# FITTING INSTRUCTIONS

**making everyday smoother**

airsuspension


• Increased comfort • Better driveability • More safety

# RENAULT MASTER
# OPEL MOVANO
# NISSAN NV400
# X62

**Single wheel RWD**

**VB-FullAir 2C & 4C**

**FOR KIT: 1051923XXX**

# Revision table

| | | | | |
|---|---|---|---|---|
| Document number | 730105192300 | | | |
| New version: | V3.0 | | Old version: | V2.0 |
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| Page (new): | Changes: | | | |
| 22 | Added: Paragraph 4.13 step 4 and 6. | | | |
| 31 | Updated: Chapter 6. Calibration. | | | |
| 34 | Updated: Chapter 8. Checklist. | | | |
| 36 | Added: Barcode. | | | |

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# 1. Safety regulations

## Personal safety regulations

- Always wear appropriate safety clothes and safety shoes.
- Do not wear any rings, watches, or free hanging clothes.
- Never keep any loose goods in pockets of clothes.
- Bind long hair together.
- Never use defect tools. Use tools only for the purpose where it is meant for.
- Wear safety goggles.

## General safety regulations

- Always use a car lift to perform the operations.
- Be sure the vehicle is always supported properly when necessary.
- Be sure the vehicle can not roll away.
- Incapable fitting operations may result in dangerous situations.

## Used Symbols

***Attention***

| | |
|---|---|
|  | ***When the warning symbol is displayed, information of great importance to the safety and / or health of the involved persons is provided. This symbol is also used in operations that are crucial for the correct mounting of the air suspension set.*** |

***Tip***

| | |
|---|---|
|  | ***When the tip symbol is displayed, advice is given to make the mounting of the air suspension set more easy.*** |

***Torque***

| | |
|---|---|
|  | ***Every bolted joint in this manual comes with a torque.*** |
| ***xx Nm*** | |

# 2. General fitting regulations

This manual has been carefully crafted to provide the best way to fit the air suspension mentioned on the cover of this manual. However, the manual is a random indication of the technical specifications at any given time.
VB-Airsuspension reserves the right to make technical changes in the air suspension kit without any notification.

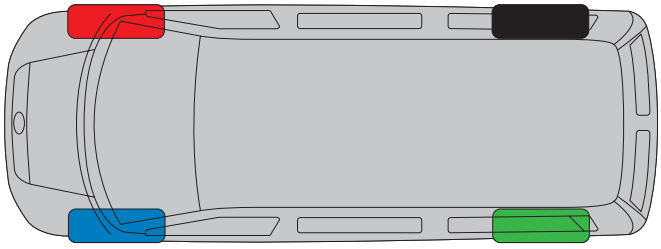
Fitting of the air suspension kit can only be done in a from VB-Airsuspension authorised workshop. The fitting can only be done by authorised mechanics. The mechanics must have proper experience in electric/electronics, pneumatics and regular vehicle technics.

- When necessary, use the work-shop manuals of the vehicle.
- Always follow the directions of the vehicle manufacturer, unless otherwise expressly stated in this manual.
- Work clean.
- Always tighten the bolts and nuts according the recommended torque.
- Whenever changes are made to the original corrosion protection, restore it immediately. For this purpose use for example protective coating or spray wax.
- Always re-fit the removed wires and tubes on the original way.
- Always secure the wires and air tubes with plenty of tie-wraps. Secure all connectors properly and make sure that there is no stress on them.
- All electrical cables must be kept at least 100 mm away from the ABS/ESP block, its sensors and other controllers.
- Make sure the air-tubes do not make sharp corners and can not bend or wear against other parts.
- Connecting electrical cables or air-tubes to brake lines is strictly prohibited!
- Make sure no tools, cleaning rags or other materials remain under the car.
- Check the air suspension after finishing the fitting according the checklist.
- Check after the fitting, the system for air leakage.
- When finishing the fitting, always make a test drive.
- Make sure that the right calibration support are available, for this kit the right calibration support are:

| Axle | Calibration height: | Partnumbers: |
|---|---|---|
| Front axle | SHF = 280 mm | - |
| Rear axle | X = 133mm | 009 000 00 46 |

- The air-suspension is split up in two corners, which correspond to one corner of the vehicle. When a part is specific for one corner, this will be marked with a coloured sticker.

| Colour | Description |
|---|---|
| Black | Right rear |
| Green | Left rear |
| Red | Right front |
| Blue | Left front |



# 3. Explanation to this fitting instruction

This fitting instruction is written for the air suspension kits for:
- Renault Master RWD X62
- Opel Movano RWD X62
- Nissan NV400 RWD X62

In this fitting instructions are the proceedings described to mount the air suspension on the front and/of rear axle. Depending which kit you ordered, you should follow only the chapters who corresponding with the kitnumber.

Have you ordered the air suspension for the rear axle with kitnumber 10519232XX, follow chapter 4 and 6.

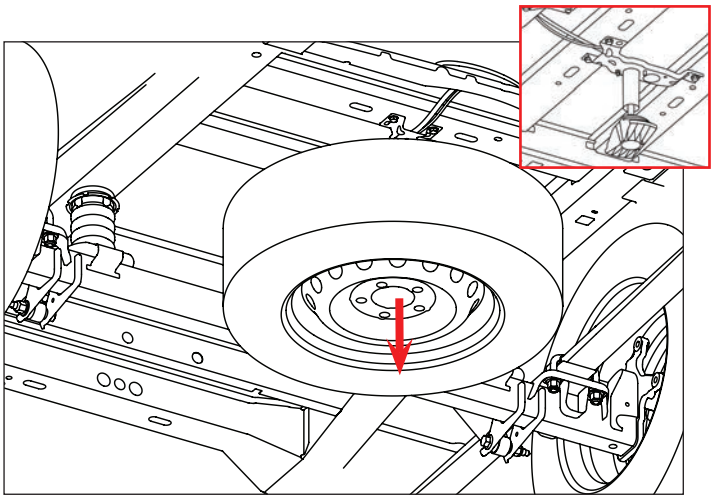
Have you ordered the air suspension for the rear axle with kitnumber 10519234XX, follow chapter 4, 5 and 6. You should first mount the rear axle air suspension kit, then the compressorbox and at last the front axle air suspension kit.

A short overview on which chapter to follow:

| Which axle? | Kitnumber | Chapter |
|---|---|---|
| Rear axle | 105 19 23 2XX | 4, 6 |
| Front and rear axle | 105 19 23 4XX | 4, 5, 6 |

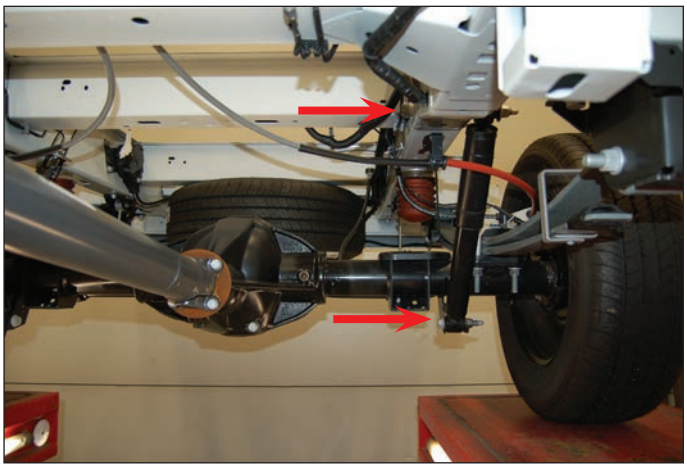
# 4. Mounting the air suspension

***For vehicles with a short wheel base, the spare tyre becomes absolute. Because after fitting the air spring suspension the spare tyre does not fit the original position. When the vehicle has been extended, it is possible to select a new position for the spare tyre.***



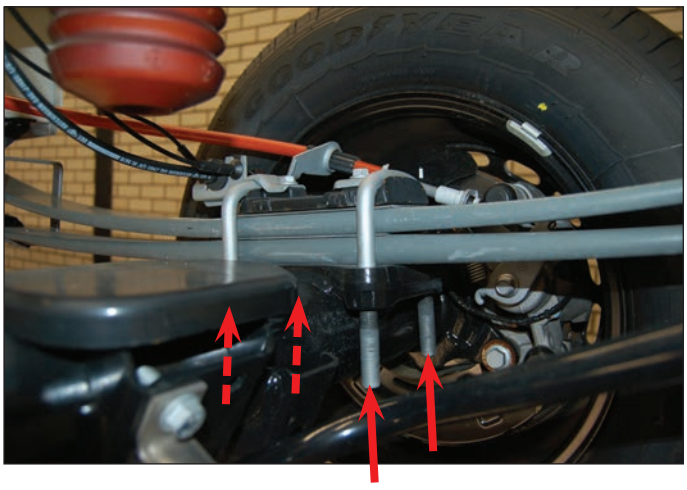
## 4.1 Preparations

1. Support the vehicle.
2. Remove the shock absorber. Keep the original fitting, these will be re-used.
3. Remove the roll stabiliser incl. torque arms and torque arm brackets



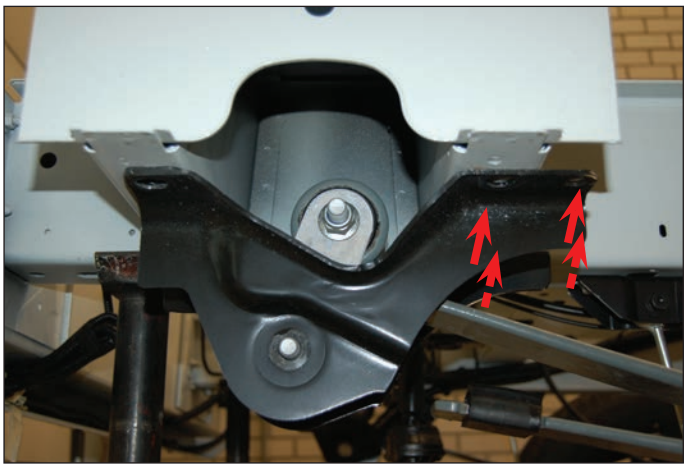
***Bolts and nuts will be re-used.***

4. Remove the U-bolts.
5. Pull the brake wear indicator carefully from its bracket. ***DO NOT remove the brake wear indicator, the brake lines, ABS-Sensors and bracket from the chassis.***



***Lower the axle, so the leaf-spring can be removed easily.***

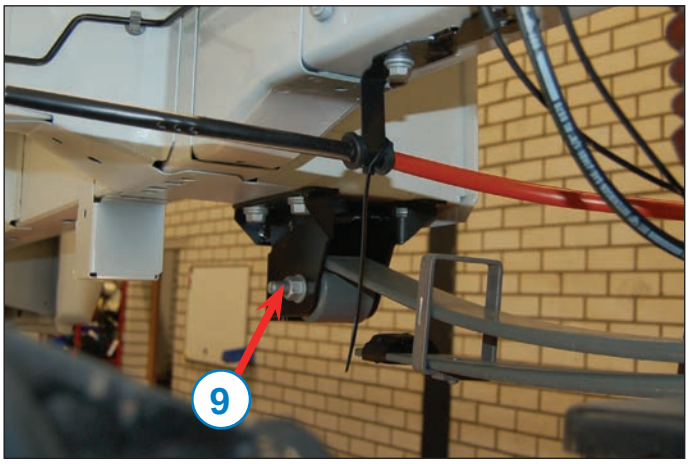
6. Remove the rear leaf spring support.



***Protect the surface with an anti corrosion substance. For example: protective coating or spray-wax.***

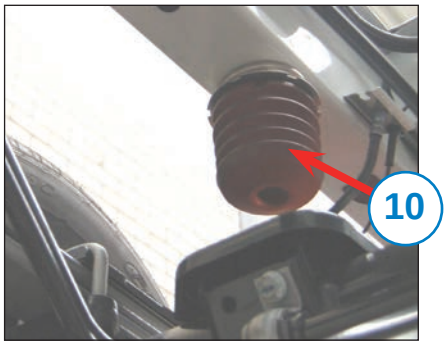
7. Lower the axle.

8. Remove the bolt, securing the leaf spring to the front leaf spring support.
9. Remove the leaf springs.



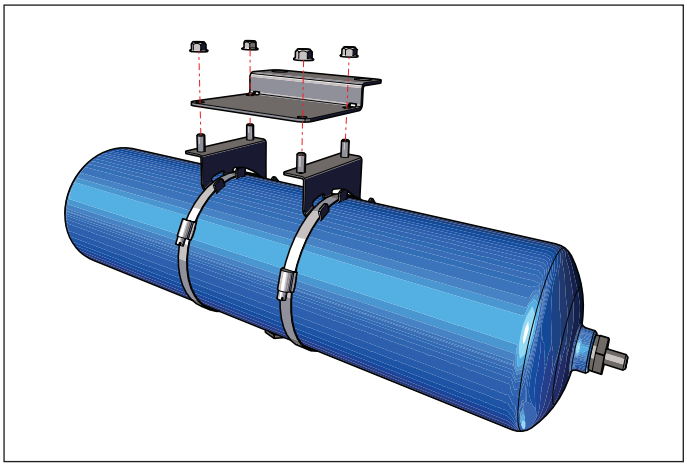

10. Remove the original bump stops.
11. Remove the bracket for the bump stop.

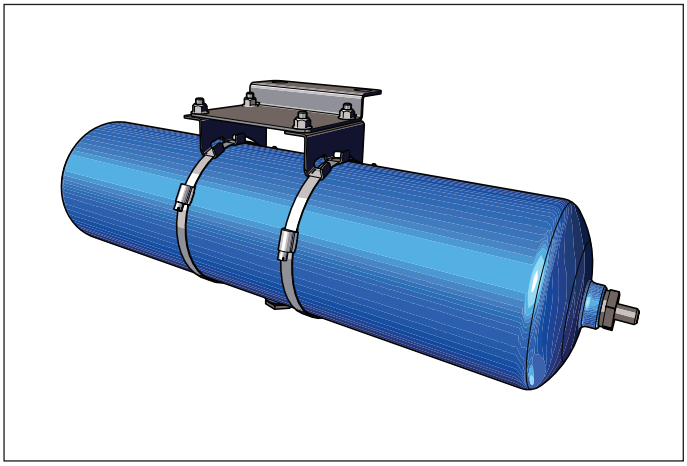
***Prevent the axle agianst moving related to the alignment of the axle.***




## 4.2 Air tank

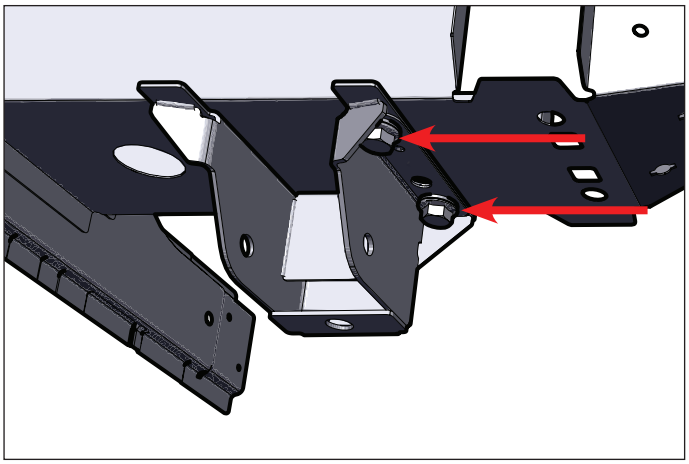
1. Fit the tank bracket to the brake clip brackets.



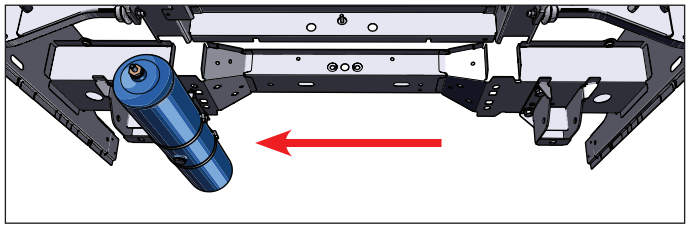


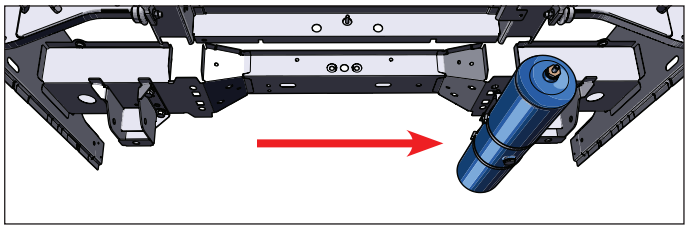
| *4 x flange nut* | *M8* |
|---|---|
| Nm | ***20 Nm*** |

2. Fit the tank to the inside of the leaf-spring bracket.

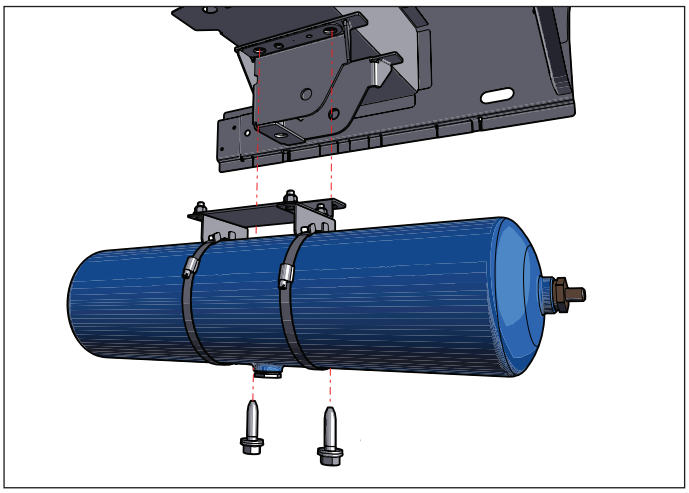


3. The tank can be fitted on the left or right.

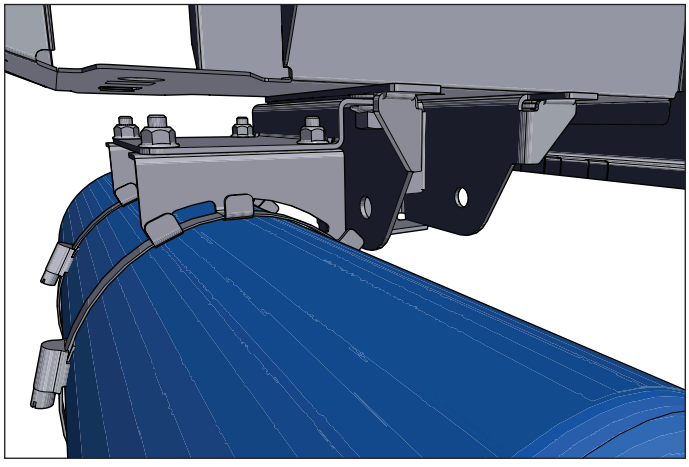




4. Remove the two innermost bolts from the leaf-spring bracket.



5. Fit the tank using the bolts from the leaf-spring bracket.



## 4.3 Protective coating

***For vehicles equipped with a coating against chipping, it is important to remove the coating between the upper crossbeam and chassis.***

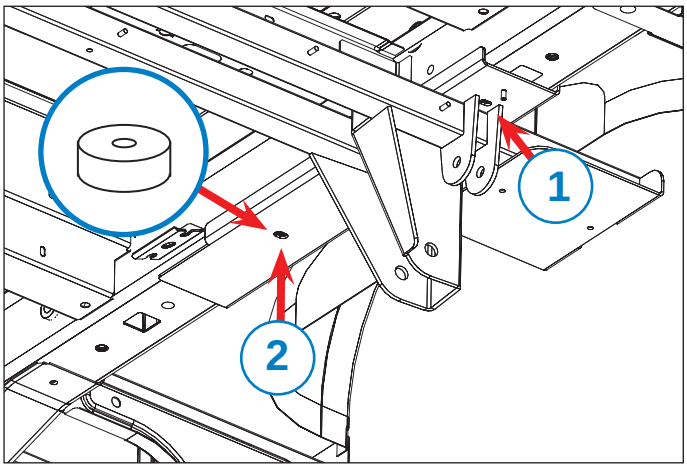
1. Position the crossbeam against the chassis.
2. Draw the outer line of the crossbeam to the chassis.
3. Remove the coating from the chassis.

| | |
|---|---|
| ⚠ | ***Step 2 and 3 is only applicable for vehicles with a protection layer.*** |
| ⚠ | ***Be sure that al of the protection layer is removed before the crossbeam is mounted.*** |
| ⚠ | ***Note the position of the panhard mounting. This must be placed at the right side of the vehicle.*** |

## 4.4 Upper crossbeam

1. Fit the crossbeam to the chassis. The holes should match the holes in the chassis. Start with fitting the rear bolts first.

| | |
|---|---|
| ***30 Nm*** | ***2 x Bolt M8x30 10.9***<br>***2 x Washer M8*** |



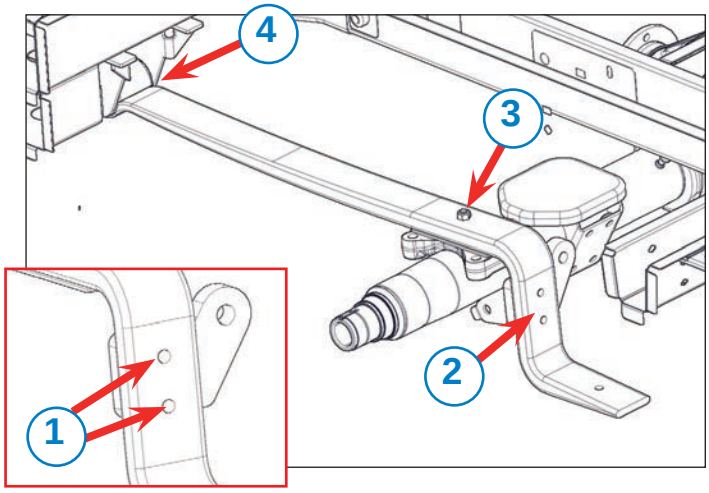

2. Fit the front side to the chassis. The front is also the position for the bump stop. When fitting the bump stop to the chassis, fit the rubber spacer between the chassis and bump stop.

| | |
|---|---|
| ***60 Nm*** | ***2 x Bolt M10x75***<br>***4 x Washer M10*** |

## 4.5 Main springs

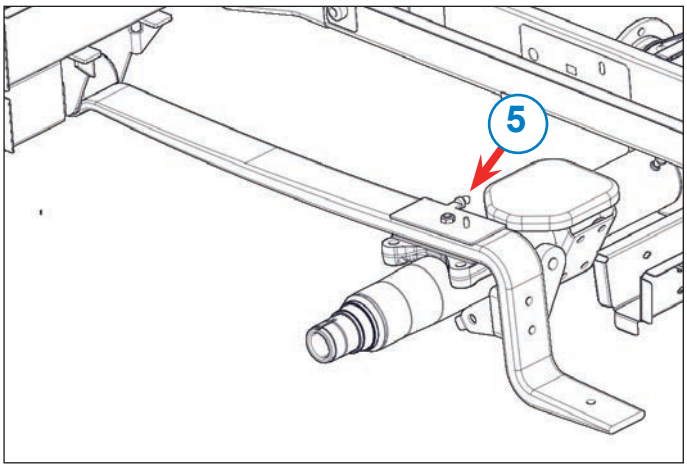
1. The left main spring has two holes. Fit the panhardrod bracket to these two holes.

| | |
|---|---|
| 60 Nm | *2 x Bolt M12x70*<br>*4 x Washer M12*<br>*2 x Lock nut M12* |




2. Position the main springs to the leaf spring seat. The main spring with the bracket has to been fitted to the left **. The other main spring should be fitted to the right **.

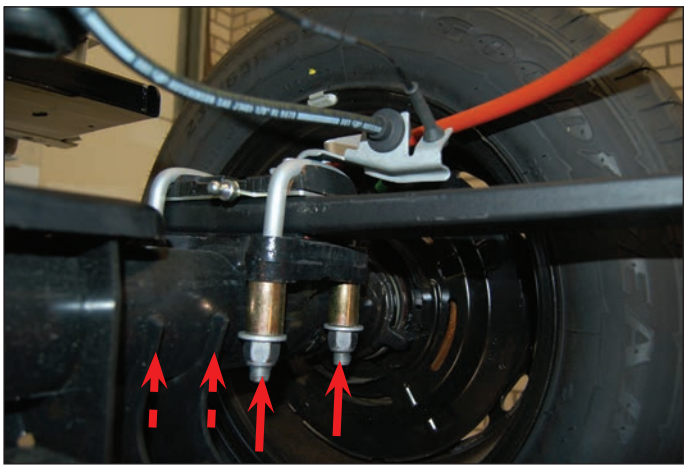
3. The hole in the leaf spring seat must drop over the centre bolt.
4. Secure the main springs to the leaf spring support. ***Use the original fasteners**.***




> ***** Tighten them once the vehicle is at the ride height.***

5. Position the ball-joint bracket on to the main springs.
6. The ball-joints must face forward and to the inside of the vehicle.

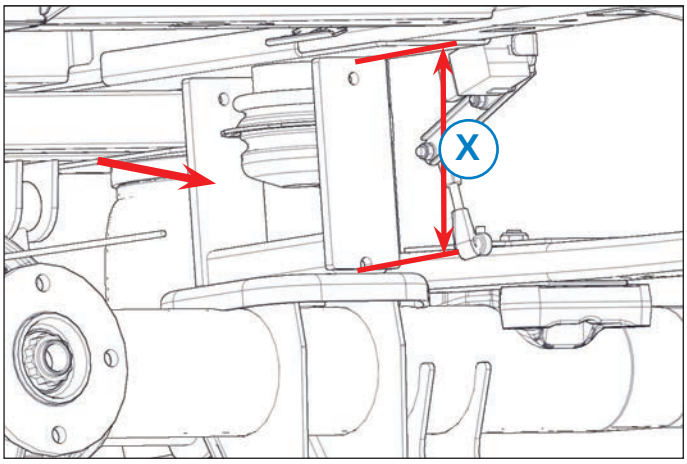
7. Re-position the top plate to the ball-joint bracket.
8. Fit the U-bolts. Slide the spacer over the threaded end, before securing the U-bolts**.
   When re-fitting the U-bolts, use grease on the threaded ends.



> ***** Tighten them once the vehicle is at the ride height.***

## 4.6 Panhardrod

1. Check whether the height ***X*** of the calibration support is ***133 mm***.
2. Put the vehicle on the calibration supports.

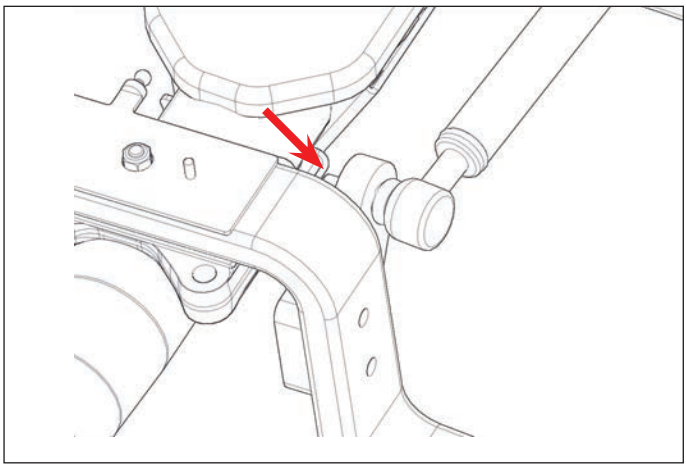



3. Mount the panhard rod ball-joint on the panhard rod bracket.
4. Secure the castellated nut with a split pin.

| | |
|---|---|
| ***75-85 Nm*** | ***1 x Washer M14***<br>***1 x Castellated nut M14***<br>***1 x Split pin*** |

5. Mount the panhard rod on the ball-joint. Use anti-seize compound on the screw thread.

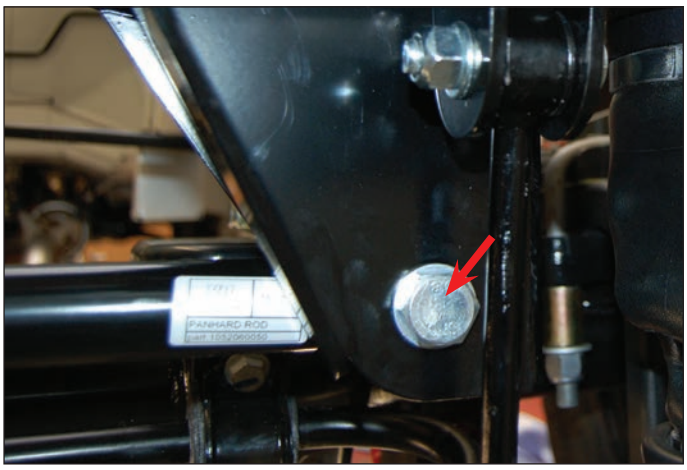
***Make sure, that the ball joint is turned right towards the bracket.***



6. Mount the panhard rod on the panhard-rod bracket.
   ***Don't secure the panhard rod bolt yet.***

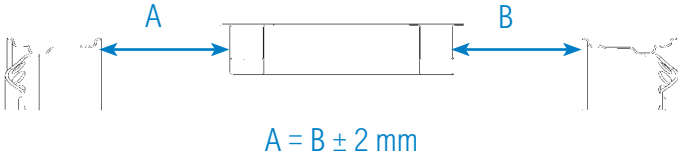
| | |
|---|---|
| ***180 Nm*** | ***1 x Bolt M16x90***<br>***1 x Lock nut M16***<br>***2 x Washer M16*** |

***The next step can only be performed, when the vehicle is at ride-height!***



7. Measure the distance ***(A)*** between the chassis and the rim edge on the left-hand side. Measure the distance ***(B)*** between the chassis and the rim edge on the right-hand side. If the distance between left and right is more than 2 mm, loosen the lock nut and remove the panhard rod bolt. Turn the panhard rod:
   - Left: when A < B
   - Right: when A > B

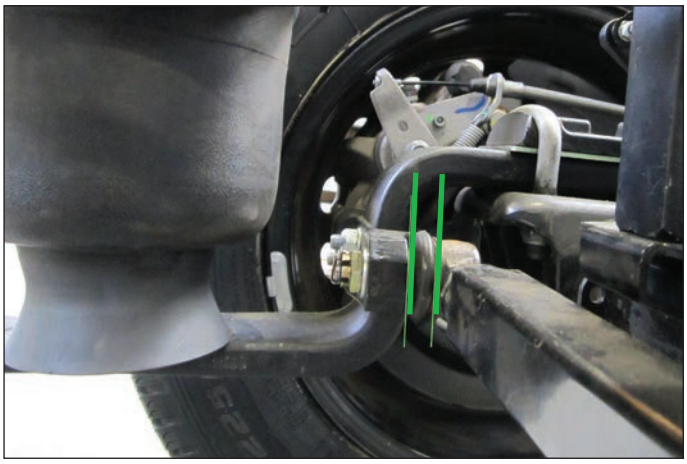
   Size difference > 2mm, Adjust!
   Size difference < 2mm, Go further!



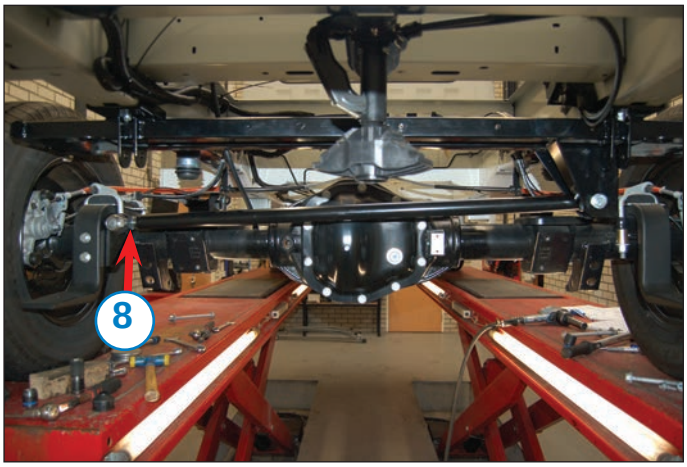

A = B ± 2 mm

***By rotating the panhard rod 1 turn, the adjustment of the displacement is 1.5 mm.***

| | |
|---|---|
| | ***The ball joint should be parallel with the panhard bracket, see the green lines.*** |

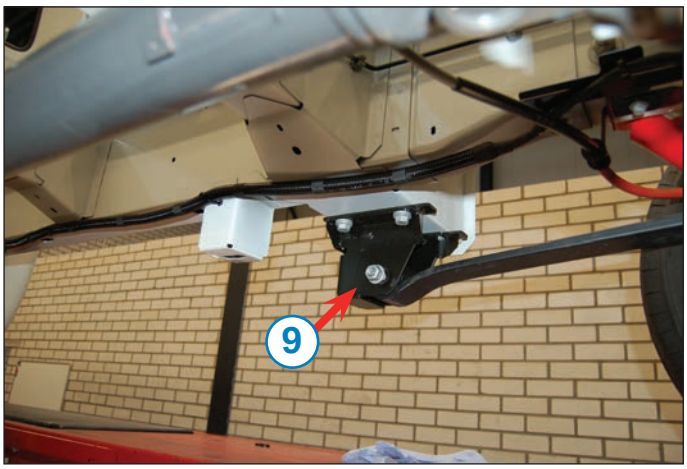


8. Secure the lock nut.



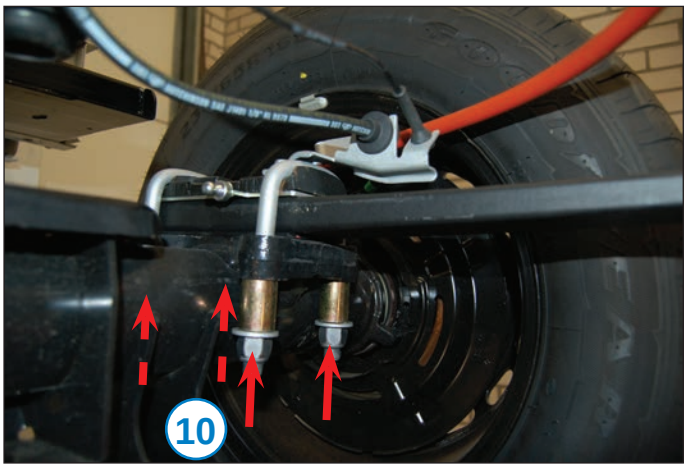

| | |
|---|---|
| ***60 Nm*** | ***Nut in delivery content*** |

9. Secure the bolts.




| | |
|---|---|
| ***180 Nm*** | ***Original fasteners*** |

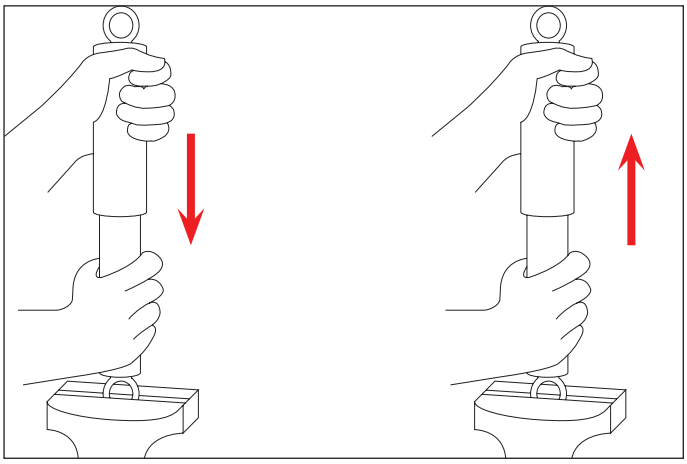
10. Secure the bolts.




| | |
|---|---|
| ***130 Nm*** | ***Original fasteners*** |

## 4.7 Shock absorber

1. Before mounting, it is necessary to bleed the shock absorbers.
2. Clamp the shock absorbers vertically in a vice.



***The wide side of the shock absorber, is the top side.***

3. Press the top of the shock absorbers slowly down and than slowly pull the shock absorbers up.
4. At the end you may hear a slurping sound, the sound indicates that there's air in the shock absorbers.
5. Repeat this step until you can't hear the sound any more.
6. Keep the shock absorber upright.

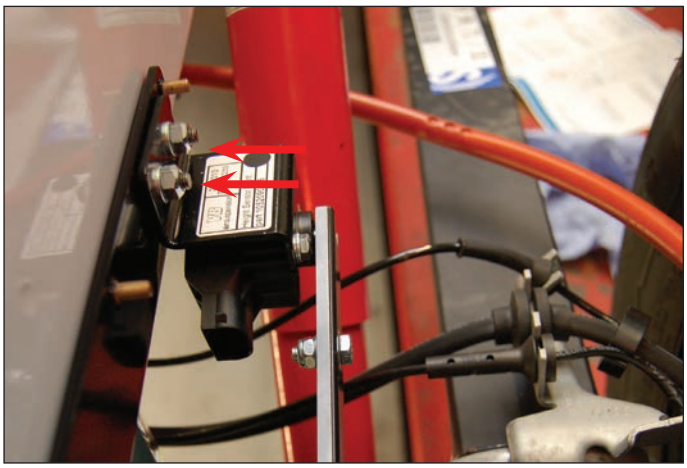

***Keep the top of the shock absorbers up at all times. If you don't do this, you will get new air in the shock absorber.***

7. Fit the new shock absorbers.
   - Top side of the shock absorber needs to be fitted with a spacer between the chassis and the shock absorber.
   - The lower side of the shock absorber needs to be fitted with a washers to both sides of the eyelet.

***180 Nm*** — ***Original fasteners***

## 4.8 Height sensors

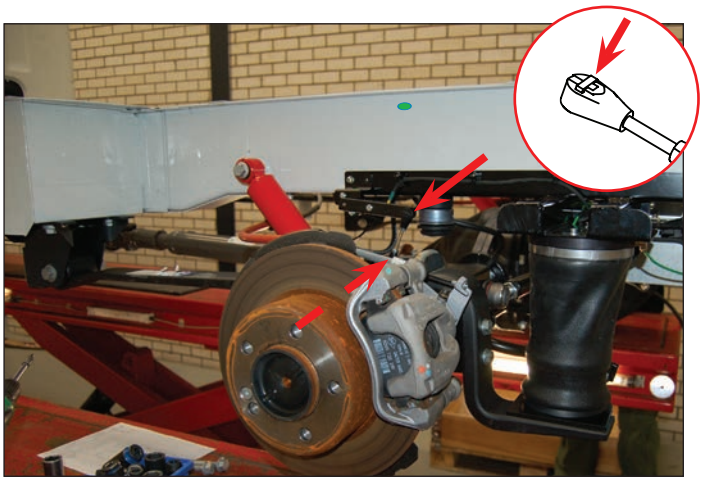
1. Fit the brackets of the heightsensor to the indicated position. Keep in mind that this kit usage a ***left*** en right variant.



***8 Nm*** — ***4 x Washer M6***
***4 x Lock nut M6***

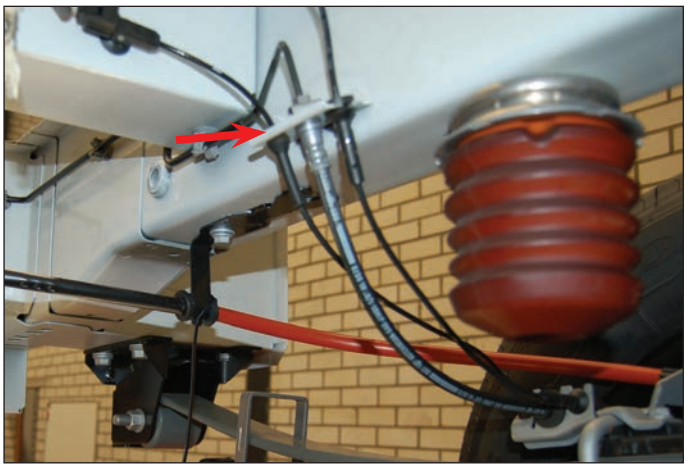
2. Check the length of the vertical bars
   - ***90mm*** - measured from heart-to-heart.

3. Fit the height sensor rods to the ball-joints of the heightsensor.
4. Fit the height sensor to the ball-joint of the ball-joint brackets.



| | |
|---|---|
| ⚠ | ***The height sensor arm must be pointing to the back of the vehicle!*** |
| ⚠ | ***Secure the height sensor arms, by pressing the clips.*** |

5. Move the brake wear indicator carefully in the direction of the arrow, just 1 cm. Ensure that the cable cannot get in contact with the heightsensor rods.

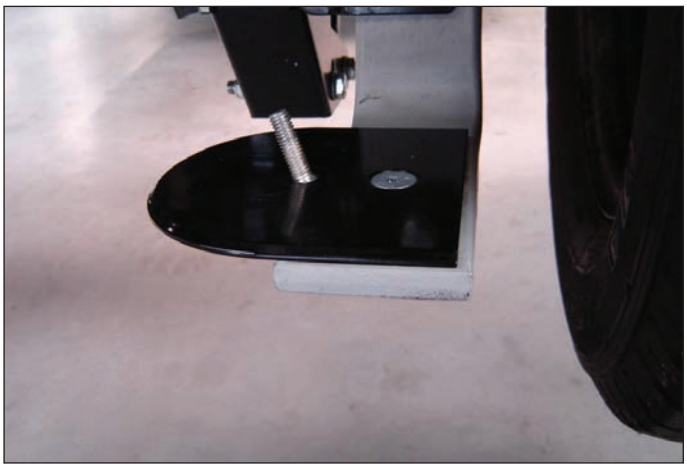


## 4.9 Air springs

1. Blow air in the air springs so the piston fits the underside of the air spring.
2. Mount the air spring to the upper cross beam.

| | |
|---|---|
| 8 Nm | ***4 x Allen screw M6x16***<br>***4 x Washer M6*** |

3. Mount the lower spring plate to the main spring.



| | |
|---|---|
| 8 Nm | ***2 x Countersunk allen screw M10x35***<br>***2 x Washer M10***<br>***2 x Lock nut M10*** |
| ⚠ | ***Push before tightening the lower spring plate the UNC 3/8"x 1 1/2" through the middle hole. When the lower spring plate is mounted, this is not possible.*** |

4. Slide the piston over the plug on the bottom side of the air spring.
5. Mount the bottom side of the air spring to the lower spring plate.

| | |
|---|---|
| ***Only tighten the bolts when the air springs are pressurised, so that the air springs are not twisted.*** | |
| ***10 Nm*** | ***2 x Bolt UNC 3/8"x 1 1/2"*** |

## 4.10 Stabiliser bar

***This paragraph is only for vehicles equipped with an original stabiliser bar.***

1. Put some grease on the stabiliserbar at the place the rubber is holden it.
2. Mount the stabiliser bar.
3. Place the filling plate under the bracket.

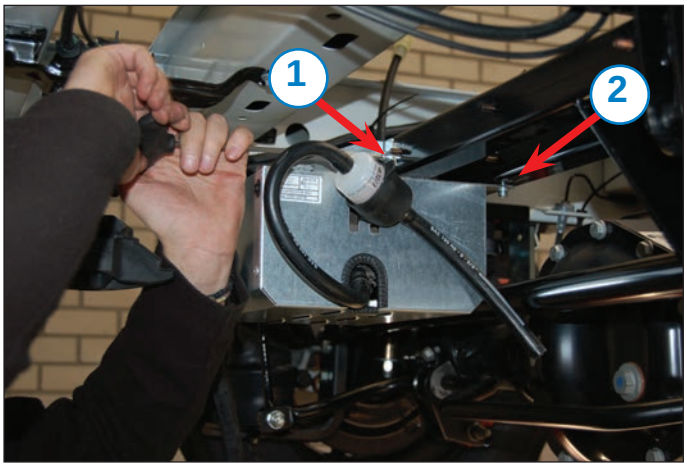
| | |
|---|---|
| ***60 Nm*** | ***2 x Bolt M10x30***<br>***2 x Washer M10*** |

4. Mount the reactionarms to the upper crossbeam.
5. Mount the reactionarms to the stabiliserbar.

| | |
|---|---|
| ***77 Nm*** | ***4 x Bolt M12x55***<br>***8 x Washer M12***<br>***4 x Lock nut M12*** |

## 4.11 Compressor box

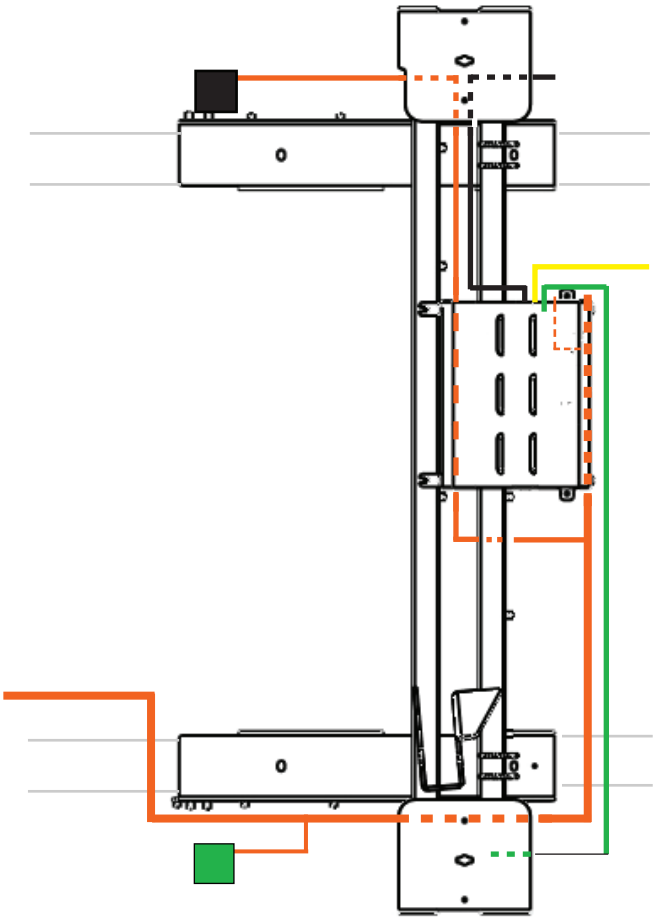
1. Screw two M6 bolts with washers in the upper cross beam. Don't tighten them yet, but let there about 5 mm space between the washer and upper cross beam.
2. Mount the blue air-tube to the valve block.
3. Mount the red air-tube to the valve block.
4. Slide the compressorbox with the slots over the bolts. Mount two M6 bolts with washers and tighten them. Tighten also the two bolts of step 1.




| | |
|---|---|
| ***8 Nm*** | ***4 x Bolt M6x25***<br>***4 x Washer M6*** |

## 4.12 Wiring harness

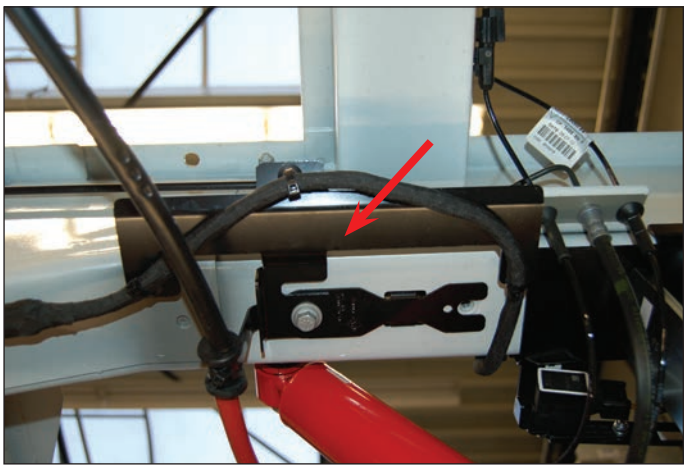
1. Mount the tie-wraps on the threaded ends on the upper cross beam.
2. Lead the ***wiring harness*** with the ***black*** air tube to the right side of the vehicle.
3. Mount the ***wiring harness*** and ***black*** air tube to the tie-wraps located on the top of the compressor box.



***Don't pull the tie wraps to tight untill the wiring harness is connected to the battery.***

4. Lead the ***wiring harness*** with the ***green*** air tube to the left side of the vehicle.
5. Connect the ***green*** air tube to the left air spring.
6. Connect the ***green*** height sensor cable to the left height sensor.
7. Connect the ***black*** height sensor cable to the right height sensor.
8. Connect the ***black*** air tube to the right air spring.
9. Fit the **yellow** air tube to the air tank.

10. Mount the cablebracket to the chassis.
11. Secure the cables with tie-wraps.

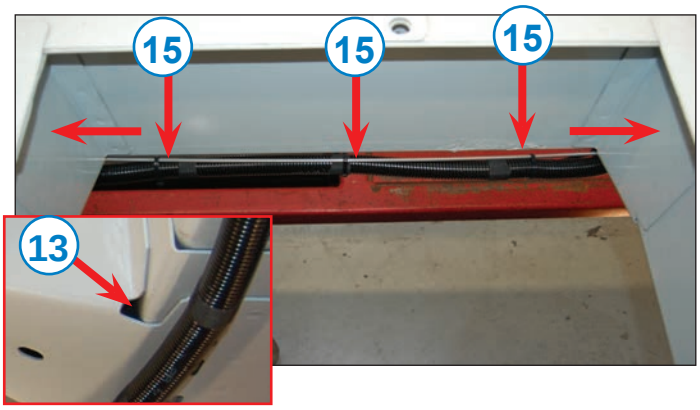


***Don't pull the tie wraps to tight untill the wiring harness is connected to the battery.***

12. Lead the wiring harness along the chassis to the front.

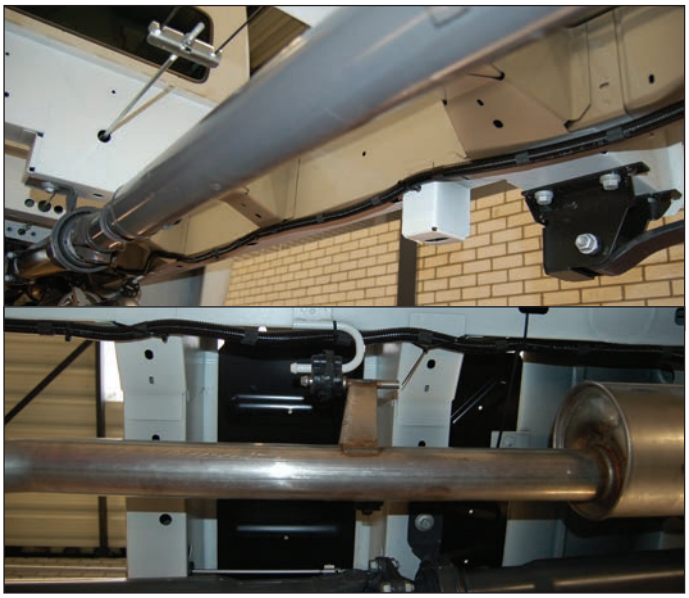
***Make sure that the tubes aren't near hot or moving parts. Use sufficient tie-wraps to secure the lines.***

13. To mount the cable, you have to mount a cable guider in the third section of the chassis.
14. Push the guider in the hole between the chassis beam and the cross beam.
15. Push the guider enough in the other hole.
16. Mount the wiring harness with three tie wraps to the guider.



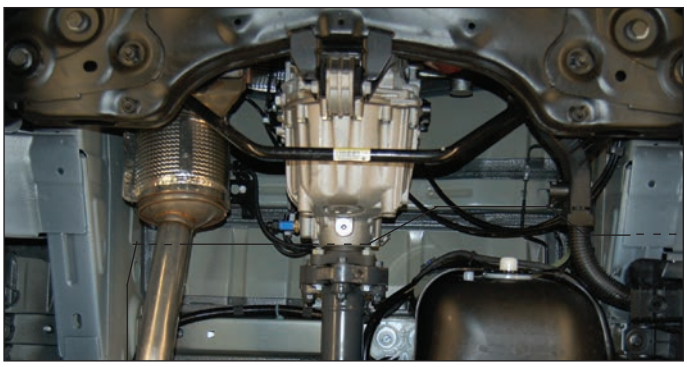

***Connecting electrical cables or airtubes to brake lines is strictly prohibited!***

17. Lead the wiring harness as shown in the picture.

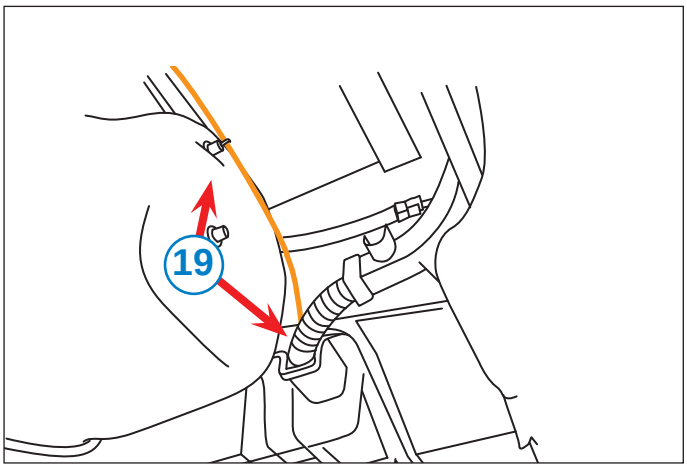


18. Lead the wiring harness above the exhaust.

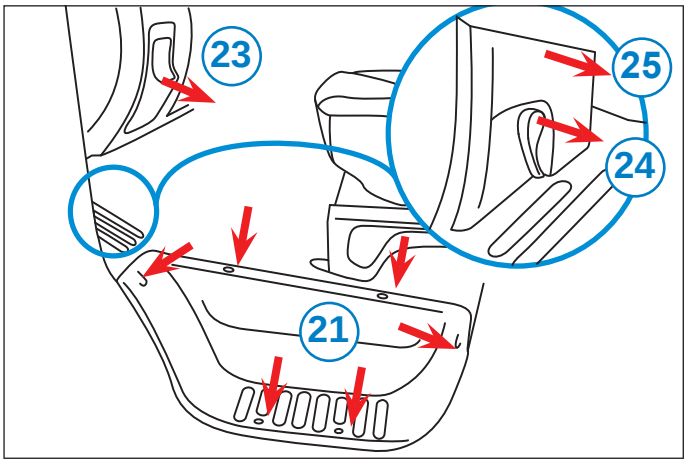
19. Lead the wiring harness along the cross beam to the bracket of the fuel tank.



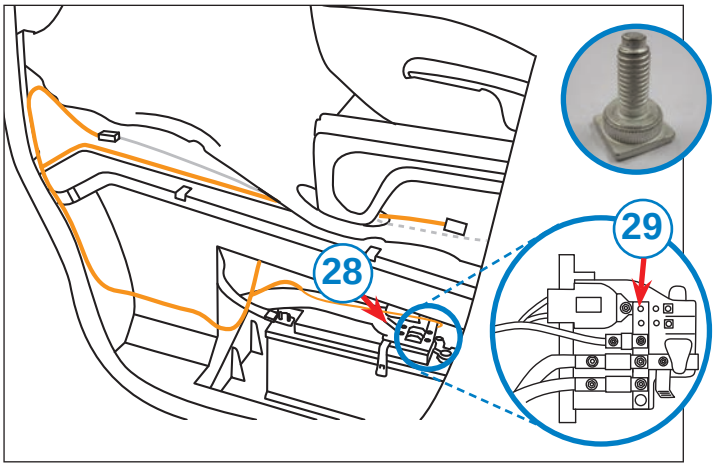
20. In front of the fuel tank there is a hole. Lead the VB-wiring harness inside, along with the vehicle's wiring harness.
21. Mount the wiring harness with tie-wraps.



22. Remove the screws.
23. Remove the entry of the cabin.
24. Remove the tray.
25. Remove the inside bonnet release (click).
26. Remove the panel (click).




27. Disconnect the battery terminals.
28. Remove the fuse block (See inlay picture).
29. Mount the special bolts in the fuse block, in one of the rear fuse positions [1].
30. Connect the red and yellow cable to the stud bolt (+) [1].
31. Mount the ***50A*** fuse between the red/yellow wire and the battery [1].





[1] ***Vehicle manufacturer guidelines.***

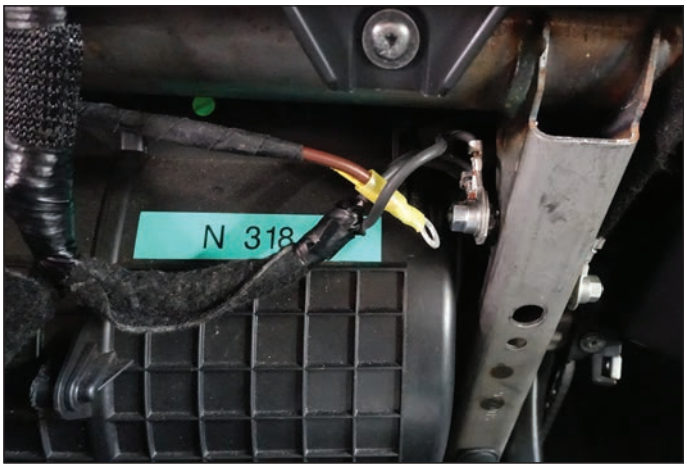
32. Mount the wiring harness with tie-wraps.
33. Lead the cable for the remote control and handbrake signal to the drivers seat according to the image.

34. Remove the five bolts.
35. Remove the dashboard cover of the central console.

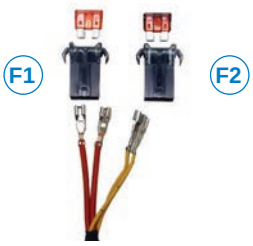
36. Route the yellow/brown earth wire to the central console.

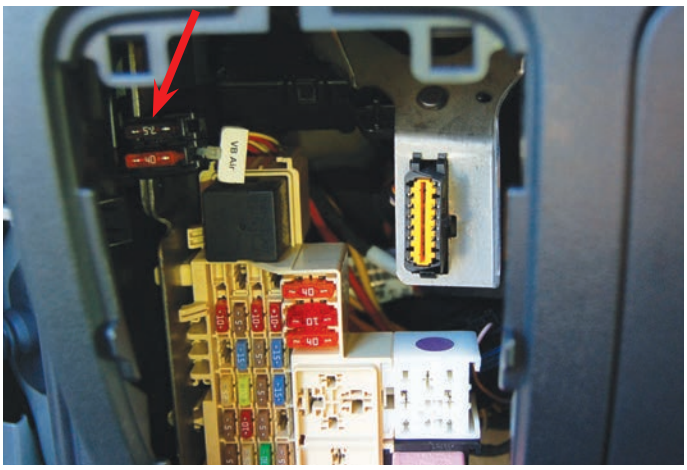
37. Route the yellow/brown earth wire to the earth point of the central console.

38. Connect the yellow/brown wire to the earth point.
39. Mount the dashboard cover of the central console.




40. Connect the red wires in a fuse block (**F1**).
41. Connect the yellow wires in the other fuse block (**F2**).



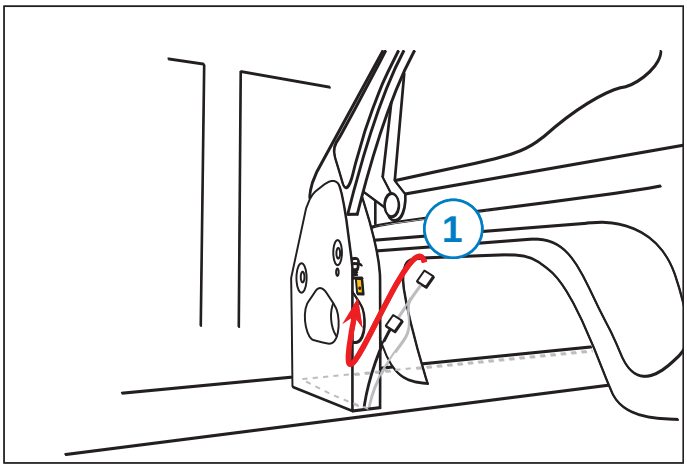



42. Mount the fuse blocks on the marked position with tie-wraps.
43. Do not fit the fuses yet.

### 4.12.1 Handbrake signal

***When the speedsignal option is ordered, please continue with paragraph 4.12.2***

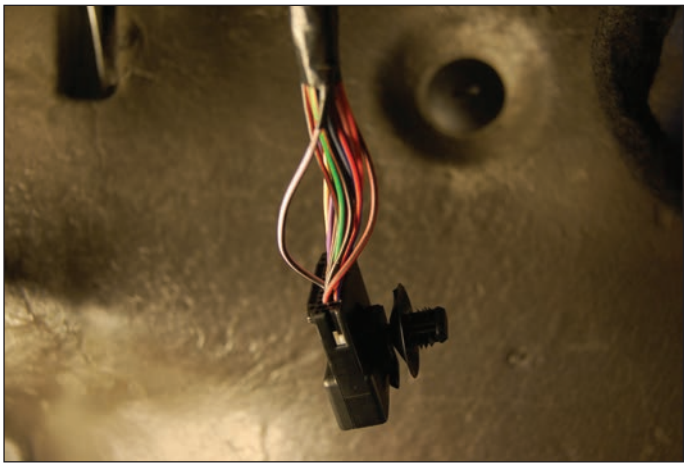
1. Lead the cable for the handbrake signal underneath the carpeting, around the back of the drivers seat, to the handbrake.
2. Remove the connector of the handbrake.
3. Connect the loosened connector to the white wire of the supply cable.
4. Connect the other plug of the supply cable to the connection of the handbrake.
5. Mount the VB-wiring harness to the original wiring harness.



### 4.12.2 speedsignal

1. Remove the accessory box.
2. Remove the glove box.
3. Search for the shown connector.
4. Lay the yellow cable (nr 18) behind the dashboard to the right side of the vehicle until you reach the connector.

5. Release the connection.
6. Connect the yellow cable(nr 18) to the pink/ grey, purple/black or grey/black cable on position 5 of the connector.
7. Mount the white connector (yellow/pink cable) to the VB-wiring harness.
8. Mount the connector and the boxes in reverse order.
9. Reconnect the battery terminals.

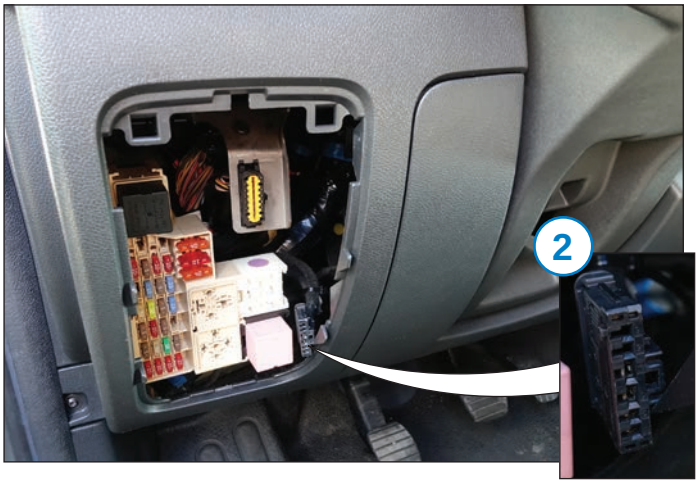


### 4.12.3 Ignition feed

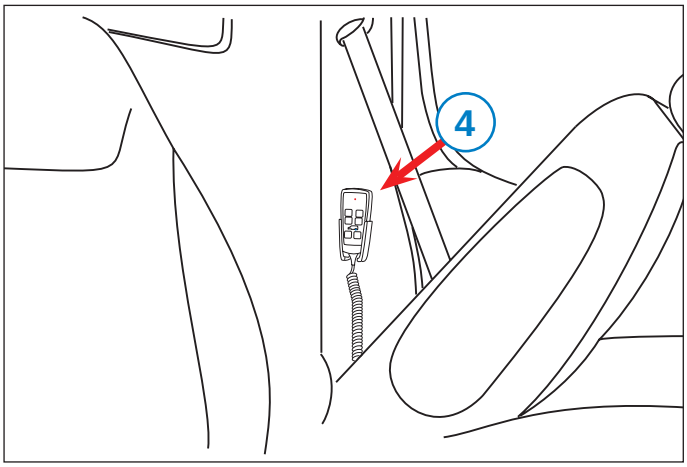
1. Next to the relay box there is a connector.

> ***Renault/Nissan vehicles should be equipped with code: CABADP***
>
> ***Opel/Vauxhall vehicles should be equipped with code: KPD***
>
> ***If not, continue with chapter 9.***

2. Connect the wiring harness to the vehicle using the supply cable.



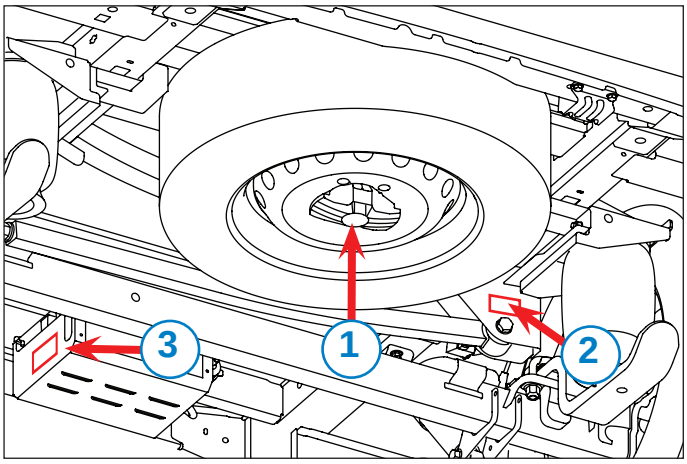

> ***If the vehicle is right-hand-driven, an additional extension wire is needed. This can be ordered by VB-Airsuspension, part number 1052200026.***




3. Connect the cable of the remote control to the VB-Wiring harness.
4. Mount the remote control at the specified location.
5. Mount the wiring harness with tie-wraps.
6. Refit the removed interior panels.
7. Mount the wiring harness under the vehicle.
8. Secure any remaining cable according to section ***4.12,*** step ***17.***
9. Mount the exhaust heat screen.

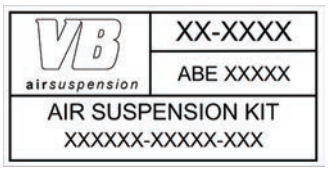
## 4.13 Warranty stickers

1. Mount the spare wheel.
2. Affix sticker ***B*** on the upper cross beam.
3. Affix sticker ***A*** on the compressor box.
4. Apply the protective film over the stickers.

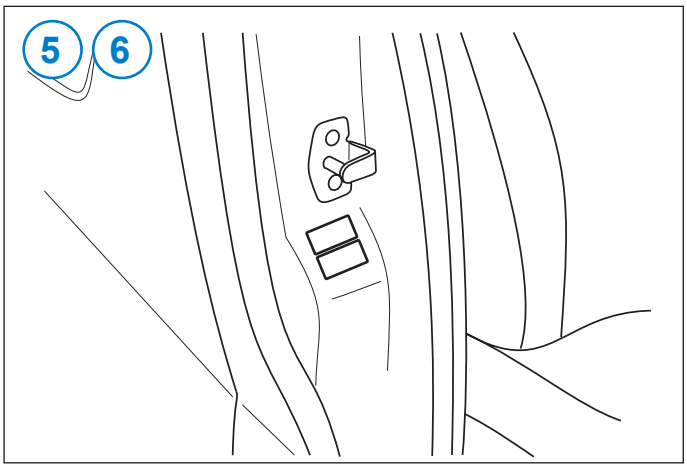



***A***


***B***




5. Place the warranty stickers ***A+B*** in the B-pillar on the passenger side.
6. Apply the protective film over the stickers.




7. Place the sticker with fuses information on the tray where the fuses are mounted.
8. Note the installation of the air-suspension kit in the maintenance booklet.

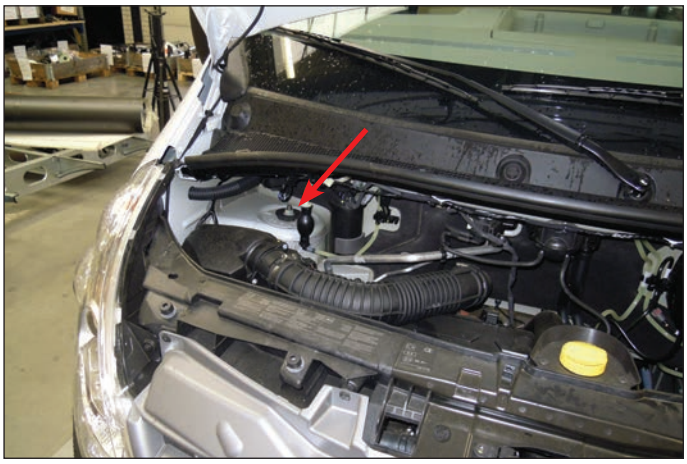
***When kit 105 19 23 2XX for the rear axle is ordered, continue with chapter 6 Calibration.***

***When kit 105 19 24 4XX for the front and rear axle is ordered, continue with chapter 5.***

# 5. Mounting the front axle

## 5.1 Preperations

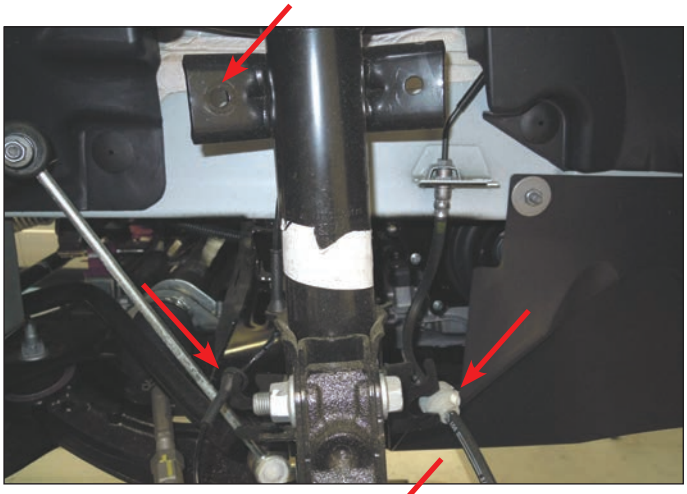
1. Support the vehicle properly.
2. Remove the wheels.



3. Loosen the suspension strut at the top by unscrewing the (flange) nut.

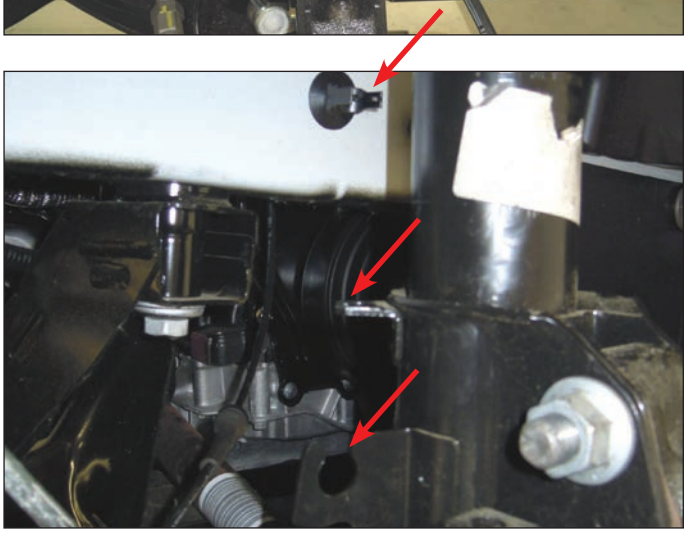
***Nuts will NOT be re-used.***

4. Remove the reaction arm (of the anti-roll bar). Loosen the brake line and ABS sensor cable from the suspension strut.

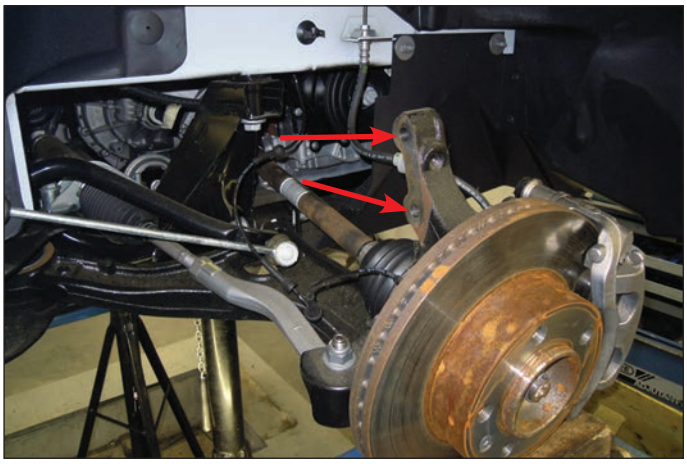


***Reaction arm and nuts will NOT be re-used.***

5. Loosen the ABS sensor cable at the three indicated points.



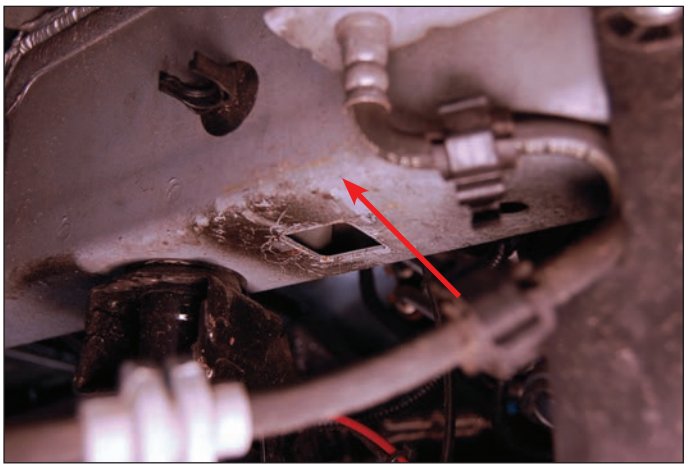
6. Support the steering knuckle or the brake disc and disassemble the suspension strut.



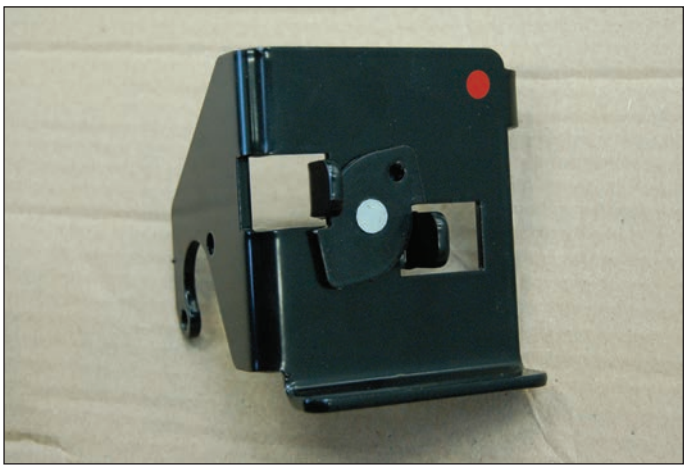
| | |
|---|---|
| ⚠ | ***Bolts and nuts will NOT be re-used.*** |
| ⚠ | ***Avoid tension in the brake-lines.*** |

## 5.2 Heightsensors

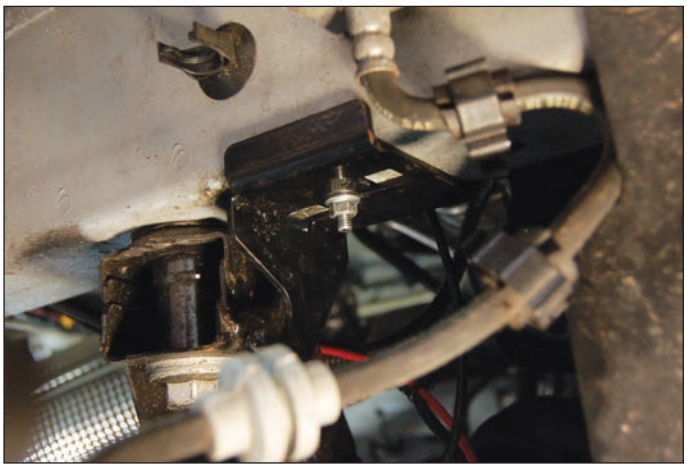
1. Clear the hole in the chassis.



2. Assemble the heightsensor bracket clamp so that it fits in the hole in the chassis.
   Pay attention to the colors of the brackets,
   Red is for right, blue is for left.

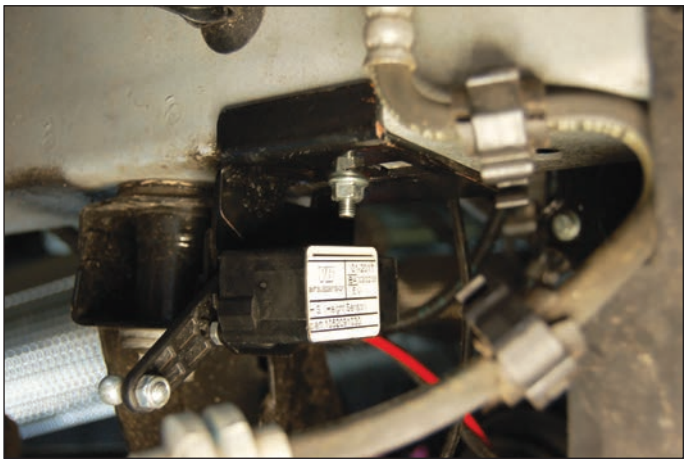


3. Press the heightsensor against the chassis and tighten the nut.
   The bracket is now clamped to the chassis.



| | |
|---|---|
| ***8 Nm*** | ***2 x Flange nut M6*** |

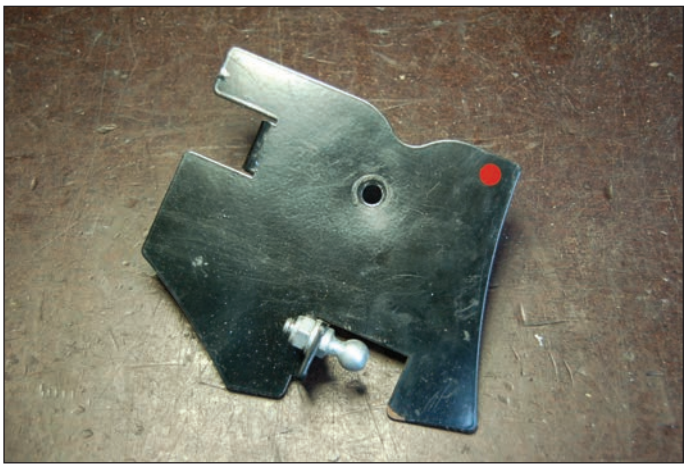
4. Mount the heightsensors to the heightsensor brackets.



| | |
|---|---|
| ***The connector of the heightsensor should be pointing to the inner side of the chassis.*** | |

| | |
|---|---|
| ***5 Nm*** | ***4 x Bolt M5x10 8.8***<br>***4 x Washer M5*** |

5. Mount the ball joint to the ball joint bracket. Pay attention to the colors of the brackets, Red is for right, blue is for left.



| | |
|---|---|
| ***8 Nm*** | ***2 x Balljoint M6***<br>***2 x Washer M6***<br>***2 x Lock nut M6*** |

6. Mount the ball joint bracket to the suspension arm, it fits only in one way.

| | |
|---|---|
| ***8 Nm*** | ***2 x Bolt M6x40 8.8***<br>***2 x Washer M6***<br>***2 x Lock nut M6*** |

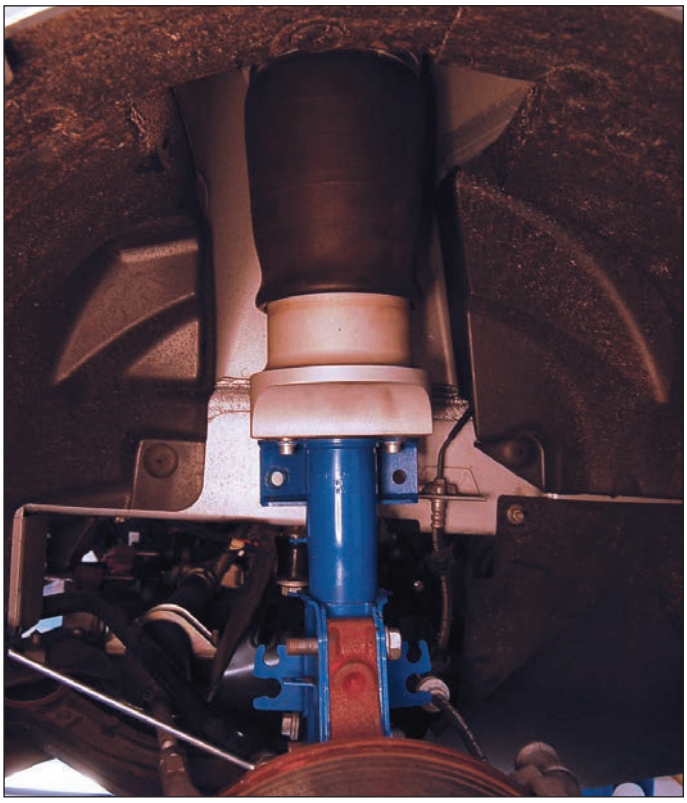
7. Mount the nut together with the fastening strip on the bottom side.


| | |
|---|---|
| ***The slot in the fastening strip at the bottom should be falling over the strip of the ball joint bracket, see insert.*** | |

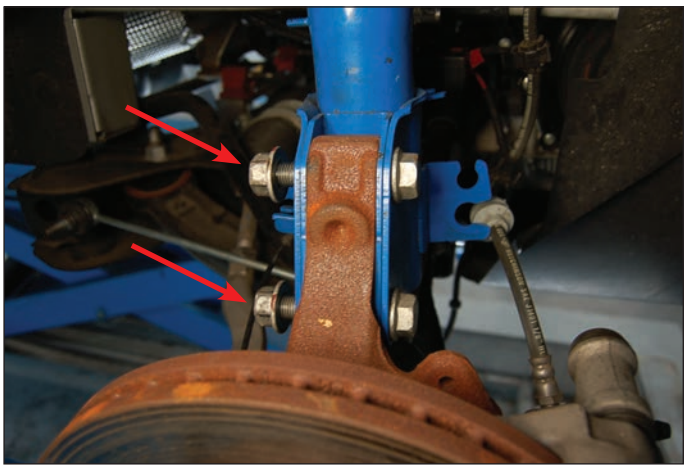
## 5.3 Air spring with shock absorber

1. Mount the air spring with shock absorber, the air coupler have to be placed at the front side of the shock absorber.

| | |
|---|---|
| | ***Avoid tension in the brake lines.*** |
| | ***Position the shockabsorber by hanging it in the upper hole and mount the nut and the mounting plate, tighten the nut a few turns.*** |
| ***2 x flange lock nut*** | ***M14 x 1.5*** |
| | ***- Nm*** |



2. Mount the shock absorber to the steering knuckle.

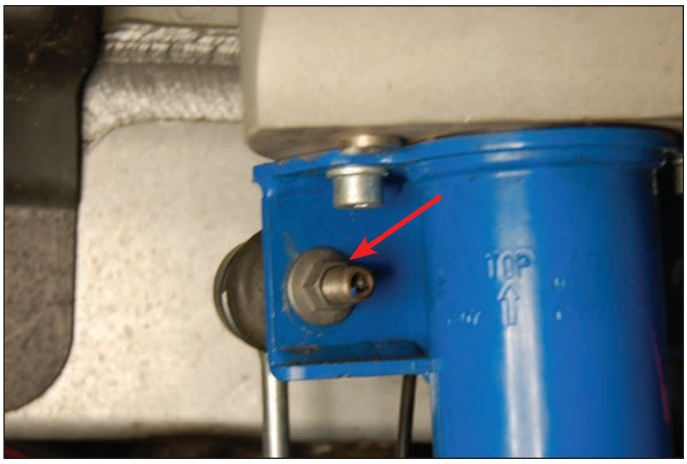


| | |
|---|---|
| ***180 Nm*** | ***4 x Original supplied flange bolt***<br>***4 x Original supplied flange nut*** |

3. Check the length of the heightsensor rods, **L = 180 mm** measured from heart to heart.

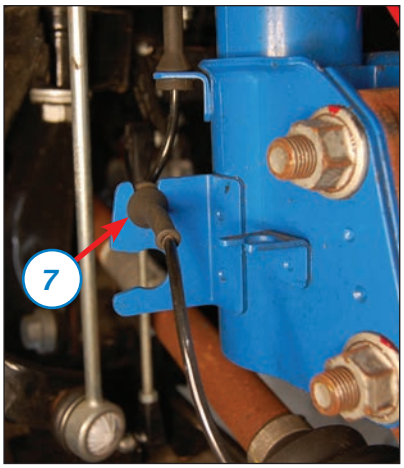
4. Mount the heightsensor rods to the heightsensors and ball joints.
   Lock the heightsensor rods.

5. Mount the new reaction arm to the shock absorber and stabiliser bar.



| | |
|---|---|
| 62 Nm | ***4 x Original supplied flange nut*** |

6. Mount the ABS cables and brake hoses at its original mountings.
7. Finger-tight the nut on the top of the shock absorber.** ***The nut has to be secured when the vehicle stands on the wheels.***





| | |
|---|---|
| 62 Nm | ***2 x flange lock nut** M14x1.5*** |

## 5.4 Air-tubes

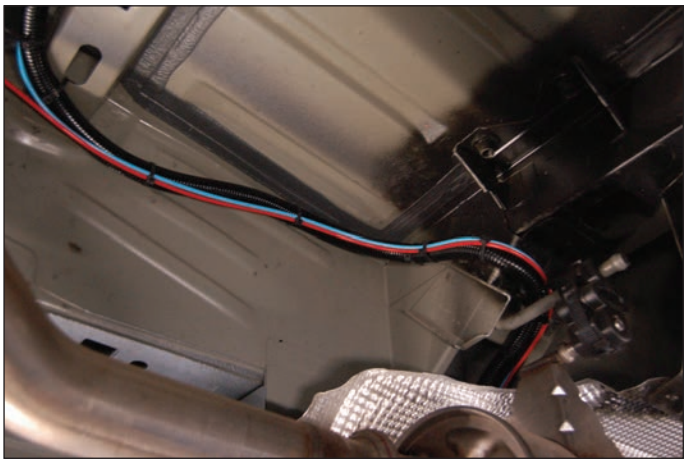
1. Lay the air-tubes along the right side of the vehicle to the front.

| | |
|---|---|
| ! | ***Make sure that the air tubes are clean and undamaged. Cut the air tube straight with an air pipe cutter, of the special tools.*** |

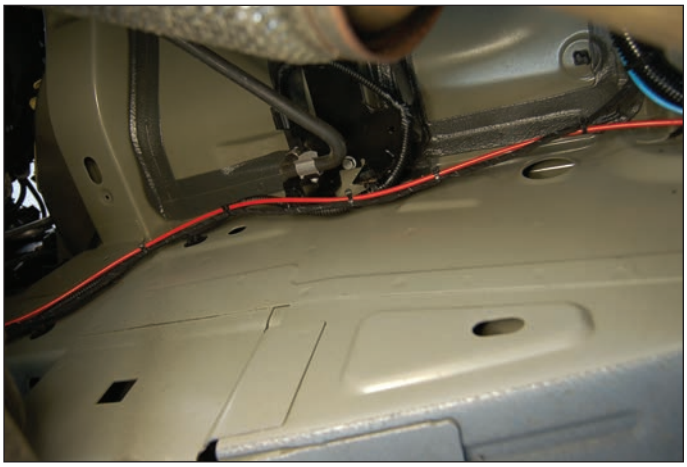
2. Place the blue and red air-tubes along the VB-wiring harness to the front of the car untill near the fueltank.

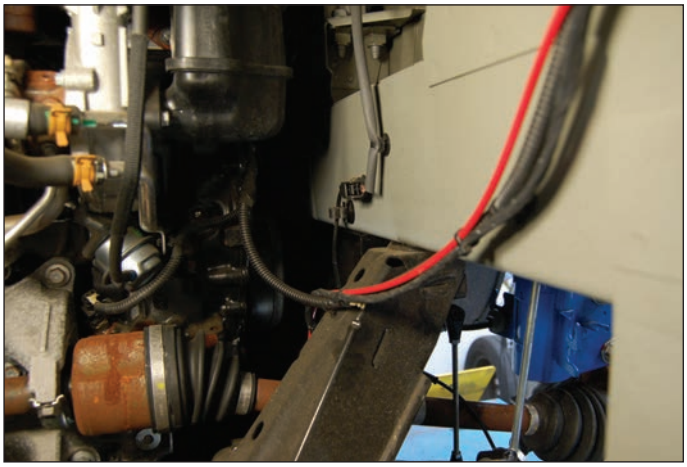
| | |
|---|---|
| ! | ***Make sure you use enough cable ties to secure the air-tubes.*** |

***Make sure that the air tubes aren‘t near hot or moving parts.***



3. Lay the red air-tube to the right air spring.

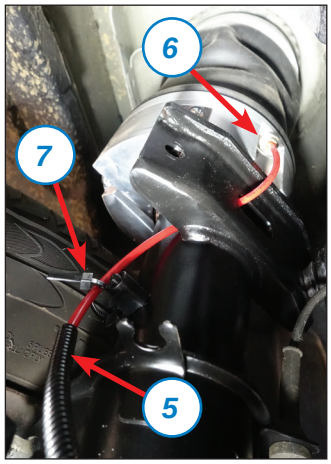




***Make sure that the air tubes aren‘t near hot or moving parts.***

4. Lay the blue air-tube to the left air spring.

5. Slide the conduit over the air-tubes as shown in the picture.
6. Connect the air-tubes to the air springs.



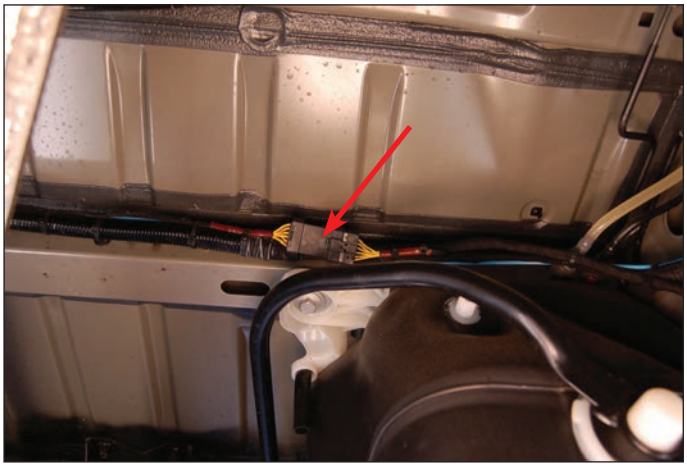

***Slide the air-tube at least 80 mm into the air connection.***

7. Mount the air-tube to the shock absorber with a cable tie.

8. Mount the air-tube with the clips to the brake hose.
9. Mount the air-tube to the heightsensorbracket with a cable tie with Fir Tree, with Disc Ø6.5.

## 5.5 Wiring harness

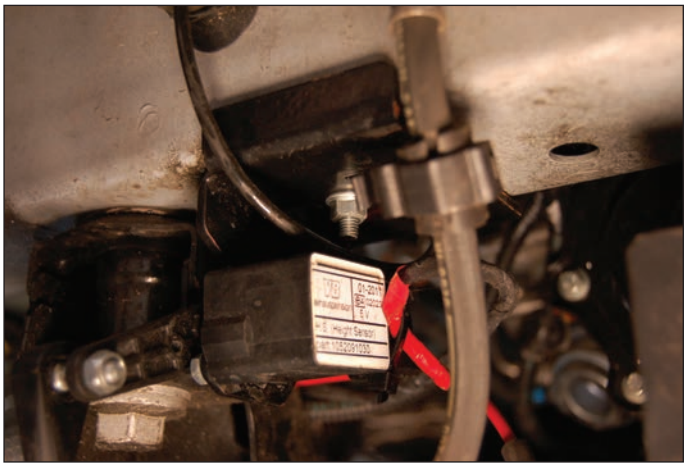
1. Connect the wiring harness with the wiring harness from the rear axle. this one is located in front of the fueltank.
2. Place the connectors for the heightsensors along the air-tubes to the heightsensors left and right.



***Pay attention to the colors, Red is for right, blue is for left.***

***Use sufficient tie-wraps to secure the cables.***

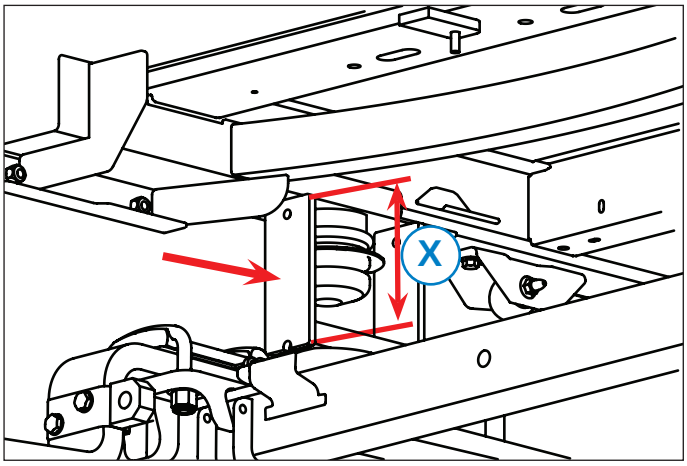
3. Connect the connectors to the heightsensors.
4. Mount the wheels [1].

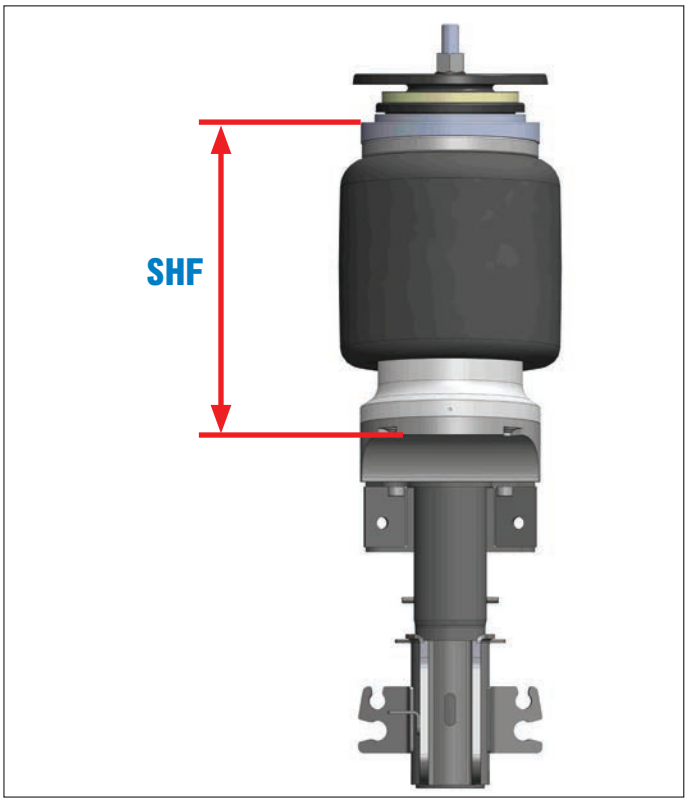


[1] ***Vehicle manufacturer guidelines.***

# 6. Calibration

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



1. Place the fuses in the fuse blocks.
   (F1 = 40 A + F2 = 7.5A).

> ***Program the VB-ASCU via the SMT.***

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

   **1 – 3 – 4 – 2**

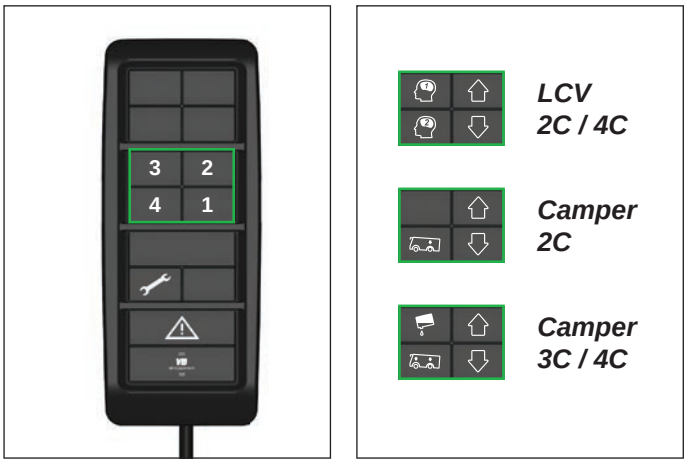
   The LEDs on the remote control will go out.
5. Press and hold the -button untill a long tone is heard.
6. Enter the following code within 20 seconds:

   **2 – 4 – 3 – 1**

   Calibration mode has been activated.
7. The / -LED and the -LED will start to flash.
8. Press button **2** or to raise the vehicle.
9. Place the calibration supports under the vehicle.
10. 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.
11. Hold down the -button until the long tone is heard.
    The ride height has been stored.

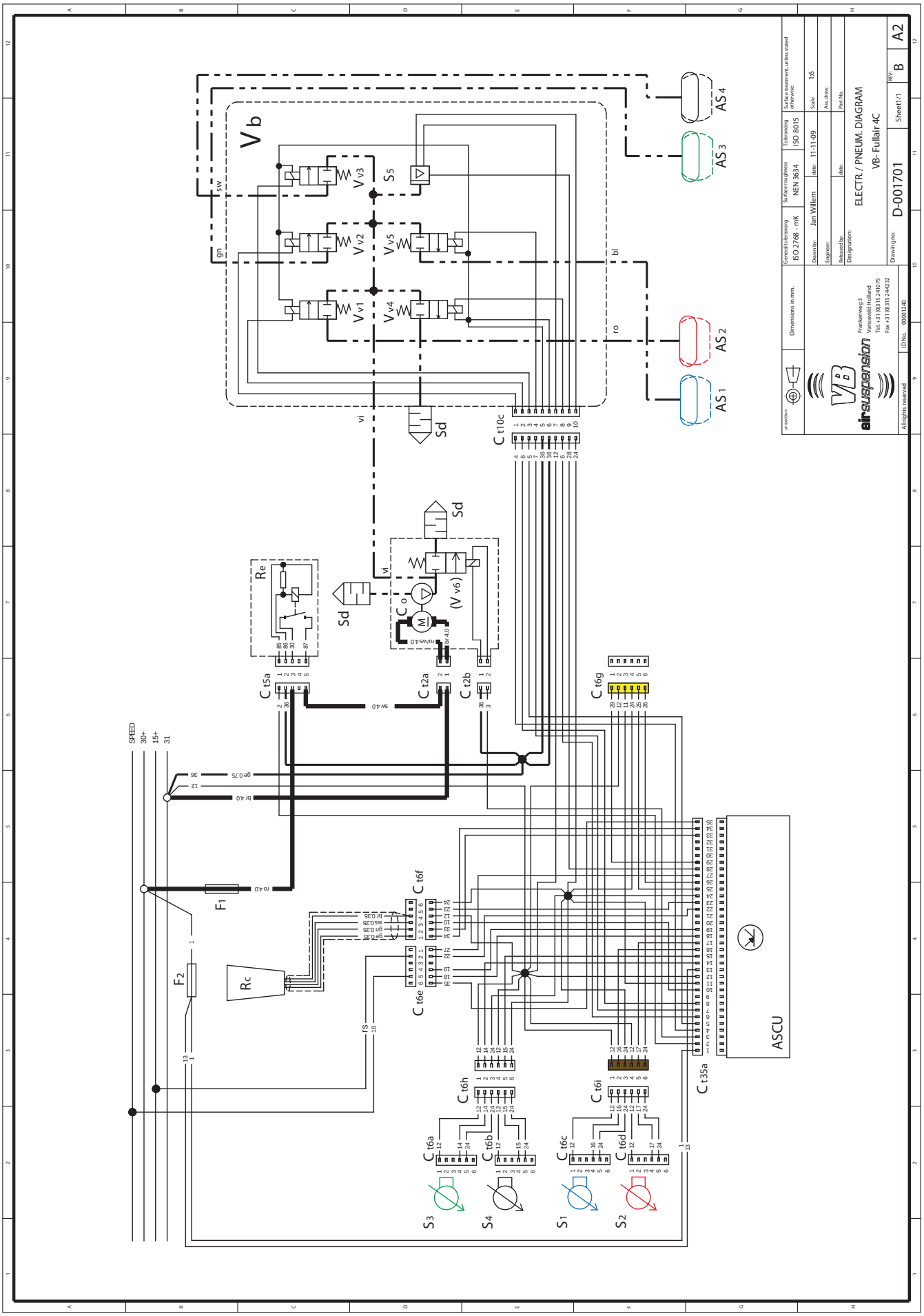
> ***2C calibration: Continue at step 14.***
> ***4C calibration: Continue at step 12.***

12. Briefly press the -button once (LED lights up).
    The system restarts.
13. Repeat steps 8 through 11
14. Briefly press the -button once.
    calibration mode is closed.
    The system restarts.
15. Briefly press the -button once.
    -mode is closed.
16. Press button **2** or to raise the vehicle.
17. Remove the calibration supports from under the vehicle.
18. Set the vehicle to the ride-height.
19. Turn the ignition off.
20. Tighten all nuts and bolts indicated in the manual with **.
21. Have the headlamp adjustment checked by a dealer.




22. Check the vehicle using the checklist in the manual.

# 7. Wiring diagram



| Name | Description |
|---|---|
| ASCU | VB-ASCU (control unit) |
| AS1 | Air spring front left |
| AS2 | Air spring front right |
| AS3 | Air spring rear left |
| AS4 | Air spring rear right |
| Co | Compressor |
| Ct2a | Connector, 2-pole, compressor |
| Ct2b | Connector, 2-pole, valve on compressor |
| Ct5a | Connector, 5-pole, relay Re |
| Ct6a | Connector, 6-pole, height sensor S1 |
| Ct6b | Connector, 6-pole, height sensor S2 |
| Ct6c | Connector, 6-pole, height sensor S3 |
| Ct6d | Connector, 6-pole, height sensor S4 |
| Ct6e | Connector, 6-pole, VB-supplycable |
| Ct6f | Connector, 6-pole, remote control |
| Ct6g | Connector, 6-pole, option connector (Yellow) |
| Ct6h | Connector, 6-pole, height sensor rear axle (White) |
| Ct6i | Connector, 6-pole, height sensor front axle (Brown) |
| Ct10a | Connector, 10-pole, valve block connection |
| Ct35a | Connector, 35-pole, VB-ASCU control unit |
| F1 | Fuse compressor, 40A |
| F2 | Fuse control unit, 7,5A |
| Rc | Remote control |
| Re | Compressor relay |
| 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 |
| Vb | Valve block |
| Vv1 | Valve for air spring, right front on valve block |
| Vv2 | Valve for air spring, left rear on valve block |
| Vv3 | Valve for air spring, right rear on valve block |
| Vv4 | Dump valve, to release air on valve block |
| Vv5 | Valve for air spring, left front on valve block |
| Vv6 | Release valve on compressor box |
| ***Colour codes (not mentioned is yellow with numbers)*** | |
| bl | Blue |
| br | Brown |
| ge | Yellow |
| gn | Green |
| ro | Red |
| ro/ws | Red/White |
| rs | Pink |
| sw | Black |
| vi | Violet |
| ws | White |
| ——— | 0,50 mm² |
| ——— | 0.75 mm² |
| ——— | 4,00 mm² |
| - - - - | Air tube |

# 8. Checklist

## Final checks

| | | OK |
|---|---|---|
| 1.1 | Ride height correctly calibrated. | ☐ |
| 1.2 | Front axle/rear axle aligned. | ☐ |
| 1.3 | Height sensors correctly fitted. | ☐ |
| 1.4 | Shock absorbers vented. | ☐ |
| 1.5 | Bolts tightened to correct torque and ticked off. | ☐ |
| 1.6 | Air tubes, wires and connectors properly secured. | ☐ |
| 1.7 | System checked for air tightness. | ☐ |
| 1.8 | Clearance around air springs checked. | ☐ |
| 1.9 | Identification stickers including protective film stuck to the vehicle. | ☐ |
| 1.10 | Headlamp adjustment checked. | ☐ |
| 1.11 | If prescribed, have ADAS (Advanced Driver Assistance Systems) recalibrated. | ☐ |
| 1.12 | VB-ID card inside cover of user manual. | ☐ |
| 1.13 | Documentation present in vehicle: - user manual | ☐ |
| | - TUV / ABE documentation | ☐ |

## System functions

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

*SYSTEM OK* ☐

# 9. CABADP/KPD option connector

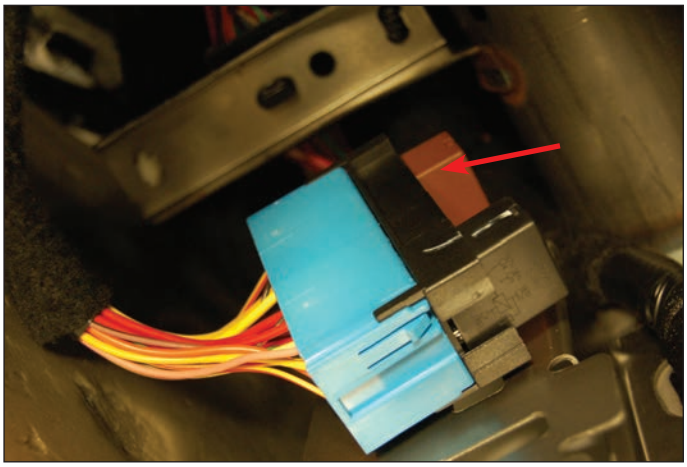
***In the vehicle are two possible situations when the option CABADP is not available. It´s possible that there´s a connector available and it´s possible that the connector is not available.***

## 9.1 CABADP/KPD option connector available

1. When option CABADP not available, please order 1 relay with VB partnr: 0030300005.

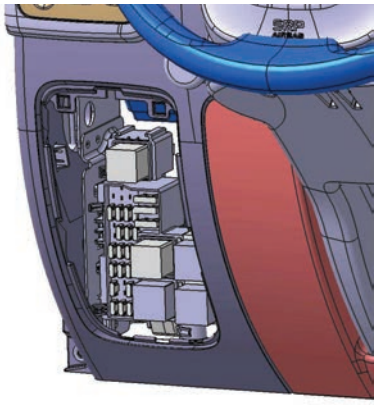
2. Mount the relay on the right side of the vehicle.

3. Insert the relay into the relay-holder in the upper position.
4. Continue on page 18 with step 3.



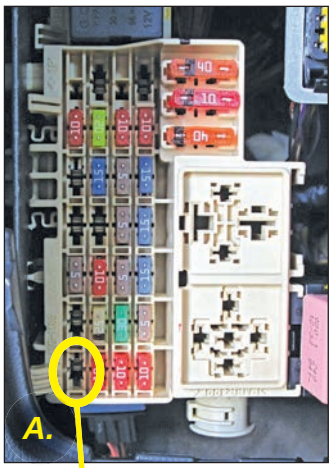
## 9.2 CABADP/KPD option Cconnector not available

1. De-mount the original fusebox.

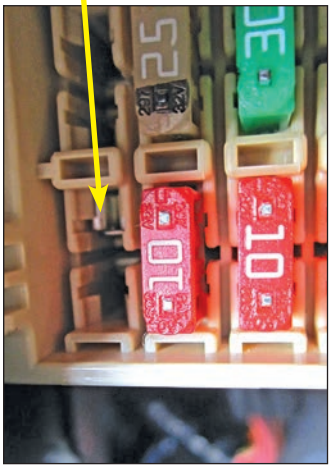


2. Connect the pink cable of the VB-wiring harness to the yellow cable of the pointed position.

***A. / B.***







3. Continue on page 18 with step 3.

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