



FITTING INSTRUCTIONS

making everyday smoother



- Increased comfort • Better driveability • More safety



RENAULT MASTER
OPEL MOVANO
NISSAN NV400
X62

Single wheel FWD
with VB-FullAir 2C and 4C air suspension

FOR KIT 1051922XXX

What's changed?



© 2012, VB-Airsuspension B.V.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the publisher's prior consent. That does also count for the schemes and drawings.

Contents

1. Safety regulations	4
2. General fitting regulations	5
3. Explanation to this fitting instruction	6
4. Mounting the air suspension	7
4.1 Preparations	7
4.2 Main springs	9
4.3 Upper cross beam	10
4.4 Panhardrod	10
4.5 Air springs	12
4.6 Shock absorber	13
4.7 Height sensors	14
4.8 Compressor box	14
4.9 Wiring harness	15
4.9.1 Handbrake signal	17
4.9.2 speedsignal	18
4.9.3 Contact plus	18
4.10 Warranty stickers	19
5. Mounting the front axle	20
5.1 Preperations	20
5.2 Heightsensors	21
5.3 Air spring with shock absorber	23
5.4 Air-tubes	24
5.5 Wiring harness	26
6. Calibration	27
6.1 Calibration 2C rear axle by kit 105 18 07 2XX	27
6.2 Calibrating 4C front and rear axle by kit 105 18 07 4XX	28
7. Checklist	29
7.1 System finishing	29
7.2 Functions of system	29
8. Wiring diagram	30
9. Exploded view	32
9.1 Rearaxle	32
9.2 Frontaxle	38
10. Mounting upper cross beam with a Chassis Cab.	40
11. Mounting compressorbox with a Chassis Cab	41
12. CABADP/KPD option	42
12.1 CABADP/KPD Option connector available	42
12.2 CABADP/KPD Option connector not available	42
13. Notes	43

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



xx Nm

Every bolted joint in this manual comes with a torque.

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.

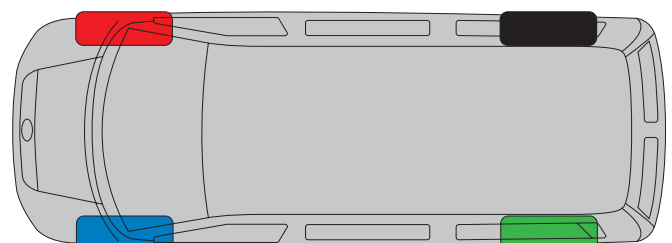
The warranty is only valid if the fitting is carried out in a specialist workshop. The fitting can only be done by authorised mechanics. The mechanics must have proper experience in electric/electronics, pneumatics and regular vehicle technics.

- 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 = 210 mm	-
Rear axle	X = 152mm	009 000 00 43

- The air-suspension is split up in four 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.

Color	Description
Green	Left rear
Black	Right 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 FWD X62
- Opel Movano FWD X62
- Nissan NV400 FWD 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 10519222XX, follow chapter 4 and 6.

Have you ordered the air suspension for the rear axle with kitnumber 10519224XX, 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 22 2XX	4,6
Front and rear axle	105 19 22 4XX	4,5,6

4. Mounting the air suspension

This fitting instruction is written for Air suspension kits for the Renault Master X62. However the kit for chassis-cabin contains parts who could may vary in design and mounting methods.

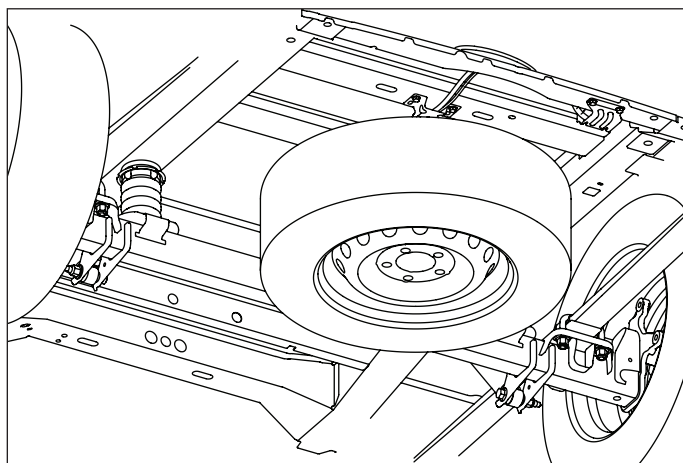
The upper cross beam and the compressorbox should be mounted on a different way. By those parts will be referred to chapter 10 and 11. Other deviant parts can be mounted the same as the parts who are described in the fitting instructions.

4.1 Preparations

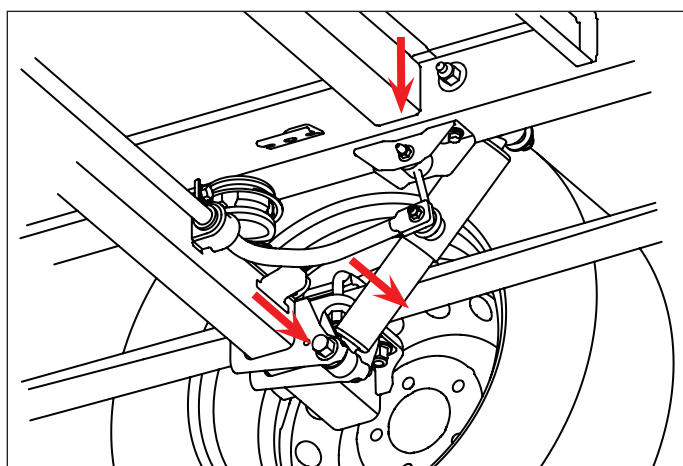
1. Remove the spare wheel.
The winch tool is located under the driver's seat.



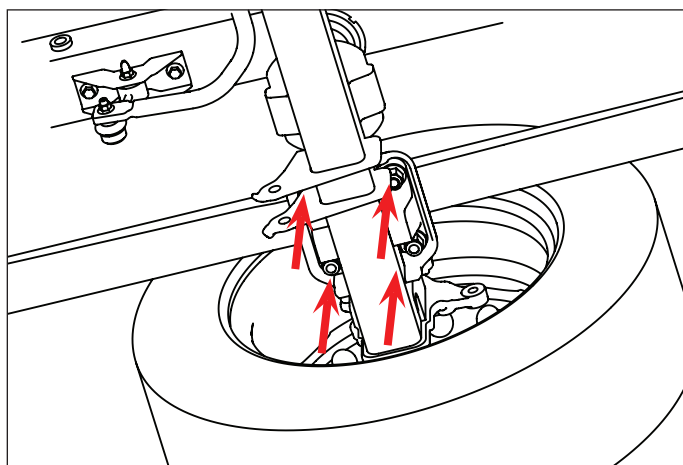
The pictured vehicle is equipped with a roll stabiliser. It is possible that the vehicle you are working on is not. This does not affect the mounting of the air suspension.



2. Support the vehicle and the rear axle properly.
3. Remove the shock absorbers.
Bolts and nuts will be re-used.



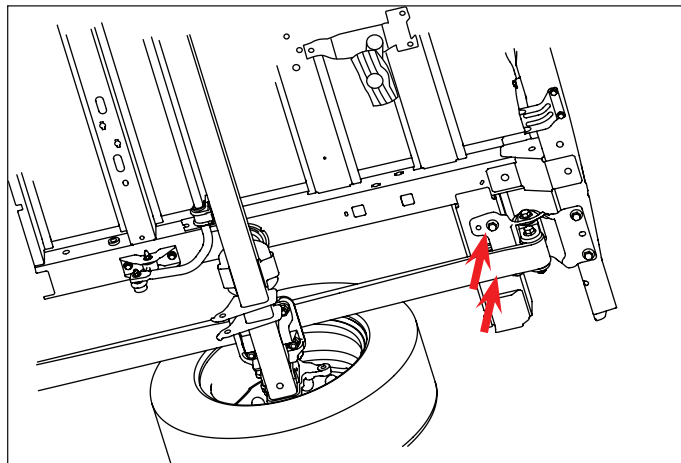
4. Remove the leaf-spring U-bolts.
5. Don't remove the brake line bracket.



6. Remove the **rear** leaf-spring bracket.



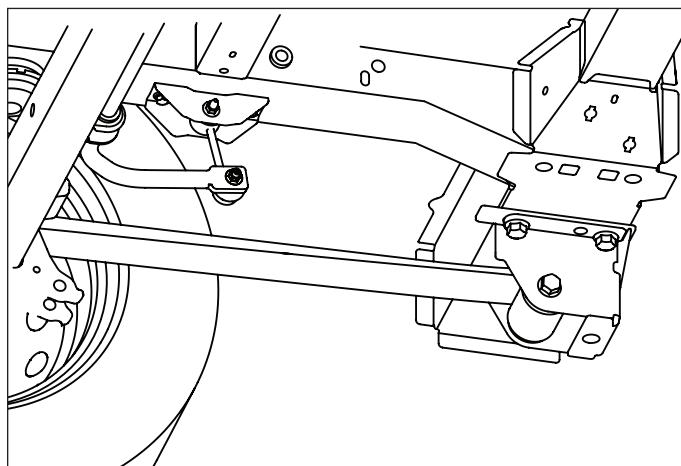
Lower the axle, so the leaf-spring can be removed easily.



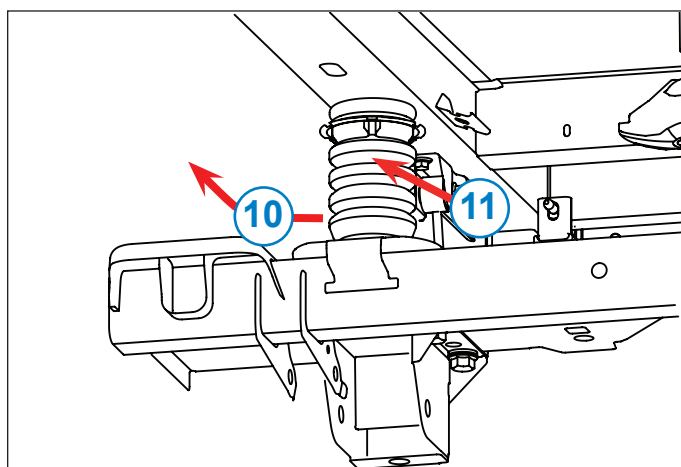
7. Lower the axle.
8. Remove the **front** spring bolt.
9. Remove the leaf spring.



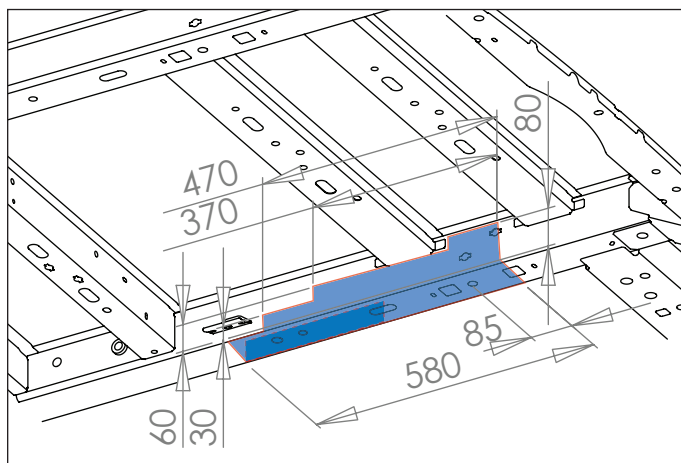
Protect the surface with an anti corrosion substance. For example: protective coating or spray-wax.



10. Remove the bump stops.
11. Remove the bolt.
12. Remove the bump-stop bracket.



13. Remove the protective layer from the chassis by using for example a paint scraper.



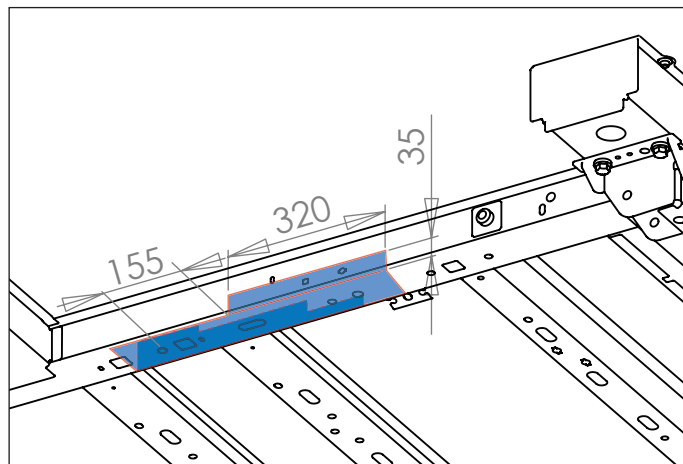
14. On the outside of the chassis for the given dimensions.



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



Make sure all of the protective layer is removed from the contact area between the chassis and upper cross member.



4.2 Main springs

1. Mount the panhard rod bracket on the left main spring.



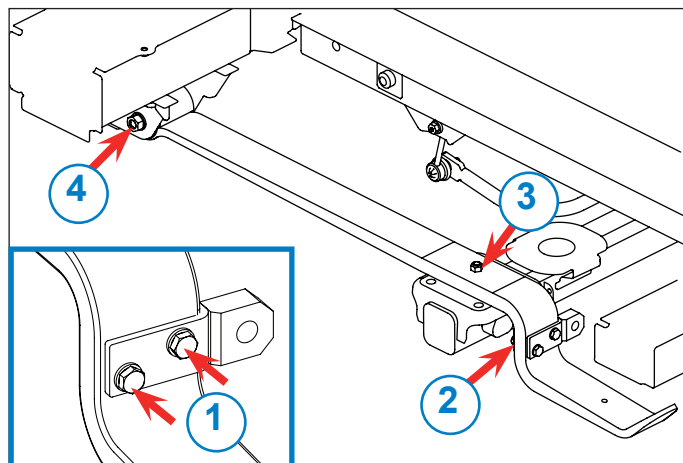
2 x Bolt M10x55

4 x Washer M10

62 Nm

2 x Lock nut M10

2. Place the main springs on the spring seats. The main spring with the panhard bracket is mounted at the **left-hand** side.
3. The centre bolt must fall in the hole of the spring seat.
4. Mount the main spring in the front leaf-spring bracket. Use the original fasteners.



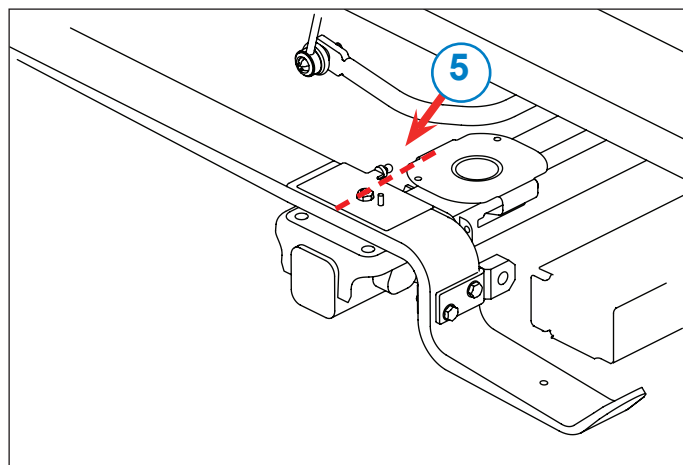
****Don't secure the nuts yet, the vehicle has to be in ride-height first.**



180 Nm

2 x Original fasteners

5. Place the ball-joint bracket on the mainspring. The ball-joints must be pointing to the front and centre of the vehicle.



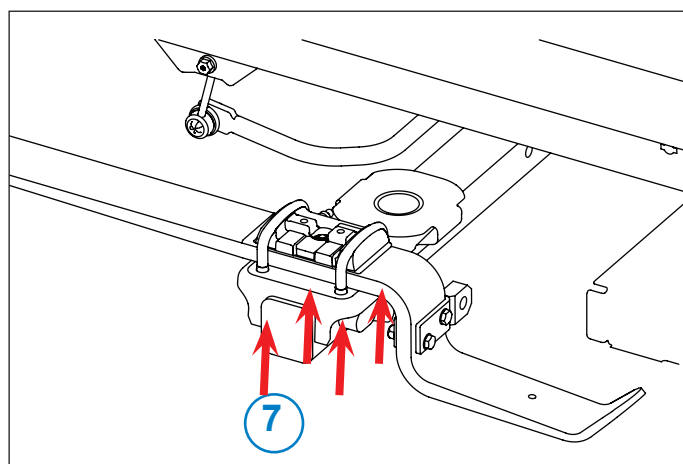
6. Place the spring plates on the ball-joint brackets.
7. Mount the U-bolts. Use anti-seize compound on the screw thread.

****Don't secure the nuts yet, the vehicle has to be in ride-height first.**



130 Nm

2 x Original fasteners



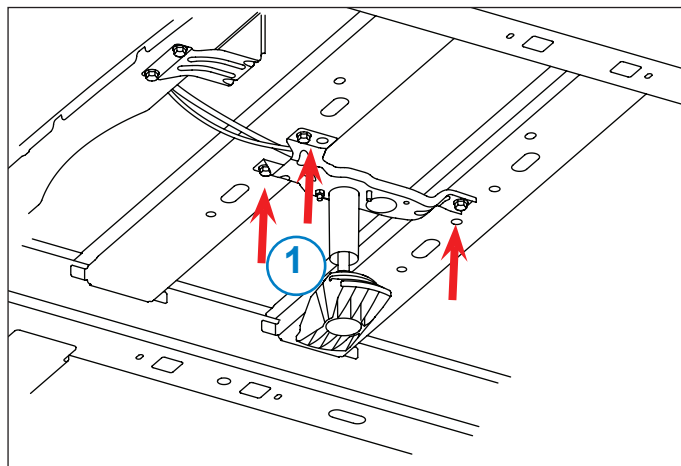
4.3 Upper cross beam

For mounting the upper cross beam by a Chassis-Cabin, see chapter 10.

1. Remove the bolts.
2. Remove the spare wheel winch.



Note the position of the panhard mounting. This must be placed at the right side of the vehicle.

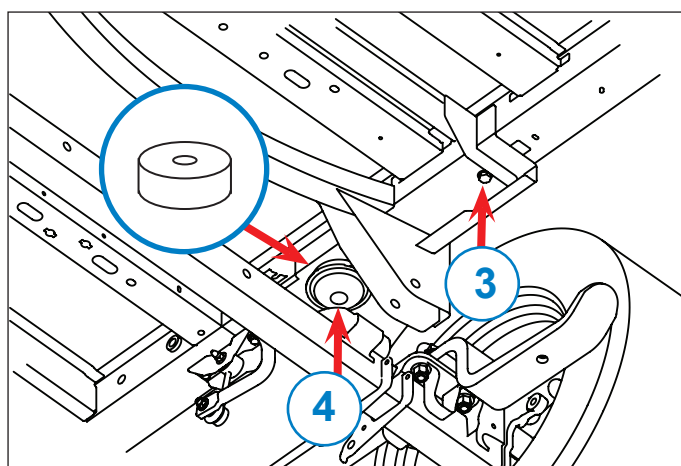


3. Mount the upper cross beam to the chassis. The front holes match the holes for the bump stops.



105 Nm

2 x Bolt M12x30
2 x Washer M12

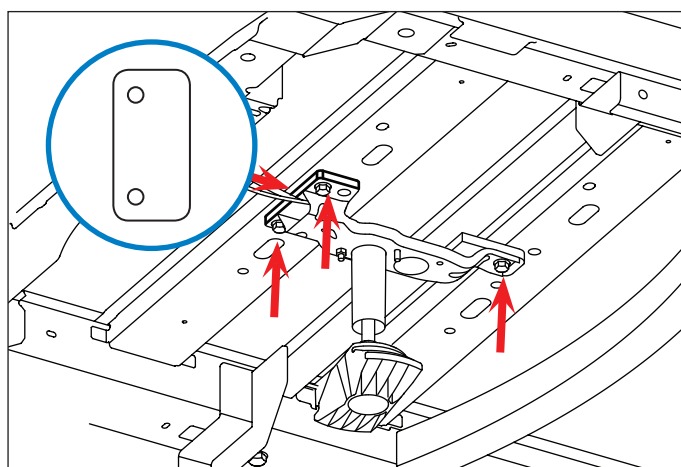


4. Mount the new bump stops with the spacers.



62 Nm

2 x Bolt M12x30
2 x Washer M12

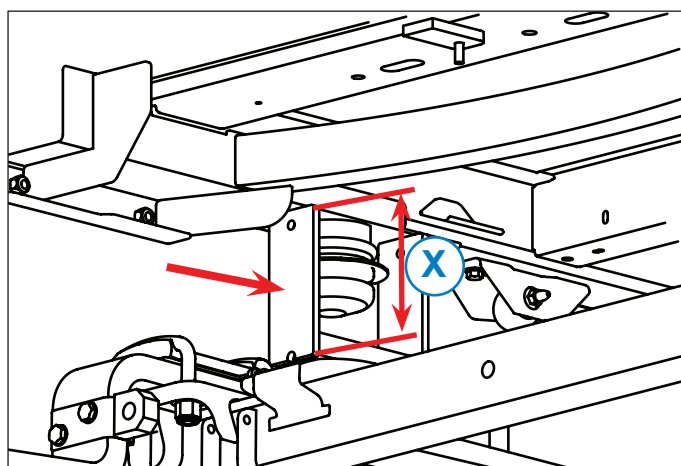


5. Mount the supplied filling plate.
6. Mount the spare wheel winch.
7. Note the changed mounting points.



20 Nm

2 x Original bolt
1 x Washer M8
1 x Bolt M8x12




4.4 Panhardrod

1. Check whether the height **X** of the calibration support is **152 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.

	1 x Washer M14
	1 x Castellated nut M14
	75-85 Nm
	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.
Note that the curvature of the panhard rod corresponds to the curvature of the upper cross beam.

Don't secure the panhard rod bolt yet.

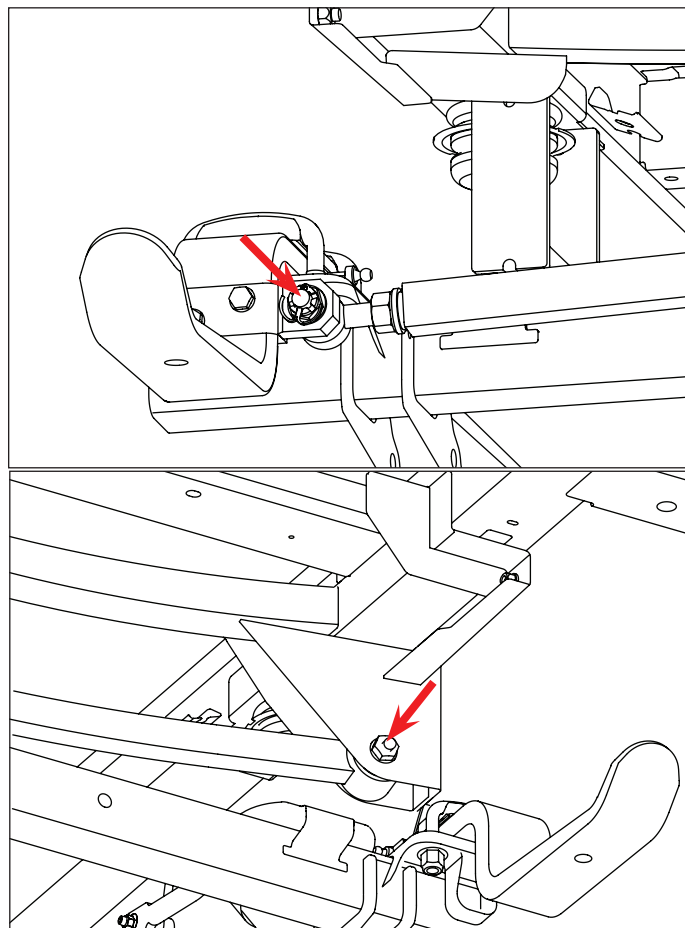
	1 x Bolt M16x90
	1 x Lock nut M16
	180 Nm
	2 x Washer M16

	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.
8. Turn the panhard rod:
 - Left: when $A < B$
 - Right: when $A > B$
 Size difference > 2mm, Adjust!
 Size difference < 2mm, Go further!
9. Secure the lock nut.

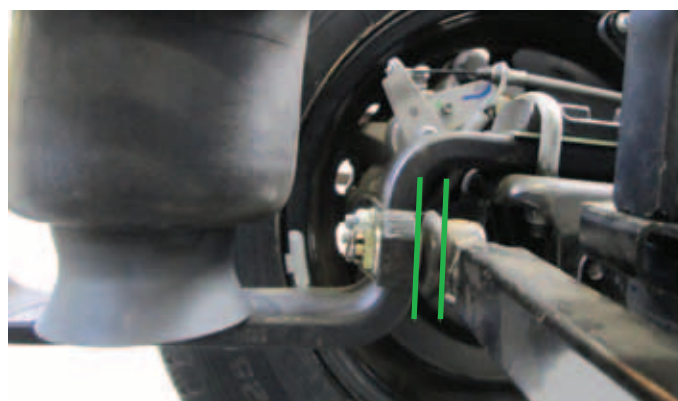
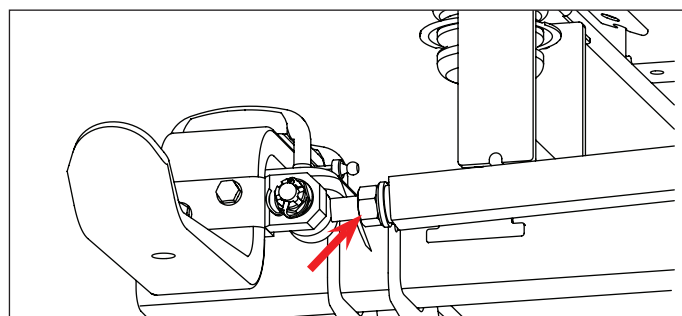
	Nut in delivery content
	62 Nm

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




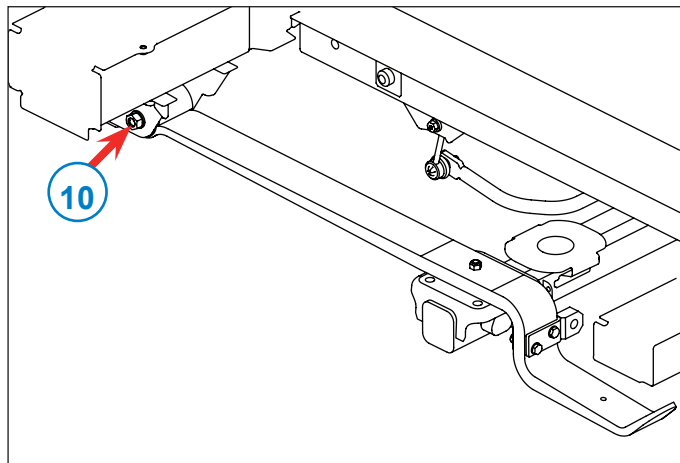
$$A = B \pm 2 \text{ mm}$$

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




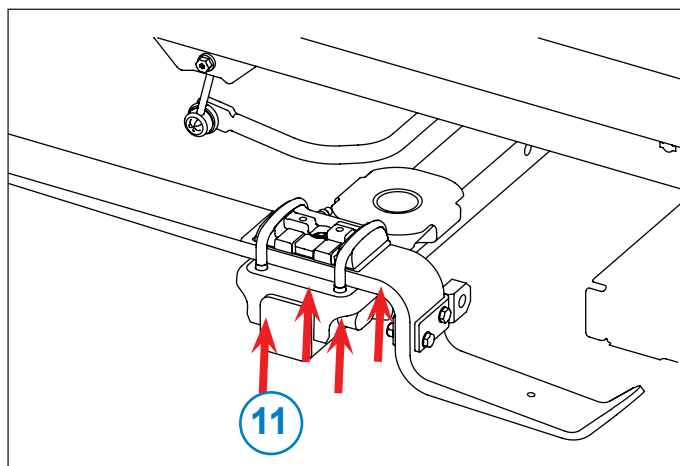
10. Secure the bolts from section 4.2 step 4.

	1 x Bolt M16x90
180 Nm	1 x Lock nut M16
	1 x Washer M16



11. Secure the bolts from section 4.2 step 7.

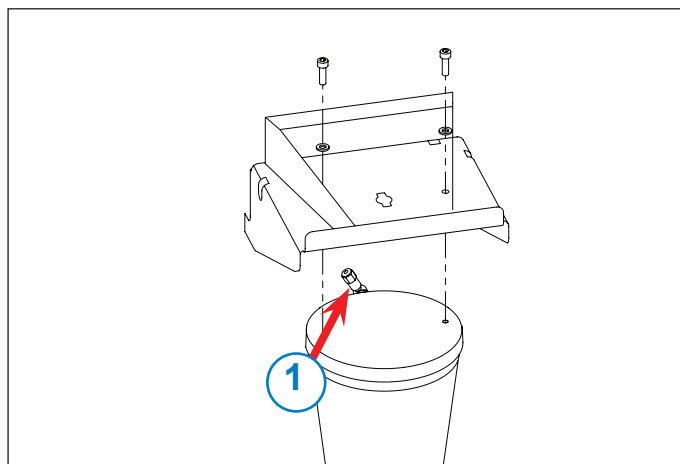
	Original fasteners
130 Nm	



4.5 Air springs

1. Mount the air couplings to the air springs. These must be pointing to the centre of the vehicle.

	Air coupling
5 Nm	



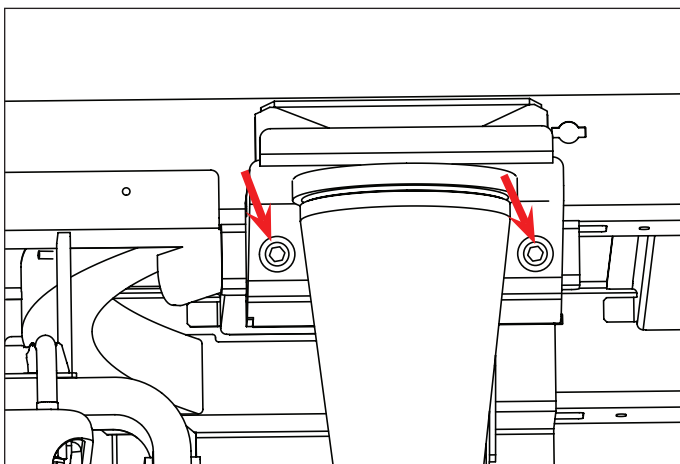
2. Mount the air springs to the upper spring-plates.

	4 x Allen screw M6x12
8 Nm	4 x Washer M6

3. Pull the plug out from the underside of the air springs.

4. Mount the piston to the underside of the air spring.

	4 x Allen screw M12x30
130 Nm	4 x Washer M12



5. Mount the air spring on the main spring.
Note the position of the dowel pins

**** Don't secure the bolt yet.**



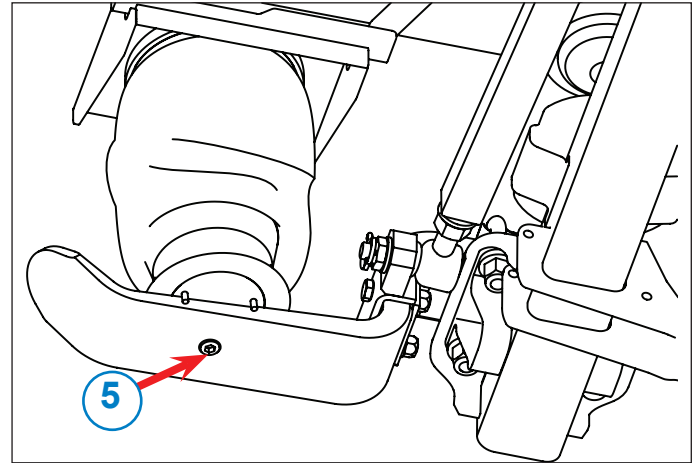
20 Nm

2 x Allen screw M8x25

2 x Washer M8



Don't secure the bolts until the air springs are on pressure. So they don't get distorted.



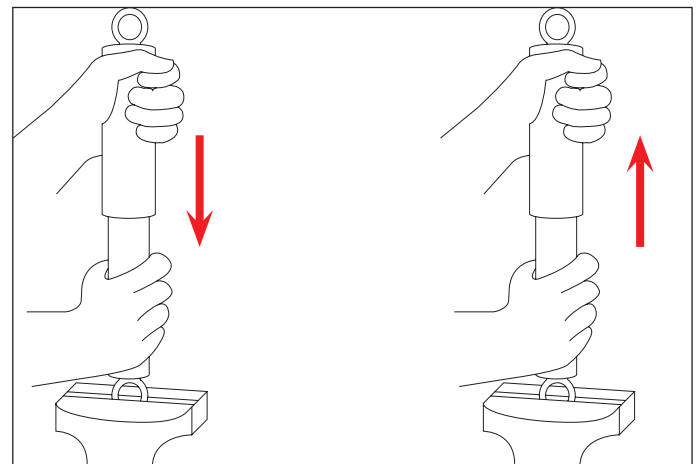
4.6 Shock absorber

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 then 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.
7. Mount the new shock absorbers.



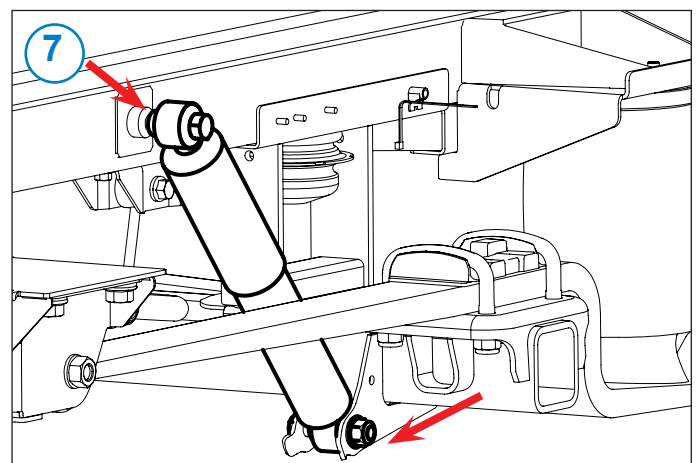
Keep the top of the shock absorbers up at all times. If you don't do this, you will get new air in the shock absorber.

8. Make sure the spacer on the upper bush is pointing to the inside.
Use the original fasteners.



180 Nm

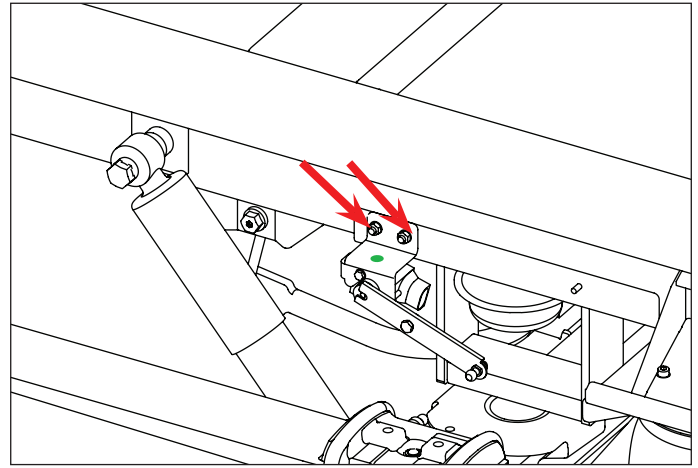
Original fasteners



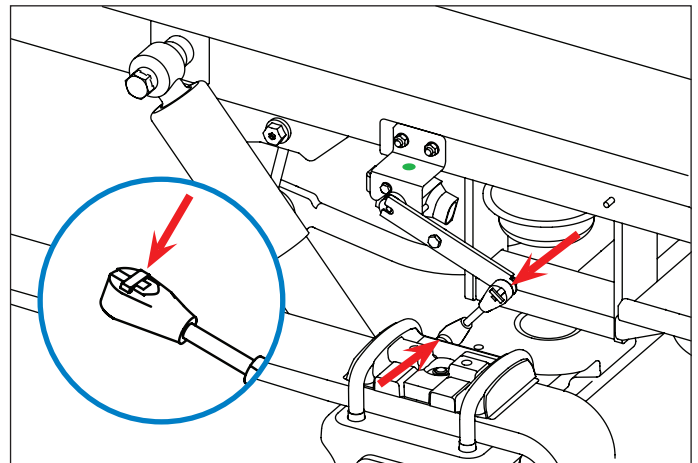
4.7 Height sensors

1. Mount the height sensor brackets on the marked position.
2. Note that there is a **left** and a **right** version.

	4 x Washer M6
8 Nm	4 x Lock nut M6



3. Check the length of the vertical bars - **90mm** - measured from heart-to-heart.
4. Mount the height sensor rods to the height sensors.
5. Mount the height sensor rods to the ball-joints brackets.

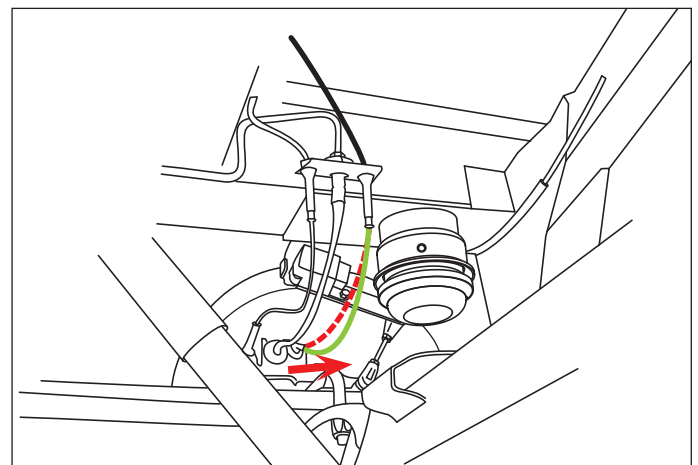


The height sensor arm must be pointing to the back of the vehicle!



Secure the height sensor arms, by pressing the clips.

6. Gently pull the brake pad wear indicator wire as shown in the picture, for approx. 1 cm. This prevents the wire from touching the height sensor when the vehicle is in it's lowest position.



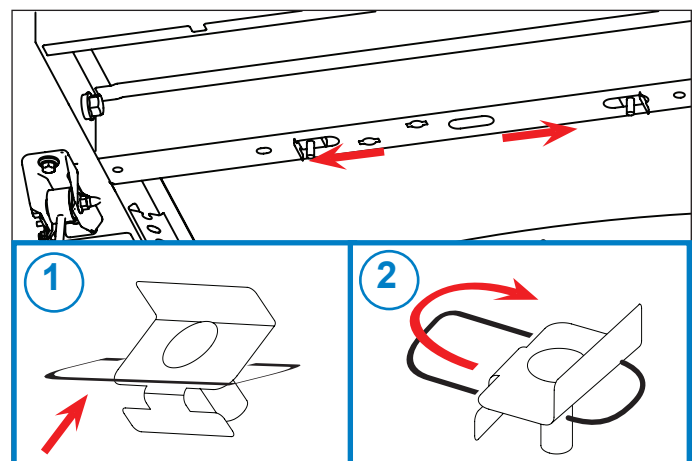
4.8 Compressor box

For mounting the compressorbox on a chassis cabin vehicle, please go to chapter 11.

1. Slide the supports into the slot.
2. Rotate the supports a quarter turn.
3. Slide the supports away from each other, with the tabs facing to the outside of the vehicle.

When kit 105 19 22 2XX for only the rear axle is ordered, please continue with step 5.

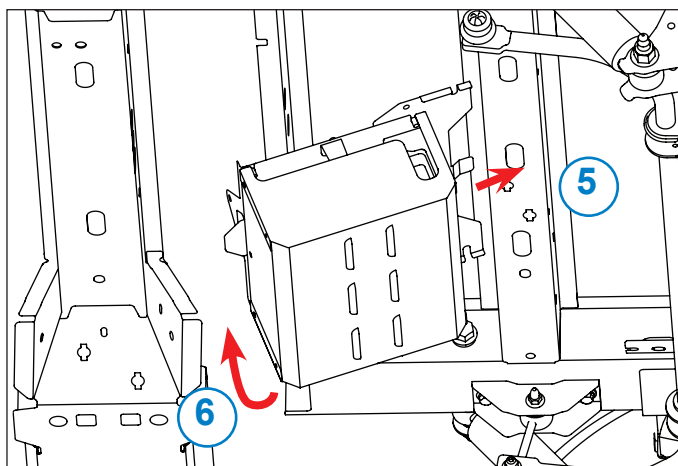
4. Mount the blue air-tube to the valve block.
5. Mount the red air-tube to the valve block.



6. Mount the compressor box on the vehicle.
7. Make sure the tab is located in the hole.
8. Tilt the compressor so that the tab at the front touches the chassis member.



When the vehicle has a wheelbase L1 (3182 mm), the long bolt and long centring part are used instead of the short ones.

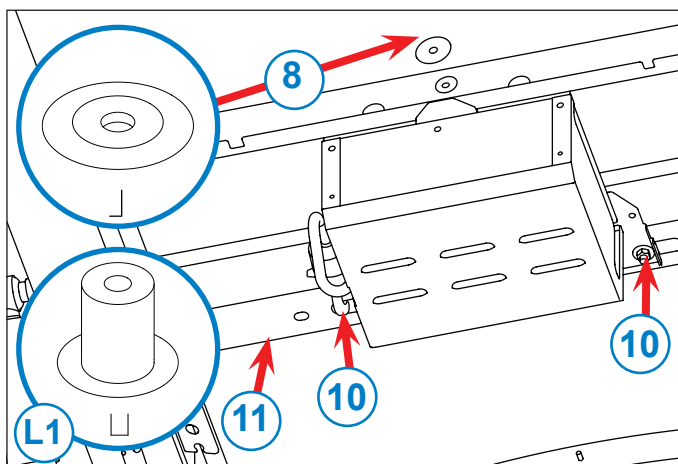


9. Make sure that the front mounting hole is centred properly.
10. Mount the centring part.
11. Mount the bolt using a sheet metal washer. Make sure the centring part is aligned properly.
12. Mount the compressor box to the brackets.



8 Nm

**1 x Bolt M8x25 (of M8x80 when L1)
1 x Sheet metal washer ø30
2 x Sheet metal washer ø25
2 x Lock nut M8**



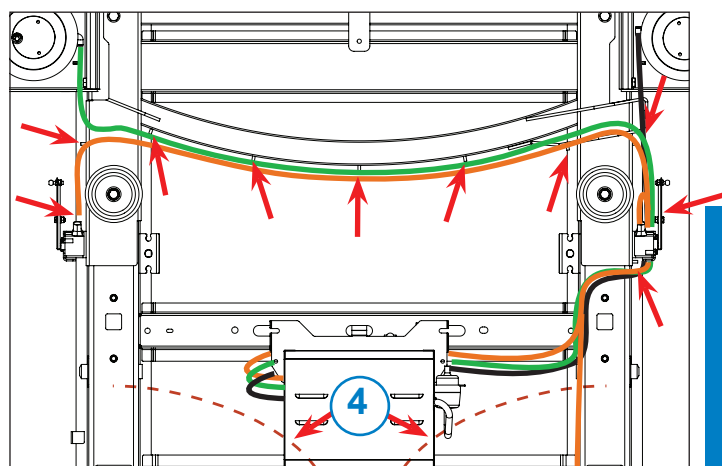
13. Lead the free end of the air tube through the hole into the chassis.

4.9 Wiring harness

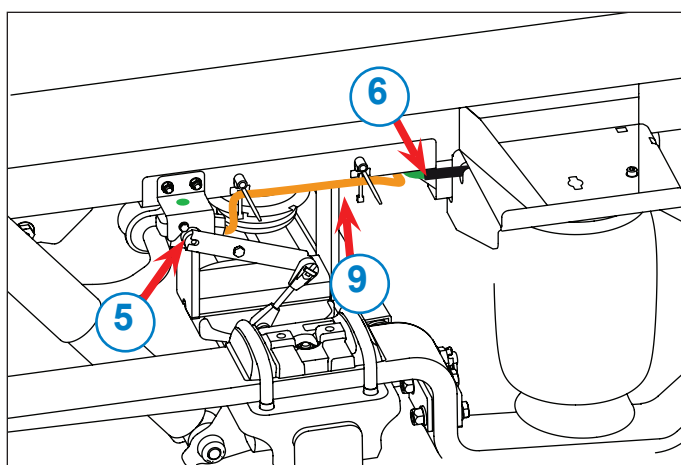
1. Mount the tie-wraps on the threaded ends on the upper cross beam.
2. Lead the wiring with the **green** air tube to the left side of the vehicle.
3. Lead the wiring harness with the **black** air tube to the right side of the vehicle.
4. Mount the handbrake cable to the tie-wraps located on the top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




Connecting electrical cables or air-tubes to brake lines is strictly prohibited!



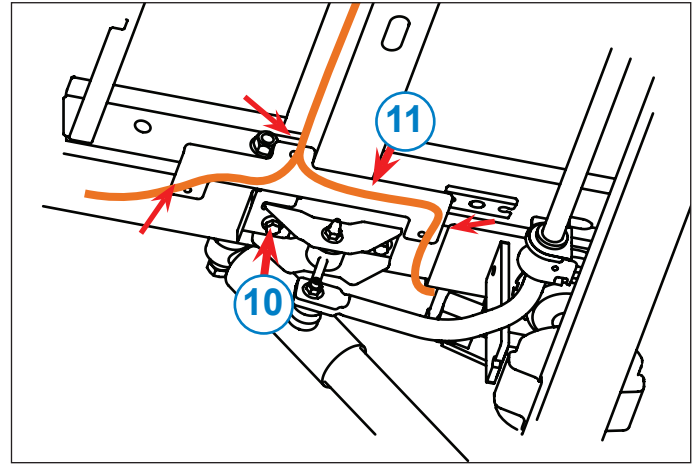
5. Connect the height sensor cables to the height sensors.
6. Protect the tube with cable conduit.
7. Connect the **black** air tube to the right air spring.
8. Connect the **green** air tube to the left air spring.
9. Secure the cables with tie-wraps.



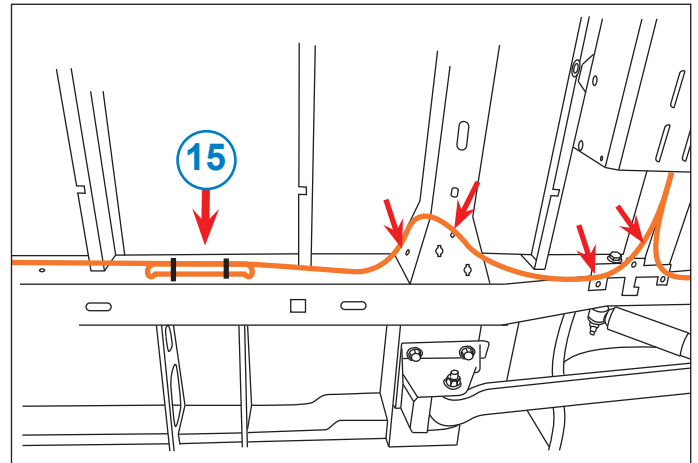
10. Remove the **front** bolt of the stabiliser reaction bar bracket on the right hand side.
11. Mount the wiring harness support.

	1 x Original bolt
21 Nm	

12. Mount the wiring harness with tie-wraps.

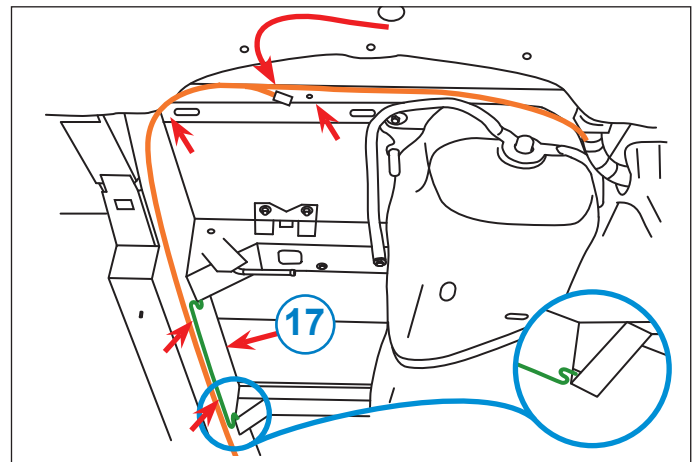


13. Mount tie-wraps to the chassis at the specified places.
14. Lead the wiring harness as shown in the picture.
15. Don't fasten the tie-wraps until the wiring harness is fully connected. Any remaining cable is secured at the specified location.

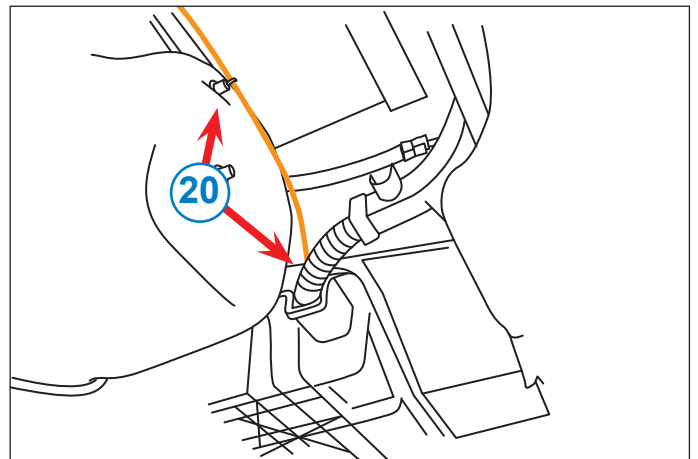


Make sure that the tubes aren't near hot or moving parts. Use sufficient tie-wraps to secure the lines.

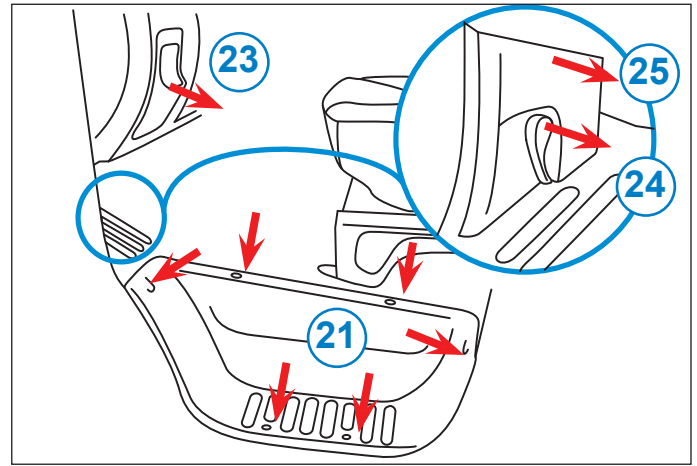
16. Remove exhaust heat screen.
17. Mount the wiring harness support to the chassis.
18. Mount tie-wraps to the chassis at the specified places.



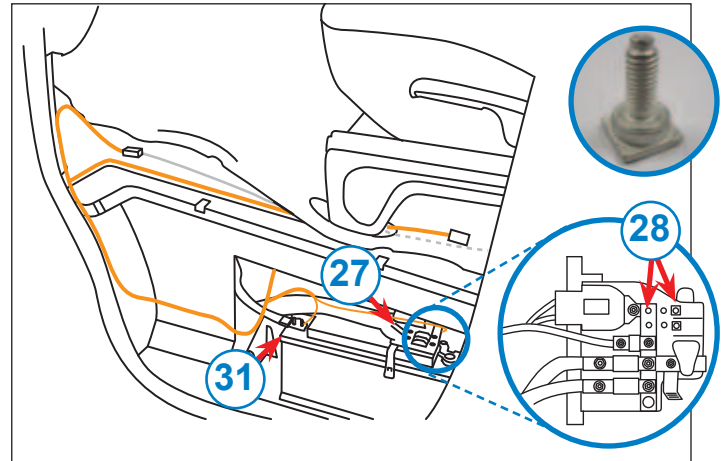
19. In front of the fuel tank there is a hole. Lead the VB-wiring harness inside, along with the vehicle's wiring harness.
20. Mount the wiring harness with tie-wraps.



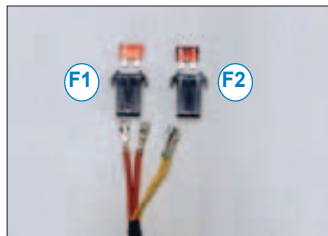
21. Remove the screws.
22. Remove the entry of the cabin.
23. Remove the tray.
24. Remove the inside bonnet release. (click)
25. Remove the panel. (click)



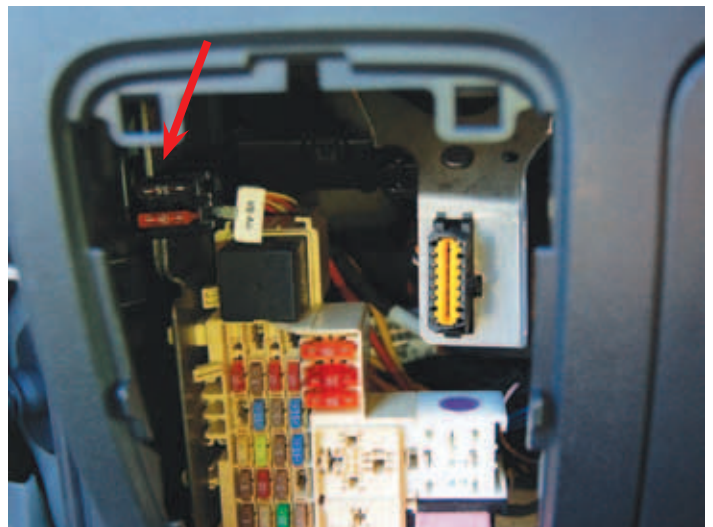
26. Disconnect the battery terminals.
27. Remove the fuse block. (See inlay picture)
28. Mount the spec bolts in the fuse block, in one of the rear fuse positions. (**M5 spec bolts, 2x**)
29. Connect the red and yellow cable to the stud bolt.
30. Mount the **30A** fuse between the red/yellow wire and the battery (+).
31. Connect the brown and yellow cable to the earth (-).
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. Connect the red wires in a fuse block (**F1**).
35. Connect the yellow wires in the other fuse block (**F2**).



36. Mount the fuse blocks on the marked position with tie-wraps.
Remove the fuses.

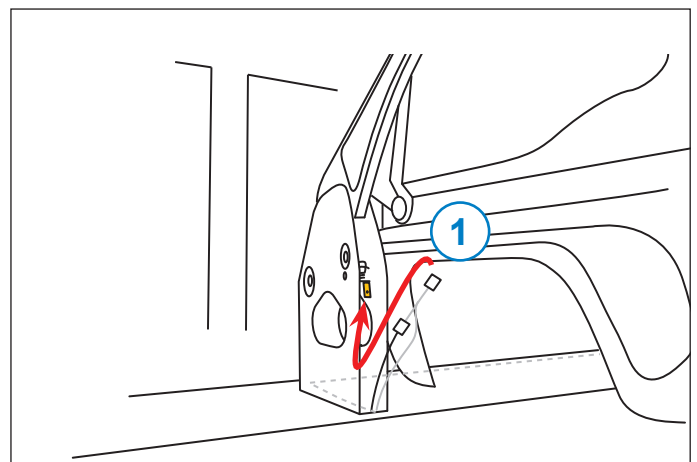


4.9.1 Handbrake signal



When the speedsignal option is ordered, please continue with paragraph 4.9.2

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.

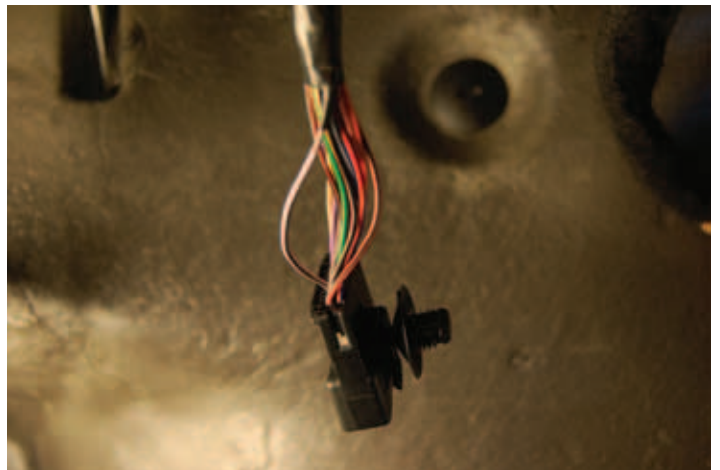


4.9.2 speedsignal

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 or purple/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.



4.9.3 Contact plus

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:

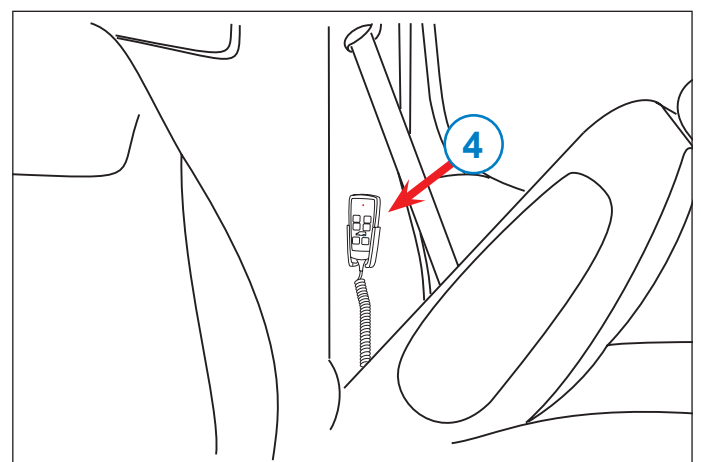
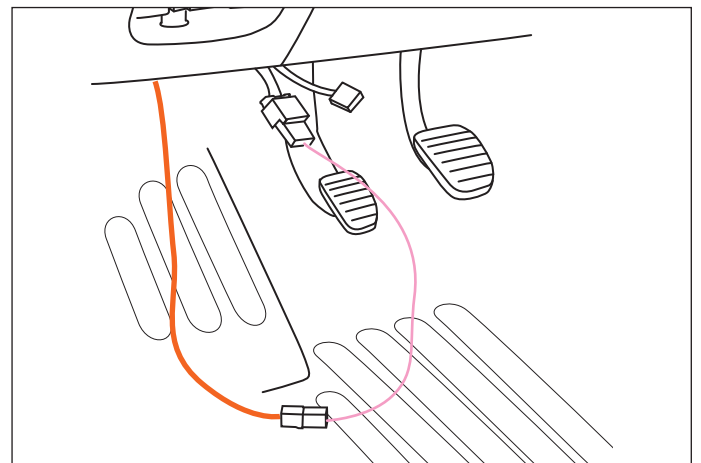
KPD

If not, continue with chapter 12.

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



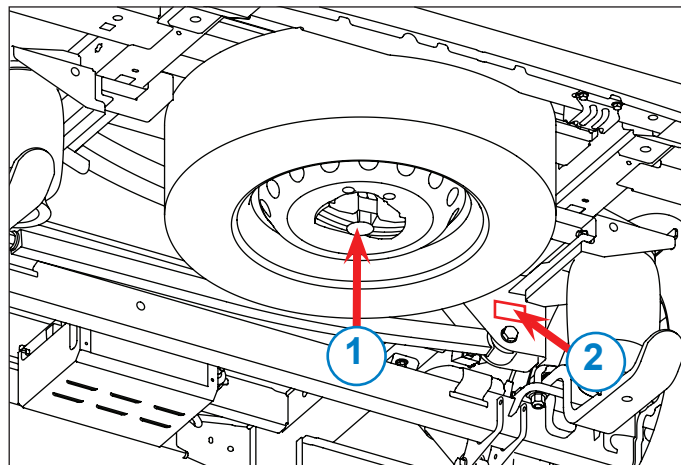
If the vehicle is right-hand-driven, an additional extension wire is needed. This can be ordered by VB-Airsuspension, part number 1052200026.



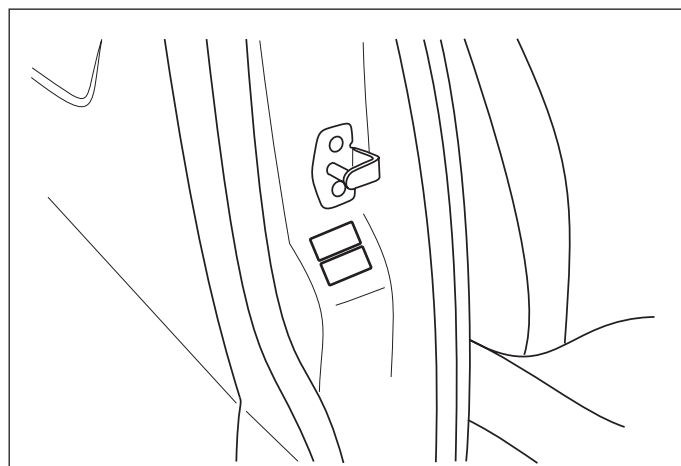
3. Connect the cable of the remote control to the VB-Wiring harness.
4. Mount the remote control at the specified location.
5. Mount the wiring harness with tie-wraps.
6. Refit the removed interior panels.
7. Mount the wiring harness under the vehicle. Secure any remaining cable according to section 4.9, step 15.
8. Mount the exhaust heat screen.

4.10 Warranty stickers

1. Mount the spare wheel.
2. Place sticker **B** on the upper cross beam.



3. Place the warranty stickers **A+B** in the B-pillar on the passenger side.
4. Place the sticker with fuses information on the tray where the fuses are mounted.
5. Note the installation of the air-suspension kit in the maintenance booklet.



When kit 105 18 07 2XX for the rear axle is ordered, continue with chapter 7.1 "Calibrating 2C rear axle".

When kit 105 18 07 4XX for the front and rear axle is ordered, continue with chapter 6.

5. Mounting the front axle

5.1 Preparations

1. Support the vehicle properly.
2. Remove the wheels.
3. Loosen the suspension strut at the top by unscrewing the (flange) nut.



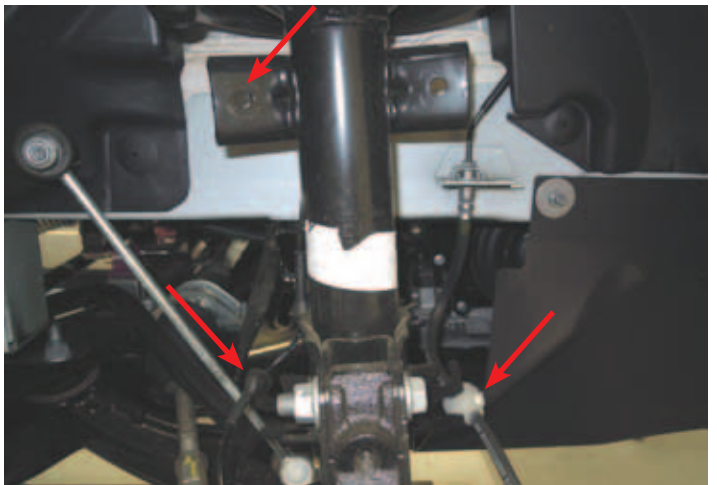
Bolts and nuts will be re-used.



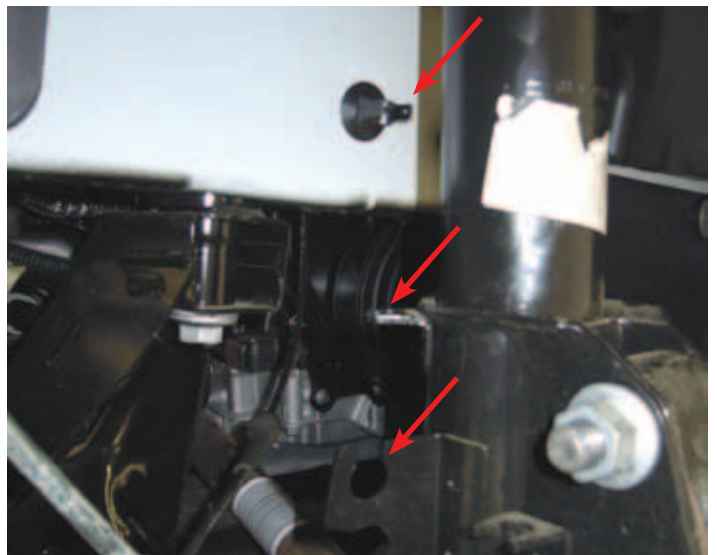
4. Remove the reaction arm (of the anti-roll bar). Loosen the brake line and ABS sensor cable from the suspension strut.



Bolts and nuts will be re-used.



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



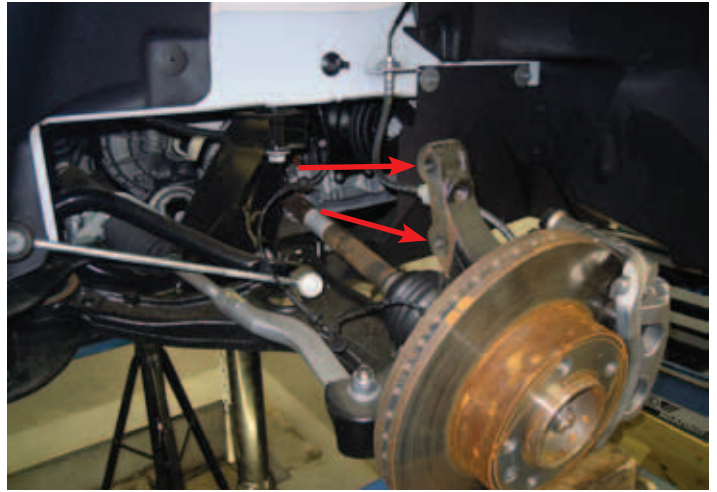
6. Support the steering knuckle or the brake disc and disassemble the suspension strut.



Bolts and nuts will 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 Flare nut M6

4. Mount the heightsensors to the heightsensor brackets. For a mounting overview see chapter 8.2.

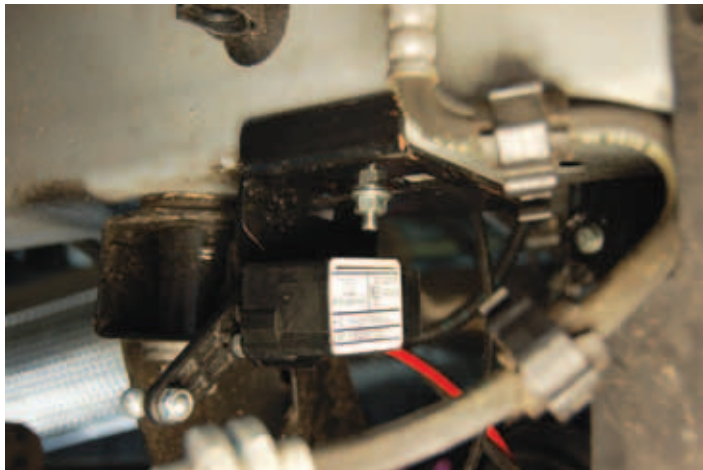


The connector of the heightsensor should be pointing to the inner side of the chassis.



5 Nm

4 x Bolt M5x10 8.8
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
2 x Washer M6
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
2 x Washer M6
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. Mount the underside of the reaction arm.

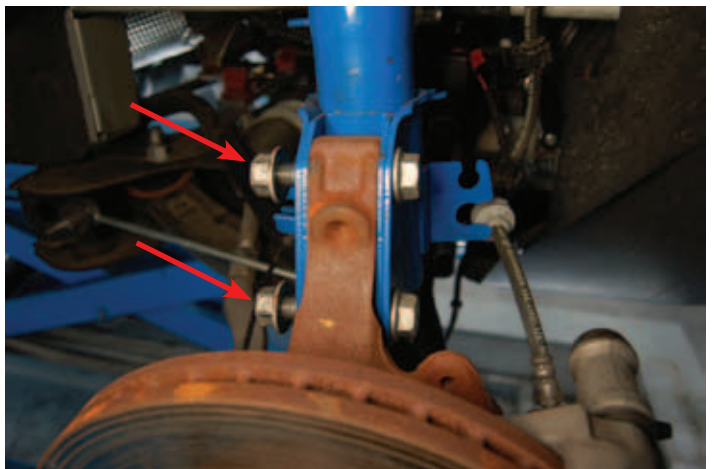


3. Mount the shock absorber to the steering knuckle.

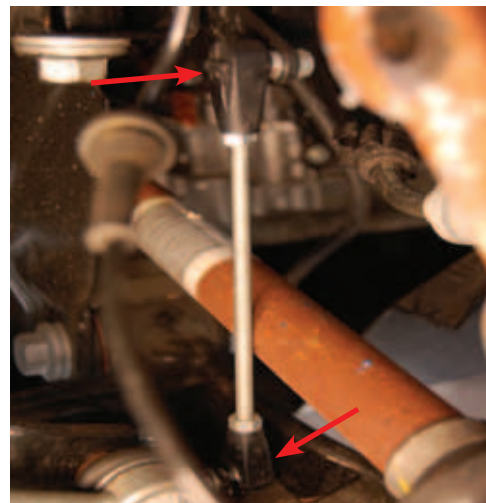


180 Nm

**4 x Original flare bolt
4 x Original flare nut**

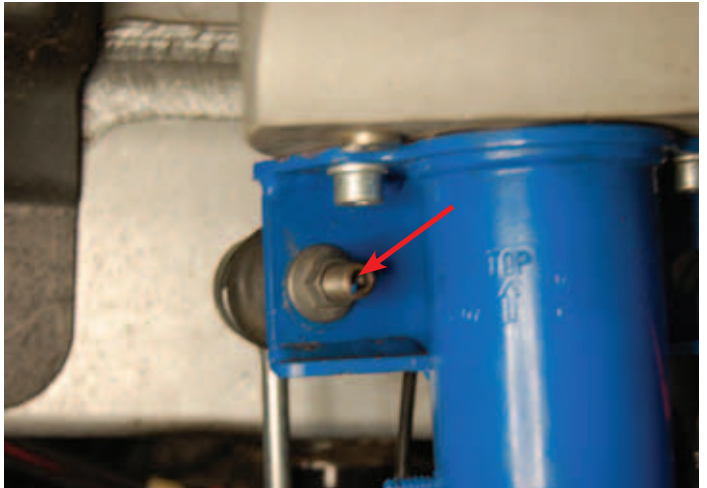


4. Check the length of the heightsensor rods, **L = 180 mm** measured from heart to heart.
5. Mount the heightsensor rods to the heightsensors and ball joints. Lock the Heightsensor rods.




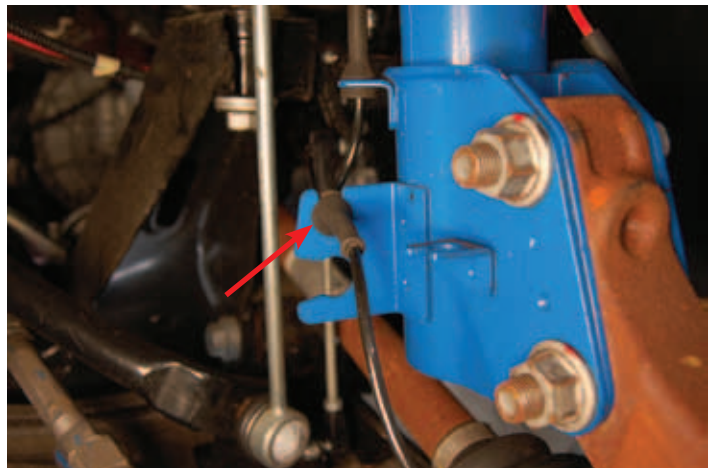
6. Mount the new reaction arm to the shock absorber and stabiliser bar.

	4 x Original flare nut
60 Nm	




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

	2 x Bout M12x90
62 Nm	4 x Sluitring M12
	2 x Borgmoer M12




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.
---	---



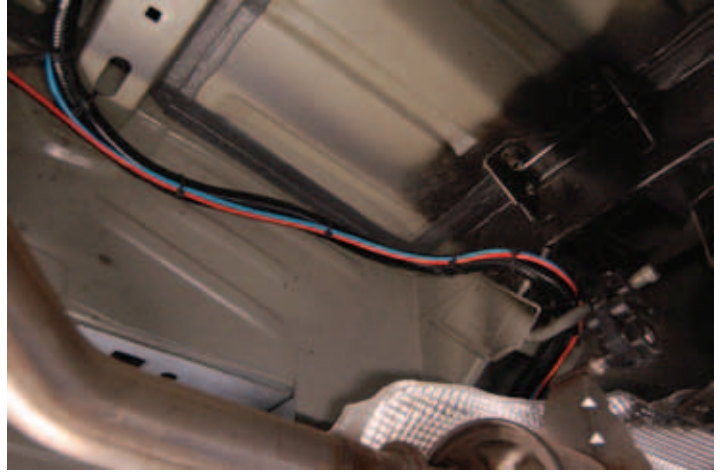
2. Place the blue and red air-tubes along the VB-wiring harness to the front of the car until near the fueltank.

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





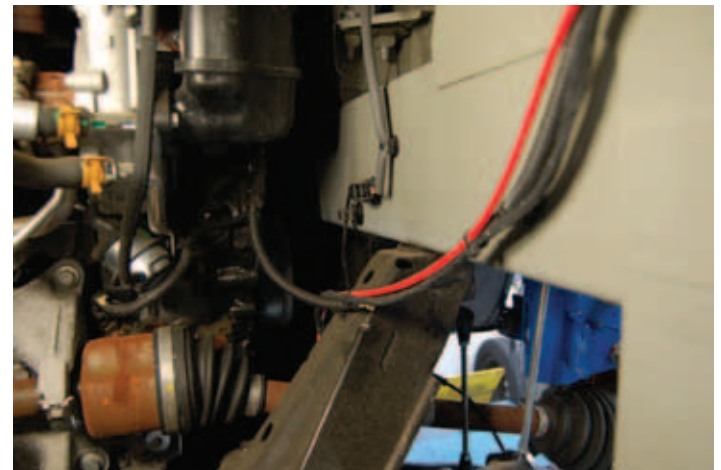
Make sure that the air tubes aren't near hot or moving parts.



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.

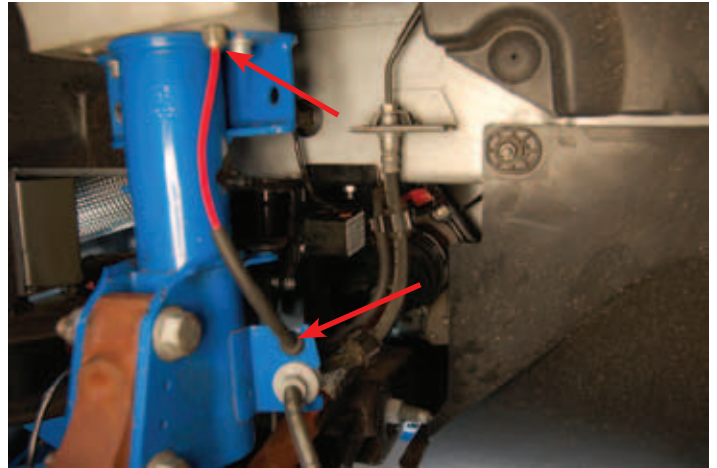


5. Slide the conduit over the air-tubes as shown in the picture.
6. Connect the air-tubes to the air springs.

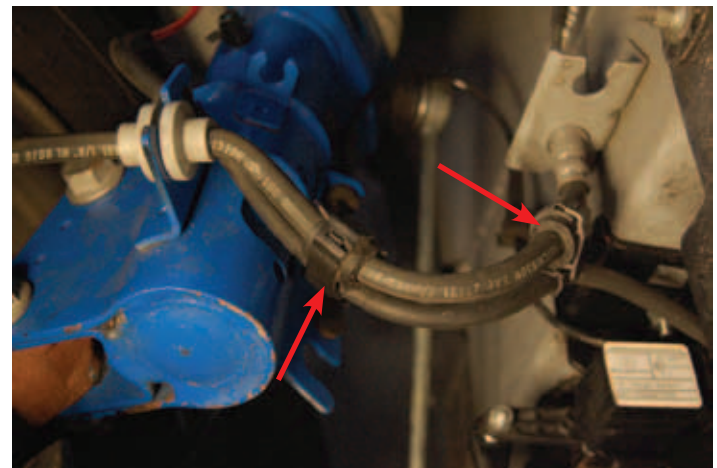


Slide the air-tube at least 80 mm in the air connection.

7. Mount the air-tube to the shock absorber.



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 fuel tank.
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.



172 Nm

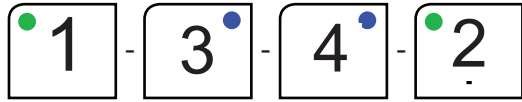
Original bolts



6. Calibration

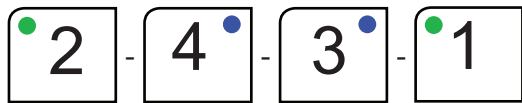
6.1 Calibration 2C rear axle by kit 105 18 07 2XX

1. Mount the fuses (**F1**=40A + **F2** = 7,5A)
2. Switch on the ignition.
3. Make sure the vehicle is standing on it's wheels, on a level surface.
4. Briefly press the **SERVICE**-key (LED lights), and enter the following code within 10 seconds:



The system will give a long beep and reboot.

5. During the first beep, hold the **SERVICE**-key, until a second long beep is heard. Now enter the following code within 10 seconds:



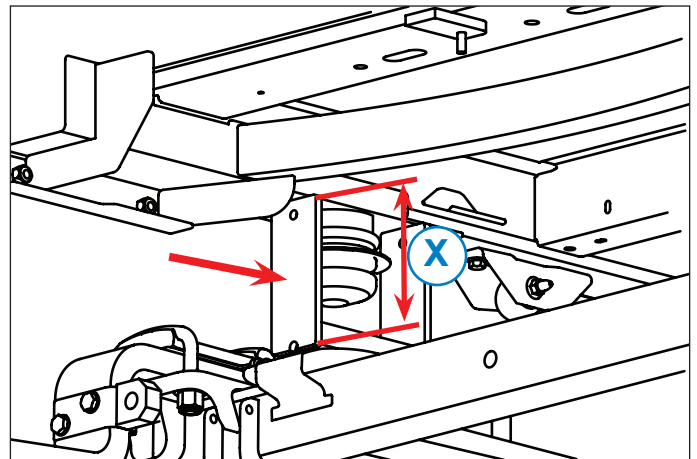
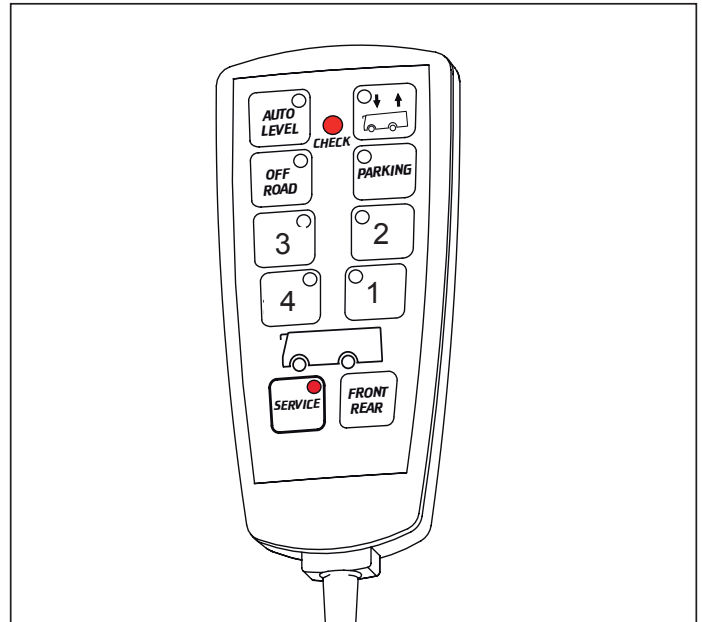
The calibration mode is activated. The rear axle LED and **CHECK** LED will blink.

6. Use the arrow-keys to raise the vehicle to place the calibration supports.



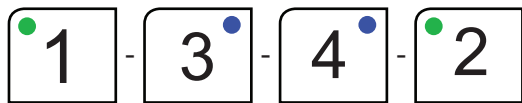
For an overview of the right calibration supports for this kit, please see chapter 2.

7. Check if the calibration support are placed properly.
8. Use the arrow-keys to release all air from the air springs, until the hissing sound stops.
9. When the correct height is set, hold the **SERVICE**-key until a long beep is heard. The ride height is now stored.
10. Briefly press the **SERVICE**-key. The calibration mode is now closed. The system will reboot again
11. Briefly press the **SERVICE**-key to leave the Service mode.
12. Use the arrow key to lift the vehicle, so the calibration supports can be removed.
13. Remove the calibration supports.
14. Set the vehicle at ride height.
15. Switch off the ignition.
16. Secure all bolts and nuts, which were marked in this manual with **
17. Let an official dealer check the head-light adjustment.
18. Check the vehicle according to the checklist in this manual.



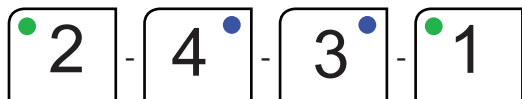
6.2 Calibrating 4C front and rear axle by kit 105 18 07 4XX

1. Switch on the ignition.
2. Make sure the vehicle is standing on it's wheels, on a level surface.
3. Briefly press the **SERVICE**-key (LED lights), and enter the following code within 10 seconds:



The system will give a long beep and reboot.

4. During the first beep, hold the **SERVICE**-key, until a second long beep is heard. Now enter the following code within 10 seconds:

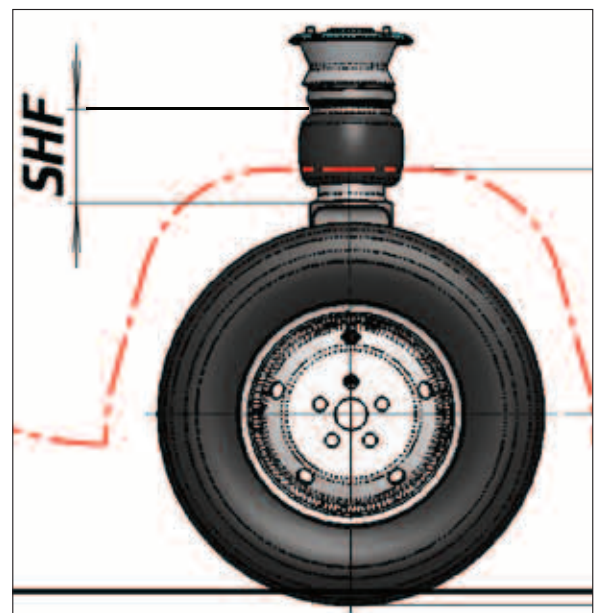
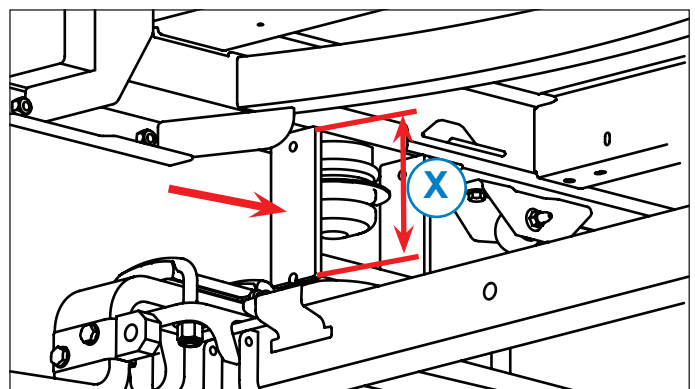
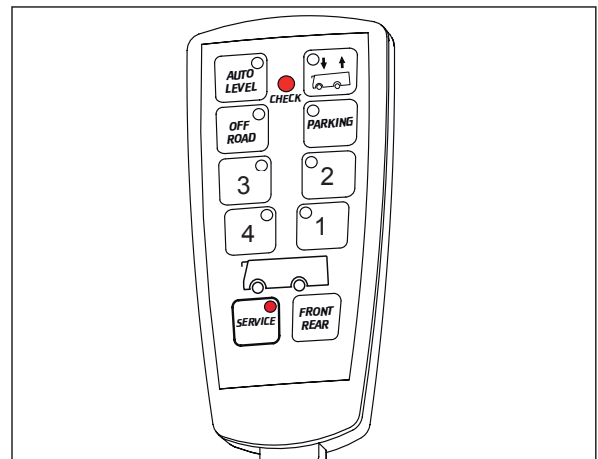


The calibration mode is activated. The rear axle LED and **CHECK** LED will blink.

5. Use the arrow-keys to raise the vehicle to place the calibration supports.
6. Check if the calibration support are placed properly
7. Use the arrow-keys to release all air from the air springs, until the hissing sound stops.
8. When the correct height is set, hold the **SERVICE**-key until a long beep is heard. The ride height is now stored.
9. Briefly press the **FRONT-REAR** key to select the front axle.
10. Use the arrow keys to raise the front axle in the right position that the calibration supports can be placed.
11. Check if the calibration support are placed properly.
12. The ride-height is measured as marked on the image.
13. When the correct height is set, hold the **SERVICE**-key until a long beep is heard. The ride height is now stored.
14. Briefly press the **SERVICE**-key. The calibration mode is now closed. The system will reboot again
15. Briefly press the **SERVICE**-key to leave the Service mode.
16. Use the arrow key to lift the vehicle, so the calibration supports can be removed.
17. Remove the calibration supports.
18. Set the vehicle at ride height.
19. Switch off the ignition.
20. Secure all bolts and nuts, which were marked in this manual with **
21. Let an official dealer check the head-light adjustment.
22. Check the vehicle according to the checklist in this manual.



For an overview of the right calibration supports for this kit, please see chapter 2.



7. Checklist

7.1 System finishing

OK

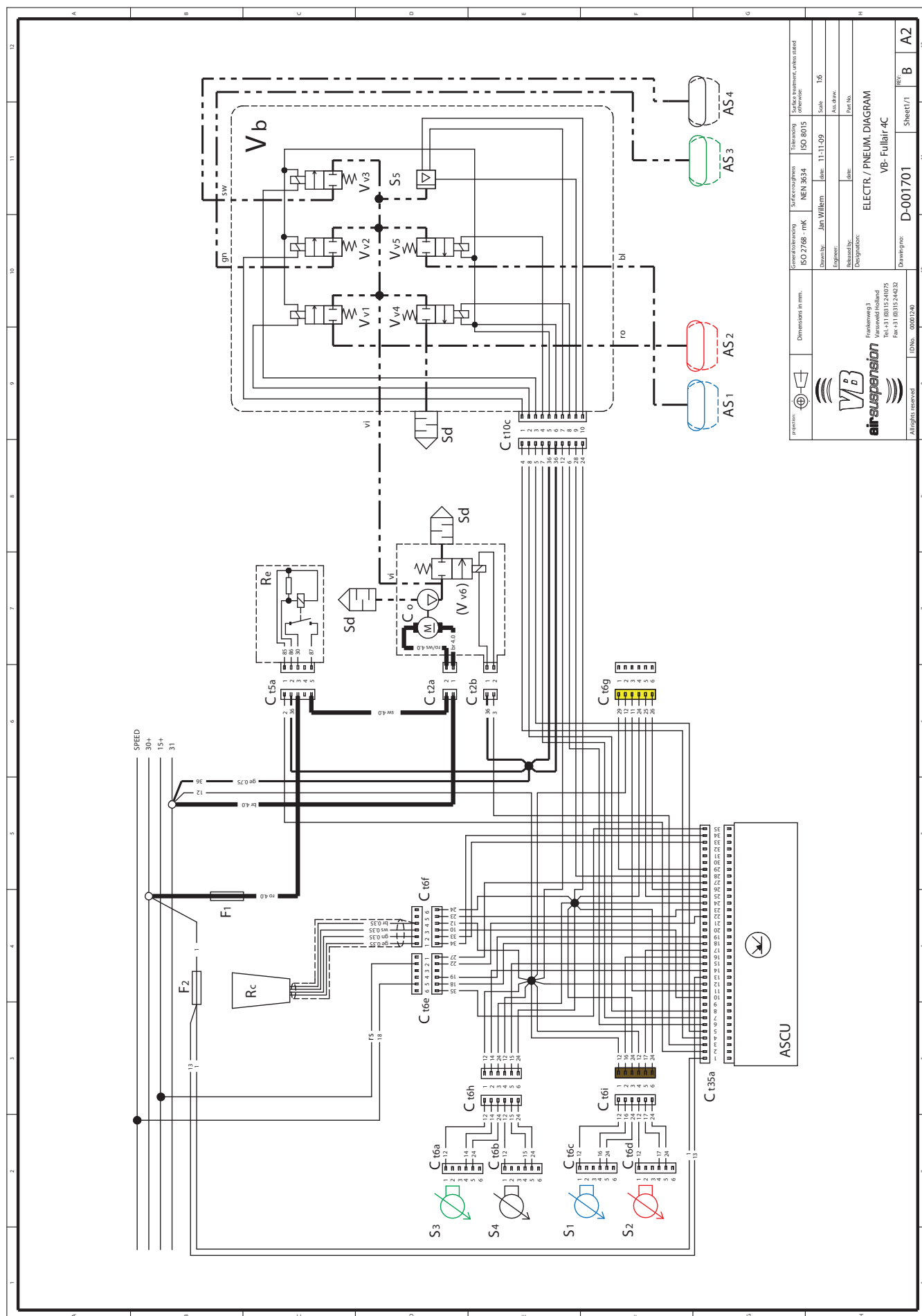
- | | | |
|------|--|--------------------------|
| 1.1 | Ride height correctly calibrated. | <input type="checkbox"/> |
| 1.2 | Front/rear axle aligned. | <input type="checkbox"/> |
| 1.3 | Height sensor correctly fitted. | <input type="checkbox"/> |
| 1.4 | Shock absorber bled. | <input type="checkbox"/> |
| 1.5 | Bolts tightened to the right torque. | <input type="checkbox"/> |
| 1.6 | Air tubes, cables and connectors correctly secured. | <input type="checkbox"/> |
| 1.7 | System checked for airtightness. | <input type="checkbox"/> |
| 1.8 | Space around the air-springs checked. | <input type="checkbox"/> |
| 1.9 | Head-light adjustment checked. | <input type="checkbox"/> |
| 1.10 | Documentation present. | <input type="checkbox"/> |
| 1.11 | Warranty form filled out and identification sticker fitted. | <input type="checkbox"/> |
| 1.12 | Converting to air suspension filled in the service booklet of the car. | <input type="checkbox"/> |

7.2 Functions of system

OK

- | | | |
|-----|----------------------|--------------------------|
| 2.1 | Manual raising. | <input type="checkbox"/> |
| 2.2 | Automatic lowering. | <input type="checkbox"/> |
| 2.3 | Manual lowering. | <input type="checkbox"/> |
| 2.4 | Automatic raising. | <input type="checkbox"/> |
| 2.5 | Test drive approved. | <input type="checkbox"/> |

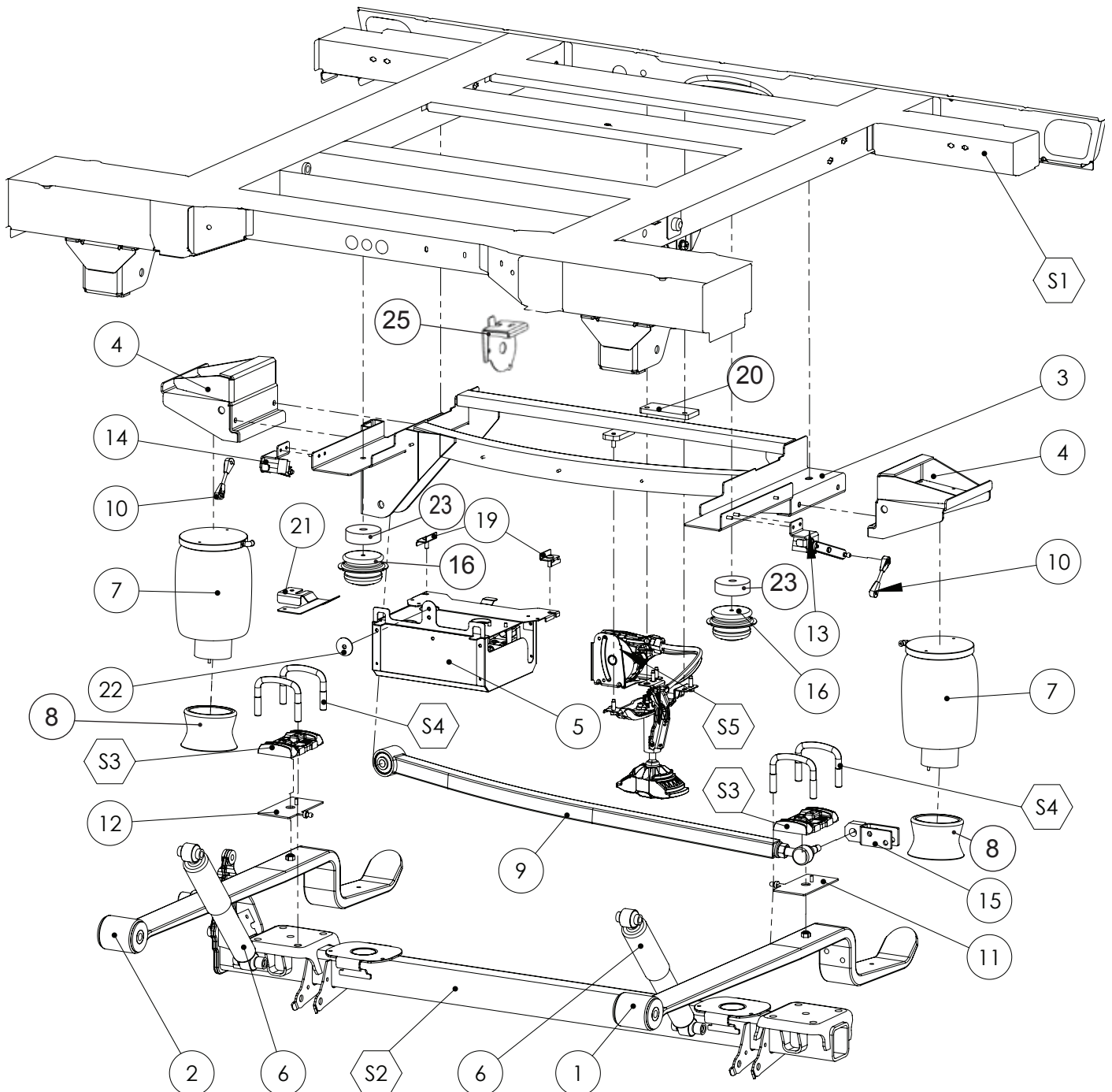
8. Wiring diagram



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

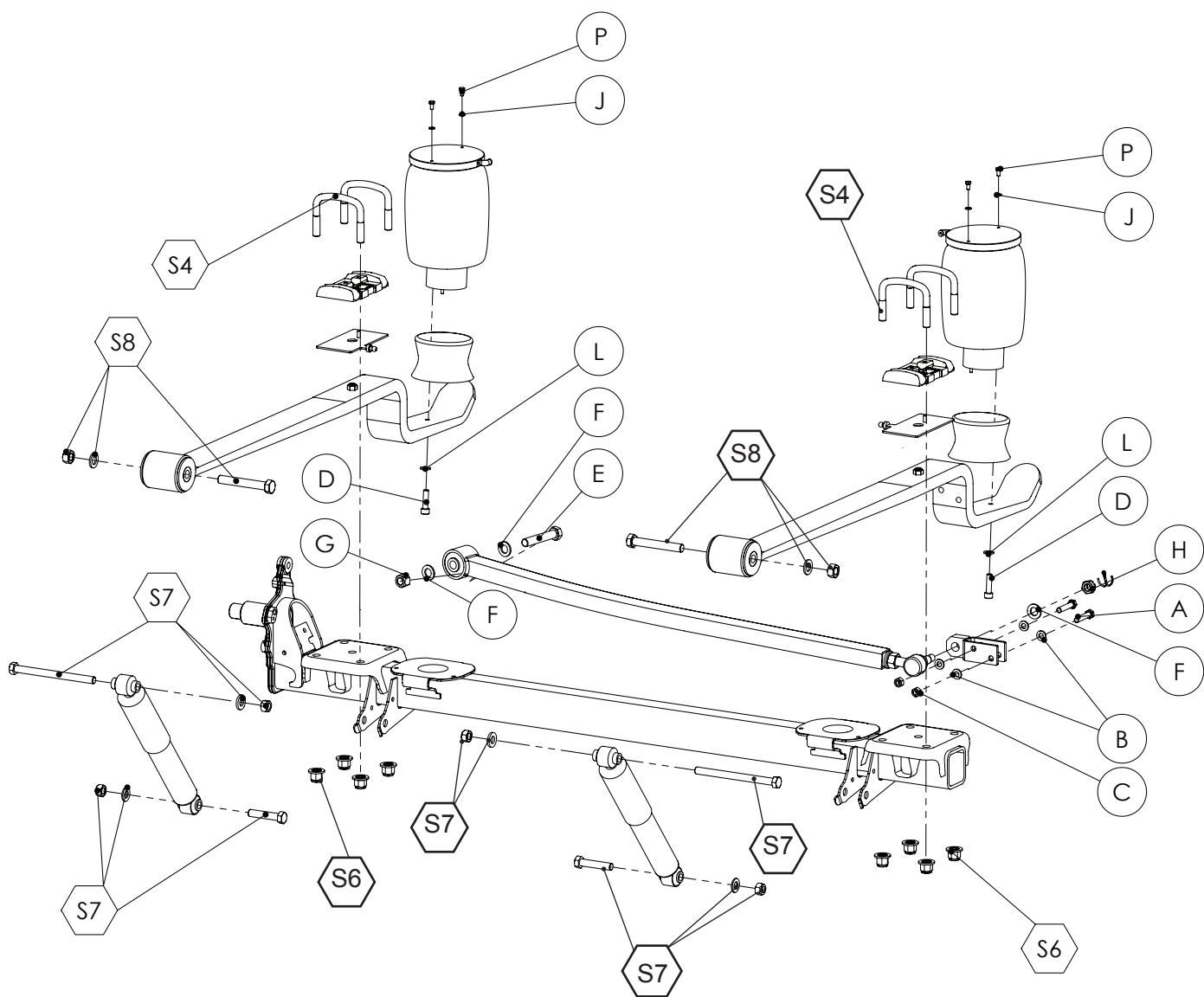
9. Exploded view

9.1 Rearaxle



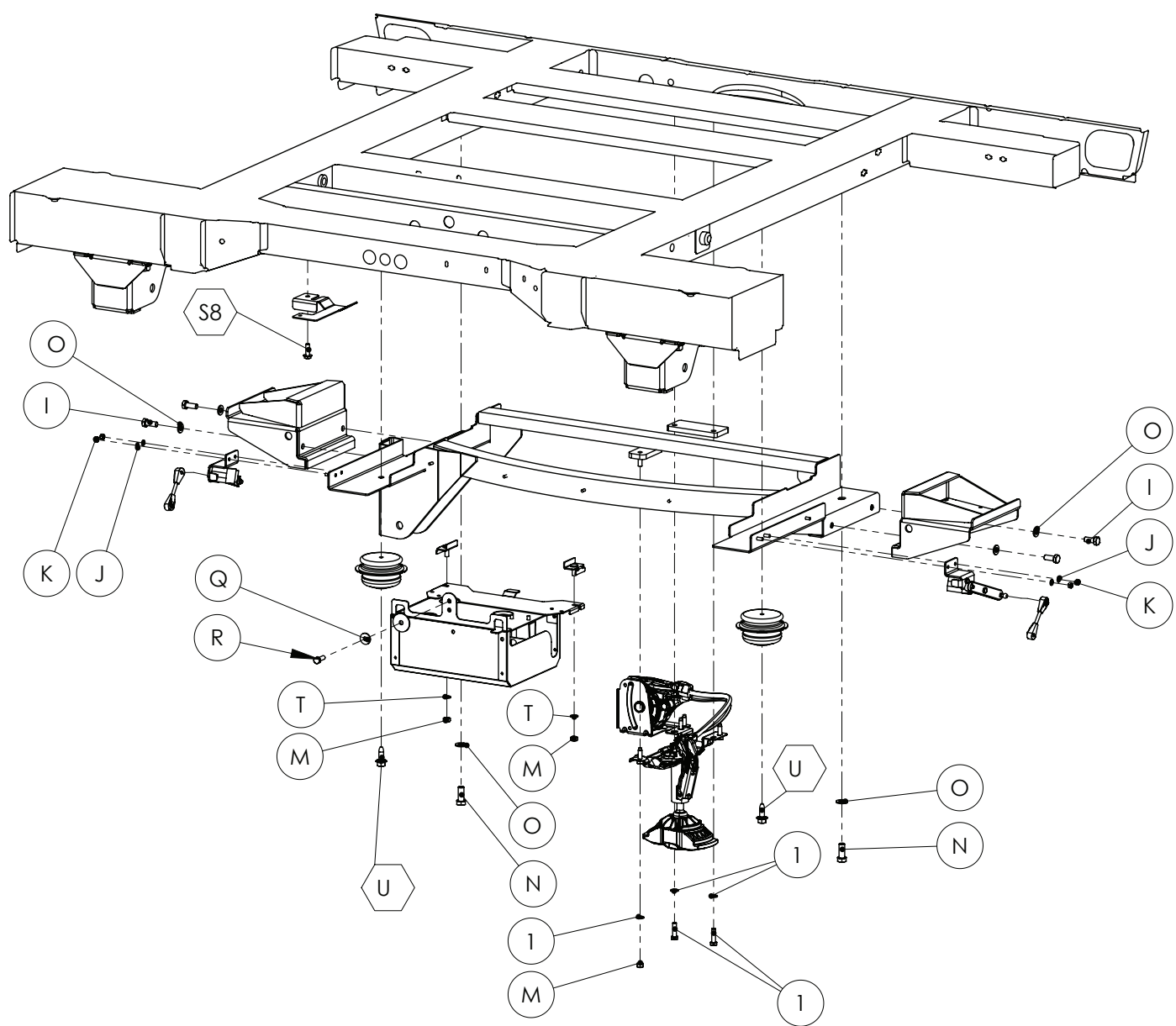
Item	Description	Part number	Chassis cabin
1	Main spring left	105 201 00 60	
2	Main spring right	105 201 00 61	
3	Upper cross-beam	105 204 00 76	
4	Upper spring-plate	105 204 00 77	105 204 00 91
5	Compressor box	105 213 01 16	105 213 01 23
6	Shock absorber	105 210 00 57	
7	Air spring	105 203 25 30	
8	Piston	105 203 01 74	
9	Panhard rod	105 206 00 65	
10	Height-sensor rod	105 209 50 63	
11	Ball-joint bracket left	105 209 01 27	
12	Ball-joint bracket right	105 209 01 28	
13	Height sensor left	105 209 01 25	
14	Height sensor right	105 209 01 26	
15	Panhard-rod bracket	105 206 00 66	
16	Bump stop	105 215 12 70	
19	Mounting bracket compressor-box	105 213 11 04	
20	Spacer	105 235 00 47	
21	Wiring bracket	105 235 00 49	
22	Centring part	105 213 11 02	
23	Spacer	105 202 57 16	
24	Panhard-rod ball-joint	105 206 14 16	
25	Winch support		105 235 00 58

Item	Description
S1	Chassis
S2	Rear axle
S3	Spring plate
S4	U-bolt
S5	Spare-wheel winch



Item	Description	Part number
A	Bolt M10x55x1.25 10.9	001 011 00 55CA
B	Washer M10	001 121 00 00A
C	Lock nut M10	001 101 00 00CA
D	Allen screw M8x25	001 030 80 25AA
E	Bolt M16x90	001 011 60 90CA
F	Washer M16	001 121 60 00A
G	Lock nut M16	001 101 60 01AA
J	Washer M6	001 120 60 00A
L	Washer M8	001 120 80 00A
P	Allen screw M6x12	001 030 6012AA

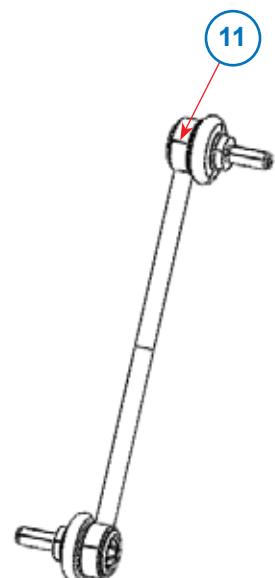
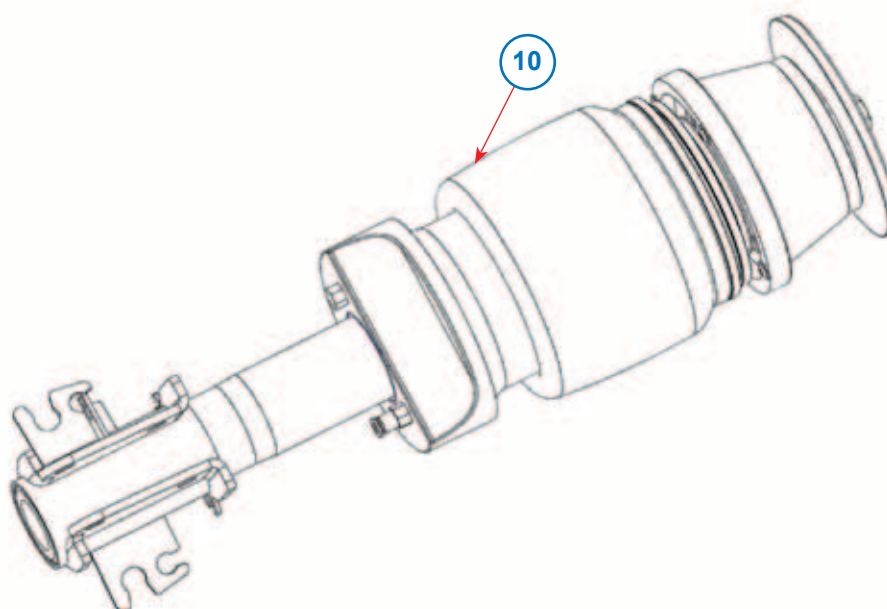
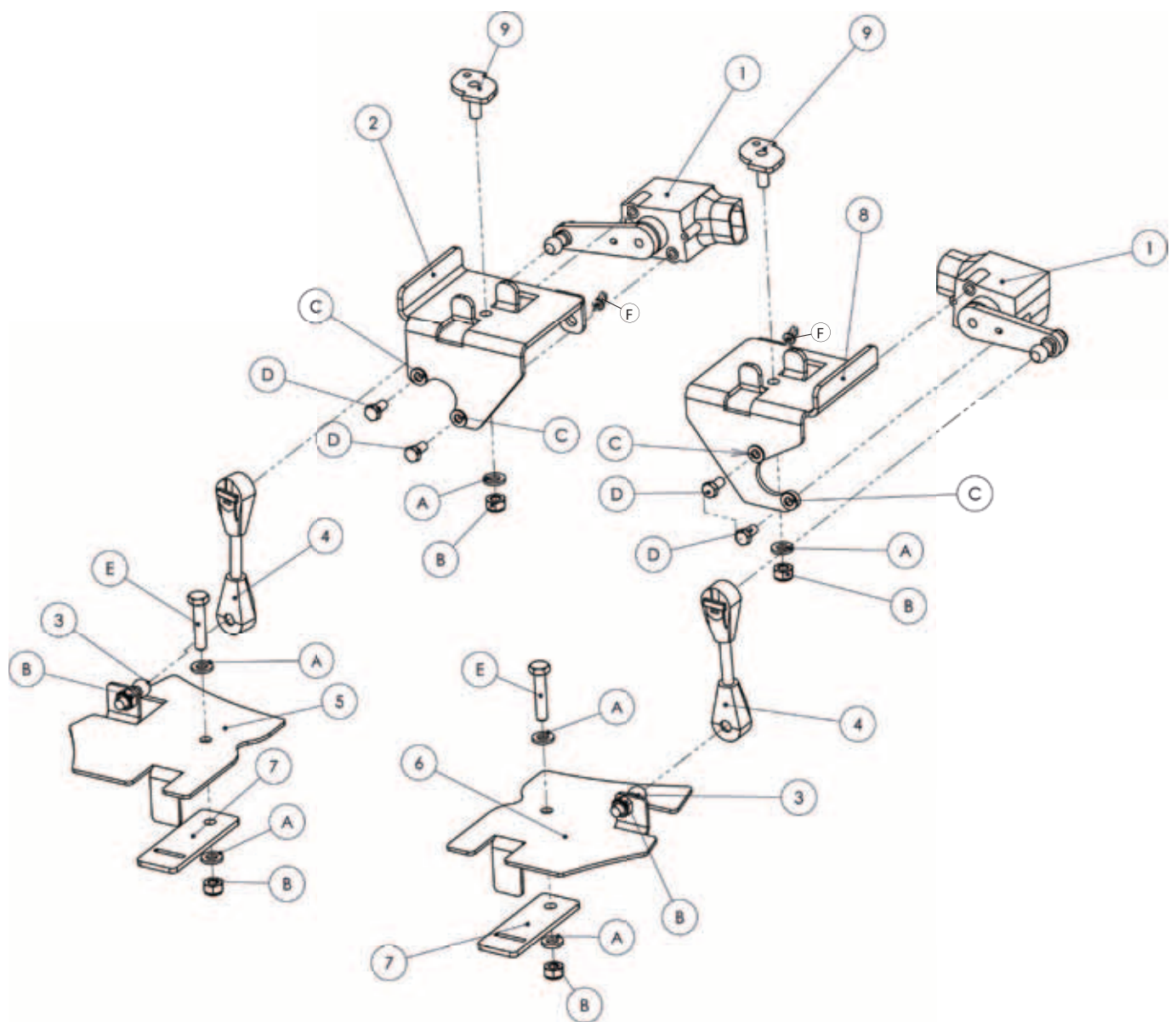
Item	Description
S4	U-bolt
S6	Nut U-bolt
S7	Fasteners shock absorber
S8	Fasteners main spring



Item	Description	Part number
B	Washer M10	001 121 00 00A
I	Allen bolt M12x30	001 031 20 30EA
J	Washer M6	001 120 60 00A
K	Lock nut M6	001 100 60 01AA
M	Lock nut M8	001 100 80 01AA
N	Bolt M12x30	001 011 20 30CA
O	Washer M12	001 121 20 00A
Q	Sheet metal washer M8	001 130 80 30A
R	Bolt M8x25	001 010 80 25AA
S	Bolt M8x30	001 010 80 30AA
T	Washer M8 x 3mm	001 120 80 02A
U	Bolt M10x55	001 011 00 55CA

Item	Description
S8	Fastener handbrake cable support

9.2 Frontaxle



Item	Amount	Description	Art. nr.
1	2	Heightsensor	105 209 10 30
2	1	Heightsensor bracket left	006 209 01 41
3	2	Ball joint M6	105 209 51 78
4	2	Heightsensor rod HtH=180mm	105 209 50 04
5	1	Ball joint bracket left	105 209 01 43
6	1	Ball joint bracket right	105 209 01 44
7	2	Ball joint bracket clamp	105 209 01 45
8	1	Heightsensorbracket right	006 209 01 42
9	2	Heightsensorbracket clamp	006 209 01 43

Item	Amount	Description	Art. nr.
A	6	Washer M6	001 120 60 00A
B	4	Lock nut M6	001 100 60 00AA
C	4	Washer M5	001 120 50 00A
D	4	Bolt M5x10	001 010 50 10AA
E	2	Bolt M6x40	001 010 60 40AA
F	2	Cable tie with fir three Ø6.5	003 022 51 05

Item	Amount	Description	Art. nr.
10	1	Air spring + Shock absorber left	105 210 10 06-L
	1	Air spring + Shock absorber right	105 210 10 06-R
11	2	Reactionrod stabiliserbar	105 207 00 93

10. Mounting upper cross beam with a Chassis Cab.

1. Remove the winch for the spare wheel.
2. Release the original renault cable from the chassis.
3. Insert the upper cross beam between the cable and the chassis.
4. Mount the upper cross beam to the chassis.

	2 x Bolt M10x30 CI 10.9 2 x Washer M8
30 Nm	


5. Mount the new bump stops with the filling disks.

	2 x Bolt M10x55 2 x Washer M10
62 Nm	

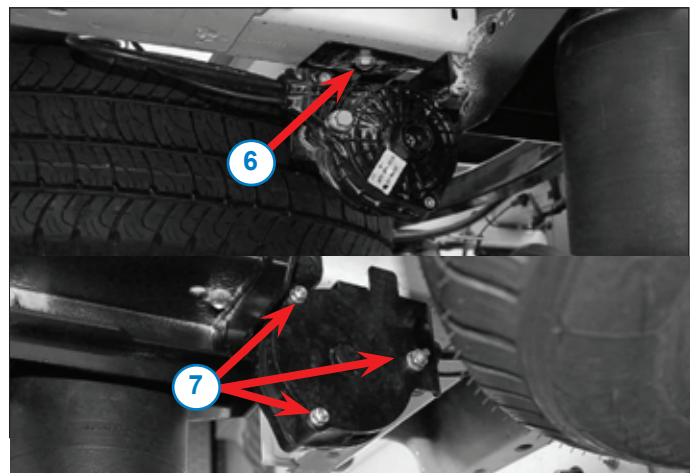
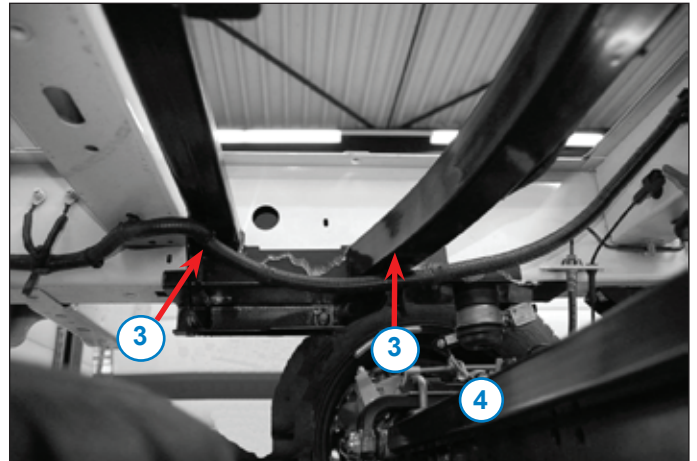
6. Mount the original renault cable on the upper cross beam with cable ties.
7. By the chassis cab edition, the spare wheelbracket can remain mounted, you only have to move the winch. Mount the winchbracket at the right side behind the upper cross beam.

	1 x Bolt M8x30 1 x Washer M8
22 Nm	

8. Mount the winch on the winch bracket with the original bolts and the supplied nuts and washers.

	2 x Original bolt 1 x Washer M8 1 x Bolt M8x12
20 Nm	

9. Go futher with paragraph 4.4 Panhardrod.



11. Mounting compressorbox with a Chassis Cab

1. The compressorbox is mounted under the cross beam in front of the axle.
2. Screw two M8x25 bolts with washers into the cross beam for just a few strokes.
3. Slide the compressorbox over the bolts and mount the last M8x25 bolt.
4. Tighten the bolts.

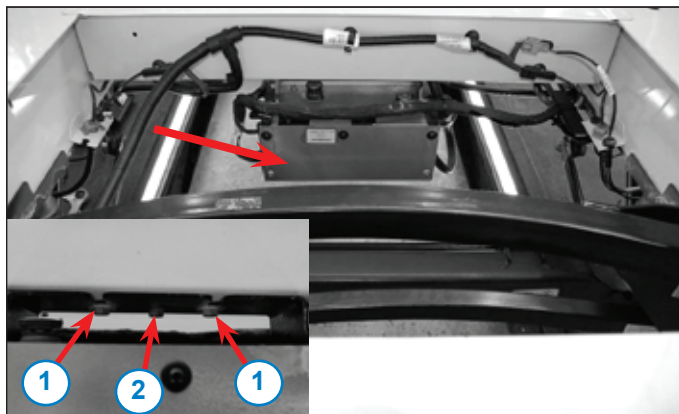


20 Nm

3 x Bolt M8x25

3 x Washer M8

5. Mount the cable with cable ties to the chassis, as shown.
6. Go further with paragraph 4.9.

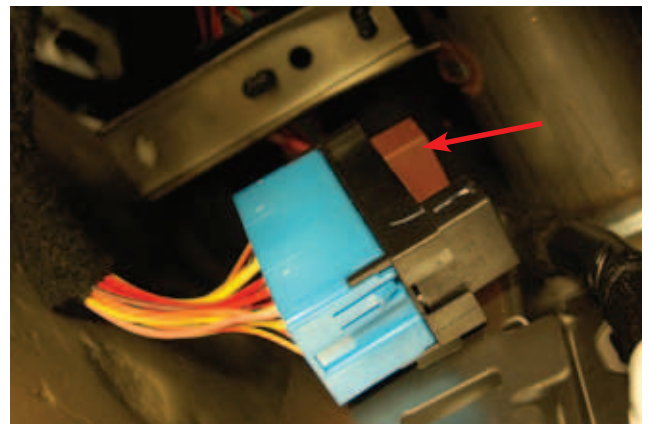


12. CABADP/KPD option

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.

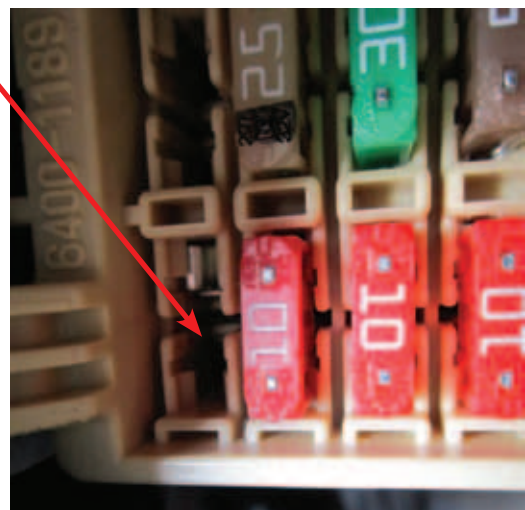
12.1 CABADP/KPD Option connector available

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.



12.2 CABADP/KPD Option connector 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.
3. Continue on page 18 with step 3.



13. Notes

[illegible]



VB-Airsuspension is producing, as one of the few European manufacturers, a very broad range of different (air-) suspension systems. From reinforced coil springs, semi-air suspension systems, up to complete full air-suspension systems, we provide solutions for customers with different vehicle types, like ambulances, minibuses, car transporters, motorhomes, etc. Now you can see why more and more commercial vehicle body manufacturers specify VB-Airsuspension on their vehicles.



Dealer:



VB-Airsuspension B.V.
postbus 130, 7050 AC Varsseveld
Frankenweg 3, Varsseveld
The Netherlands
+31 (0)315 - 24 10 75
info@vbairsuspension.com
www.vbairsuspension.com



VB-Airsuspension Deutschland GmbH
Heydastraße 10
58093 Hagen
Germany
+49 (0)2331 62474 0
info@vbairsuspension.de
www.vbairsuspension.de

VB-Airsuspension France S.A.R.L.
73, rue Principale
67310 Traenheim
France
+33 (0)689 - 06 24 69
info@vbairsuspension.fr
www.vbairsuspension.fr

VB-Airsuspension UK L.T.D.
Unit 13, Elder Court, Lions Drive
BB1 2EQ Blackburn, Lancashire
United Kingdom
+44(0) 12 54 84 80 10
info@vbairsuspension.co.uk
www.vbairsuspension.co.uk