

EN

FITTING INSTRUCTIONS

making everyday smoother



USE THIS INSTALLATION MANUAL ON A VEHICLE WITH COMPOSITE LEAF SPRINGS



FIAT DUCATO X250/X290 with composite leaf springs

***VB-SemiAir - Basic kit & Comfort kit
Rear axle***

Modified fitting instruction for modification kit 1552350048 in combination with 1550307100



REVISION TABLE










| | | | |
|----------------------------|--|--|--------------------|
| Document number | 0101550303 | | |
| New revision: | V2.4 | | Old revision: V2.3 |
| Release date (yyyy-mm-dd): | 2023-12-01 | | |
| Page (new): | Changes: | | |
| 7 | Added: extra information for composite leaf spring | | |
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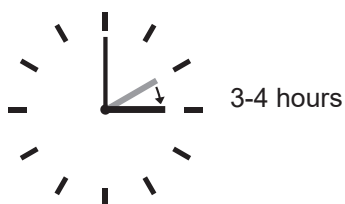
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1. VEHICLE




| Make | Trade name | Year |
|----------------------|------------|-----------------------------------|
| Fiat Ducato | X250/X290 | >2006 A,C / >2021 B |
| Peugeot Boxer | X250/X290 | >2006 A,C |
| Citroën Jumper | X250/X290 | >2006 A,C |
| Opel/Vauxhall Movano | X250/X290 | >2006 A,C |

| A Motorhome comfort kit | | B Motorhome comfort kit with electric handbrake | C LCV comfort kit | |
|---|--|---|---|---|
|  |  |   |  |  |
|  |  | |  | |

2. FITTING TIME

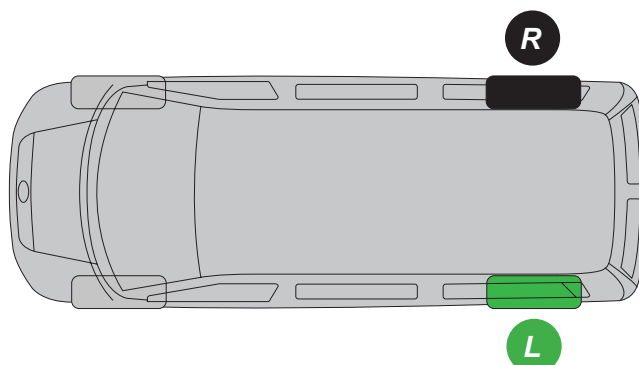


3. SYMBOLS

| Tighten | Tighten with torque | Note |
|---|--|---|
|  |  X Nm |  |

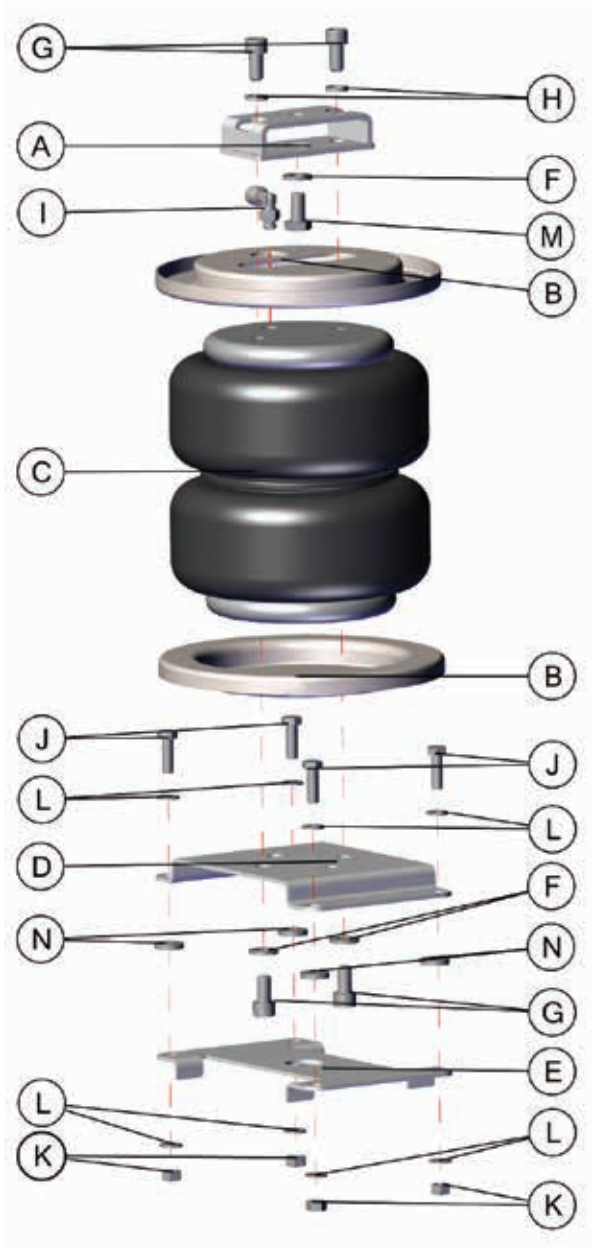
4. COLOUR MARKINGS

| Colour | Description |
|--------|-------------|
| Green | Rear left |
| Black | Rear right |

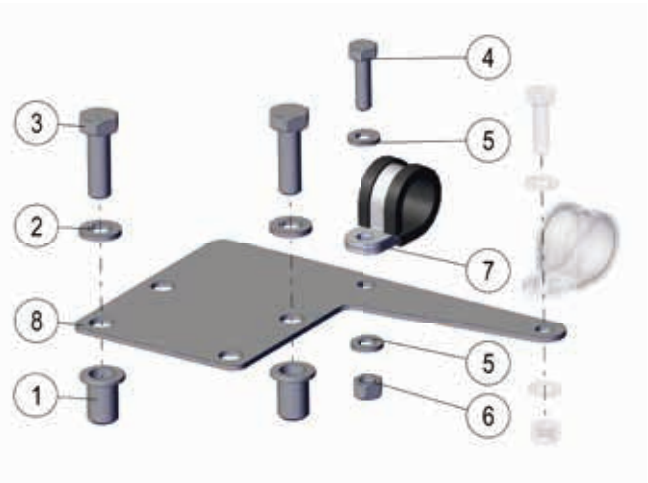


5. PARTS

| Item | Quantity | Description | Item number |
|------|----------|---------------------------------------|--------------|
| A | 2 | Upper bellows support | 1552040019 |
| B | 4 | Spring plate | 1505370224 |
| C | 2 | Air spring | 1505370208 |
| D | 2 | Lower bellows support | 1552050019 |
| E | 2 | Mounting support | 1552050020A |
| F | 6 | Disc spring M10xØ22 | 0012010000 |
| G | 8 | Allen screw M10x20 | 0010310020AA |
| H | 4 | Disc spring M10xØ16 | 0012010016 |
| I | 2 | Air coupling Ø6 x G1/4" perpendicular | 0020906021 |
| J | 4 | Bolt M8x25 | 0010108025AA |
| K | 8 | Lock nut M8 | 0011008001AA |
| L | 16 | Washer M8x1.6 | 0011208000AA |
| M | 2 | Bolt M10x20 | 0010110020BA |
| N | 8 | Washer M8x4 | 0011208001A |



| Item | Quantity | Description | Item number |
|------|----------|--------------------|--------------|
| 1 | 4 | Blind rivet nut M8 | 12908004 |
| 2 | 4 | Spring washer M8 | 0011408000A |
| 3 | 4 | Bolt M8x25 | 0010108025CA |
| 4 | 2 | Bolt M6x16 | 0010106016AA |
| 5 | 4 | Washer M6 | 0011206000AA |
| 6 | 2 | Lock nut M6 | 0011006001AA |
| 7 | 2 | Pipe clamp Ø20 | 0014100006 |
| 8 | 2 | Bracket | 1552350045 |



6. FITTING INSTRUCTIONS

This manual has been put together with great care and describes the steps for installing the air suspension indicated on the front page. However, the content of this manual is a snapshot view of the situation as at the time it was written.

Your vehicle may differ from the vehicles shown in the photographs. In some cases, it may not be possible to fit specific parts in the position indicated. In this case, you are advised to identify an alternative position for the parts yourself. The parts must remain dry at all times. Install the compressor in the vehicle at all times.

In an alternative position, the compressor and the control panel parts must remain within the dimensions of the interior (the parts must remain dry at all times).

VB-Airsuspension reserves the right to introduce technical changes at any time without warning.

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

- Use vehicle workshop manuals where necessary.
- Always follow the vehicle manufacturer's conversion instructions, unless expressly stated otherwise in this manual.
- Keep workplace clean and tidy.
- Consult with the customer as to where they want the inflation valves fitted.
- Always tighten nuts and bolts to the specified torque.
- If alterations are made to the original anti-corrosion system, this must be remedied immediately. Use spray wax or a protective coating for this purpose.
- Always refit removed tubes and wires in the same way that they were originally fitted.
- Secure pipes and wires with a sufficient number of tie-wraps.
Ensure that the wires cannot be placed under tension.
- The supply cable must be at least 100 mm away from the ABS/ESP block, the sensors and other control equipment.
- Wires must not be routed above or across the battery.
- Ensure that there are no tight bends in air-tubes and that they cannot be kinked or chafe against other parts.
- Never attach air-tubes, wires or other parts to the vehicle's brake lines.
- Fit the air tubes in accordance with the colour code system used by VB-Airsuspension.
- Do not leave any tools, cleaning cloths or other materials behind after completing work.
- Check the system for air tightness after fitting.
- Check that the air springs always have at least a 1 cm all-round clearance at maximum pressure ($p_{max} = 3.5 \text{ bar}$).
- Take the vehicle for a test drive after fitting.

7. KIT INSTALLATION

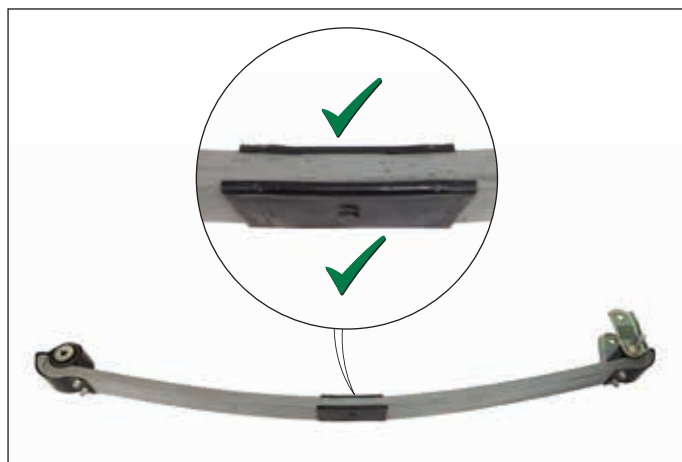


The photos in this installation manual usually show a metal leaf spring. However, this is a vehicle with composite leaf springs.

1. Support the vehicle and the axle properly.
2. Remove the bump stops.
3. Slide the handbrake cable clips back.
4. Remove the U-bolts.



The black plastic parts may NOT be removed from the composite leaf spring.



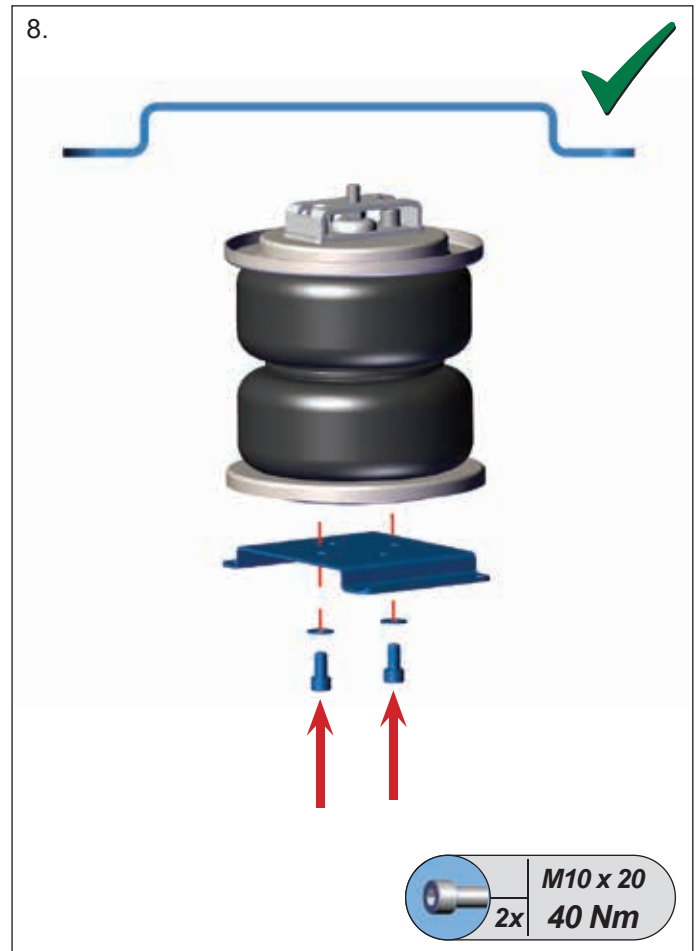
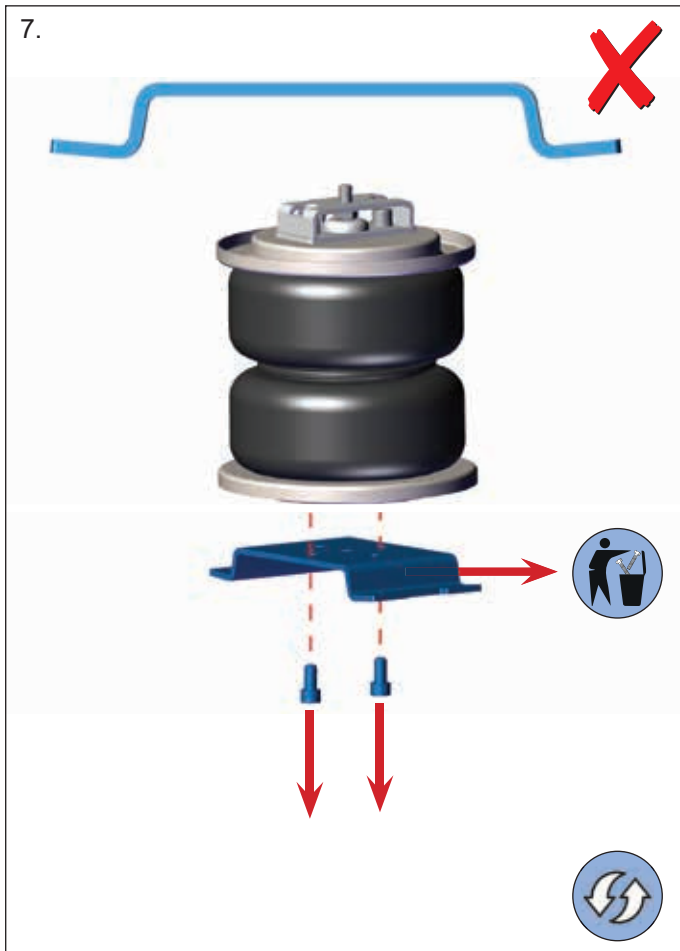
5. Place the mounting plate under the U-bolt plate. The projections must point downwards.
6. Fit the U-bolts with the original leaf-spring U-bolt nuts.



8 x original fasteners



130 Nm



9. Strike the wedge under the tap bolt so that the tap bolt is wedged between the spring plate and the wedge.
10. Fit the air tubes to the air springs.
11. Connect the green air tube to the left air spring.
12. Connect the black air tube to the right air spring.




Wrap the hose around the air spring. If necessary, secure the hose in place with some adhesive tape.

13. Screw the air spring onto the chassis in the place where the bump stop previously sat.
14. When the air spring has been tightened as far as possible, remove the wedge.

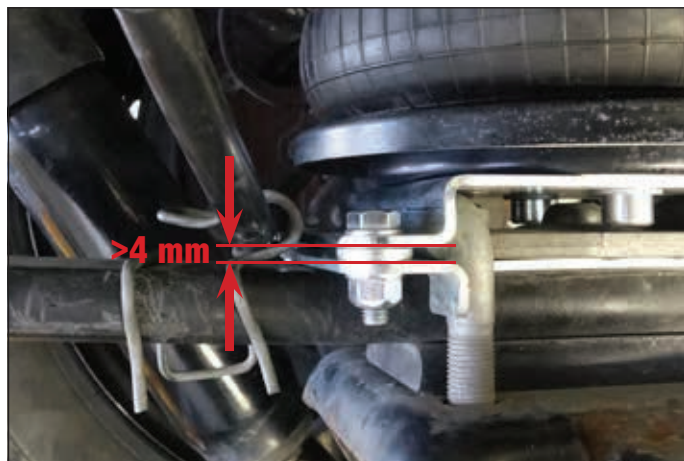


15. Cut off the tie-wraps so that the air spring takes up its position.
16. If there is more than 4 mm clearance between the mounting plate and the lower spring plate, fit the supplied thick washers between these plates.
17. Fit the lower spring plate to the mounting plate.

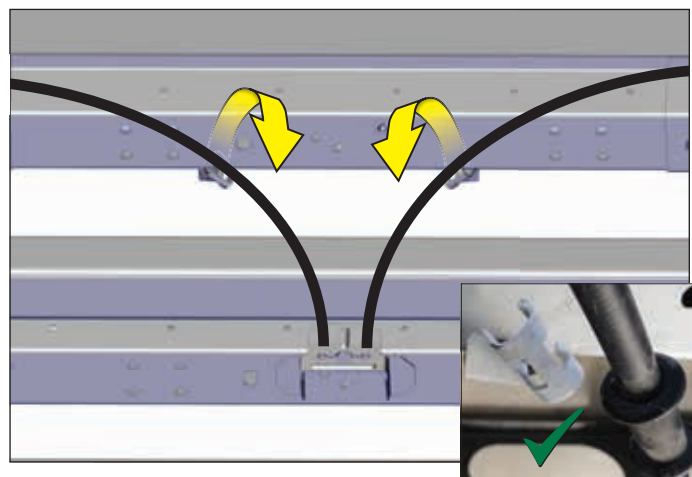
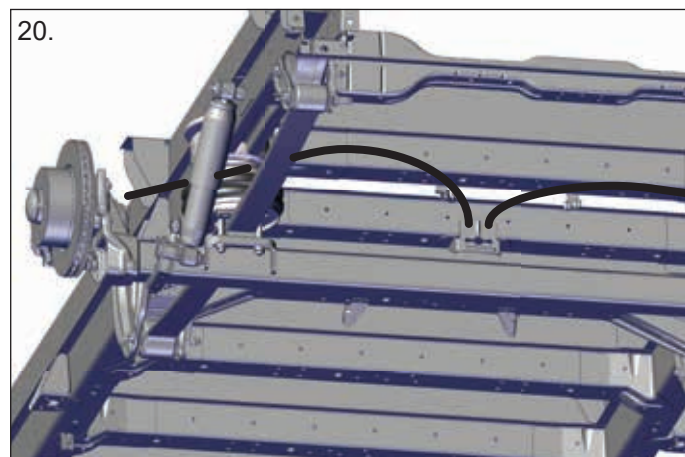
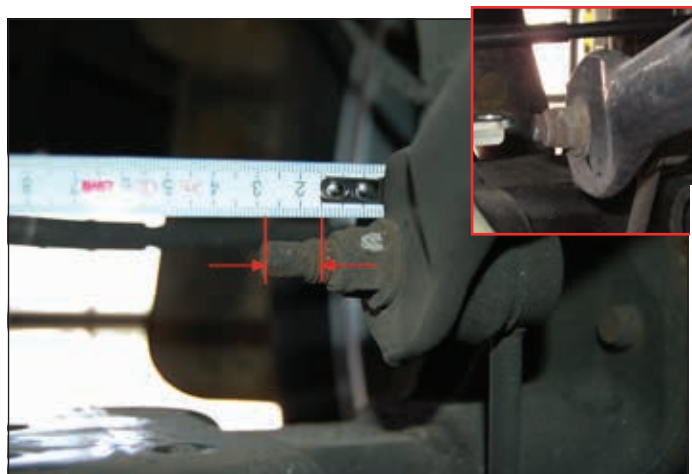
| | |
|---------------------|-----------------|
| 8 x bolt | M8 x 25 |
| 8 x lock nut | M8 |
| 8 x washer | M8 x 4 |
| 16 x washer | M8 x 1.6 |

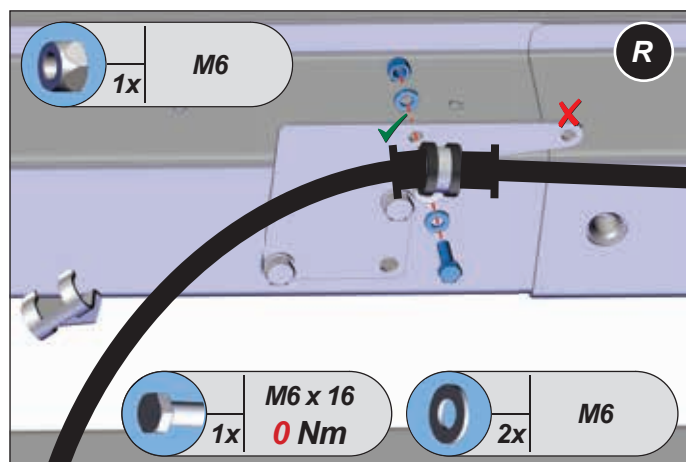
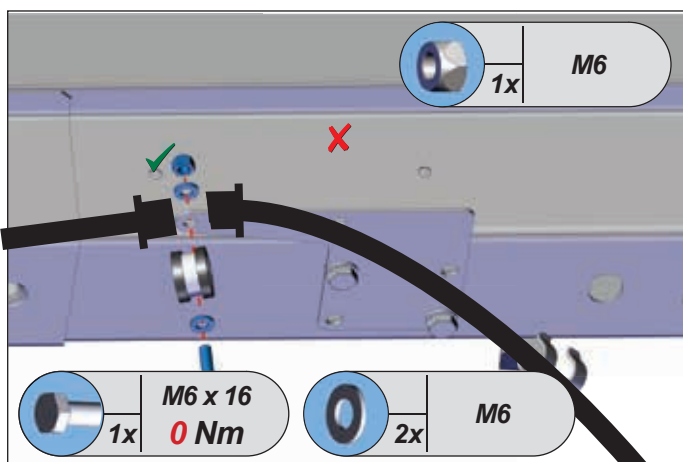
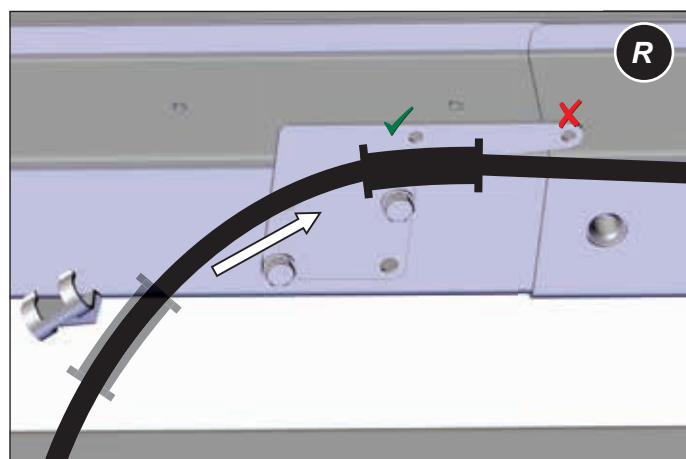
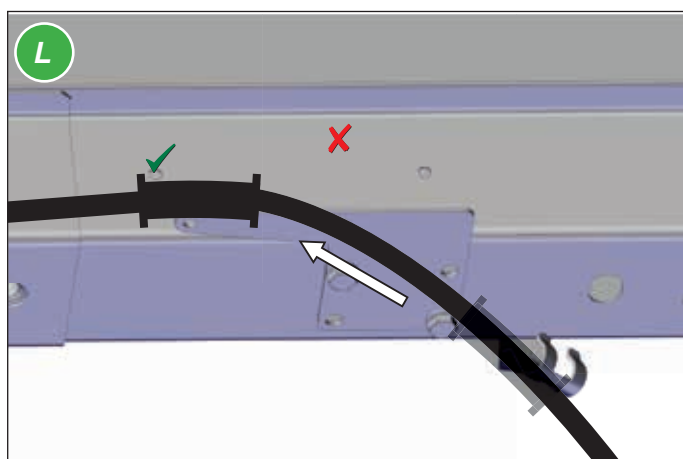
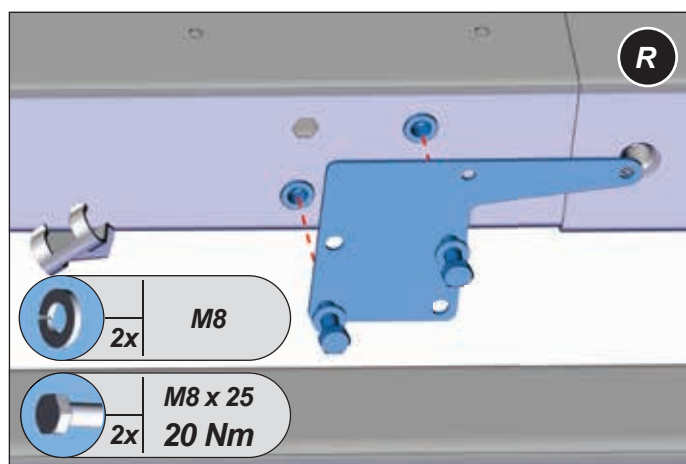
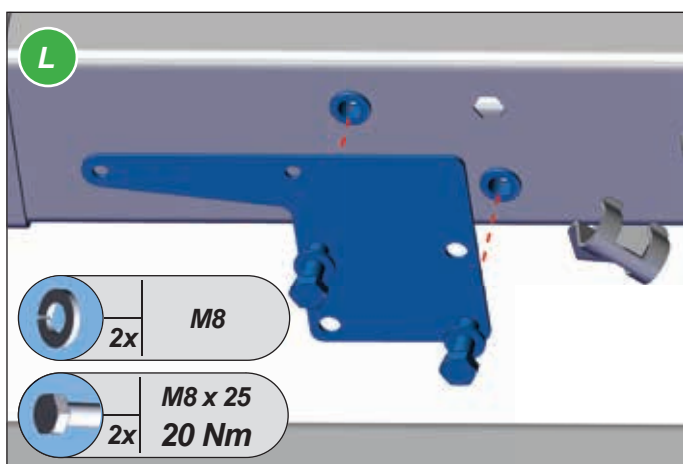


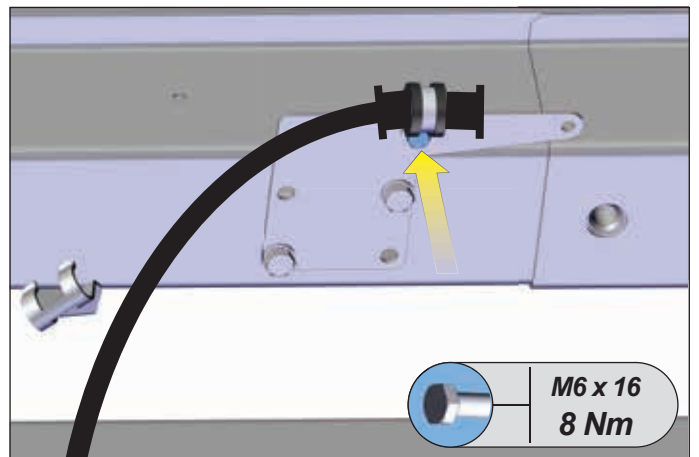
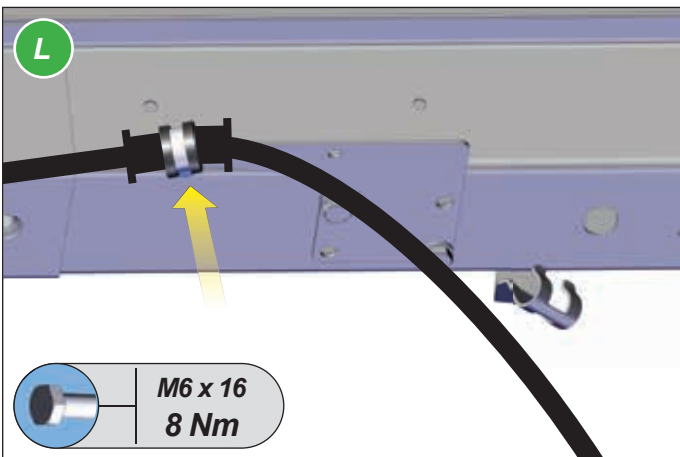
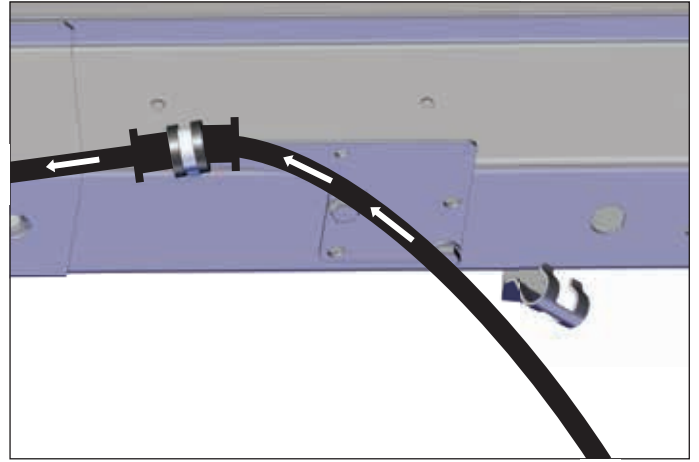
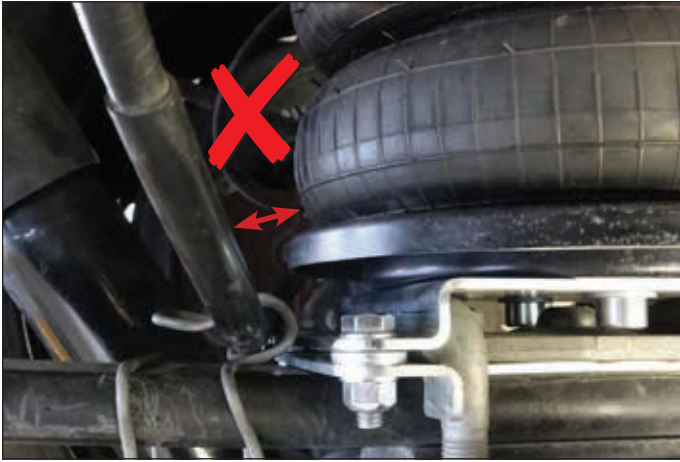
21 Nm



18. Tighten the bolt at the top of the air spring.
19. If the vehicle has a stabiliser arm, cut off a section (± 1.5 cm) of the bolt used to secure the torque arm.







21. Fit the inflation valves in the position agreed with the customer.
22. Route the air tubes to the inflation valves.
23. Connect the air tubes to the air springs.
24. Secure the air tubes under the vehicle using tie-wraps.
25. Check the system for air tightness.
26. Affix the bellows pressure sticker close to the inflation valves.



If you are also fitting the comfort kit, follow the fitting instructions in the next section.



8. FITTING THE COMPRESSOR



Install the compressor in the vehicle at all times.

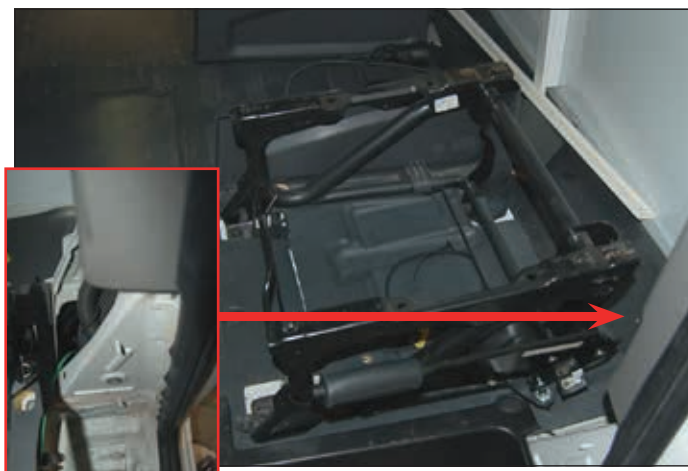


If a comfort kit is fitted, the inflation valves from the basic kit are not needed. In this case, the inflation valves must NOT be fitted.

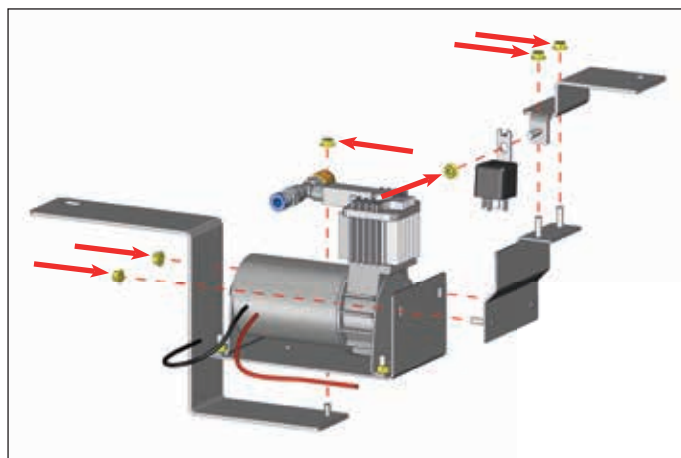
1. Route the green and black air tubes to the fuel tank filling neck.
2. Take the seat cover off the driver's seat (if fitted).
3. Remove the driver's seat.
4. Remove the entry trim.
5. Remove the cover of the B-pillar.



An alternative route to the inside of the cab for the air tubes is via the battery housing. For this purpose, drill a hole in the battery housing.



6. Route the air tubes to the inside of the cab.
7. Assemble the compressor as shown.



4 x flange nut

M5



5 Nm

8. Fit the compressor.

2 x bolt

M8 x 16

2 x lock nut

M8

2 x washer

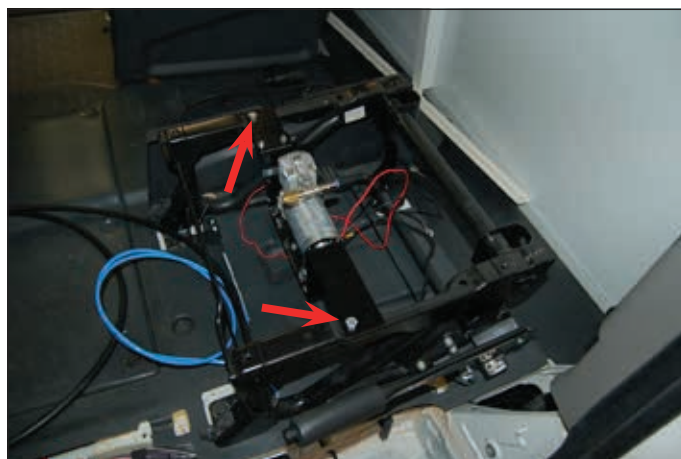
M8



21 Nm



Do not fit a lock washer between the bolt head and the seat frame.

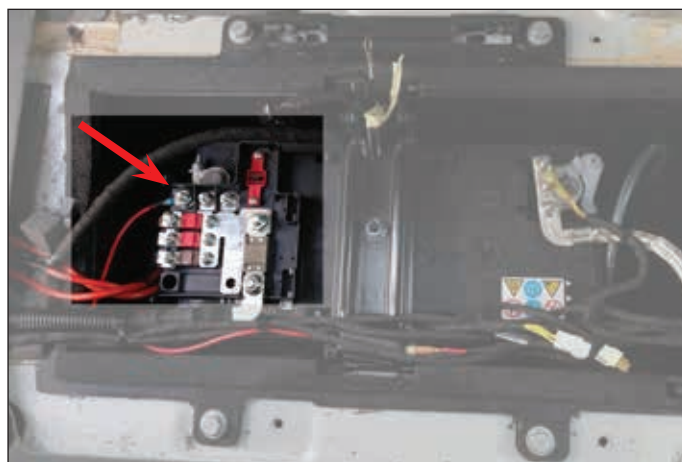


9. Connect the supply cable to the compressor.
10. Take the cover plate off the battery housing.
11. Route the compressor supply cable to the battery.



See Section 14 for an alternative mounting location for the compressor.

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



If there are 2 batteries, always use the original starter battery and not the accessories battery.

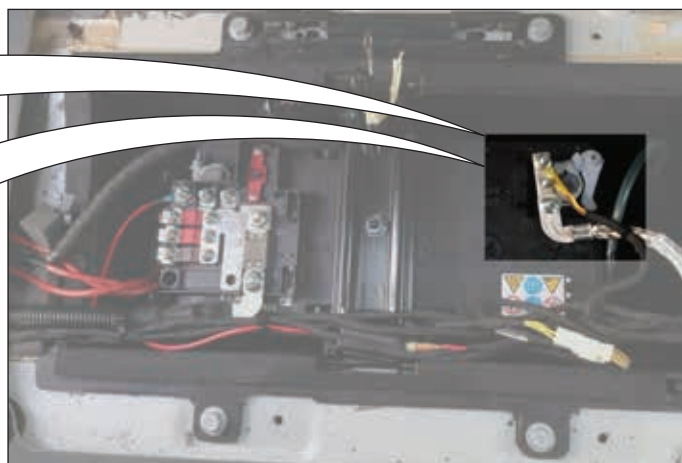
13. Connect the yellow and brown wires to the negative battery terminal (-)

With Relais:

+ 8 mm



Without relais:



9. FITTING THE CONTROL PANEL (MOTORHOME COMFORT KIT) (A)

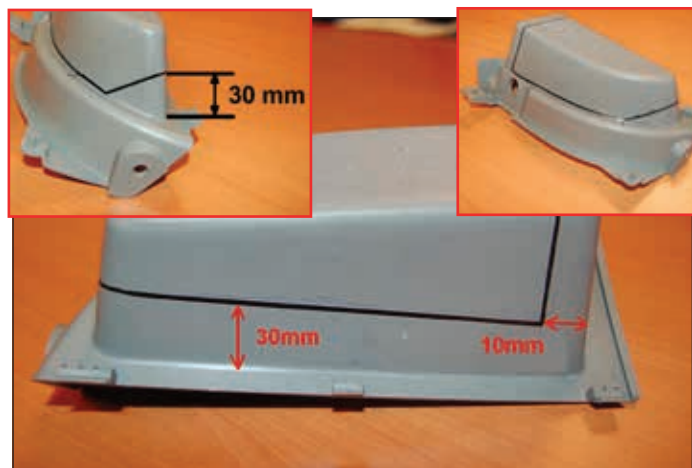


If a comfort kit is fitted, the inflation valves from the basic kit are not needed. In this case, the inflation valves must NOT be fitted.

1. Take the cover off the fuse box.
2. Remove the dashboard casing.



3. Cut the casing to size according to the indicated dimensions.
4. Mark the two holes on the inside of the casing.
5. Drill two fixing holes (Ø4.5 mm) from the inside out.



6. Fit the plate nuts to the control panel.

2 x plate nut



7. Push the air tubes and the wires through the casing.
8. Fit the control panel to the dashboard casing.
9. Push the air tubes and the wires through the dashboard above the fuse box.

2 x plate screw

3.9 x 13



10. Route the air tubes and wires to the running board.
11. Fit the dashboard casing (incl. the control panel).



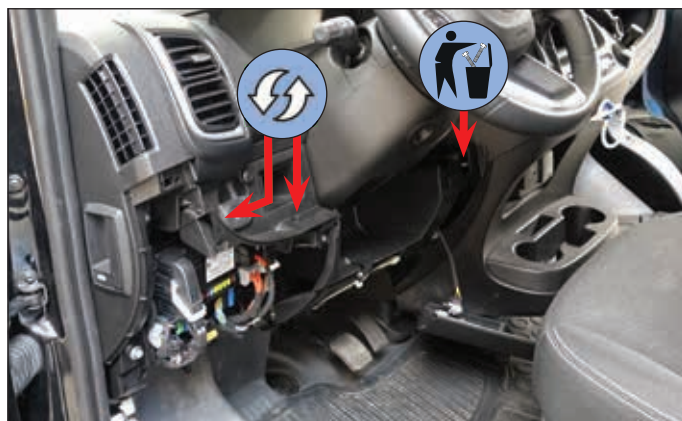
10. FITTING THE CONTROL PANEL (MOTORHOME COMFORT KIT)

FIAT DUCATO X290 >2021 WITH ELECTRIC HANDBRAKE (B)



If a comfort kit is fitted, the inflation valves from the basic kit are not needed. In this case, the inflation valves must NOT be fitted.

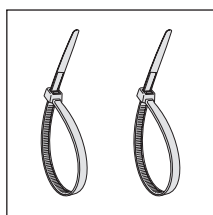
1. Remove the dashboard casing.



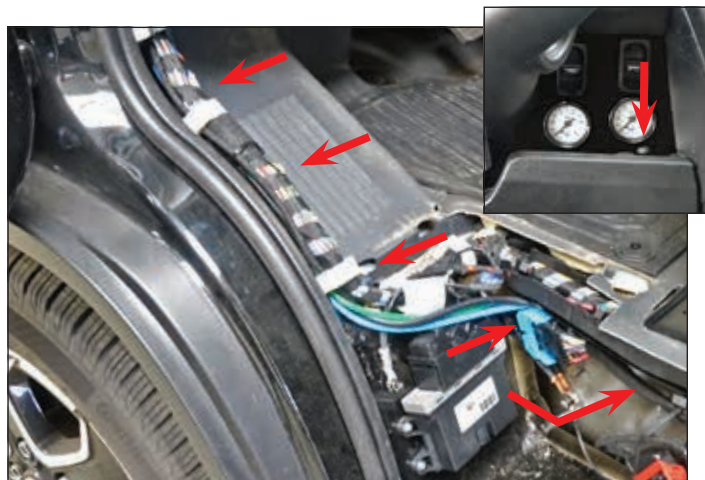
2. Feed the air tubes and the wires through the dashboard.



3. Feed the air tubes and the wires through the dashboard below the fuse box.



4. Route the air tubes and wires to the running board.
5. Fit the dashboard casing and the control panel.



2 x plate screw

Ø4,8 x 30



1 x plate screw

Ø4,8 x 38

11. FITTING THE CONTROL PANEL (LCV COMFORT KIT) (C)



If a comfort kit is fitted, the inflation valves from the basic kit are not needed. In this case, the inflation valves must NOT be fitted.

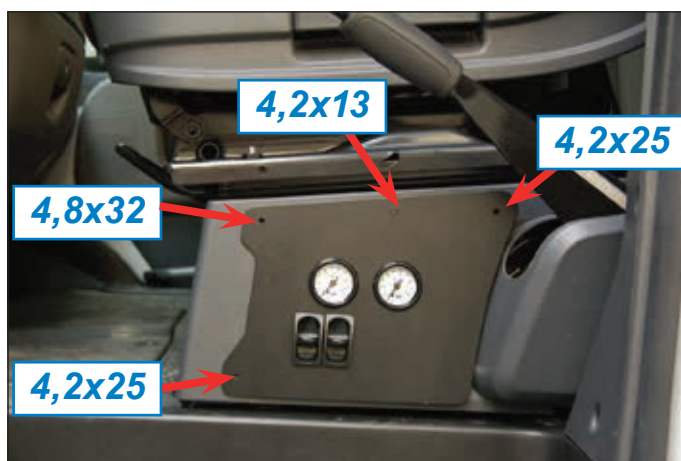


On certain models the seats have a plastic seat cover. If the vehicle has seat covers, the seat cover on the driver's seat needs to be modified. A template is provided in this manual to help you carry out this modification (creating a hole in the cover). If the vehicle does not have seat covers, continue from step 4.

- Using the template (last page of this manual) cut a hole in the seat cover.
- Push the air tubes through the hole in the seat cover.

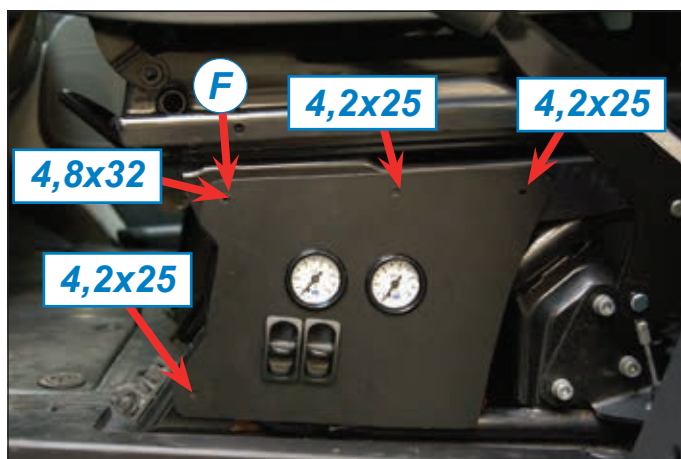


- Fit the seat cover and the control panel. Use the holes indicated for this purpose. Screw the plate screw (4.2x13) into the seat cover only.



| | |
|------------------------|-----------------|
| 1 x plate screw | 4.8 x 32 |
| 2 x plate screw | 4.2 x 25 |
| 1 x plate screw | 4.2 x 13 |

- If the vehicle does not have seat covers, fit the control panel to the seat frame. Use the holes indicated for this purpose. Use the wing nut (F) to tighten the plate screw.



| | |
|------------------------|-----------------|
| 1 x plate screw | 4.8 x 32 |
| 3 x plate screw | 4.2 x 25 |
| 1 x wing nut | M5 |



If the holes in the seat frame do not match, make a hole with an awl or drill into which to screw the plate screw.

12. CONNECTING THE CONTROL PANEL

1. Connect the blue air tube to the compressor.
2. Connect the control panel connector to the supply cable connector.
3. Using the couplings, attach the green and black air tubes from the air springs to the air tubes with the corresponding colour on the control panel.



The position shown in the photograph is only suitable if the control panel is fitted in the dashboard.

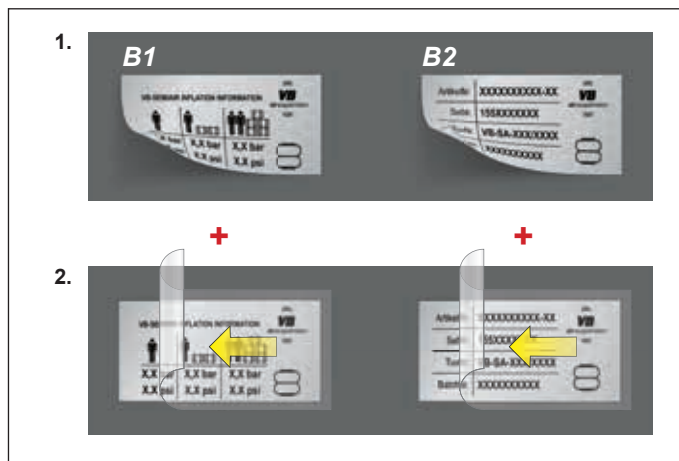
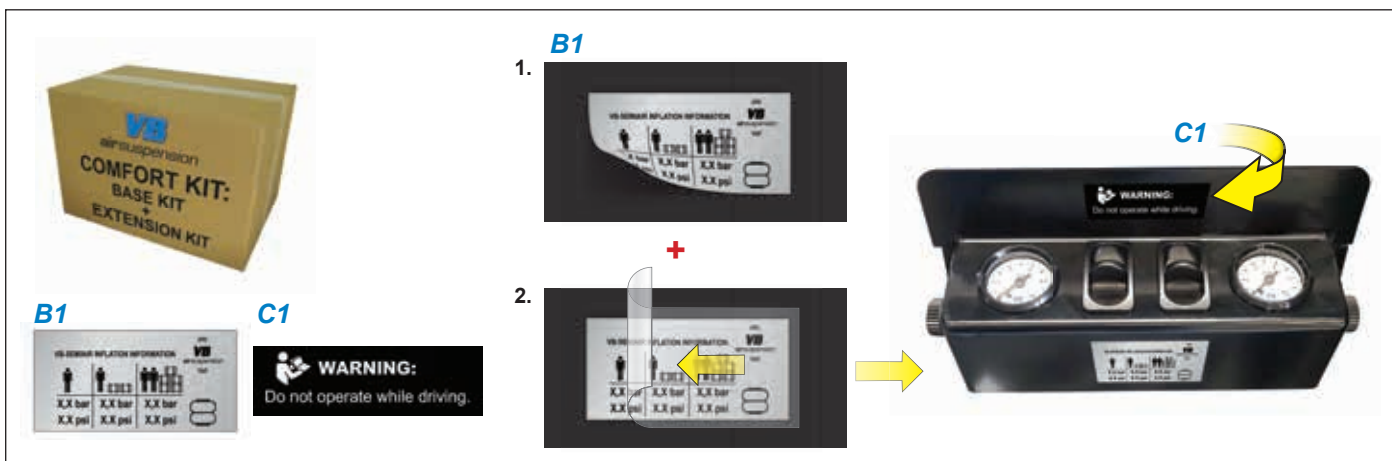
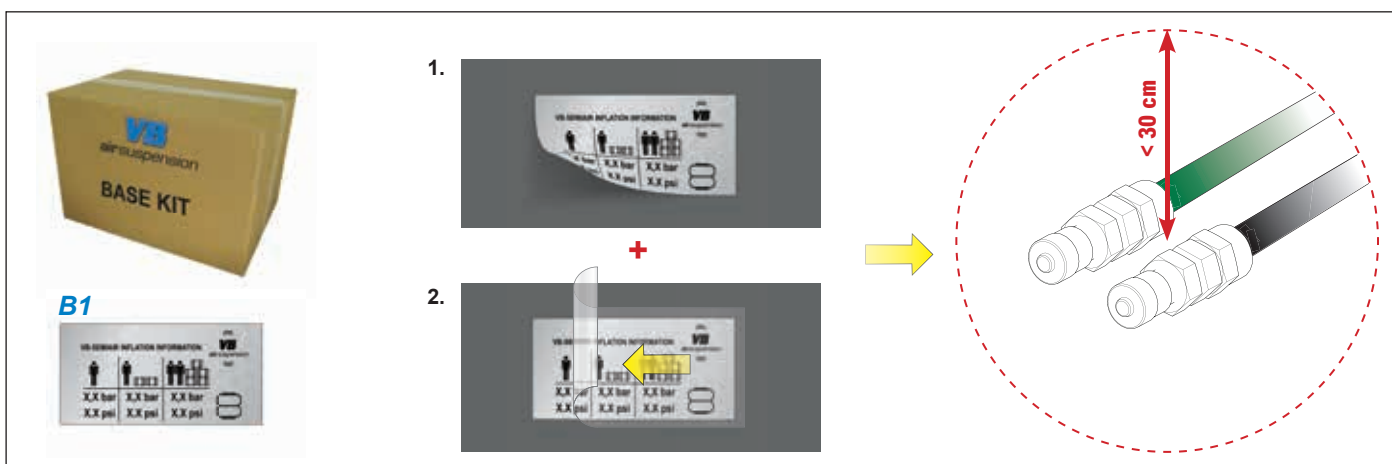
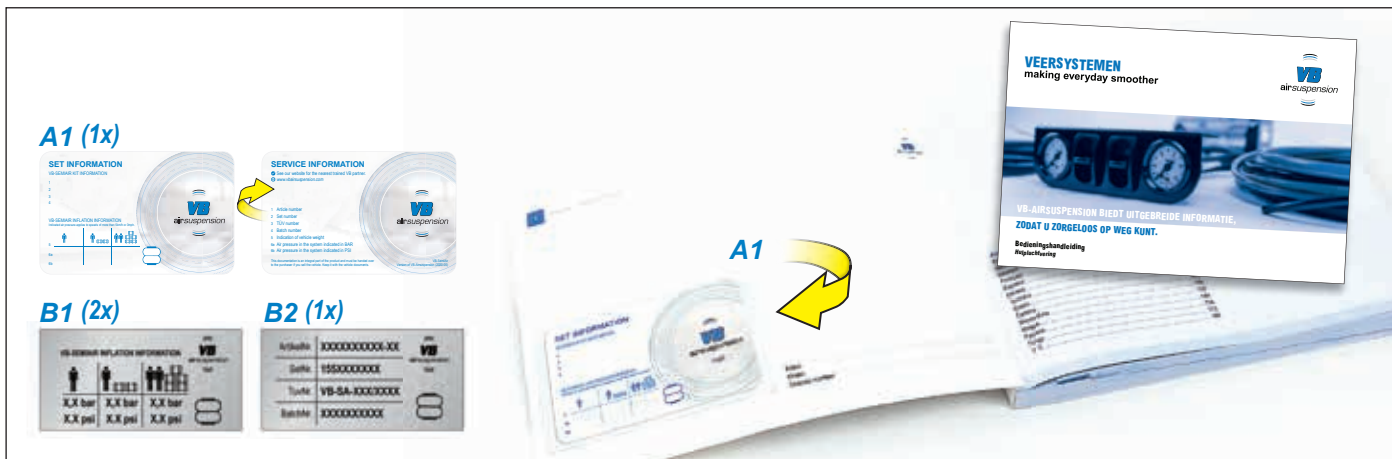


2 x air coupling

Ø6 x Ø6

4. Fit the fuse.
5. Check the system for function.
6. Check the system for air tightness.
7. Secure the air tubes under the vehicle using tie-wraps.
8. Refit all removed parts.
9. Affix the bellows pressure sticker close to the control panel.
10. Affix the "Fuse near battery" sticker to or in the vicinity of the fuse box.

13. APPLY THE BELLOW PRESSURE STICKERS

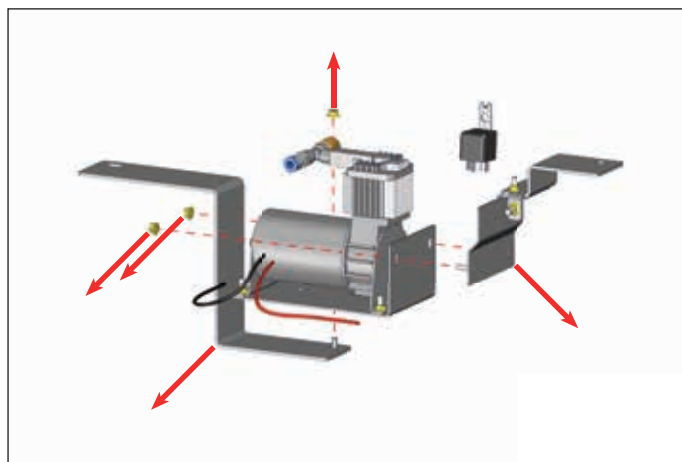


14. ALTERNATIVE COMPRESSOR LOCATION

1. Rotate the air coupling.



2. Remove the brackets.

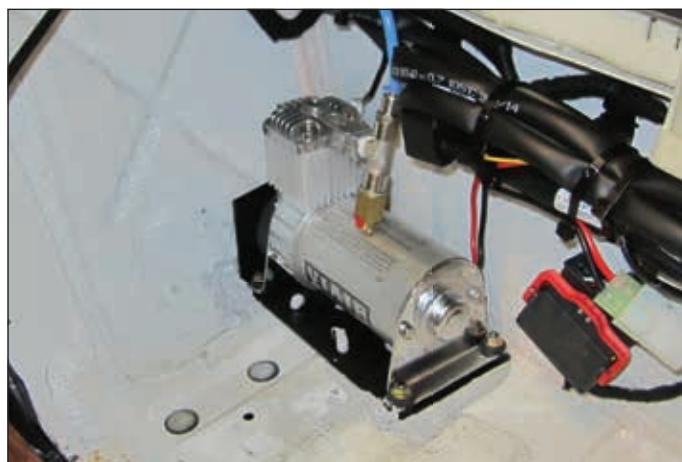


3. Apply adhesive (VB item number 5400700003) to the bracket as shown.



Thoroughly clean and remove any grease from the surface before applying the adhesive.

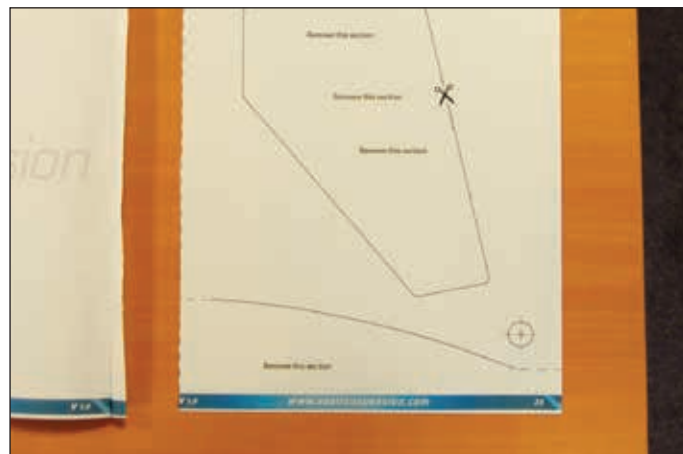
4. Apply adhesive in the area where the compressor will be fitted.
5. Place the compressor on the running board. The adhesive must be allowed to harden for at least 5 hours.



Thoroughly clean and remove any grease from the surface before applying the adhesive.

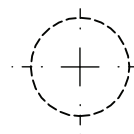
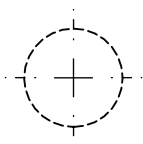
Continue installation as described in Section 8.

15. TEMPLATE



1. Line up the holes with the mounting holes.





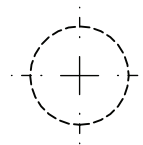
Verwijder dit deel
Entfernen Sie diesen Bereich
Remove this part
Supprimer cette partie

Verwijder dit deel
Entfernen Sie diesen Bereich
Remove this part
Supprimer cette partie



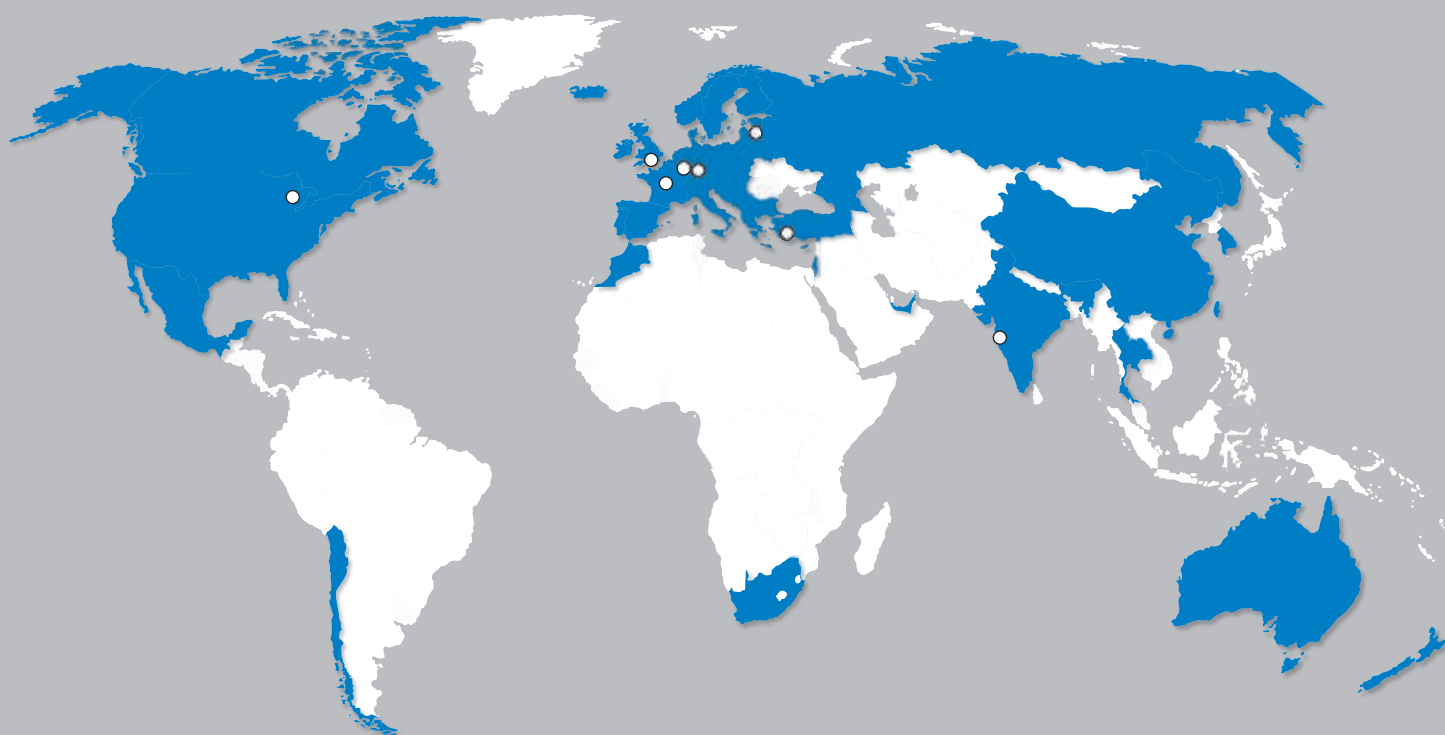
Verwijder dit deel
Entfernen Sie diesen Bereich
Remove this part
Supprimer cette partie

Verwijder dit deel
Entfernen Sie diesen Bereich
Remove this part
Supprimer cette partie



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VB-AIRSUSPENSION,

INCREASED COMFORT, BETTER DRIVEABILITY, MORE SAFETY.

