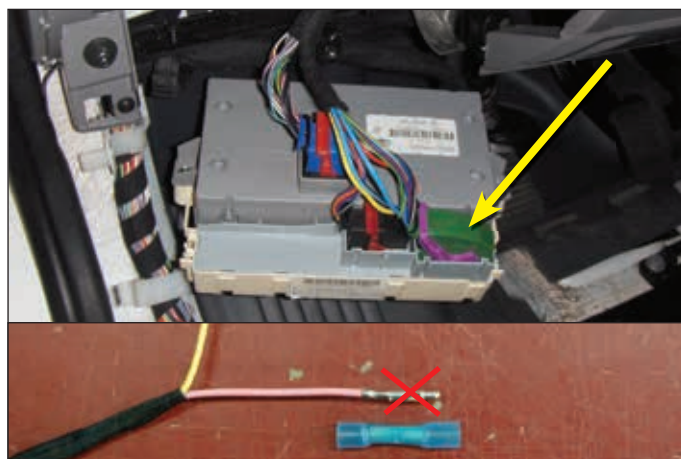


4. Remove the terminal from yellow cable no. 18 from the VB supply cable.
5. Using the red connector, connect yellow wire no. 18 to the grey/green speed signal wire.



9.2 15+ SIGNAL

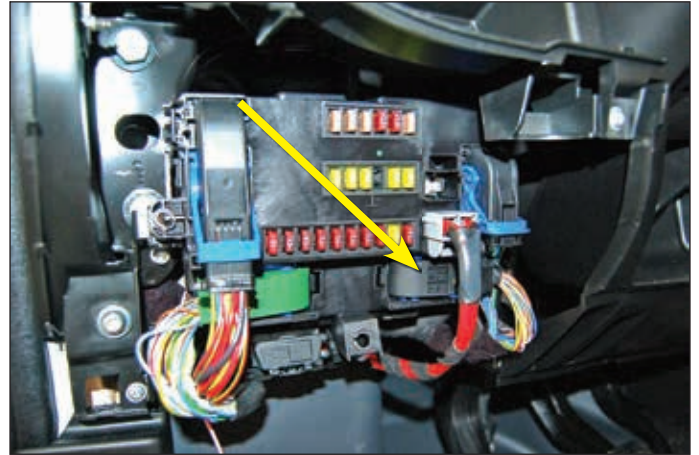
1. There is a connector on the rear of the fuse box.
2. The thick, blue wire is a positive contact.
3. Take the round terminal off the supply cable.
4. Connect the pink wire to the blue connector on the thick blue wire.
5. Continue with paragraph 4.3 Handbrake signal.



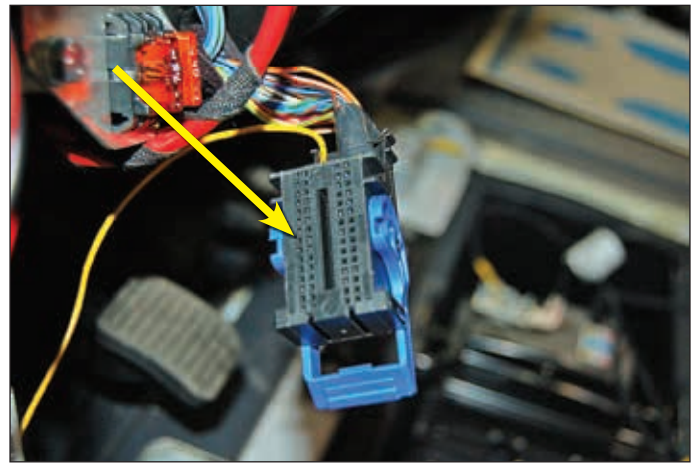
10. APPENDIX, OTHER SIGNALS WHEN EURO 5 MODEL FACTORY OPTION IS NOT PRESENT

10.1 SPEED SIGNAL

1. Remove the black connector from the fuse box.



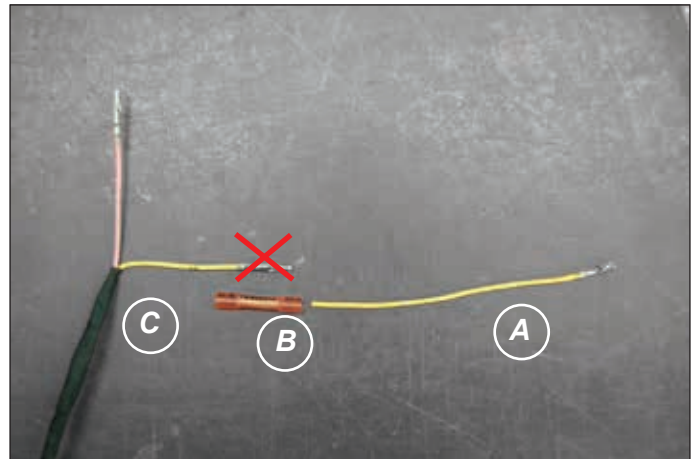
2. Pin 56 contains the speed signal.



3. Remove the terminal from yellow cable no. 18 from the VB supply cable.
4. Fit the wire with terminal (A) with the red connector (B) to the yellow supply cable wire (C).
5. Place the terminal of yellow wire no.18 in the location of pin 56 in the connector.

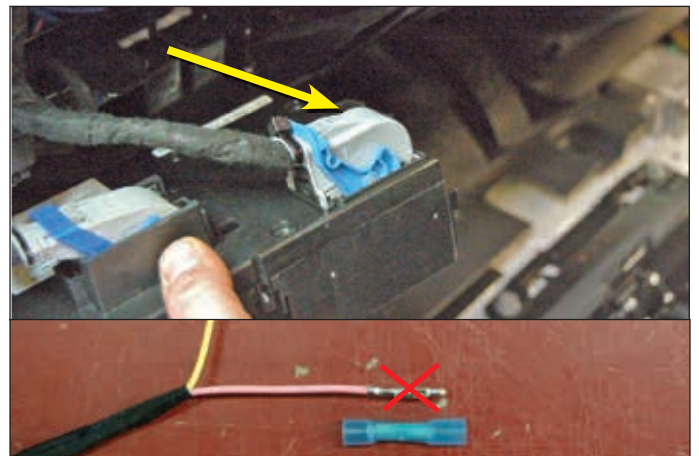


If this location is occupied, remove the terminal. Using the red connector, connect yellow wire no. 18 to the wire on pin 56.



10.2 15+ SIGNAL

1. There is a connector on the rear of the fuse box.
2. The thick, blue wire is a positive contact.
3. Take the round terminal off the supply cable.
4. Connect the pink wire to the blue connector on the thick blue wire.
5. Continue with paragraph 4.3 Handbrake signal.



11. APPENDIX, COMPOSITE LEAF SUSPENSION/OEM AIR SUSPENSION

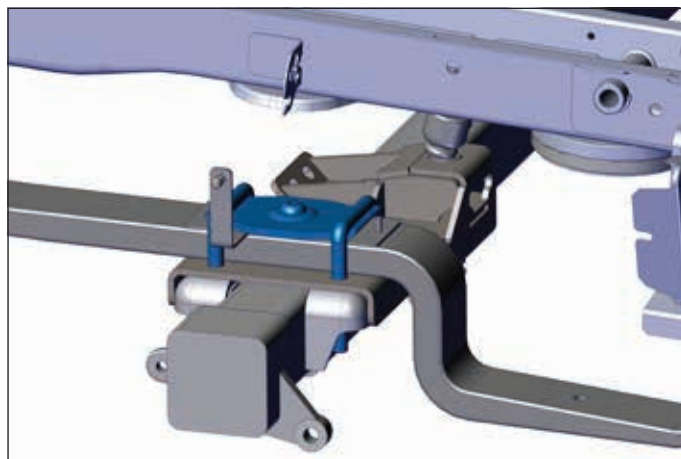


If the vehicle had composite leaf suspension or OEM air suspension, use the U-bolts from VB kit 1052350223.

1. Place the original spring clamping plates on the main spring.
2. Fit the new U-bolts.

2 x U-bolt

M14



3. Fit the new leaf-spring U-bolt nuts.
**** Do not tighten the nuts yet. Tighten them once the vehicle is at the ride height.**

4 x flange nut **

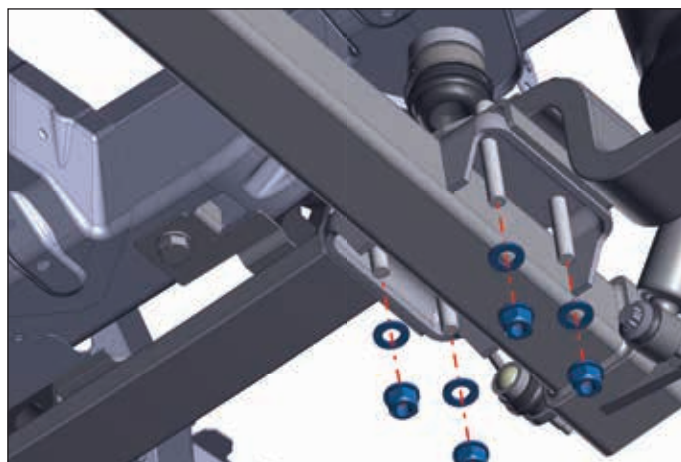
M14

8 x original washer

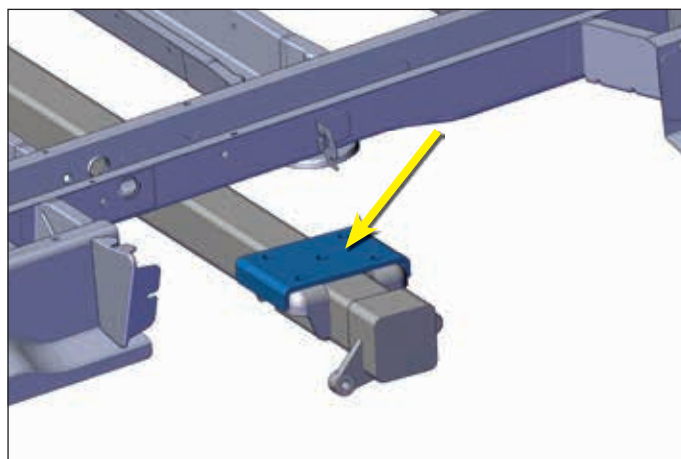
M14



130 Nm



4. Fit the upper right leaf-spring seat bracket.



5. Place the right hand main spring on the right hand spring seat.
6. Fit the main spring in the frontmost leaf-spring bracket.

Use the original bolt and a new nut.

**** Do not tighten the nuts yet. Tighten them once the vehicle is at the ride height.**

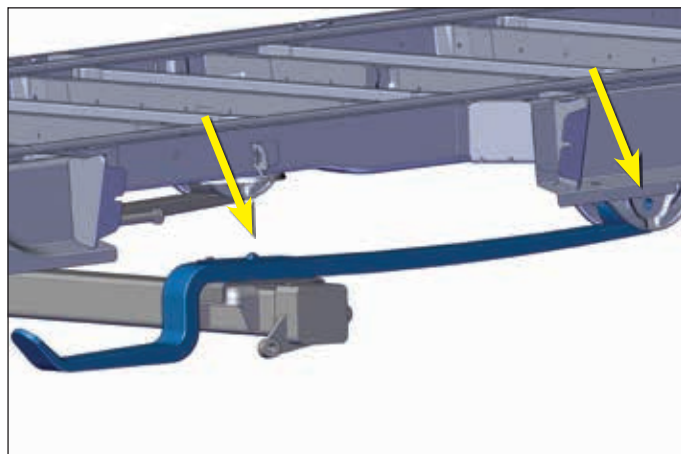
1 x original bolt

1 x steel lock nut**

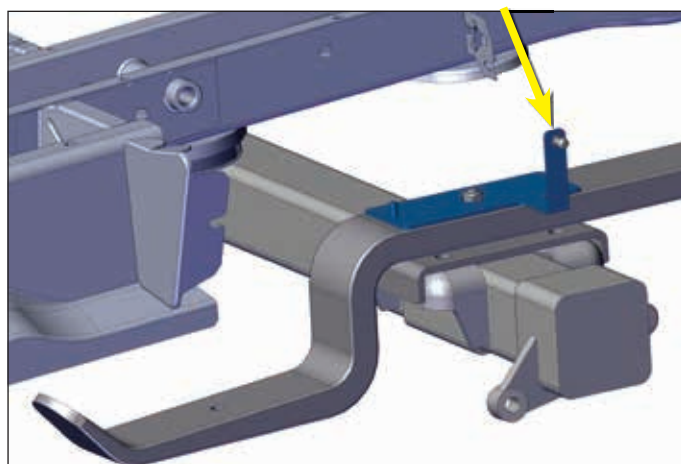
M16



185 Nm



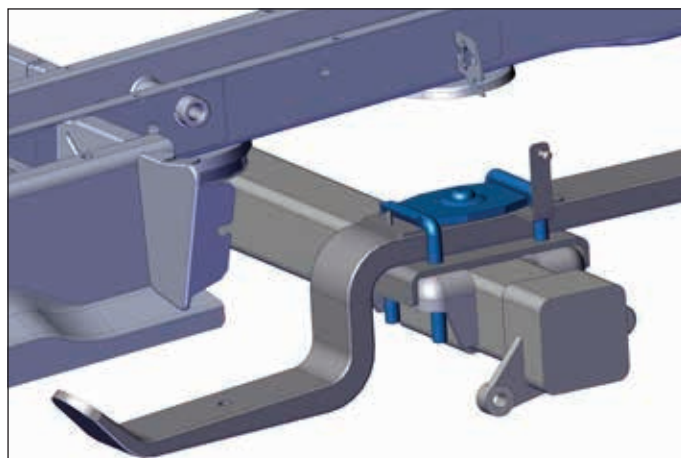
7. Place the ball-joint bracket on the main spring.
8. The ball-joint bracket ball-joints must point towards the outside of the vehicle.



9. Place the original spring clamping plates on the main spring.
10. Fit the new U-bolts.

2 x U-bolt

M14



11. Fit the new leaf-spring U-bolt nuts.
- ** Do not tighten the nuts yet. Tighten them once the vehicle is at the ride height.**

4 x flange nut **

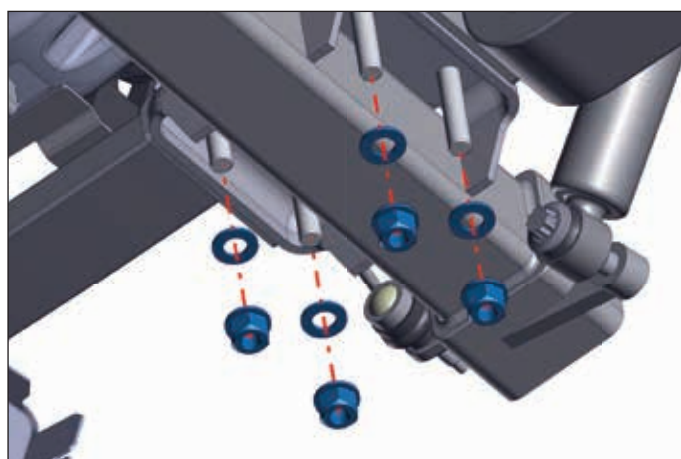
M14

8 x original washer

M14

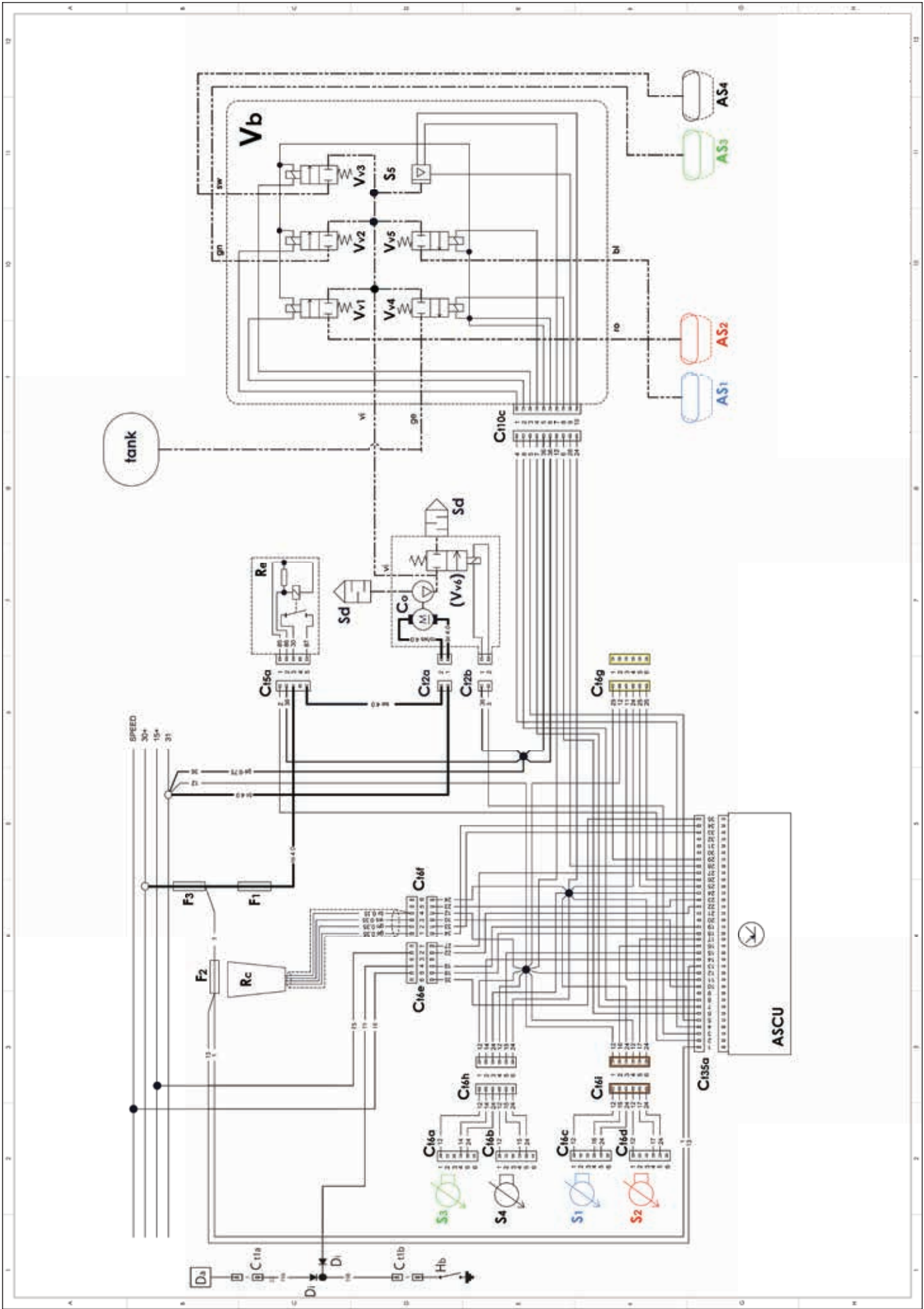


130 Nm







Continue from section 5.2 step 23

12. ELECTRICAL DIAGRAM

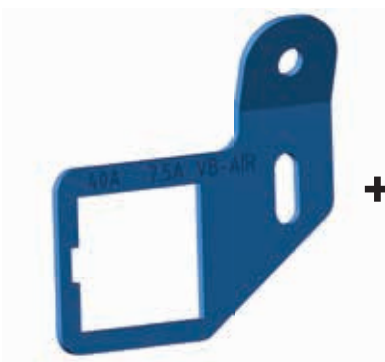


Name	Description
ASCU	VB-ASCU (electronic control unit)
AS1	Air spring, front left
AS2	Air spring, front right
AS3	Air spring, rear left
AS4	Air spring, rear right
Ct2a	Connector, 2-pin, compressor power supply
Ct2b	Connector, 2-pin, dump valve on compressor
Ct5a	Connector, 5-pin, compressor relay
Ct6a	Connector, 6-pin, height sensor rear left
Tc6b	Connector, 6-pin, height sensor rear right
Ct6c	Connector, 6-pin, height sensor front left
Ct6d	Connector, 6-pin, height sensor front right
Ct6e	Connector, 6-pin, VB supply cable
Ct6f	Connector, 6-pin, remote control
Ct6g	Connector, 6-pin, connector option (yellow)
Ct6h	Connector, 6-pin, rear axle height sensors (white)
Ct6i	Connector, 6-pin, front axle height sensors (brown)
Ct10c	Connector, 10-pin, valve block
Ct35a	Connector, 35-pin, VB-ASCU
Co	Compressor
Ds	End plug
F1	Fuse, compressor, 40 A
F2	Fuse, VB-ASCU, 7.5 A
F3	Fuse, primary, 50 A
Re	Compressor relay
Rc	Remote control
S1	Height sensor, front left
S2	Height sensor, front right
S3	Height sensor, rear left
S4	Height sensor, rear right
S5	Pressure sensor on valve block
Sd	Air silencer/filter
Tank	Air tank
Vb	Valve block
Vv1	Valve for front right air spring on valve block
Vv2	Valve for rear left air spring on valve block
Vv3	Valve for rear right air spring on valve block
Vv4	Dump valve to vent air on valve block
Vv5	Valve for front left air spring on valve block
Vv6	Dump valve on compressor

Name	Description
Colour codes (yellow with wire number is not indicated)	
bl	Blue
br	Brown
ge	Yellow
gn	Green
ro	Red
ro/ws	Red/white
rs	Pink
sw	Black
vi	Purple
ws	White
	0.50 mm ²
	0.75 mm ²
	4.00 mm ²
	Air tube



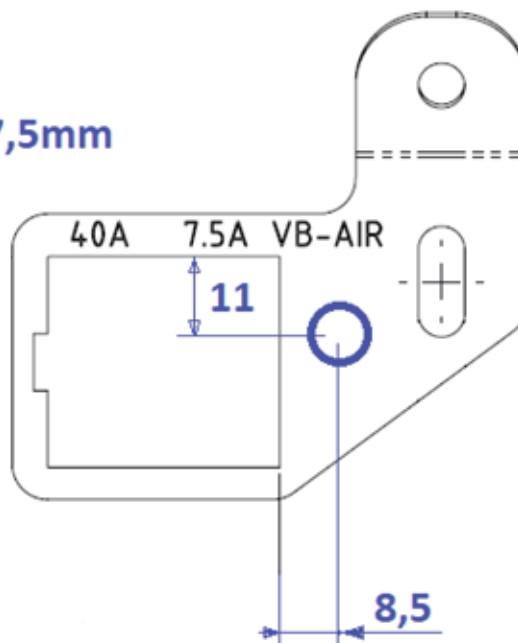
See page: 10



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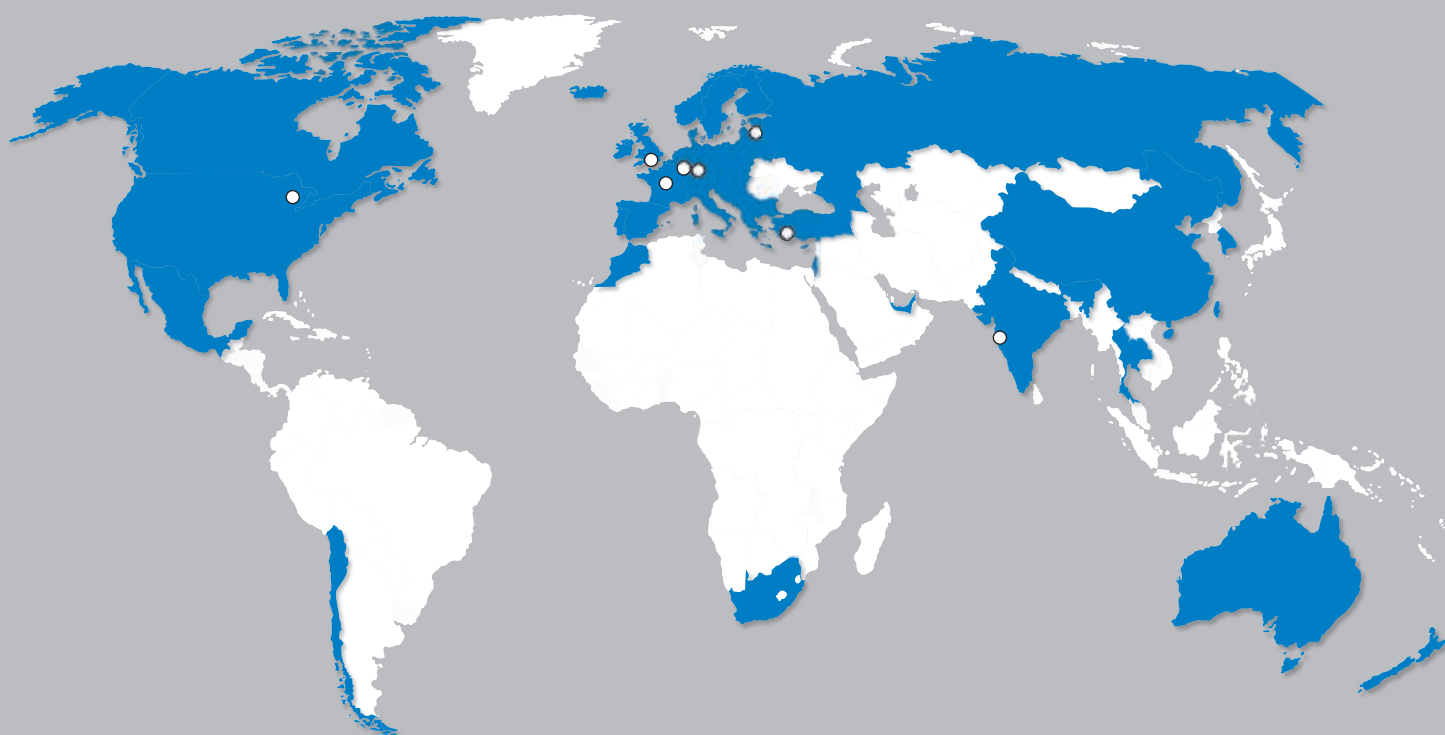
Ø 7,5mm



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VB-AIRSUSPENSION,

INCREASED COMFORT, BETTER DRIVEABILITY, MORE SAFETY.

