Ford Transit '06
Single wheel
with VB-FullAir™ for the rear axle

Fitting instructions
For Kit nr: 105061XXXX

VB airsuspension

This air suspension kit has been carefully developed especially for this vehicle. The air suspension should fit perfectly on a standard vehicle, not equipped with any optional after market parts. However, whenever a problem occurs, please contact your air suspension supplier.

This manual has been carefully crafted to provide the best way to fit the air suspension. 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.

Always place the vehicle onto a car-lift when working on it. Make sure the rear wheels are always supported. Make sure the vehicle is correctly secured when fitting the air-suspension.

When fitting the wiring VB-Airsuspension advises to disconnect the battery-terminal clamps. Please check your vehicle workshop manual if this conflicts with any electronic vehicle management equipment. Make sure that the new wiring doesn't conflict with the original vehicle wiring and electronics.

When fitting the air-suspension, make sure no parts are being damaged.

The air-suspension is designed to support the manufacturer's Gross Vehicle Weight Rating (GVWR). Never overload the vehicle, as it may result in damage to the air-suspension or vehicle. The vehicle should be weight when it is fully loaded and in a level condition. This is to determine if the manufacturer's recommended GVWR is exceeded.

If the air-suspension fails, stop the vehicle and don't drive with it. Only in an emergency the vehicle can be driven at low speed and with precautionary measures.

Directives for assembly of rear-axle air-suspension

Fitting of the air suspension kit can only be done in a from VB-Airsuspension authorised workshop, equipped with all appropriate equipment and tools, by an authorised mechanic with proper training and experience in the following fields (all in the range of light commercial vehicles):
- Mechanics
- Electronics
- Pneumatics

Before dismounting safety components (seats, base of seat, seat-belts, airbag, etc., etc.) on the vehicle, please disconnect every part from the battery of the vehicle. For the electric re assembly and reconnection please refer to the repair manuals of the vehicle.

When fitting the air-pipes and wiring make sure that they don't bent to much. Always cut the air-pipes in a right angle. Make sure that the air-pipes are clean on the inside. Connecting electrical cables or air-pipes to brake hoses is strictly prohibited!

The use of scotch connectors or clamped couplings (for rapid connection) is prohibited. Recommendation: Solder connections, using sleeves and connectors of automotive quality. After soldering use a shrink-sleeve for isolation, preferably a glued shrink-sleeve.

All electrical cables must be kept at least 100mm away from the ABS/ESP block, its sensors and other controllers The passage of cables and pipes near the exhaust must be avoided. The minimum distance between exhaust and the cables/pipes without protection measures must be 200 mm.

For the passage of cables (with or without conduit) through a metal sheet you must protect the cable(s) with either a grommet around the hole, or extra protection around the cable(s). If conduit wire is used do not feed it into the fuse-box of the vehicle.

Connecting cables with metal clamps to painted metal or galvanised parts is prohibited. (it is authorized on aluminium and stainless steel). Secure all connectors properly and make sure that there is no stress on them.

All main electrical connections after the fuse of the battery are prohibited. The main electric connections must be taken directly on the terminal + of the battery (before the fuse). The fuse must be rated according to the diameter and use of the wire and must be marked and clearly recognizable, so that it is clear that this fuse belongs to the airsuspension and not to another part of the vehicle. It has not been permitted to use more than 2 crimp terminals directly on one battery pole. For making several connections on one battery pole you must use battery distributor plates.

Whenever changes are made to the original corrosion protection, restore it immediately. For this purpose use for example paint or spray wax. Attention: do not apply corrosion inhibitor to non metal parts! For all fixings covered by anti-corrosion sealant (under chassis protection), the sealant/coating must first be removed. Add an anti-corrosive layer to any bare metal, then re-fix with the correct coupling. The whole area must then be re-sealed/recoated.

For all parts of the vehicle dismounted by the bodybuilder, it is obligatory to carry out (during re-assembly) a tightening of these parts to the recommended torque setting (see the repair manual of the vehicle that you will modify). This re-assembly must be integrated in the control sheet of the body-builder (point of safety) and is the responsibility of the body-builder.
Remarks: - Do not use a locknut with nylon;
- If the original locknut on the vehicle is a locknut with nylon, please replace the locknut with a new locknut with nylon.

When the vehicle is in it's ride-height, tighten all the bolts and nuts to the final torque. Whenever a torque mentioned in this manual conflicts with the torque recommended by the vehicle manufacturer always use the one recommended by the vehicle manufacturer.

Check the alignment of the rear-axle when the vehicle is in ride-height. Measure the distance between the inside of the rim and the chassis on both sides. A maximum difference of 3mm is allowed.

The Body-builder or adaptation company must make sure that its adaptation does not hinder or prevent the future maintenance or repair of the airsuspension.

In the case of any conflicts, in any of the points mentioned above, please contact your air suspension supplier for technical assistance.

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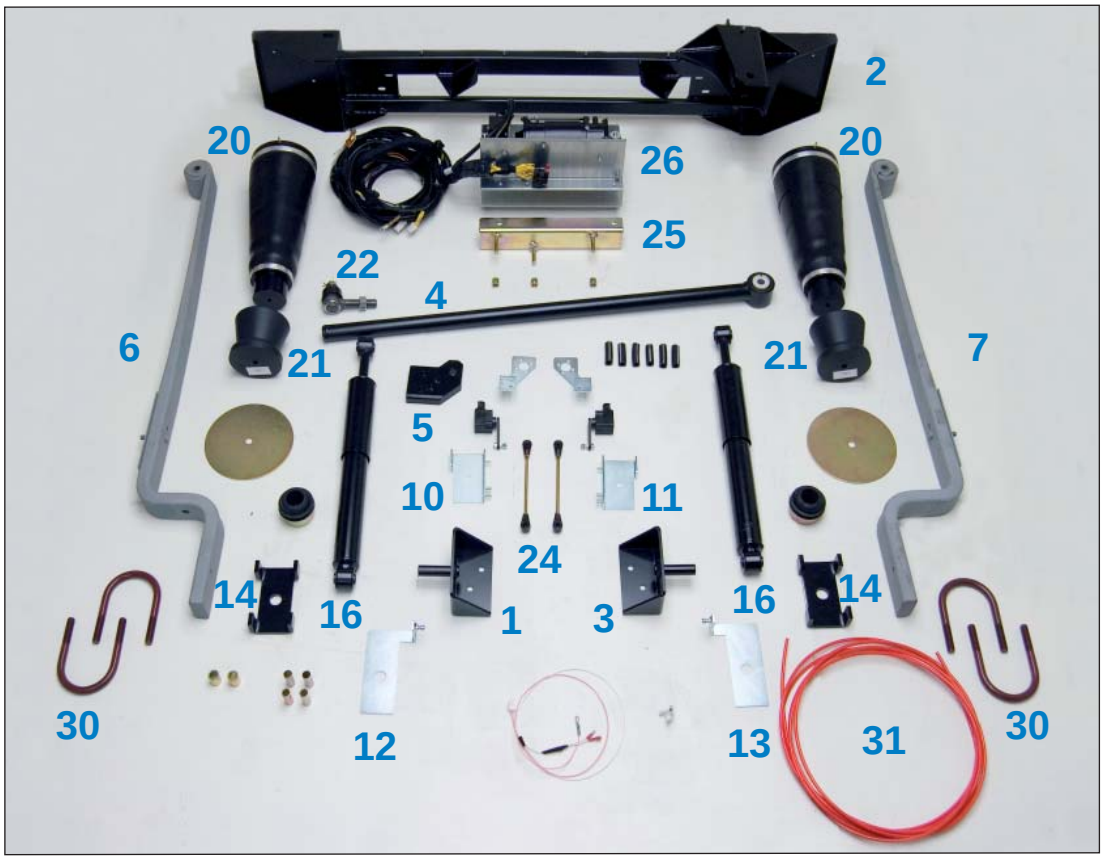
1 Overview of the air-suspension kit

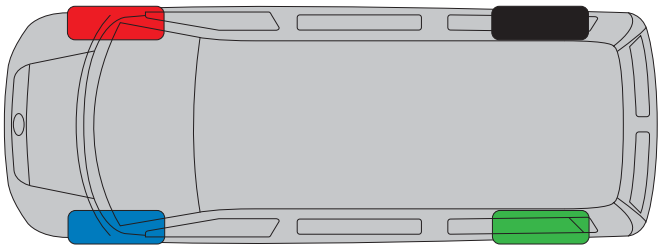


The Air-suspension kit consists of numerous different parts. To keep things clear, only the main parts have been included on the above picture. The more common parts, like for example the fitting materials, have been left out.

Number	Description
1	Upper cross beam support, R
2	Upper cross beam
3	Upper cross beam support, L
4	Panhardrod
5	Panhardrod support
6	Main spring, L
7	Main spring, R
10	Bracket heightsensor support, L
11	Bracket heightsensor support, R
12	Ball-joint support, L
13	Ball-joint support, R

Number	Description
14	Clamping plate, main spring
16	Shock absorber
20	Air-spring
21	Piston
22	Panhardrod ball-joint
24	Height sensor rod
25	Compressor support
26	Compressor
30	U-bolt
31	Air-tube

For an overview of the positions where all different parts are to be fitted, please check the exploded view in the annex. Here you can also find the part numbers.



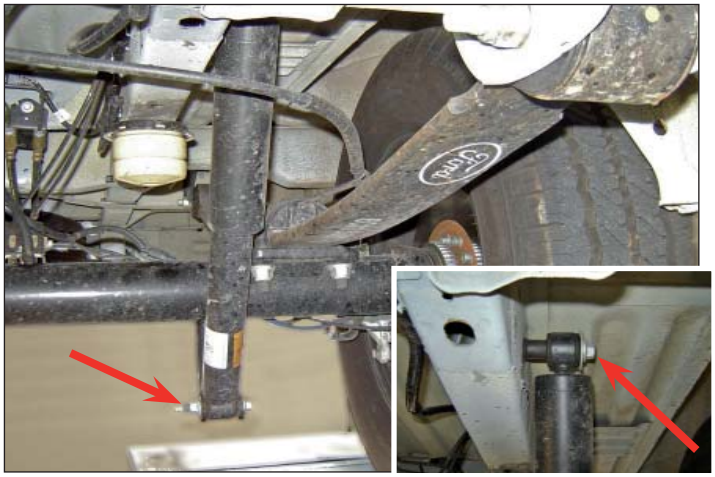
Colour	Position
Black	Rear right
Green	Rear left

2 Fitting the Air-suspension kit

2.1 Preparations

***Attention:** For F.W.D. vehicles with 15" wheels the spare wheel has to be moved. Here for, first follow chapter 3!*

Start by removing the original shock absorbers of the vehicle. To do so, remove the bottom bolts as well as the top bolts of the shock absorbers. Please notice that the bolts and nuts have to be re-used.

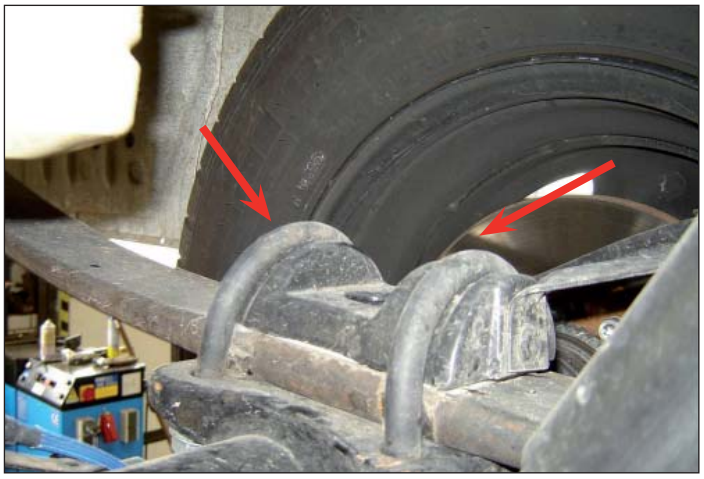


***Attention:** Always secure the rear axle to prevent tension in the parts. Tension can induce unexpected behaviour and result in damage or even injuries!*

Next, remove the bump-stops. Start by pulling the rubbers out of their supports to uncover the M10 bolts holding them. Remove the bolts and remove the supports.

Please notice that the bolts have to be re-used.

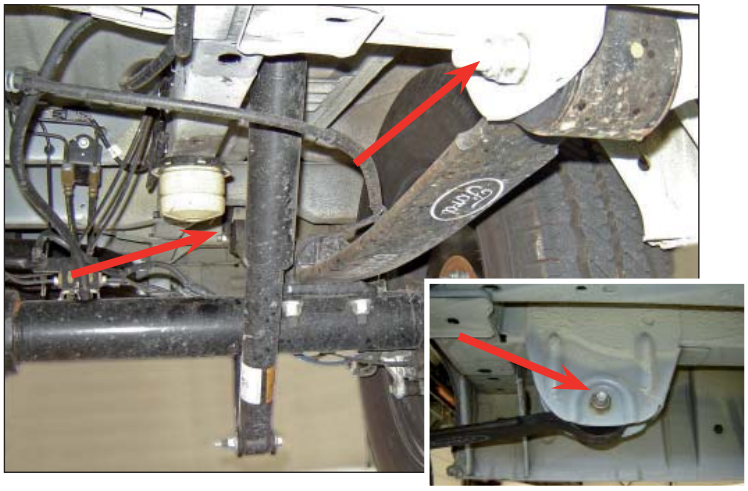
The next step is the removal of the original leaf springs. Start by removing the U-bolts. Both leaf springs have two U-bolts, which should be removed now.



***Tip:** To prevent the rear axle from moving, first replace one leaf-spring for a main spring (§ 2.2) and then do the other side!*

Finally, both the front and rear bolt can be removed from the leaf-spring and the leaf-spring itself can be removed.

The front bolts should be re-used.



***Tip:** Lower the rear axle a little to make this easier.*

2.2 Main springs

The first step is to fit the new main springs. Use the original bolts to mount the front of the main springs to the original front fixing point of the leaf-springs.

☐ Check

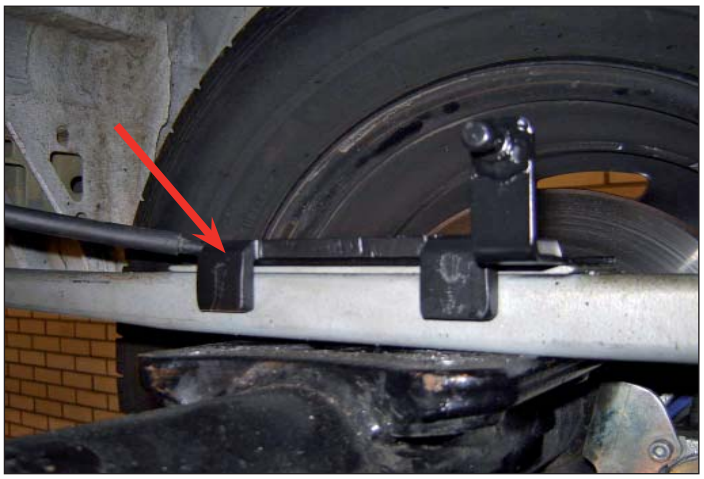
Torque: 180 Nm

*** Do not tighten these bolts yet, the vehicle has to be in driving height first!***

***Attention:* Make sure the centre-bolt slides into the hole in the rear axle! The main spring with the holes for the panhard rod should be at the right side!**

Attention:
F.W.D, Centre-bolt should be in the rear hole of the main spring.
R.W.D, Centre-bolt should be in the front hole of the main spring.

Now lay the plates with the welded ball-joints onto both main springs. Make sure the hole in the plates is over the centre bolt. Notice the difference between left and right. The ball-joints should be at the ***rear and inner side*** of the vehicle.



Check the width of the original leaf-springs. If this is ***80 mm***, the ***filling plates*** have to be used on top of the ball-joint supports, as can be seen to the right. If it is ***60 mm***, the plates ***don't*** have to be used.

Finally, use the U-bolts, together with the original nuts to secure the main springs onto the rear axle. In case the original U-bolts don't fit you should use the new ones.

☐ Check

4x U-bolt
8x Nut
Torque: 180 Nm

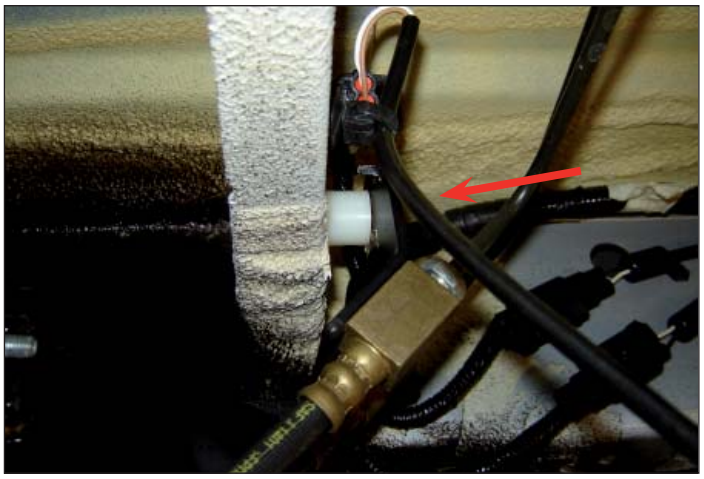
*** Do not tighten the bolts yet!***

2.3 Upper cross beam

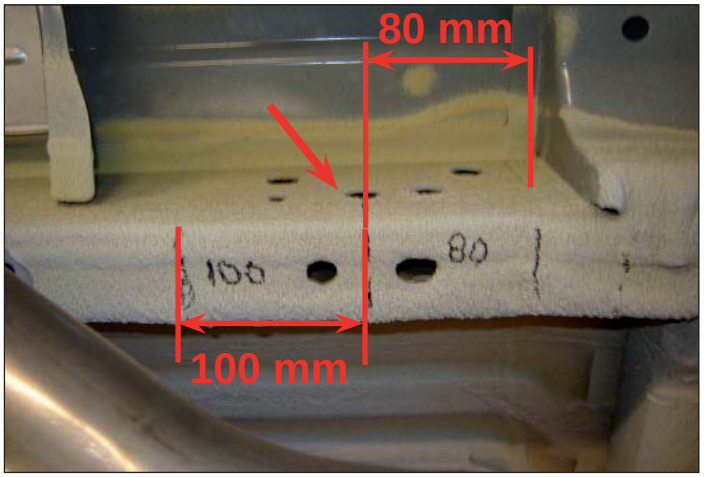
Before the upper cross beam can be fitted, the brake line holder has to be adjusted.
Therefore loosen the bolt and fit the supplied filling bush between the support and the chassis.
Use the following bolts to secure the support.

1x M8x35 Bolt
1x M8 Washer
Torque: 20.5 Nm

☐ ***Check***

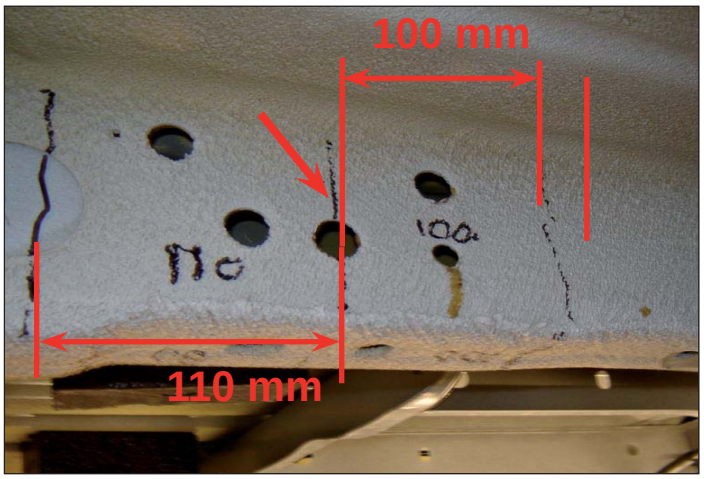


In order to be able to fit the upper cross beam some of the protective wax. (on ***both*** sides of the vehicle). Use, for example, a palette knife to do this. For the ***bottom*** of the ***right hand side*** chassis beam goes: The piece that should be cleared should be a ***100 mm*** towards the front of the vehicle and ***80 mm*** towards the rear.



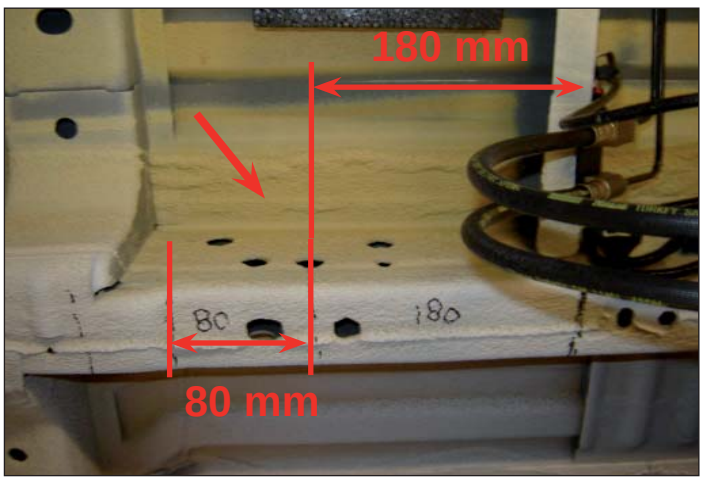
Attention: ***Protect the surface with an anti-corrosion substance as for example paint or spray-wax!***

For the ***side*** of the ***right hand side*** chassis beam goes: The piece that should be cleared should be a ***100 mm*** towards the front of the vehicle and ***110 mm*** towards the rear.



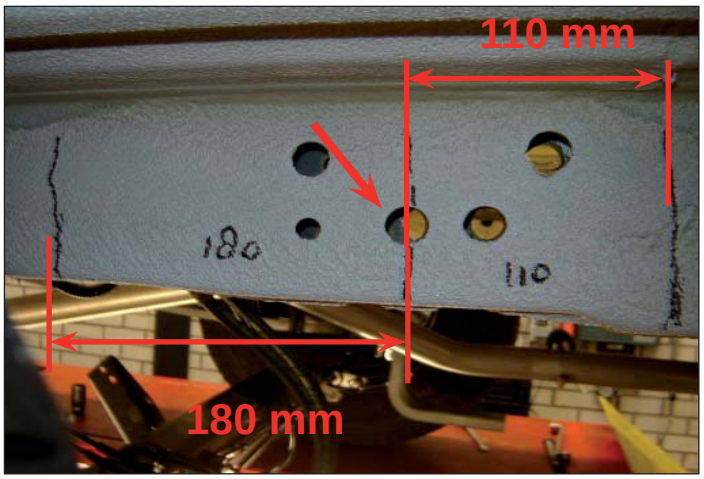
Attention: ***Protect the surface with an anti-corrosion substance as for example paint or spray-wax!***

For the ***bottom*** of the ***left hand side*** chassis beam goes: The piece that should be cleared should be a ***180 mm*** towards the front of the vehicle and ***80 mm*** towards the rear.



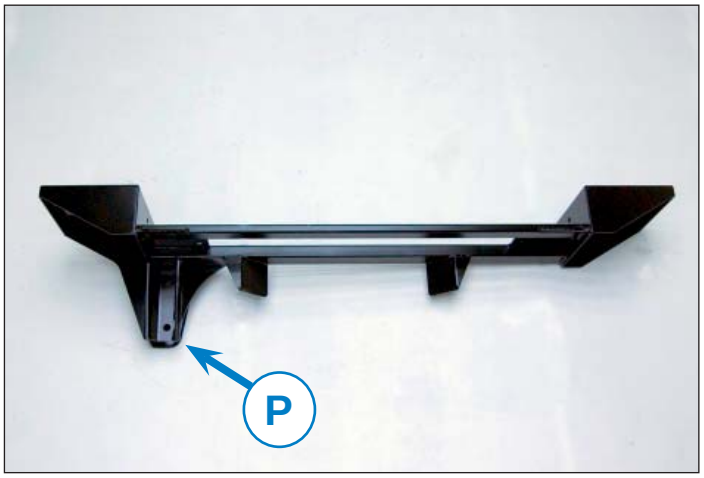
Attention: ***Protect the surface with an anti-corrosion substance as for example paint or spray-wax!***

For the ***side*** of the ***left hand side*** chassis beam goes: The piece that should be cleared should be a ***180 mm*** towards the front of the vehicle and ***110 mm*** towards the rear.

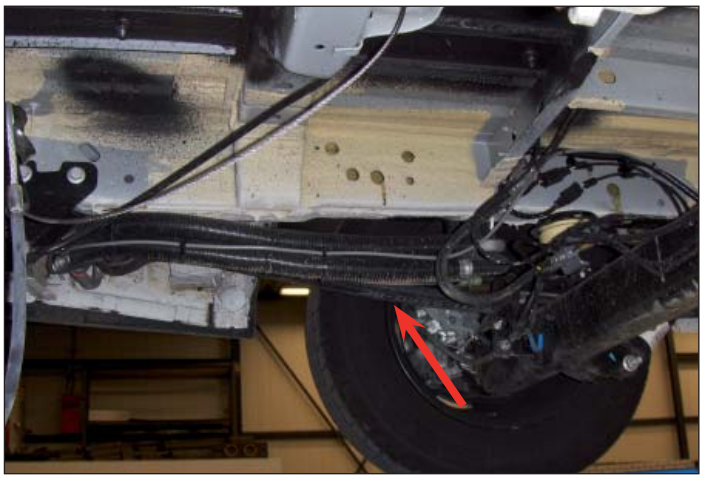


Attention: ***Protect the surface with an anti-corrosion substance as for example paint or spray-wax!***

On the picture to the right you can see the upper cross beam. When fitting it, notice that the pan-hardrod support (***P***) should be at the ***left hand side*** of the vehicle.

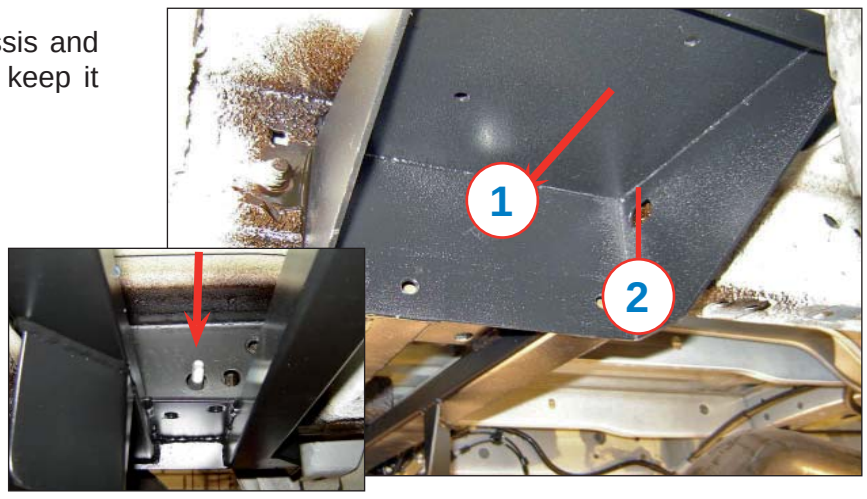


In case the vehicle is fitted with airco, the tubes of the system has to be loosened from the chassis to create space to fit the upper crossbeam between the chassis and the airco tube.

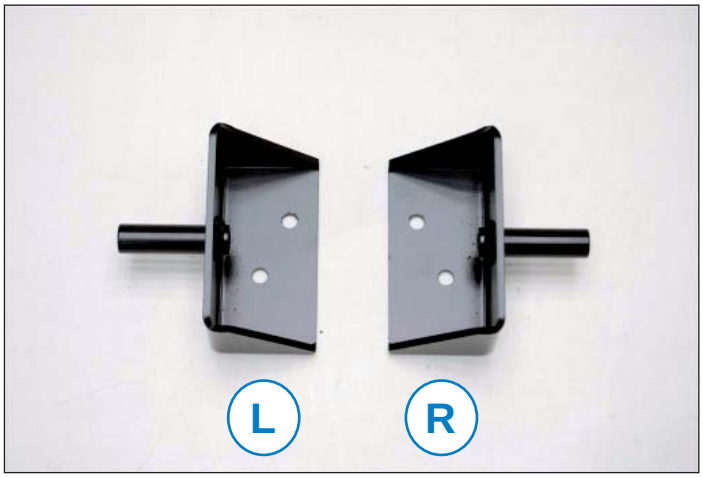


Now offer up the cross beam to the chassis and slide a bolt through the marked holes to keep it hanging in position.

2x M12x110 Bolt
2x M12 Washer
Torque: 110 Nm



On the right hand picture you can see the upper cross beam supports. Note that the supports are handed! The hole pattern is determent in which left or right.



Attention: ***Notice the difference between left and right. Check the exploded view in chapter 5 for extra clarification.***

Now use the upper cross beam supports to secure the upper cross beam.

2x M12 Washer
2x M12 Steel locking nut
Torque: 110 Nm

☐ ***Check***

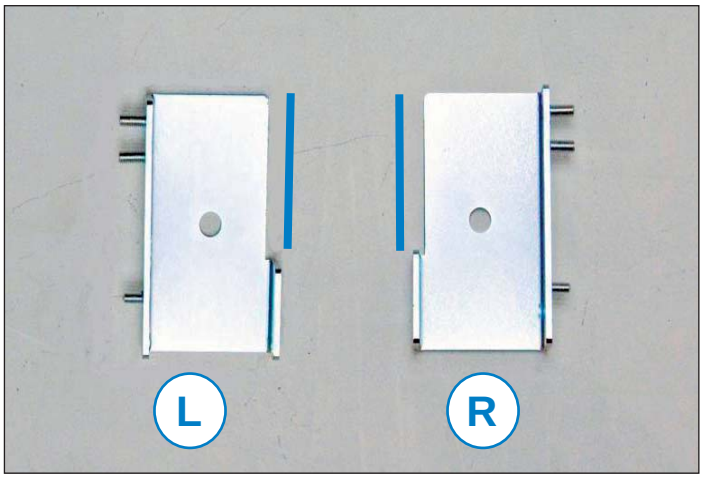
4x M10x35 Bolt
8x M10 Washer
4x M10 Steel locking nut
Torque: 60 Nm

☐ ***Check***

Now fit the airco tubes back to the chassis as you can see on the pictures.

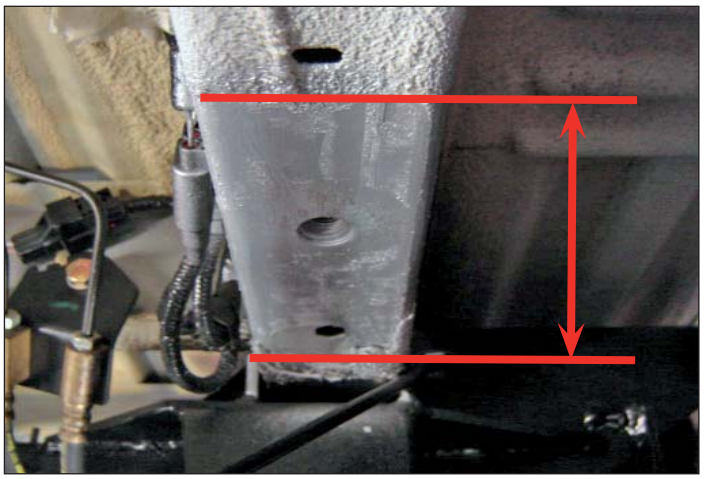
2.4 The heightsensors

To the right the heightsensor support brackets are shown. Notice that these are handed. The difference can be seen by the position of the recess in the flange, as shown with the blue lines.



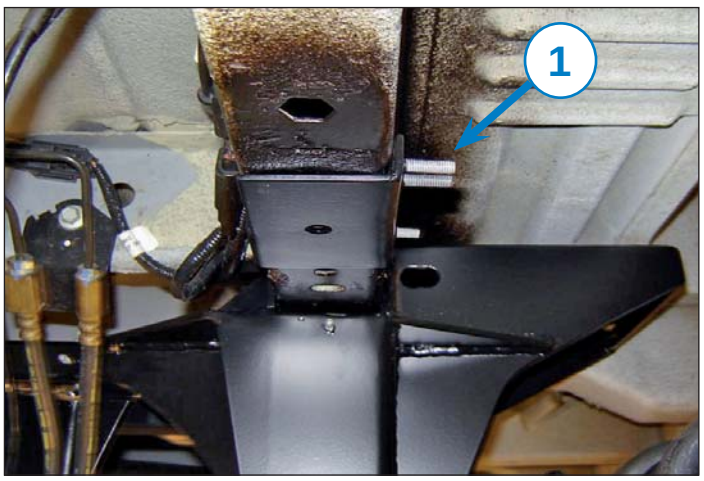
The brackets should be fitted at the position of the original bump-stops.

Offer-up the brackets to the chassis and clear enough protective wax to be able to fit the brackets.



Attention: ***Protect the surface with an anti-corrosion substance as for example paint or spray-wax!***

Hang the brackets to the chassis as on the picture. Make sure to keep the threaded ends (***1***) pointing towards the outer side of the vehicle.



Secure the brackets to the chassis with the newly supplied bump-stops. Use the original M10 bolts to do this.

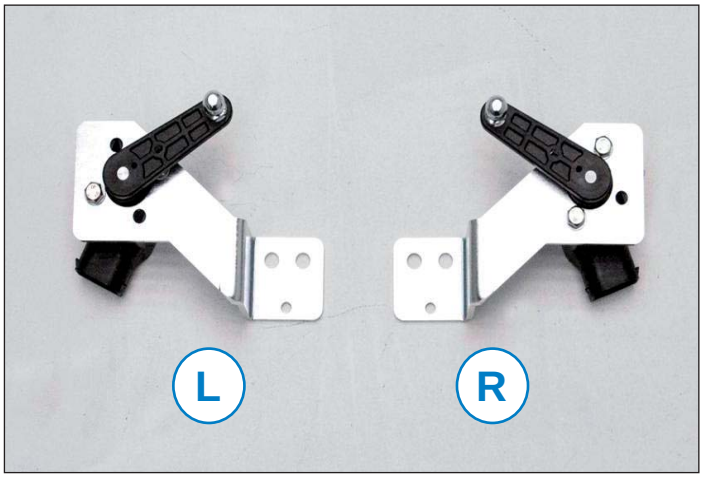
2x M10 Bolt
2x M10 Washer
Torque: 60 Nm

☐ ***Check***

Fit the heightsensors to the heightsensor supports. Notice the difference between the left and right hand side.

4x M5x10 Bolt
4x M5 Washer
Torque: 5 Nm

☐ ***Check***

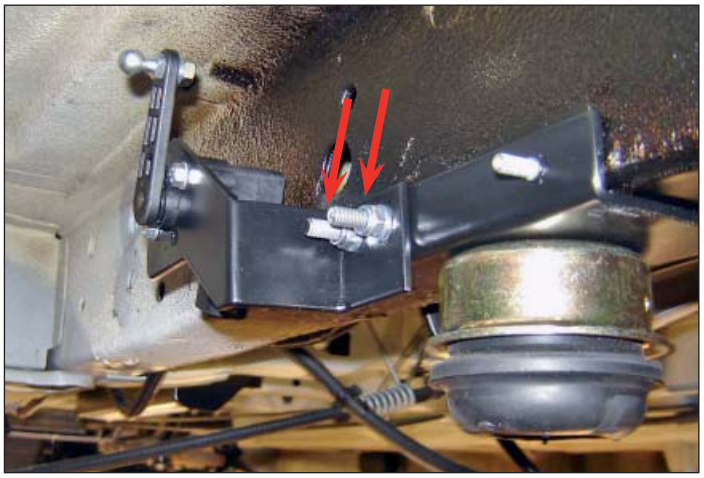


Attention: ***Notice the difference between left and right, check the exploded view!***

Now secure the complete assembly to the previously fitted support brackets. On the picture you can see the left hand side.

4x M6 Washer
4x M6 Locking nut
Torque: 10 Nm

☐ ***Check***



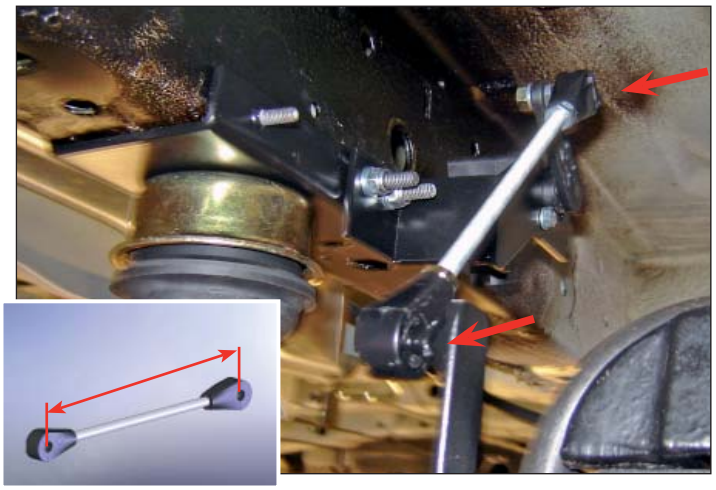
Check if the length of the heightsensor rods are, measured from centre to centre:

Front wheel drive: ***210mm***
Rear wheel drive: ***180mm***

Connect the rods to the heightsensors and the ball-joint supports.

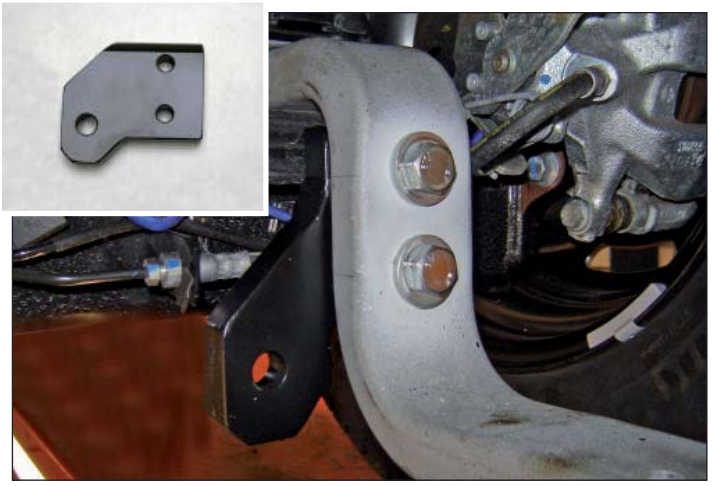
Secure the rods by pressing the clips.

Attention: ***The heightsensor lever should point upwards!***



2.5 The panhardrod

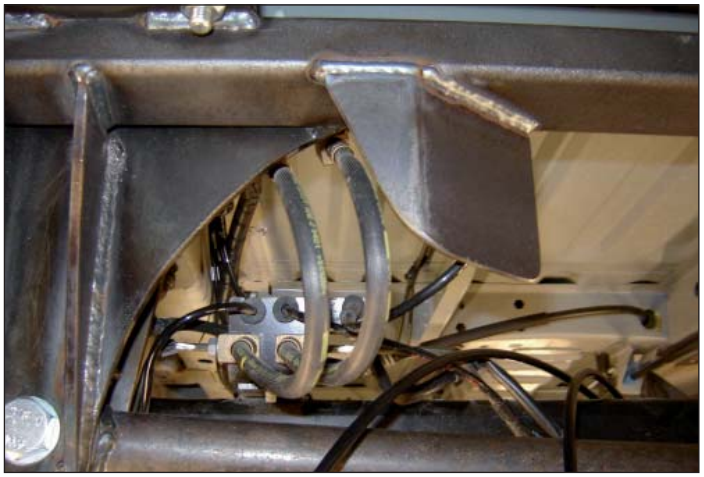
Secure the panhardrod support to the right hand main spring, as on the picture. This is the support for the F.W.D. The R.W.D. support is shown on the small picture. The bolts should be slid in from the back of the vehicle to ensure enough clearance for the air-springs.



2x M12x70 Bolt
4x M12 Washer
2x M12 Steel locking nut
Torque: 110 Nm

☐ ***Check***

Secure the panhardrod to the upper cross beam, as on the picture.

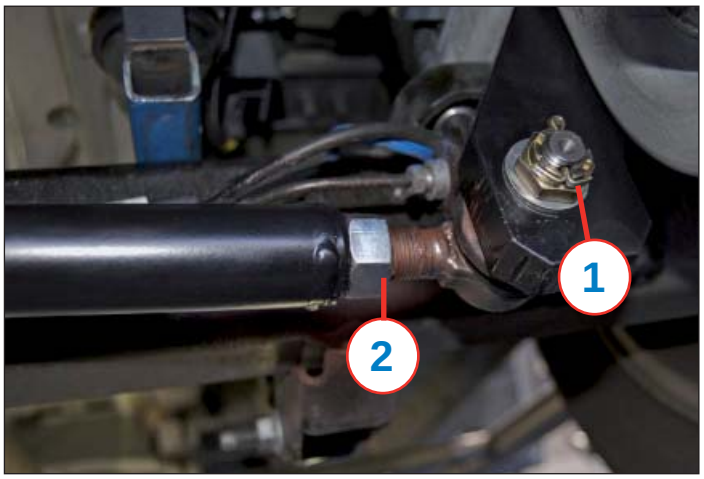


2x M16x90 Bolt
4x M16 Washer
2x M16 Steel locking nut
Torque: 180 Nm

☐ ***Check***

*** Do not tighten this bolt yet!***

Now attach the panhardrod to the support, making sure the ball-joint is at the right of the vehicle. Tighten the ball-joint and secure it using a cotter pin to prevent nut (***1***) from turning.



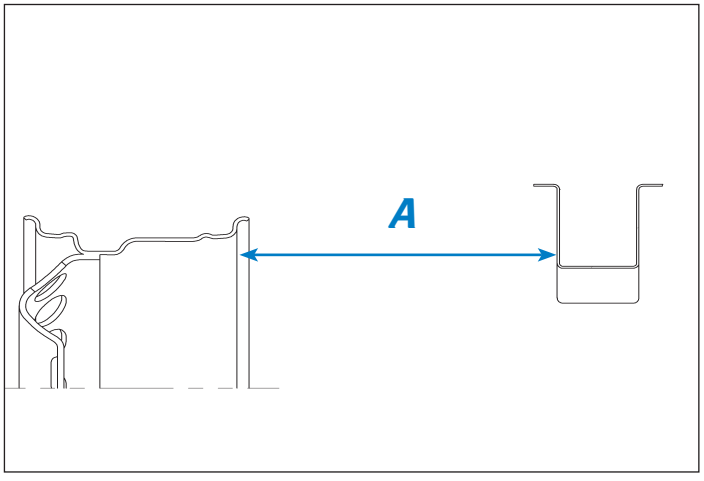
Torque: 75 - 85 Nm

☐ ***Check***

Do not tighten nut (***2***) yet as the panhardrod should be turned to it's correct length later on.

Attention: The next step shouldn't be executed until the air-springs are fitted and the vehicle is in driving height!

Measure the distance between the rim and the chassis (***A***) at both sides of the vehicle. These should be the same. If not, one can move the rear axle by changing the length of the panhard rod. Here counts: ***1 turn equals 1,5 mm displacement.*** Now tighten the rod (***2***) and do not forget the nut at the ball-joint side!



1x M16x90 Bolt
2x M16 Washer
Torque: 180 Nm

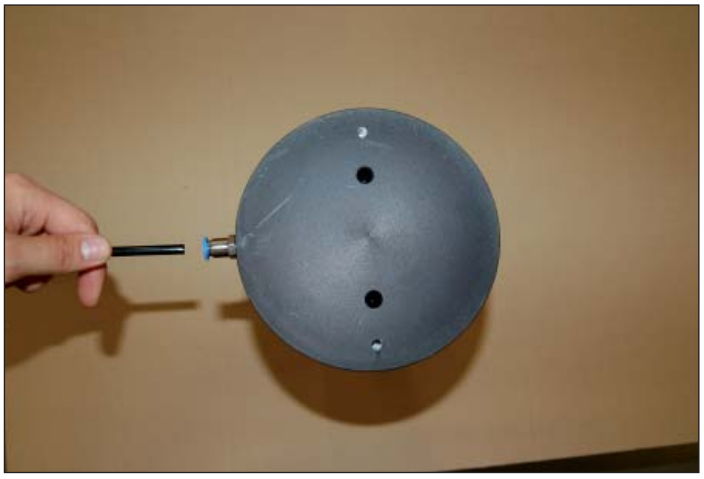
☐ ***Check***

2.6 The air-springs

Mount the air couplings on the air springs.

Torque: 5 Nm

☐ *Check*



Mount on both air-springs a piece air-tube.
Pay attention for the matching colour marker.
Slide the tube at least, 15mm in the air coupling.

***Attention:** Make sure that the tubes are clean and undamaged. Cut the tube right with an air pipe cutter, of the special tools*

Now fit the air-springs to the upper cross-beam. Make sure the air-connection is on the side of the marked hole. Lead the air-tube through the hole and protect it with, for example, conduit.

4x M6x12 Bolt
Torque: 10 Nm

☐ *Check*

Now press the special tie-wraps onto the threaded ends coming out of the upper cross-beam. These tie-wraps are designed especially for easy securing of air-tubes and wiring.

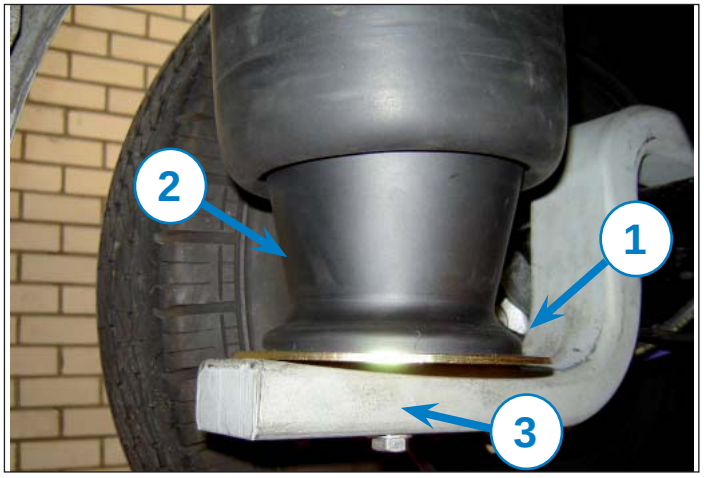
6x Tie-wrap special

Lay the bottom mounting plate (*1*) onto the main spring. Slide the piston (*2*) over the bottom og the air-spring and secure it all with a bolt (*3*) through the main spring into the air-spring.

2x M10 Washer
2x UNC 3/8 x 3" Bolt
Torque: 60 Nm

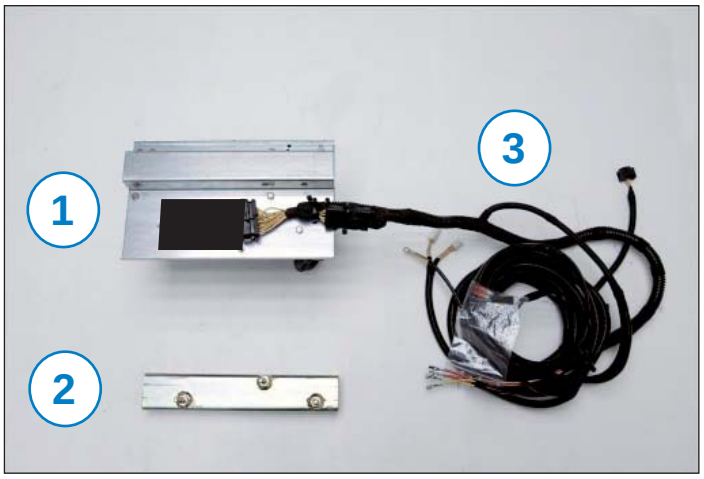
☐ *Check*

***** Do not tighten these bolts yet!***



2.7 Fitting the compressor

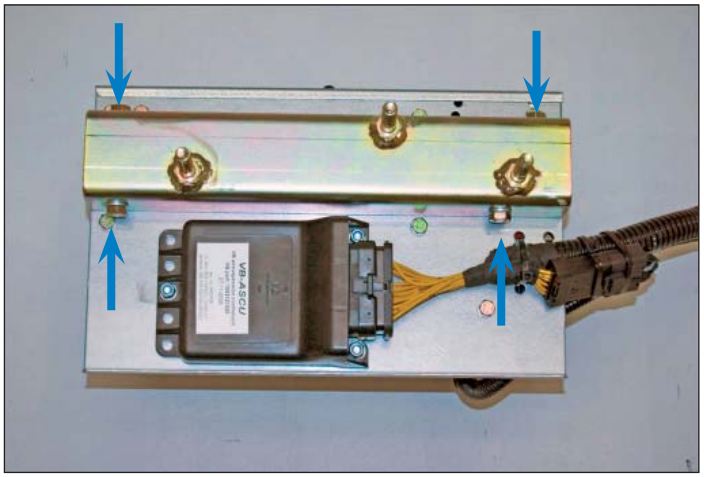
On the picture you can see the compressor (*1*), together with it's support (*2*). As you can see, the wiring harness (*3*) is already attached to the compressor at VB-Airsuspension.



Secure the compressor support to the compressor, using four bolts and washers.

4x M8x16 Bolt
4x M8 Washer
Torque: 20 Nm

☐ ***Check***

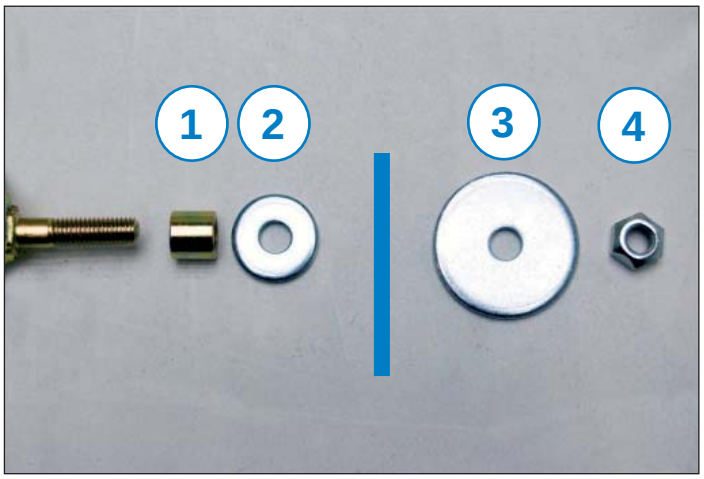


Secure the compressor assembly to the chassis. Use the following parts:
1) Filling bush
2) M10 Washer, 4mm thick
3) M10 Washer, ø50, 4mm thick
4) M10 Steel locking nut

Notice the order to fit the parts. See the exploded view in chapter 5 as well.
The blue line represents the plate of the vehicle where the assembly should be mounted.

Torque: 60 Nm

☐ ***Check***

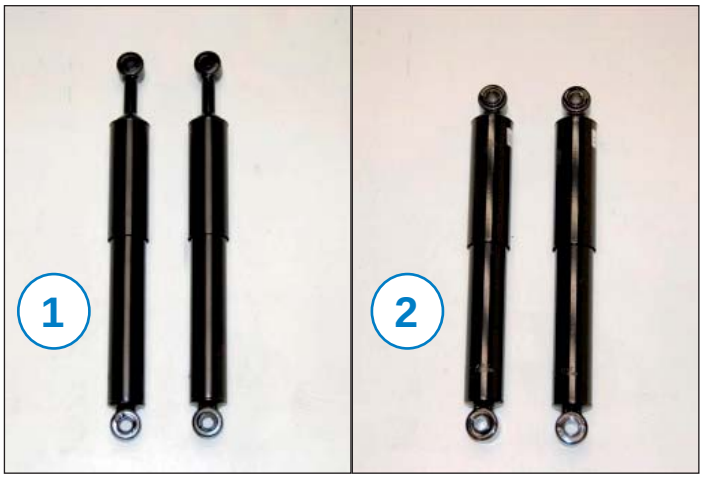


To the right one can see the compressor assembly as it is in it's correct position.

2.8 The shock absorbers

The next step is to fit the newly supplied shock absorbers. These shock absorbers can be seen on the picture to the right. There are two versions:

1) The base vehicle is ***rear wheel*** driven.
2) The base vehicle is ***front wheel*** driven.

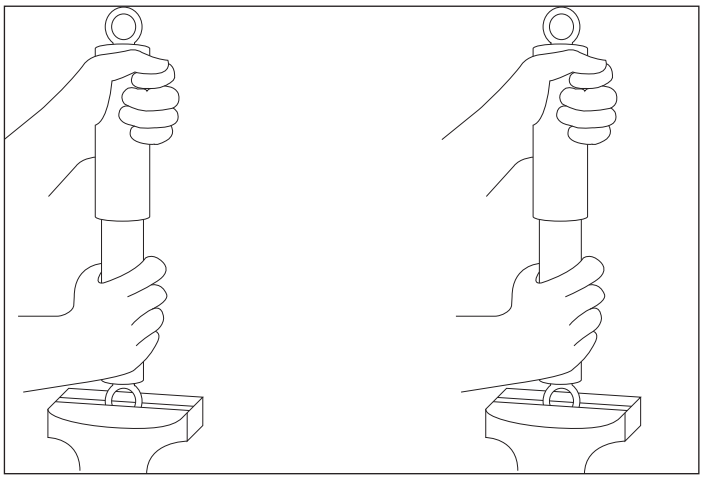


Attention: ***The wider side of the shock absorbers is considered the top side!***

Now press the filling bushes into the shock absorbers.

(*1*) Filling bush ø16 --> ø12
(*2*) Filling bush ø16 --> ø14

First, the air has to be released from the shock absorbers. To do this, fully press the top of the shock absorber down and then slowly pull it out again until you can't go any further. At the top of the stroke you may hear a slurping sound. This indicates that there's air in the shock absorber. Repeat this step until you cannot hear the sound any more, all the air will be released now. Please notice that this step may take from **2** up to **20** times!



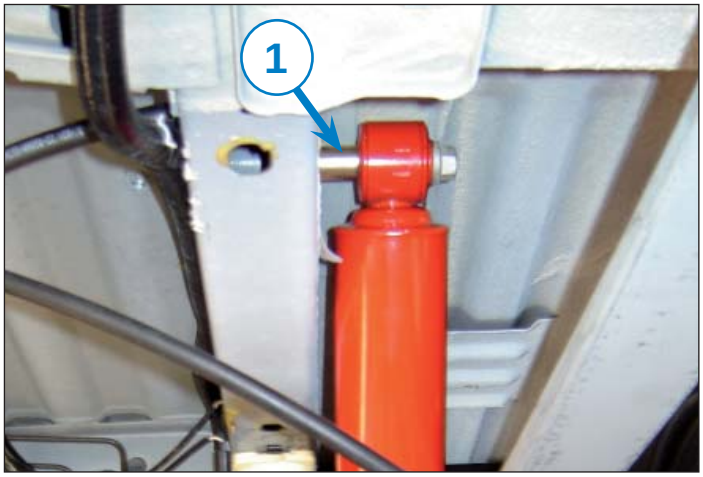
Attention: ***Keep the top side of the shock absorbers pointing up at all times!***

Use the original bolts to fit the shock absorbers. se a distance bush (*1*) in the top side of the shock absorbers, to prevent collision with the chassis.

Torque: 110 Nm

☐ ***Check***

*** Do not tighten these bolts yet!***



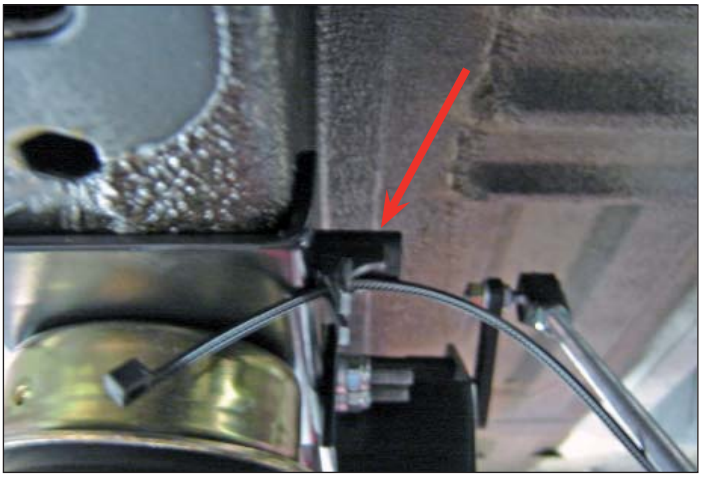
Attention: ***On the picture you can see the shock absorber for the FWD version. The way to fit is the same for the RWD version!***

2.9 Air-connections and heightsensor cables

Lead the heightsensor cables along the original wiring harness towards the rear of the vehicle. Secure the cables with tie-wraps.

Lay the heightsensor cables loosely over the upper cross beam and don't secure it yet. This will be done later, together with the air-tubes.

Now press one of the special tie-wraps over the threaded ends at both of the heightsensor brackets.



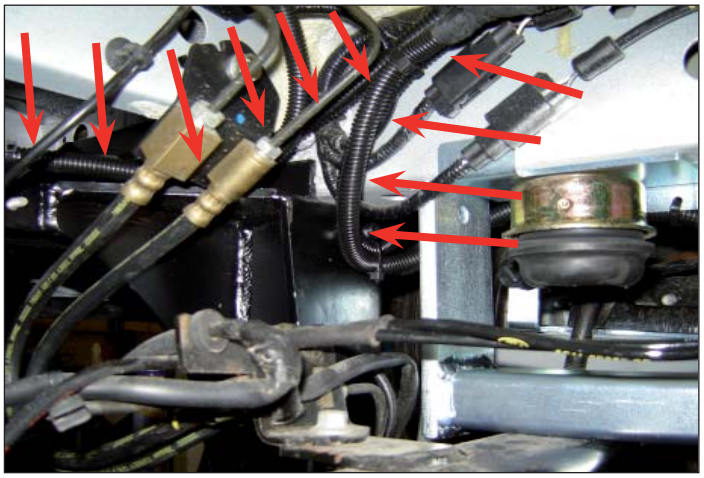
Connect the right hand heightsensor cable to the heightsensor and secure them properly with the special tie-wraps.

Protect the air-tubes with, for example, conduit. Lead the heightsensor cable, together with the air-tube, along the upper cross beam to the left hand side of the vehicle. Use the special tie-wraps to secure them.

Near the exhaust pipe the cables have to be lead ***over*** the upper cross beam, to prevent them from overheating.

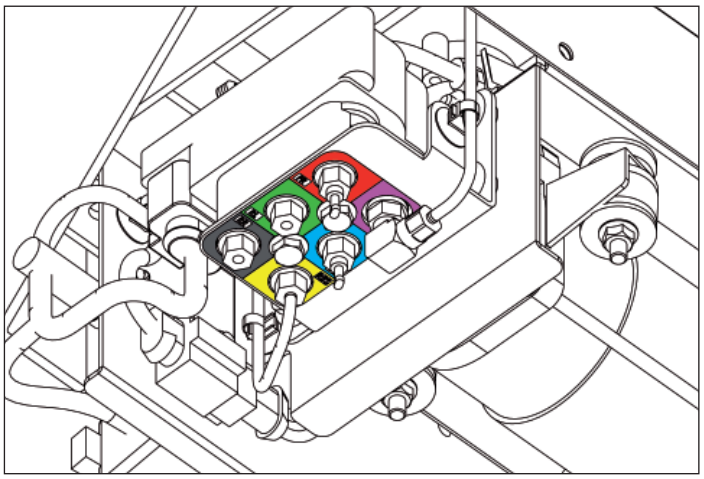
New connect the left hand heightsensor cable as well. Secure the Cables and the air-tubes to the original cables.

Attention: ***Never secure anything to the brake-lines!***



From here, lead the cables and tubes to the compressor, as can be seen on the first page of this paragraph.

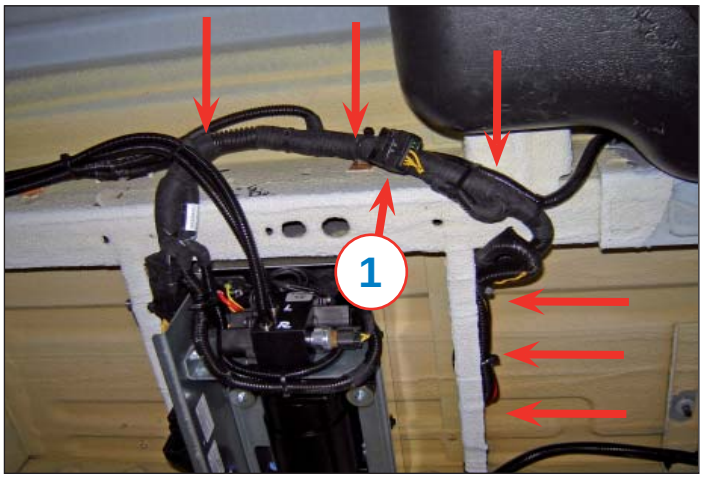
Finally, cut the air-tubes to the right length and connect them to the compressor. The ***right hand*** air-tube should be connected to the ***bottom*** (***R***) connection at the compressor. The ***left hand*** air-tube to the ***top*** (***R***) one.



Attention: ***Make sure the tubes are clean and cut straight! Use a special tool only for cutting the air-tubes!***

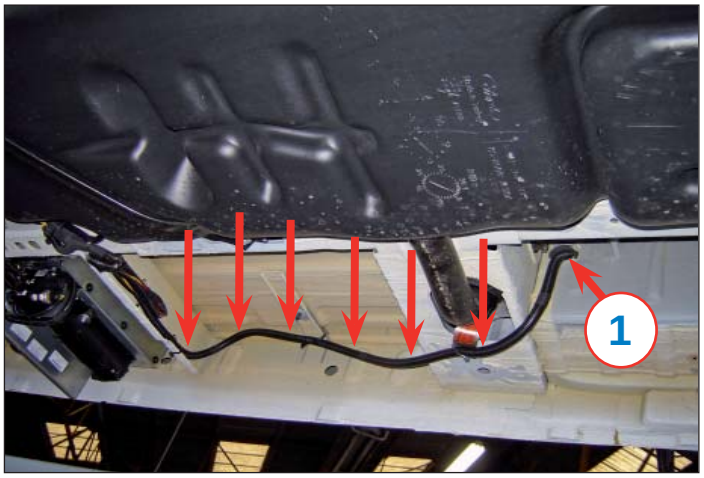
2.10 The wiring harness

Lead the front part of the wiring harness towards the outer side of the vehicle as on the picture. Secure the wiring harness with plenty of tie-wraps to the original wiring harness and holes in the chassis.



In case this hasn't been done yet a blind cap has to be put over the connector (*1*). This connector can be used for the optional extra switch.

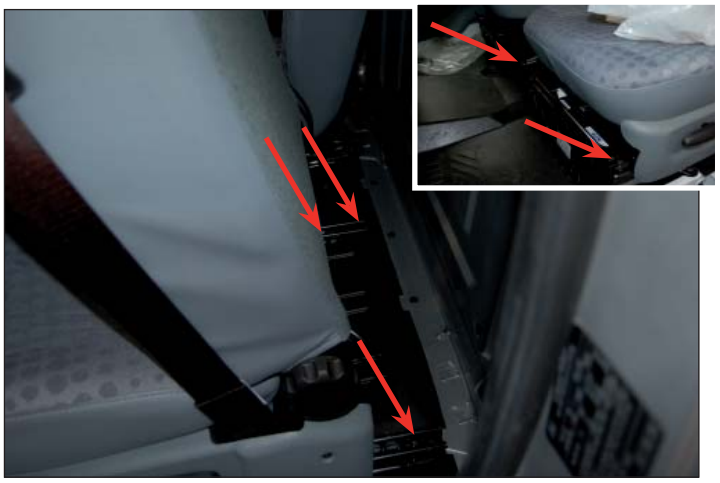
Now lead the wiring harness along the chassis towards the front of the vehicle. Again, use the original holes and cables to secure the wiring harness.



Lead the wiring harness into the cab at the marked hole (*1*) which can be found just past the filling opening of the fuel tank.

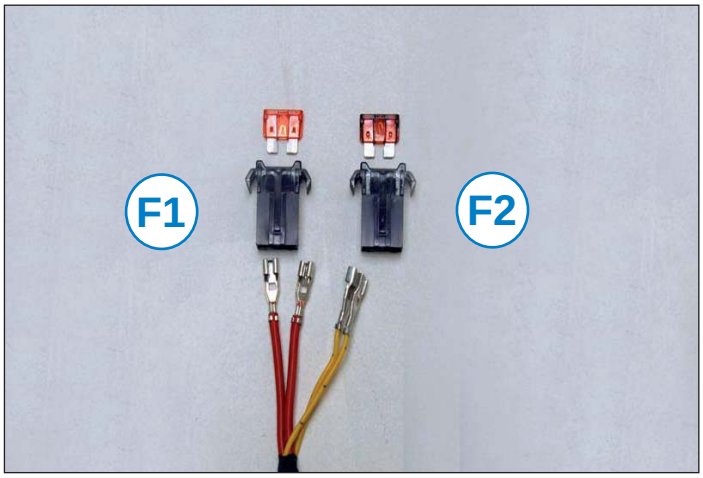
First remove the step-in. To do this, first loosen the two nuts on the underside of the vehicle (see inlay picture) and next loosen the three bolts on the inside of the cab as showed in the picture.

Now remove the driver seat. To do so, loosen the bolts as showed in the pictures.



Lead the wiring harness through the hole in the seat console.

Start by connecting the fuse holders to the cable-tree. Slide the terminals of the red wires into a fuse-holder and put a ***40 A*** fuse in it (***F1***). Now slide the terminals of the yellow wires into the other fuse-holder and put a ***7,5 A*** fuse in (***F2***).



Attention: ***In case an external air-supply is used instead a compressor F1 will also be 7,5A!***

Lead the thick red cable and brown cable to the battery and connect the red cable to the plus (+) and the brown cable to the grounding point (-)

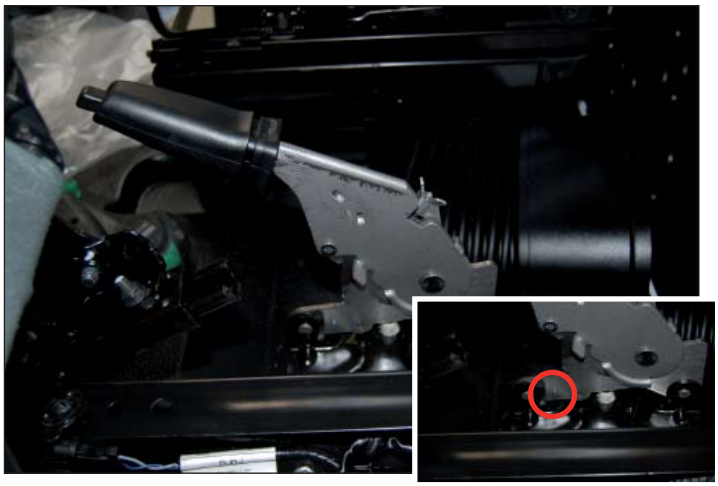
Put the fuse holder on a visible place and mark them with a label as showed on the inlay picture.

Lead the remaining cable with the two white plugs to the front-right side of the console.

Attention: ***Secure the cables properly, using plenty of tie-wraps.***

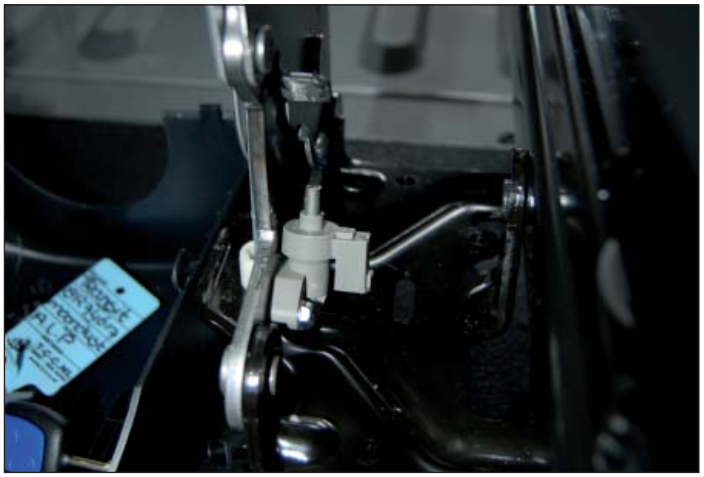
2.10.1 The brake signal

First remove the cover of the handbrake as showed on the picture.



When there is already a handbrake switch fitted, follow the next step. If not, skip the next step.

Disconnect the wire from the switch.



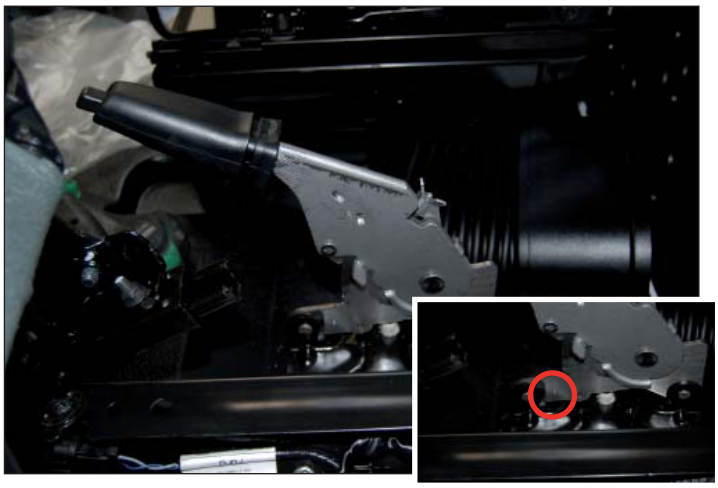
Connect the supply cable to the white connector of the VB-wiring harness. Lead the cable to the handbrake switch and connect the connectors to the switch and disconnected wire.

Re-fit the cover to the handbrake. Continue the manual at ***2.10.2***.

Attention: In case the vehicle is right hand driven, use a extension cable VB-art nr. 105220?

Attention: Secure the cables properly, using plenty of tie-wraps.

The marked hole on the inlay picture has to be enlarged to ø 4,5 mm.



Now fit the supplied switch.

1x M4 x 20 Bolt
2x M4 Washer
1x M4 Locking nut

Connect the supply cable to the white connector of the VB-wiring harness. Lead the cable to the handbrake switch and connect the connector to the switch. Leaf the remaining connector free.

Re-fit the cover to the handbrake

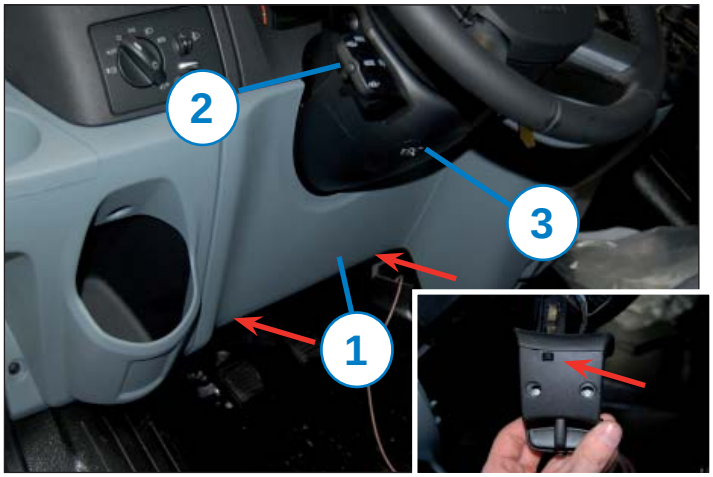
2.10.2 The ignition feed

Lead the pink wire through the hole in the seat console along the pink link underneath the floor mat to the centre console. Also lead the cable of the remote control in the same way underneath the floor mat following the blue line (only in case the recommended position of VB is applied).

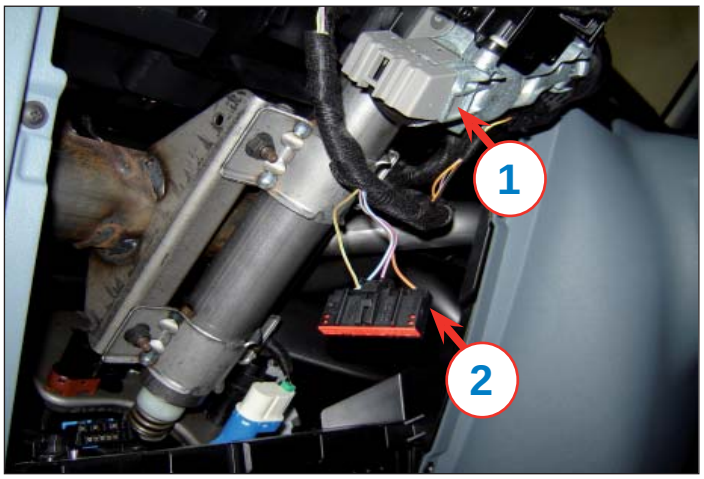
Remove the lids from the steering console. First pull lid ***1*** off on the marked place.

Next, remove the radio-control (***2***). See the inlay picture for the place of the clip which have to pushed while removing. Also disconnect the plug.

Now remove the lid ***3***. To do so, loosen the two screws on the underside. The steering axle is visible now.



Next, remove the marked connector (***2***) from the house (***1***). Lead the pink wire to this connector.



Attention: ***Secure the cables properly, using plenty of tie-wraps.***

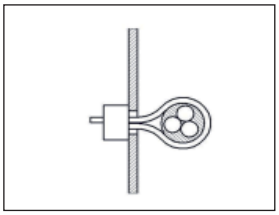
Connect the pink wire of the feed cable to the orange/green striped wire in the connector described before.

Use the supplied waterproof crimp and seal connector to connect the wires.

Find a good position for the remote-holder and lead the curled cable to it, underneath the upholstery. The position shown on the picture in the next step is recommended.

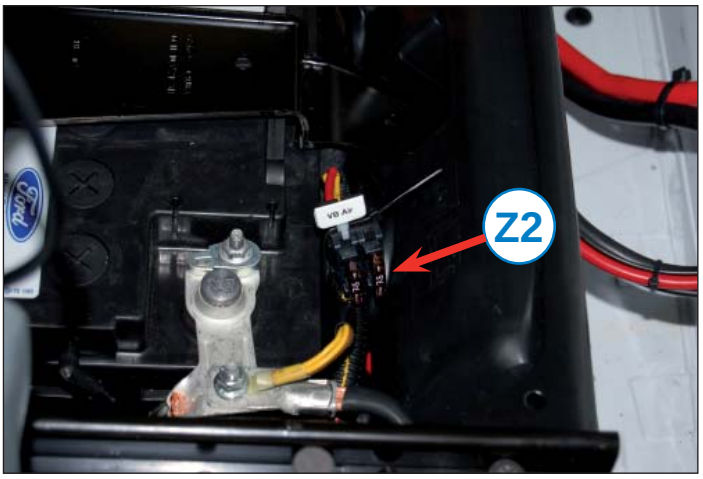
***Attention:** Make sure NEVER to get in the way of airbags!*

Hang the remote in the holder and secure the end of the cable with a tie-wrap to keep tension from pulling the cable out of the connector. The seat console is a good point for creating this strain relief. On the small picture underneath one can see an example.



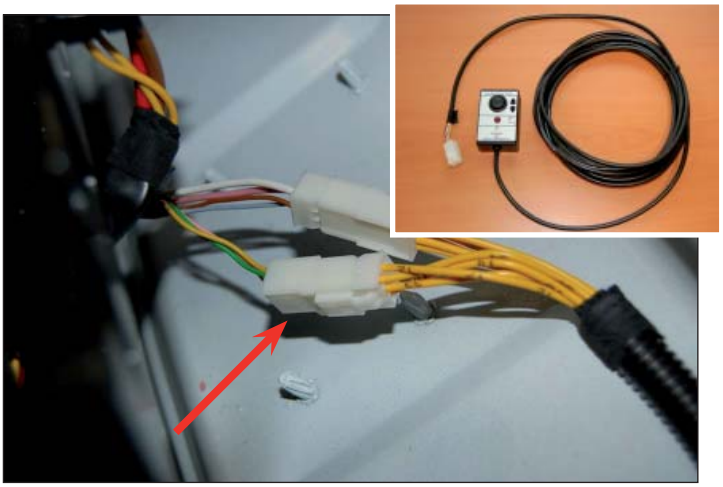
2.11 Calibrating

Make sure the air-suspension system functions properly. Turn-off the ignition and remove the fuse of the holder connected to the yellow cables (***Z2***).

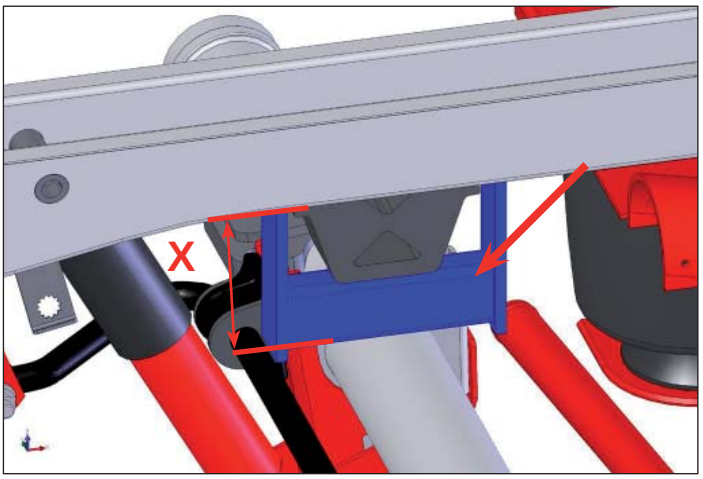


Disconnect the connector of the remote or control unit under the seat console. Connect the calibrating unit (see picture) to the connector and put the fuse back in place.

Use the calibrating device to raise or lower the vehicle enough to create space for the calibres.



Check whether the height (***X***) of the calibres is ***130 mm***. Put the calibres between the rear axle and chassis as can be seen on the picture to the right. Now remove ***all*** air from the springs



Wait at least ***one minute*** to allow the ASCU to automatically save the X value. During this one minute the LED will blink fast. Once the ASCU has stored this, the LED blink will become slow. Do not touch the raise/lower switch at the calibrating device during this time or the process will start over again!

Pump some air into the springs to loosen the calibres. Remove the calibres and then remove the fuse again.

Now disconnect the calibrating unit, re-connect the remote or control unit and re-fit the fuse.

Finally, align the rear axle as described on page ***12***. After this, secure all bolts which have been marked by ** and check the vehicle according to the checklist.

2.12 Completion

Fit the removed lids of the steering console back in place. Also put the step-in back in place. Use the original bolts and nuts to secure it.

Also fit the driver seat back in place. Use the original bolts to secure it.

Stick the supplied warranty sticker on the B-pillar on the passenger side as shown on the picture.

A

VB airsuspension	XX – XXXX ABE XXXXXX
AIR SUSPENSION KIT	
Part: XXXXXXXXXXXXXX	

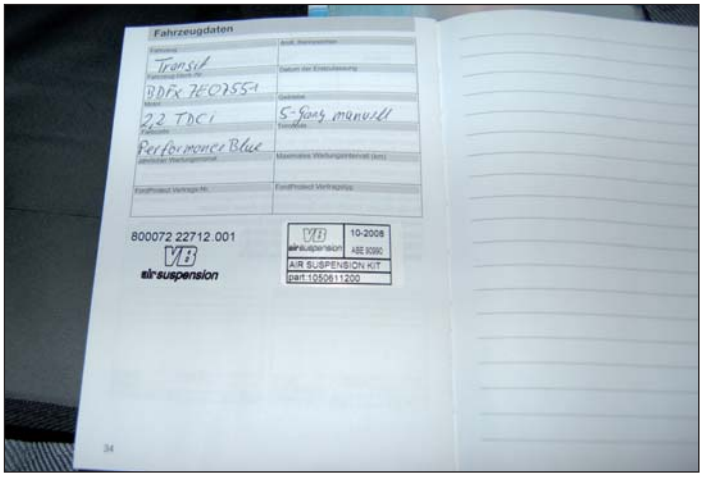
B

XXXXX XXXXX.XXX

VB airsuspension

Stick the other sticker with the kit number on the panhard support as showed on the inlay picture.

Also fill the fitting of the air-suspension in to the maintenance booklet. See picture for details.



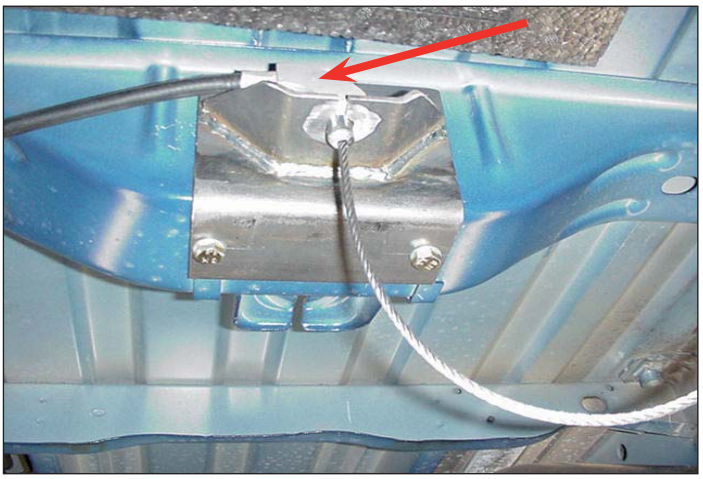
3 The spare wheel

In case the vehicle is a Front Wheel Drive (F.W.D.) and has 15" wheels, the spare wheel is prohibiting correct fitting of the air-suspension kit. Therefore it has to be moved.

Start by removing the spare wheel.

Offer up the new spare wheel bracket into the position shown in the photo. Mark the position of the holes and drill ***Ø 10.5 mm*** holes. Insert thread inserts and bolt on the bracket using M10 bolts.

Press the original hanging cable into the new support.



Finally, hang up the spare wheel again, using the new bracket.

Now spray all the bolts and nuts of the kit with a anti-corrosion substance as for example spray-wax.

Take the vehicle for a testdrive and check the vehicle according the checklist in this manual.

4 Checklist

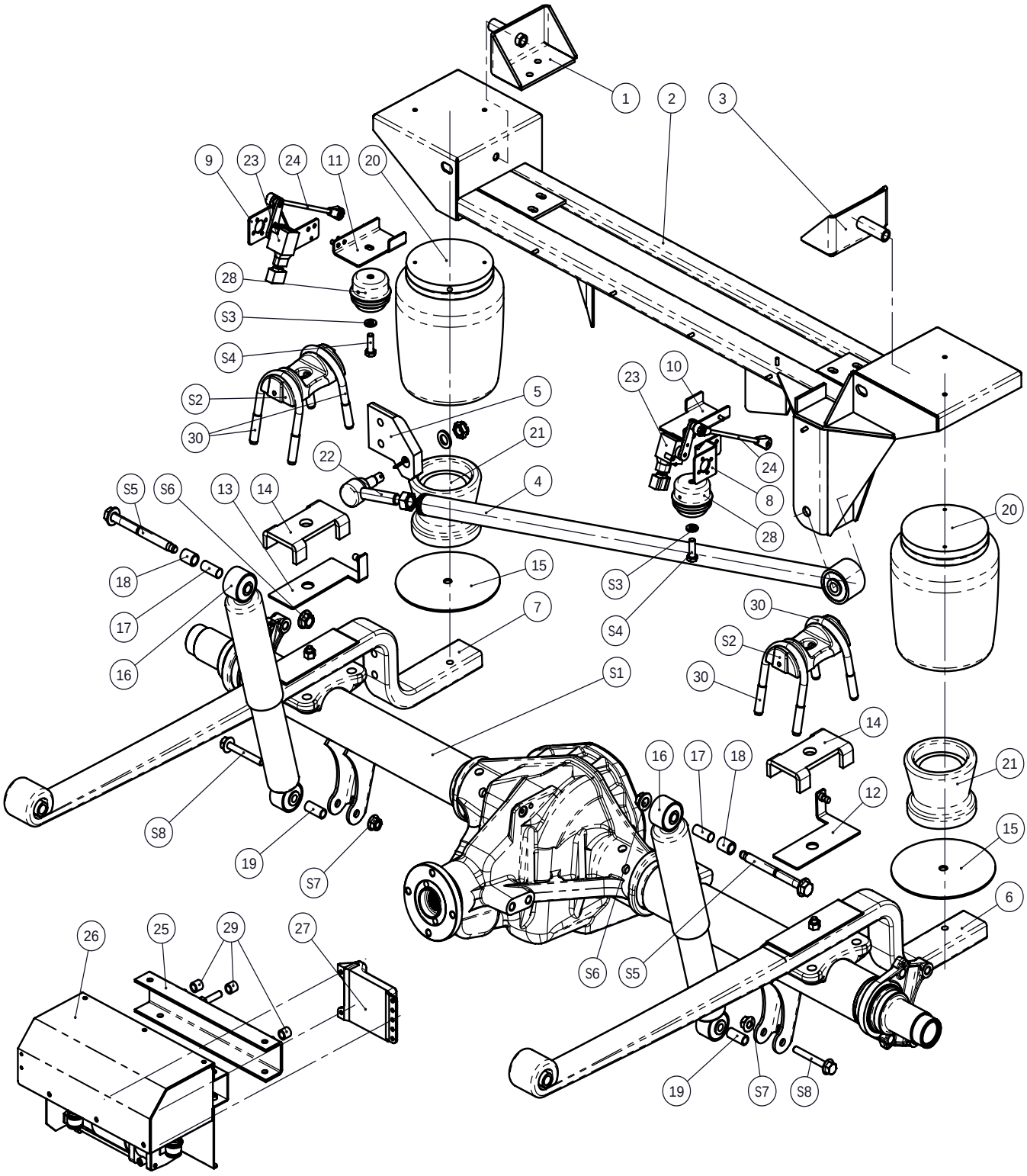
1. System finishing

		OK
1.1	Chassis height, near the rear axle, checked according to the X-value	☐
1.2	Rear axle aligned, 3 mm tolerance allowed	☐
1.3	Heightsensor correctly fitted	☐
1.4	Shock absorbers set-up and relieved of air	☐
1.5	Bolts tightened to the right torque and checked off in fitting instructions	☐
1.6	Tubes, cables and connectors correctly secured	☐
1.7	System checked for air-leaks	☐
1.8	Space around the air-springs checked	☐
1.9	Documentation present	☐
1.10	Warranty form filled out and identification sticker fitted	☐

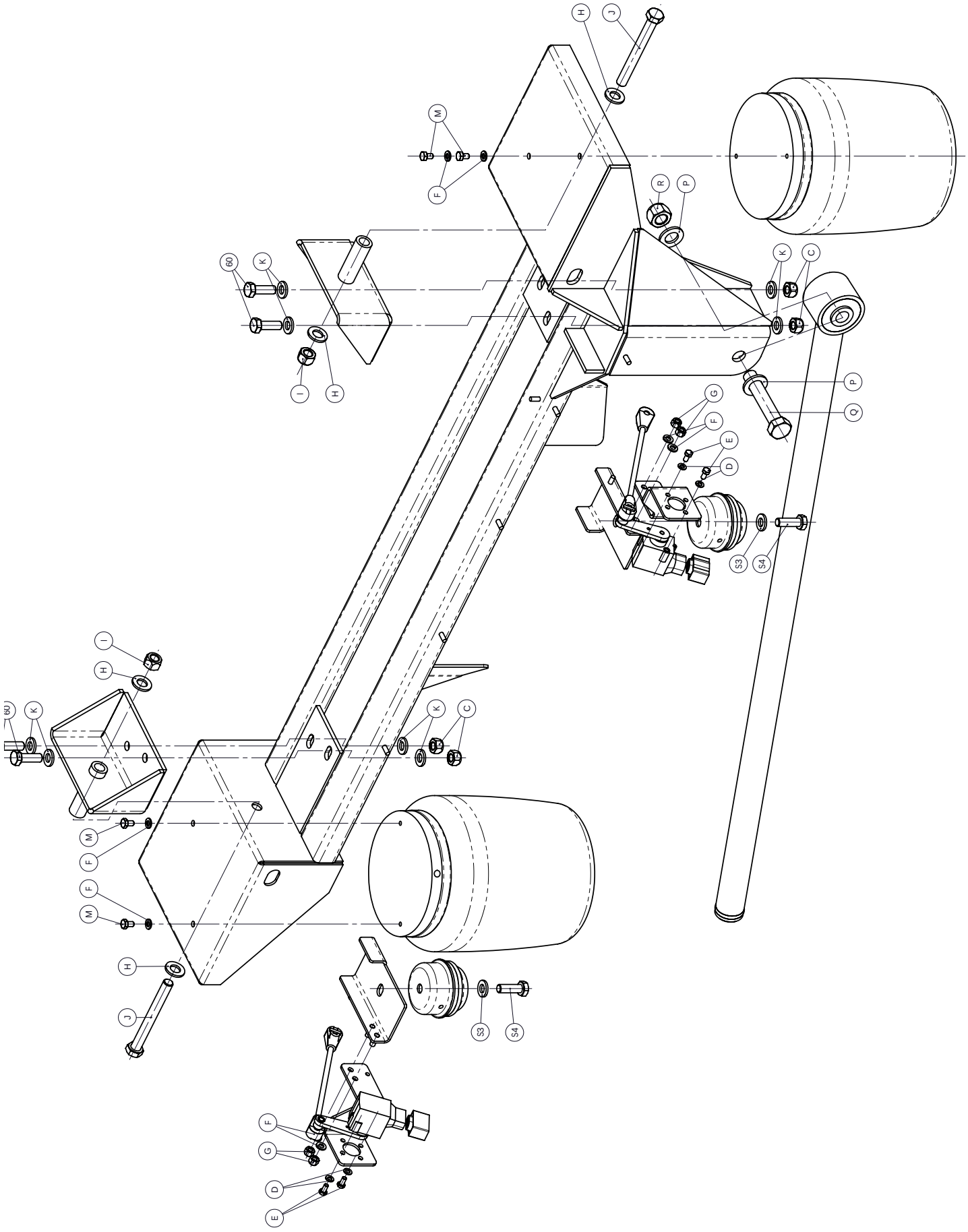
2. Functions of system

	OK
2.1 Manual raising	☐
2.2 Automatic lowering	☐
2.3 Manual lowering	☐
2.4 Automatic raising	☐
2.5 Testdrive approved	☐

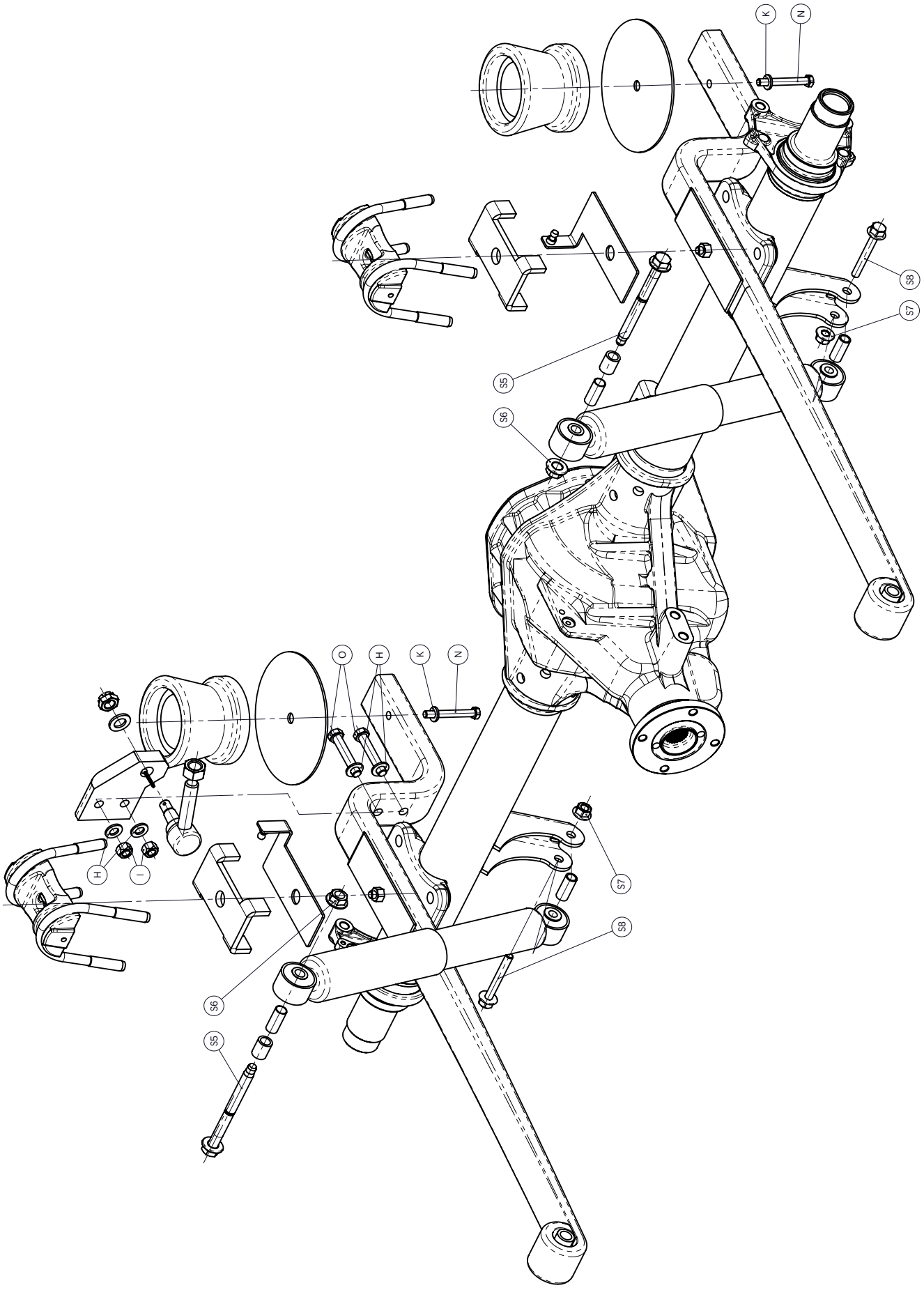
5 Exploded view



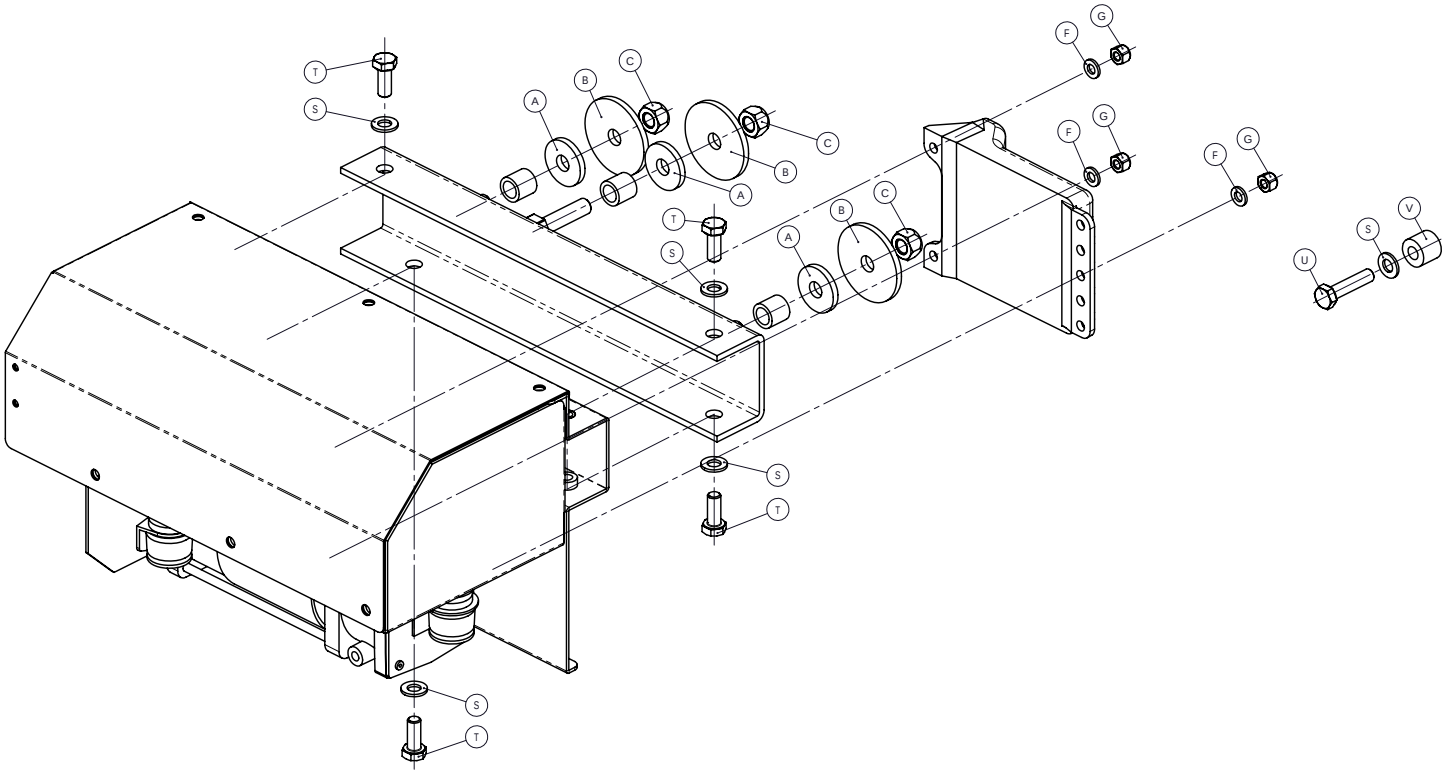
Item	Qty	Description	Order nr.
1	1	UPPER CROSS BEAM SUPPORT, RIGHT	1052040054
2	1	UPPER CROSS BEAM	1052040052
3	1	UPPER CROSS BEAM SUPPORT, LEFT	1052040053
4	1	PANHARDROD	1052060055
5	1	PANHARDROD SUPPORT, MAIN SPRING	1052060056
6	1	MAIN SPRING, LEFT	1052011714
7	1	MAIN SPRING, RIGHT	1052011719
8	1	HEIGHTSENSOR SUPPORT, LEFT	1052090095
9	1	HEIGHTSENSOR SUPPORT, RIGHT	1052090096
10	1	BRACKET HEIGHT SENSOR SUPPORT, L	1052090059
11	1	BRACKET HEIGHT SENSOR SUPPORT, R	1052090058
12	1	BALL-JOINT SUPPORT, LEFT	1052090097
13	1	BALL-JOINT SUPPORT, RIGHT	1052090098
14	2	CLAMPING PLATE MAIN SPRING	1052021250
15	2	BOTTOM MOUNTING PLATE	1052030119
16	2	SHOCK ABSORBER (Rear wheel drive)	1052101080
		SHOCK ABSORBER (Front wheel drive)	1052104050
17	2	TOP FILLING BUSH SHOCK ABSORBER	0014200001
18	2	DISTANCE BUSH SHOCK ABSORBER	1000137
19	2	BOTTOM FILLING BUSH SHOCK ABSORBER	0014200000
20	2	AIR-SPRING	1052032500
21	2	PISTON	1052030125
22	1	PANHARDROD BALL-JOINT	1052061416
23	2	HEIGHTSENSOR	1052091030
24	2	HEIGHTSENSOR ROD	1052095004
25	1	COMPRESSOR SUPPORT	1052131043
26	1	COMPRESSOR	1052130098
27	1	VB-ASCU	
28	2	BUMPSTOP	1052151270
29	3	DISTANCE BUSH	1052131044
30	4	U-BOLT	1052022547


H
J
M
F
R
P
60
K
C
I
H
P
Q
G
F
E
D
S3
S4
I
H
60
K
K
C
M
F
F
M
H
J
S3
S4
F
G
D
E

Item	Qty	Description	Order nr.
C	7	LOCKING NUT M10	0011010001CA
D	4	WASHER M5	0011205000A
E	4	BOLT M5x10	0010105010AA
F	11	WASHER M6	0011206000A
G	7	LOCKING NUT M6	0011006000AA
H	8	WASHER M12	0011212000A
I	4	LOCKING NUT M12	0011012001CA
J	2	BOLT M12x110	0010112110CA
K	10	WASHER M10	0011210000A
L	4	BOLT M10x30	0010110030CA
M	4	BOLT M6x12	0010106012AA
P	2	WASHER M16	0011216000A
Q	1	BOLT M16x90	0010116090CA
R	1	LOCKING NUT M16	0011016001CA


K
N
S8
S7
S5
S6
O
H
K
N
H
I
S7
S8
S6
S5

Item	Qty	Description	Order nr.
H	8	WASHER M12	0011212000A
I	4	LOCKING NUT M12	0011012001CA
K	10	WASHER M10	0011210000A
N	2	BOLT UNC 3/8"x3"	0010238300A
O	2	BOLT M12x70	0010112070CA



Item	Qty	Description	Order nr.
A	3	WASHER M10 ø30x4	0011210001AA
B	3	WASHER M10 ø50x4	0011310050A
C	7	LOCKING NUT M10	0011010001CA
F	11	WASHER M6	0011206000A
G	7	LOCKING NUT M6	0011006000AA
S	5	WASHER M8	0011208000A
T	4	BOLT M8x20	0010108020AA
U	1	BOLT M8x35	0010108035AB
V	1	DISTANCE BUSH	0014300006

6 Torque recommendations

6.1 Specific torque values

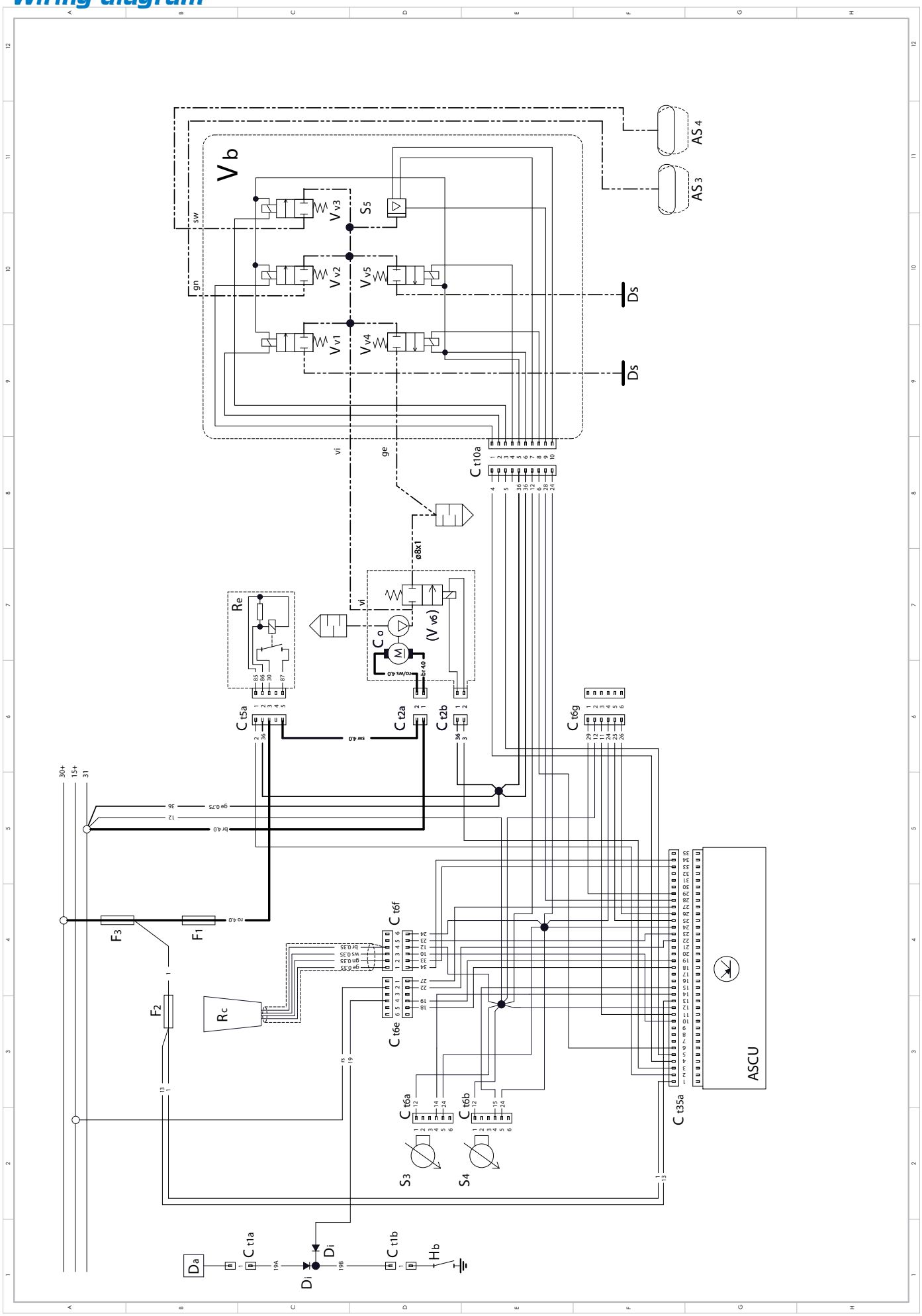
Position	Torque
Leaf-spring bracket, frontVeerhand voor	180 Nm
Leaf spring U-bolt	180 Nm
Shock absorber connection, upperside	110 Nm
Shock absorber connection, bottumside	110 Nm
Air-spring connection, upperside M6	6 Nm
Air-spring connection, bottumside UNC 3/8"	20 Nm
Air-coupling in air-spring 1/8"	6 Nm
Panhard rod ball-joint, castelled nut	75-85 Nm
Thread end M6	6 Nm

6.2 Standard torque values

Bolt type	Pitch	Grade 8.8	Grade 10.9
M3	0.50 mm	1 Nm	1.5 Nm
M4	0.70 mm	4 Nm	6 Nm
M5	0.80 mm	6 Nm	8.5 Nm
M6	1.00 mm	8.5 Nm	12.5 Nm
M7	1.00 mm	14 Nm	20.5 Nm
M8	1.00 mm	22 Nm	32 Nm
M8	1.25 mm	20.5 Nm	30 Nm
M10	1.00 mm	45 Nm	67 Nm
M10	1.25 mm	43 Nm	64 Nm
M10	1.50 mm	41 Nm	60 Nm
M12	1.25 mm	77 Nm	112 Nm
M12	1.50 mm	74 Nm	108 Nm
M12	1.75 mm	71 Nm	104 Nm
M14	1.50 mm	121 Nm	175 Nm
M14	2.00 mm	113 Nm	165 Nm
M16	1.50 mm	180 Nm	270 Nm
M16	2.00 mm	170 Nm	250 Nm
M18	1.50 mm	270 Nm	390 Nm
M18	2.50 mm	245 Nm	350 Nm

ATTENTION: Torque values represented here are intend to be for general information. The tolerance on the values is +/- 10%.

7 Wiring diagram



Name	Description
ASCU	VB-ASCU (control unit)
AS3	Air-spring, left
AS4	Air-spring, right
Ct1a	Connector, 1-pole, to dashboard
Ct1b	Connector, 1-pole, to handbrake
Ct2a	Connector, 2-pole, compressor box
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
Ct6e	Connector, 6-pole, VB-supplycable
Ct6f	Connector, 6-pole, remote control
Ct6g	Connector, 6-pole, option connector
Ct10a	Connector, 6-pole, valve block connection
Ct35a	Connector, 35-pole, VB-ASCU control unit
Co	Compressor box
Da	Dashboard
Di	Diode
Ds	Blind cap
F1	Fuse compressor, 40A
F2	Fuse control unit, 7,5A
F3	Fuse BF1 on the battery 80A
Hb	Handbrake
Re	Compressor box relay
Rc	Remote control
S1	Height sensor, left
S2	Height sensor, right
S5	Pressure sensor on valve block
Vb2	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

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