REV-01

INSTALLATION INSTRUCTIONS

VW T5 – 4 Corner (Van Version)
1710kg Front Axle Load

FULL AIR INTELLIRIDE ECAS

W21 - 760 - 3526

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Thank you for purchasing a Driverite-Firestone Air Suspension System.

All work should be carried out in a properly equipped workshop with due regard to Health and Safety Regulations. No further reference to Health and Safety Regulations will be made, but they must be considered at all times.

The kit should be opened and the contents checked against the kit contents provided.
Identify the various components and familiarise yourself with them using pictures and information provided.

WARNING

Do not inflate this assembly when it is unrestricted.

IMPORTANT

This kit is not designed to increase the GVW of your vehicle. For your safety and to prevent possible damage to your vehicle, do not exceed the maximum load recommended by the vehicle manufacturer.

Pre-Assembly Information

The fitting of the Driverite Air Suspension System must be carried out by Driverite trained personnel in an authorized workshop, equipped with appropriate equipment and tools.

When routing the tubing avoid sharp bends as these can lead to airline blockages in the long term. All tubing must be cut at right angles with a sharp blade. Do not use a pliers to cut the tubing as this will lead to deforming the tubing and can cause air leaks.
Secure the tubing to the vehicle where necessary and ensure it is not fastened to brake lines.

If it is necessary to route the tubing through sheet metal then you must protect it from abrasion against the metal edges using rubber grommets or conduit.

If the paintwork or corrosion protection layer is damaged it must be re-coated immediately. This can be done using corrosion prevention paint. Ensure only the metal work is coated and protect all other items within close proximity from any paint spray.

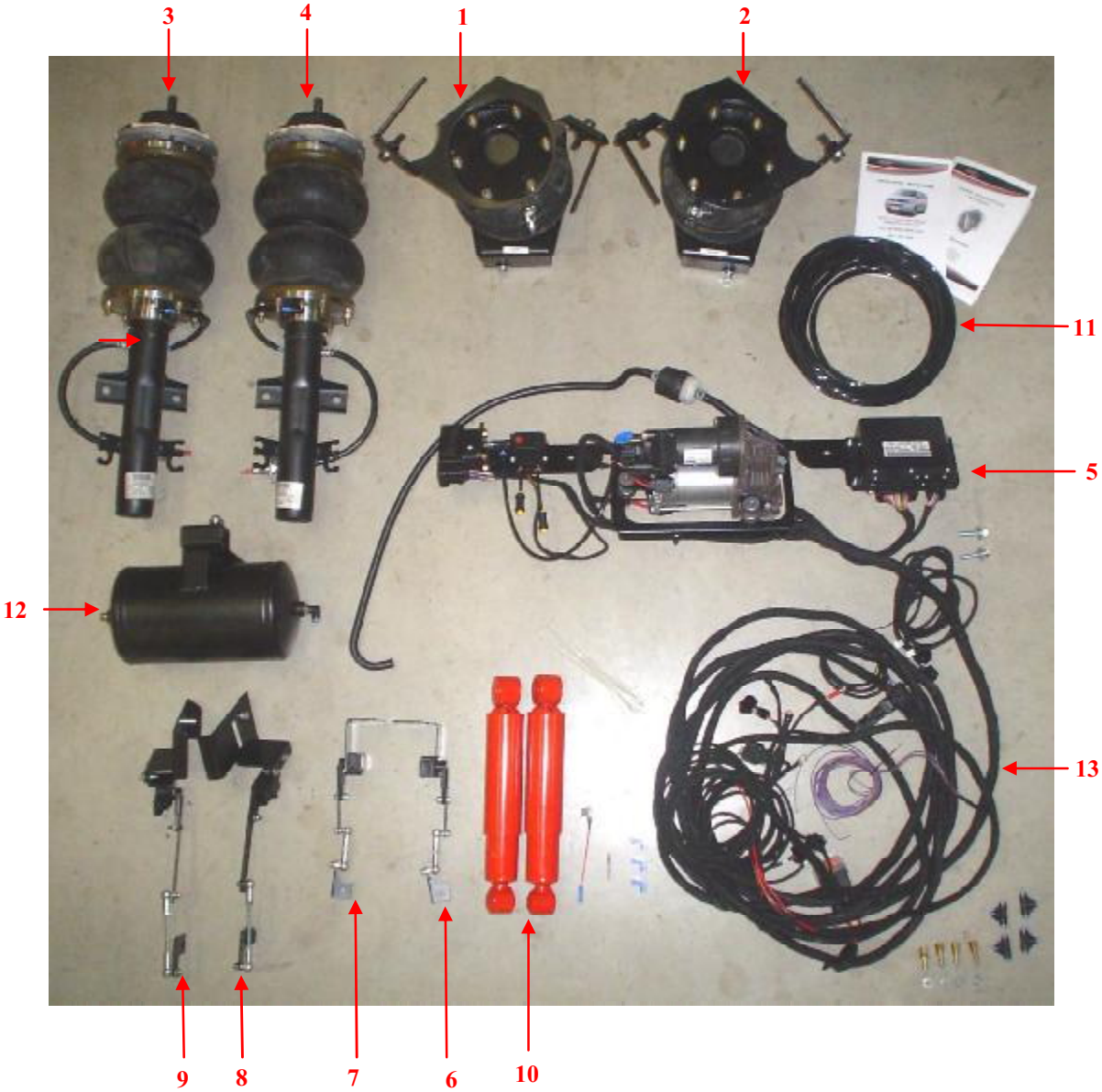
Any OEM parts that have been removed in order to fit the air suspension must be replaced back in their original position and condition. If there are any parts that require a torque setting (such as the shock absorbers) then the vehicle manual must be referred to in order to establish the correct torque setting.

Only tighten and torque the shock absorber bolts when the vehicle is at ride height. If the torque setting in this fitting instructions differs from the torque setting stated by the vehicle manufacturer always use the one recommended by the vehicle manufacturer.

Ensure that surrounding components on the vehicle can still be maintained and the air suspension components cannot inhibit servicing these components.

Contents

Kit Contents



1.	Left Hand Rear Airpring Assembly	(x1)
2.	Right Hand Rear Airspring Assembly	(x1)
3.	Left Front Strut	(x1)
4.	Right Front Strut	(x1)
5.	Hardware Assembly	(x1)
6.	Right Rear Height sensor Assembly	(x1)
7.	Left Rear Height sensor Assembly	(x1)
8.	Right Front Height sensor Assembly	(x1)
9.	Left Front Height sensor Assembly	(x1)
10.	Shock Absorbers	(x2)
11.	Air Tubing	(x10M)
12.	Air Tank Assembly	(x1)
13.	Harness	(x1)

For clarity purposes only the main items have been listed above

Rear Axle Preparation

Raise the vehicle and support the chassis using axle stands.

CHECK

☐

Remove the original shock absorbers. To do this you need to remove the original bolts. (Circled in the picture on the right)
This should be carried out when the vehicle is at ride height.

CHECK

☐

Please note - do not discard these bolts as they are to be re-used.

NOTE: To avoid damage or injury always secure the rear axle and chassis to prevent tension in the parts.
The rear wheels can be removed to create more working room but this kit can be fitted with the rear wheels in place.

With the shock absorbers removed it is possible to further lower the rear axle.
Lower the axle until the coil spring becomes loose.
Ensure the brake lines are not stressed during this procedure.

It is now possible to remove the coil spring.

NOTE: Do not hang the rear axle as this will create too much tension in the brake lines.

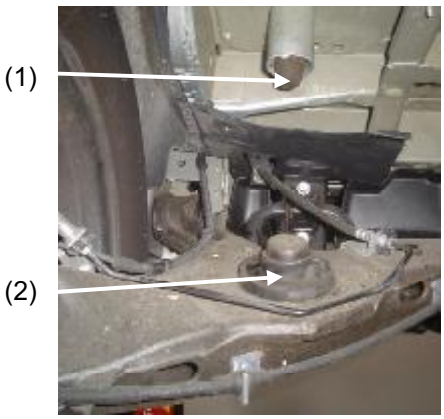
The rear coils can now be removed

CHECK

☐

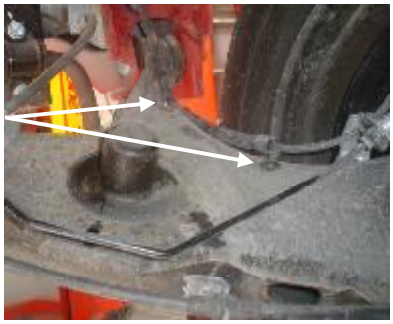
Remove the rubber bump stop (1) and lower spring seat (2).

CHECK ☐



Temporarily remove the cable grommets from the wishbone. The purpose of this step is to prevent these cables from getting pinched and damaged when inserting the airspring assembly.

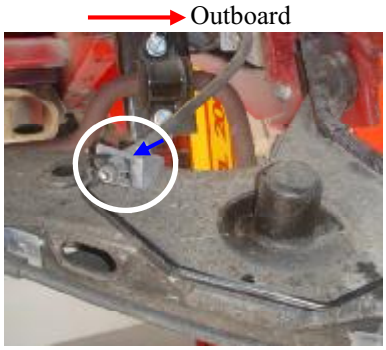
CHECK ☐



The bracket securing the brake line to the wishbone must be chamfered on the outboard side on both sides of the vehicle.
The purpose is to prevent the 90 degree corner from touching and damaging the airspring.

CHECK ☐

NOTE: The brake lines must be protected during this procedure to prevent any possible damage.



Once the chamfer has been made it is necessary to file down the rough edges to ensure no sharp edges remain.

CHECK ☐

NOTE: The cut surface must be coated with a suitable primer and paint to prevent any corrosion from occurring.

Fitting the Rear Air Spring Assembly

Identify the left air spring assembly and the right air spring assembly. NOTE: There should be a sticker on each assembly to tell you which side is left and which side is right.	**Right**  **Left** 
For ease of installation the assembly can be compressed. Insert a short length of tubing into the elbow. To prevent it from returning to its original position the opposite end is plugged using one of the inflation valves (Circled).	
Remove the rubber grommet in the wishbone. **CHECK** ☐	

Insert the lower bracket fastener and line up with the hole in the lower bracket on the opposite side of the wishbone.	 
Bolt the lower bracket to the lower bracket fastener using the M10 bolts and spring washers. Do not tighten fully at this stage. **CHECK** ☐	
Place a second lower bracket fastener into the wishbone from the opposite side of the outboard flange. Line it up with the hole in the bracket on the opposite side of the wishbone and bolt in place using the M10 bolts and spring washers. **CHECK** ☐	
The upper bracket now needs to be bolted in place.	

There is a tubular recess in the upper bracket (circled with the solid line). The upper bump stop tube (circled with the broken) must sit inside this cavity in the upper bracket when in position.

CHECK ☐

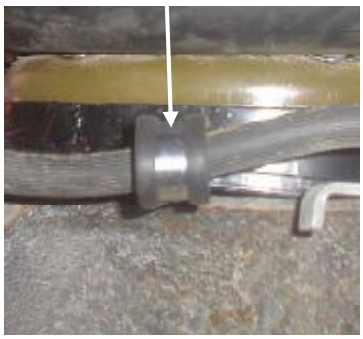
Release the air from the airspring assembly and rest the front face of the upper bracket against floor plate.
Bolt in place using the M8 x 40 bolt, spring washer and penny washer with the spring washer situated between the penny washer and the head of the bolt

CHECK ☐

NOTE: Due to tolerances there may be a gap between the front face of the upper bracket and the floor plate when tightening.
If this occurs do not continue to tighten the bolt as this will cause the floor plate to deform. The space must be filled using the spare M8 penny washers..
Remove the bolt and insert spacer washer between the Driverite bracket and the floor plate to fill the gap.

Ensure the rear of the upper bracket is firmly clamping the rear floor plate.

CHECK ☐

Now that the upper bracket is correctly seated the M8 bolt can be tightened. **CHECK** ☐	
Check the top and bottom brackets to ensure they are seated correctly. Relocate the brake lines so they will not make contact with the airspring during its travel. Insert the brake line in the supplied P-Clip on the lower brackets. This keeps the brake line away from the airspring when deflated. Re-insert the cable grommets back into their original location on the wishbone. **CHECK** ☐	 
Repeat on the opposite side	

Fitting The Rear Height Sensors

Loosen the bolts used to secure the anti-roll bar to the vehicle. This procedure should be carried out when the vehicle is at ride height.

Slide the left hand upper height sensor bracket between the rubber bush and the securing bracket. Line up the holes on the Driverite bracket with the holes on the anti roll bar bracket and re-insert the 2 bolts.

CHECK ☐

Note:
Do not torque at this stage. This process will be carried out when the vehicle is at ride height. (Refer to the "Torque Settings" section").

Loosen the inboard bolt that secures the anti roll bar to the wish bone.

Place the square end of the left lower height sensor bracket in place as shown with opposite flange facing up and forward.
The line indicates the direction of the front of the vehicle.

CHECK ☐

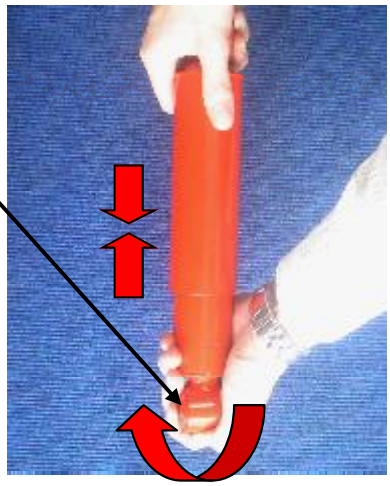
Note:
Do not torque at this stage. This process will be carried out when the vehicle is at ride height. (Refer to the "Torque Settings" section").

Attach the height sensor to the lower height sensor bracket using the 6mm threaded bar.

Check that the distance from the centre of the upper ball joint is 52mm from the centre of the lower ball joint as shown. **CHECK** ☐	
Repeat on the opposite side	

Fitting The Rear Shock Absorbers

Adjust the shock absorbers to their softest setting. This can be done by compressing the shock absorber to its shortest length and rotate the end with the rotating arrow clockwise to its fullest position.



CHECK ☐

Note:
Ensure this procedure is done in the same way for both shock absorbers.

The shock absorbers are placed in position. Bolt loosely in place.

CHECK ☐

Note:
Do not torque at this stage. This process will be carried out when the vehicle is at ride height. (Refer to the "Torque Settings" section").

Repeat this procedure on the opposite side.

Front Axle Preparation

Support the front suspension. Remove the front wheels and plastic mud guard.	
Remove the stabiliser link from the strut and anti-roll bar. These will be replaced with the new stabiliser links provided in the kit. **CHECK** ☐	
The nut bolting the top of the strut to the body of the vehicle must be removed. In order to gain access to this nut the air filter housing must be dismantled.	
Remove the 2 x Torx screws and the metal cover.	

It is now possible to gain access to the upper nut.
Remove the protective rubber cover to reveal the securing nut.
Remove it and the large washer.

CHECK

Loosen and remove the 2 nuts that clamp the lower end of the strut.

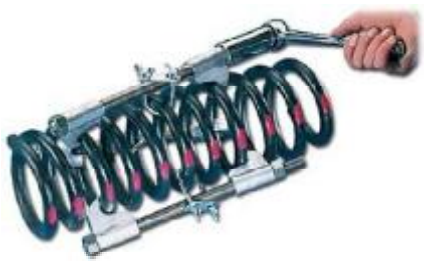
CHECK

Please note - do not discard these bolts as they are to be re-used.

Remove the brake line hoses from the strut.

CHECK

Using spring clamps compress the steel springs and remove the complete strut assembly.
In some instances it is quicker to remove the wheel hub in order to remove the strut.



Ensure the brake lines are not stressed or damaged during this procedure. **CHECK** ☐	

Fitting the New Front Struts

Before installing the new front struts ensure the brake lines are on the outboard side of the strut.
Use the rubber isolators B and C on the top of the strut to isolate it from the body of the vehicle.
Install the new strut and re-attach the rubber brake lines back in their original position.

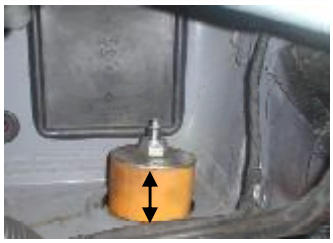
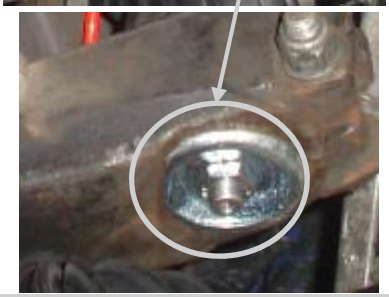
CHECK ☐

Attach the new stabiliser link to the new strut and then to the anti roll bar.

CHECK ☐

Note:
Do not torque at this stage. This process will be carried out when the vehicle is at ride height. (Refer to the "Torque Settings" section").

The air lines should be routed in a similar path to the brake lines as both need to move together with the suspension. Do not attach the air lines directly to the brake lines.

Place the rubber isolator A over the threaded stud of the strut. Place the large disc washer over isolator A and tighten in place using the nyloc nut. Continue to tighten until the rubber isolator is half its original length. Ensure the strut is centrally located in the hole. **CHECK** ☐	 Before Tightening  After Tightening
Ensure the base of the strut assembly is seated fully in the lower bracket. **CHECK** ☐	 
Tighten the 2 nuts that clamp the lower end of the strut. **CHECK** ☐ Note: Do not torque at this stage. This process will be carried out when the vehicle is at ride height. (Refer to the “Torque Settings” section”).	
Repeat on the opposite side	

Fitting The Front Height Sensors

Identify the left and right height sensors

Left

Right

The bracket that holds the height sensor itself will be mounted on the circled wishbone bolt.

Remove this bolt and insert it through the large hole on the height sensor bracket. Place it back in position and tighten in place ensuring the suspension is at ride height.
The arrow is pointing towards the front of the vehicle.

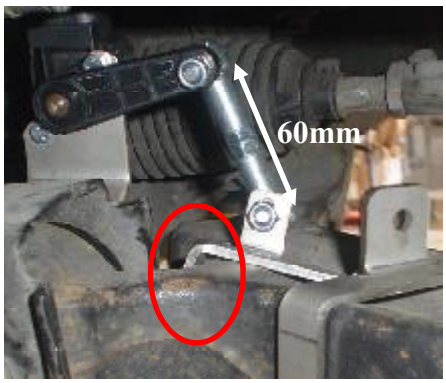
CHECK

Place the lower height sensor bracket over the wishbone as shown.

Slide the lower bracket inboard until the upright flange meets the height sensor locating bracket.
Bolt the 2 brackets together.

Ensure the locating flange (circled) is resting against the wishbone as shown.

Check that the distance from centre to centre of each ball joint is 60mm.



CHECK

☐

View from below

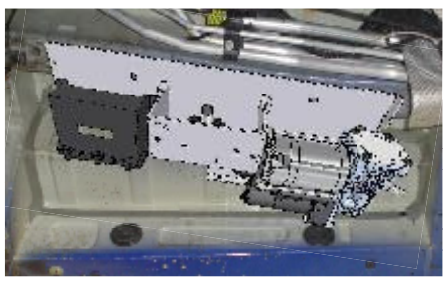
Clamp the lower bracket to the wishbone and use the supplied spacer (circled) to prevent over tightening.

CHECK

☐

Repeat on opposite side.

Fitting The Compressor Assembly

Remove the plastic guard that is located to the rear of the front right wheel. This is where the hardware box will be located.	
There are 3 holes along the chassis and one in the foot well (Circled in the picture on the right). Use the 4 supplied M6 inserts and rivet in each of these holes. **CHECK** ☐	 
Offer the hardware bracket in place with the ECU towards the front of the vehicle and the connector facing outboard. Bolt in place using the M6 bolts, flat washers and spring washers. Ensure the spring washer is between the head of the bolt and the flat washer. **CHECK** ☐	

Fitting the Horizon Levelling Sensor (if supplied)

The horizon levelling sensor is an optional extra, if it is not supplied please skip to the following page. If it is supplied it will be located to the floor of the vehicle using the 2 bolts circled in the picture on the right.

Temporarily remove the indicated bolts.

CHECK ☐

There is a label on the horizon levelling sensor indicating the side of the sensor which must face foreword and an arrow indicating the “up” direction. This label must be facing the front of the vehicle. If the sensor is not mounted in the correct orientation the function will not work.

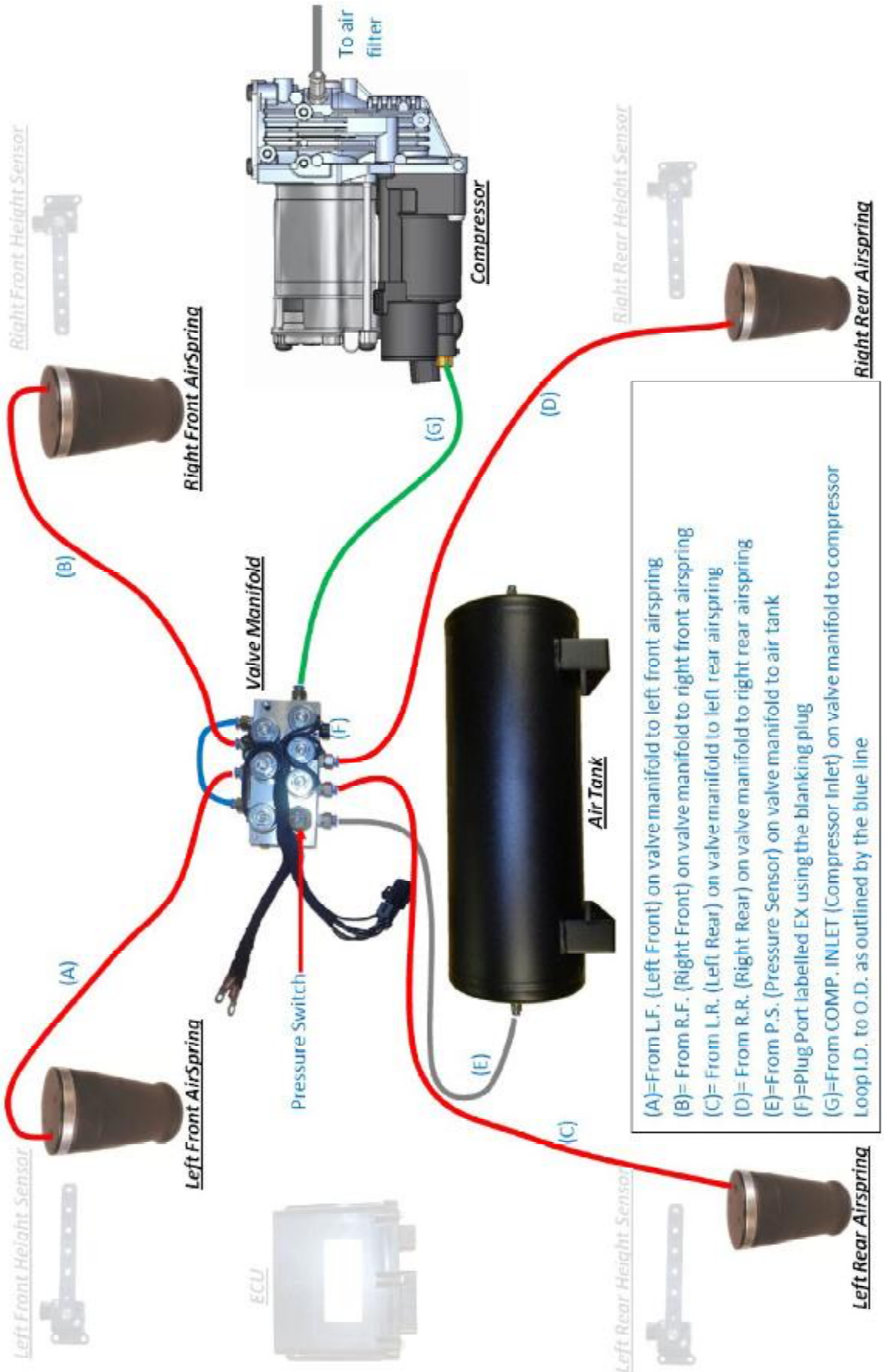
Note:
If there is an obstruction preventing the horizon levelling sensor from being mounted in this location it can be moved to a more suitable location. Simply ensure that it does not interfere with any other vehicle components and it is not the lowest point on the vehicle. Also ensure that the label is facing forward and the arrow is pointing up.

CHECK ☐

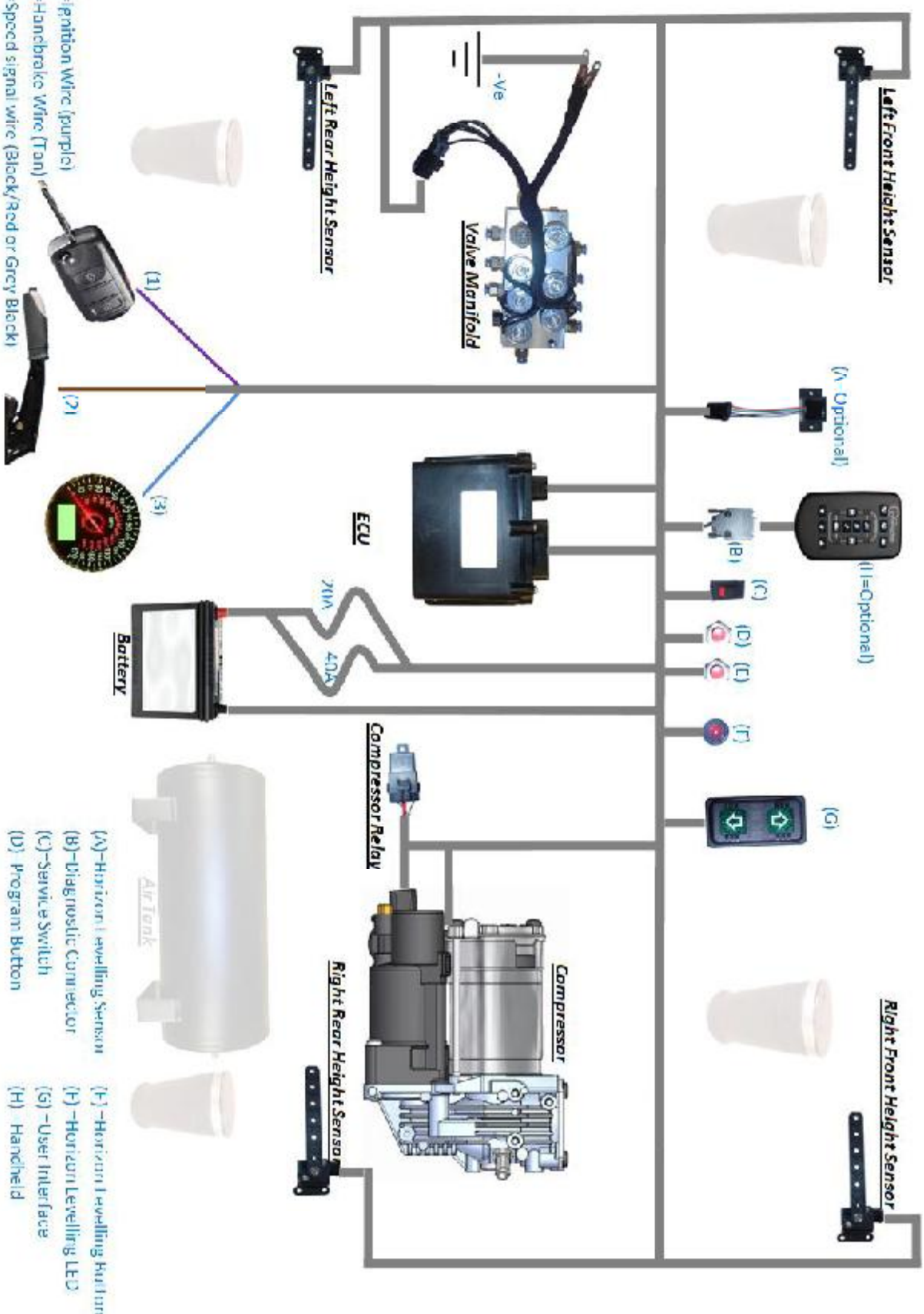
Fitting the Air Tank

The air tank will be installed forward of the spare wheel using the 3 holes circled in red. Note: If there is an obstruction preventing the air tank from being mounted in this location it can be moved to a more suitable location. Simply ensure that it does not interfere with any other vehicle components and it is not the lowest point on the vehicle. **CHECK** ☐	 
Bolt the assembly to the vehicle as shown using the M8 bolts, flat washers and nyloc nuts.	
Plumb the system as per the illustration on the following page. **CHECK** ☐	

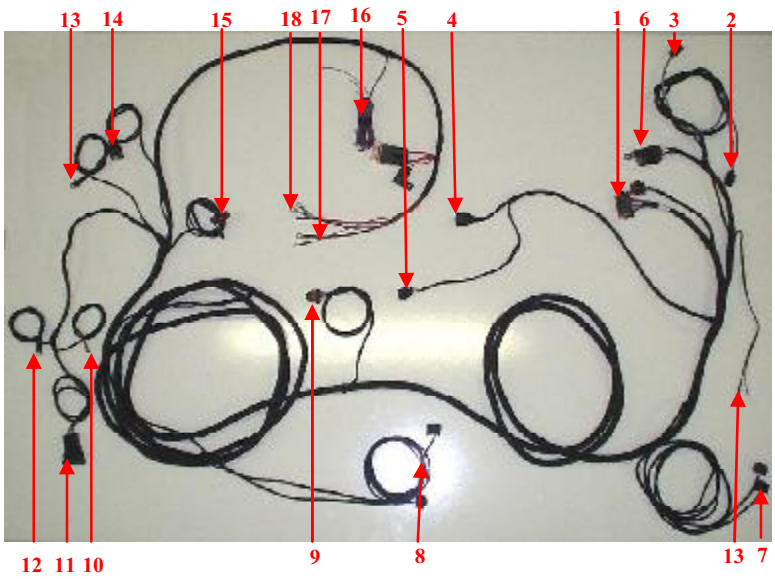
Pneumatic Diagram



Electrical Diagram



Connecting/Routing the Harness



Harness Layout

1. ECU Connection
2. Compressor Motor
3. Compressor Exhaust Solenoid
4. Valve Block Connection
5. Pressure Switch Connection
6. Compressor Relay
7. Rear Height Sensor Connections
8. Front Height Sensor Connections
9. Horizon Levelling Connection
10. Horizon Levelling LED
11. User Interface
12. Horizon Levelling Button
13. Program Button
14. Diagnostic Connection
15. Service Switch
16. Signal Wires
17. Ground Wire (Black)
18. Constant Live Wire (Red)

The harness is routed starting from the compressor.
Connect the large compressor connection on the on the harness to the motor of the compressor
Connect the small compressor connection on the harness to the solenoid on the air drier.

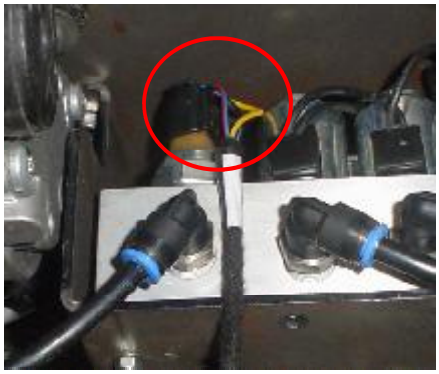
CHECK ☐

Connect the valve block to the harness as shown.
Ensure the harness is connected to the ground wires for the solenoids

CHECK ☐

Connect the pressure switch to the harness as shown

CHECK ☐



Connect the ECU to the harness as shown.
Secure any excess harness to the chassis using cable ties.

CHECK

☐

NOTE:
Ensure the harness is not exposed to any sharp objects or close to the exhaust.
Do not attach the harness to the brake lines.

There are 3 wires in each height sensor connection on the harness. 2 of these are common—black/blue and red/blue. The remaining third wire can be used to identify the correct position of the height sensor.

- The connection with the green wire goes to the right rear height sensor.
- The connection with the brown/white wire goes to the left rear height sensor
- The connection with the brown wire goes to the right front height sensor.
- The connection with the white/red wire goes to the left front height sensor.

CHECK

☐

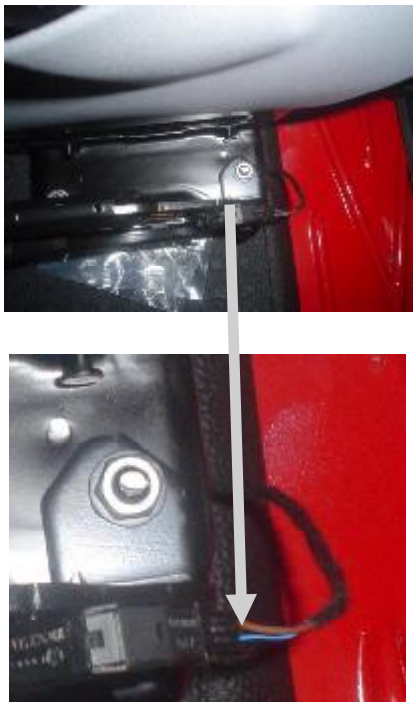
Connecting The Handbrake Wire

Route the brown handbrake wire into the cabin of the vehicle and to the base on the handbrake. Cut to length.
There are 2 wire that are attached to the handbrake (Brown and Blue).
The blue wire is cut and the brown wire from the Driverite harness is attached to one end of the cut wire.
The blue wire that was cut is then reconnected using the supplied soldering butt connector.

CHECK

☐

Note:
When heating the soldering butt connector ensure the surrounding area is protected from the heat gun.

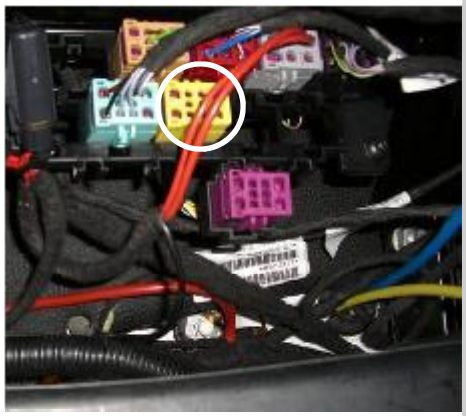


Connecting The Speed Wire (Option 1)

There is a fuse box located under the drivers seat.
Attach the speed signal wire (Black/red or grey/black) on the Driverite harness to pin 2 on the yellow housing.

CHECK

☐



Connecting The Speed Wire (Option 2)

If the connector in the fuse box is not available there is a second speed signal pick up point behind the speedometer. In order to remove the instrument cluster you will need to remove the 2 bolts located under the steering column.

To gain access to these bolts remove the grey moulds under the steering wheel as shown.

CHECK ☐

This picture shows the view from under the steering wheel. The 2 circled bolts secure the instrument cluster to the dash. Remove these 2 bolts

CHECK ☐

The instrument cluster can now be removed. At the back it will have one connector. Remove this connector by releasing the orange locking tab. Slide the purple tab up to remove the inner (white) part of the connector. The speed wire on the Driverite harness is spliced into the wire that terminates at Pin 9.

If the vehicle has 2 connector the speed wire from the Driverite harness is connected to the blue connector at Pin 3

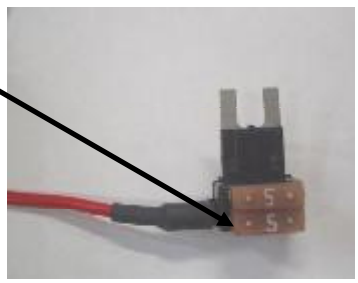
CHECK ☐

Connecting The Ignition Wire

Remove the plastic cover, battery and battery base.
Feed the harness along the bulkhead into the battery compartment.

Temporarily remove the indicated red 5A Mini fuse from the fuse box.
This is an ignition controlled fuse.

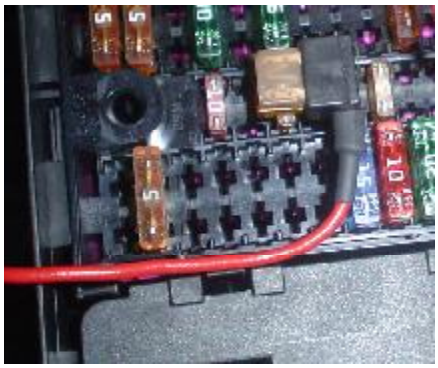
Crimp on a dual housing mini fuse holder to the end of the ignition (Purple) wire on the Driverite harness
Insert a 5A fuse into the end furthest from the male spades on the housing.
Place the removed 5A fuse in the remaining slot as shown.



Insert the 2 exposed spades on the housing into the slot on the fuse box that was previously used to hold the 5A fuse.
Replace the plastic cover over the fuse box.

CHECK

☐



Connecting the +Ve and –Ve wires

Feed the +Ve and –Ve wires from the harness into the battery compartment. Attached the red wire to the +Ve terminal on the battery and the black wire to the -Ve terminal. Replace the plastic cover. **CHECK** ☐	

Torque Settings

Bring the vehicle to ride height. The recommended heights are listed below.
(Note: The measurements below are taken from the centre of the wheel to the wheel arch.)

Ride height =450mm
Access height =360mm on the rear axle and 410 on the front axle
Raised height =480mm

It is now possible to torque all remaining fasteners.

Rear shock absorber upper bolt	=70Nm
Rear shock absorber lower bolt	=120Nm
Front strut lower nuts	=75Nm
Front stabiliser link upper nut	=60Nm
Front stabiliser link lower nut	=60Nm
Rear anti-roll bar chassis bolts	=60Nm
Rear anti-roll bar wishbone bolt bolts	=30Nm

Check all connections.
Ensure all bolts are securely fastened

Replace the metal cover and re-assemble the air filter housing.

CHECK ☐

Checklist

Height Sensor Checklist	CHECK
1. Height sensor orientation is correct	☐
2. Is the threaded bar set to the correct length?	☐

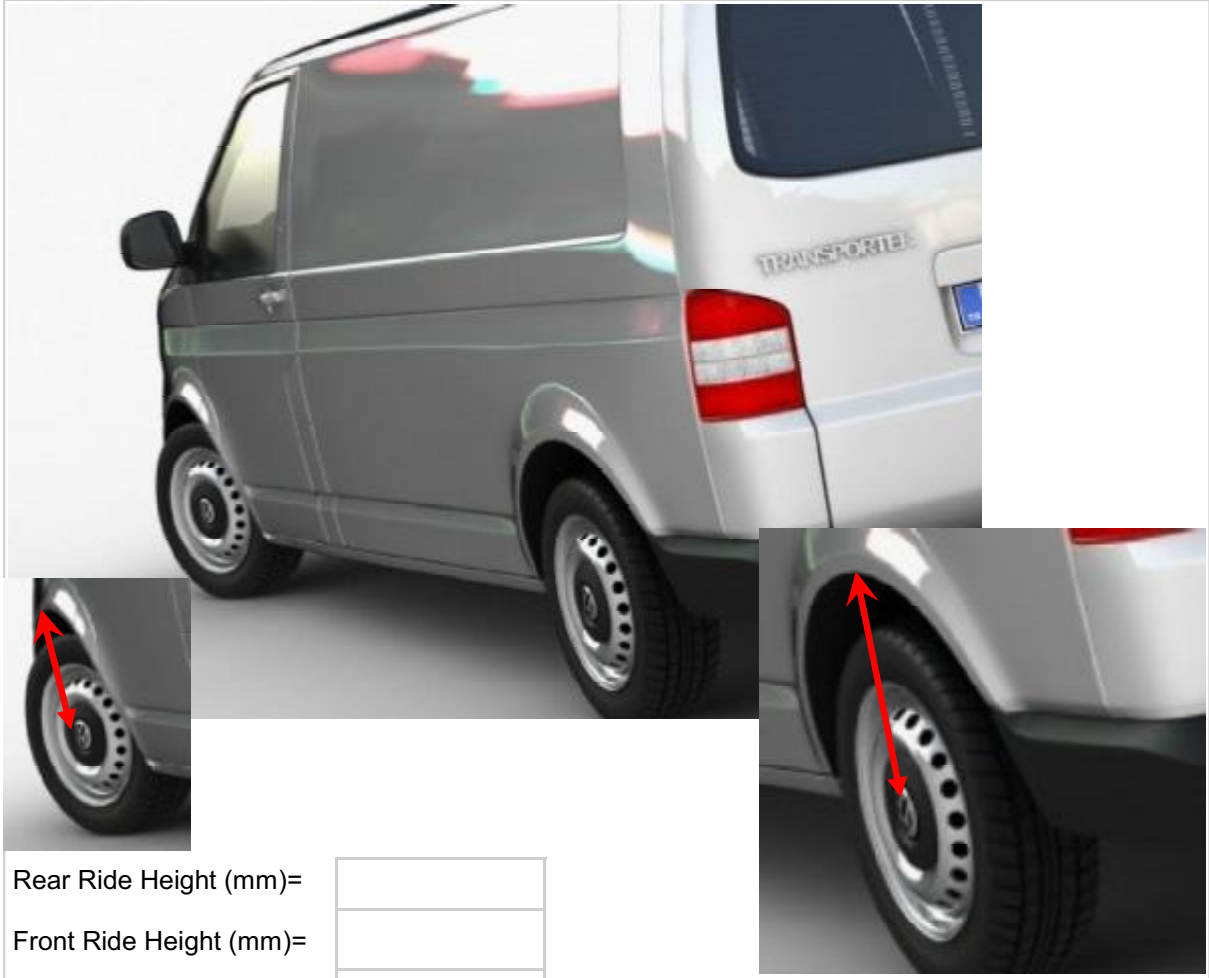
General Checklist	CHECK
1. Ride, access and raised heights have been set at the correct measurement	☐
2. Shock absorbers have been adjusted to the correct setting	☐
3. Shock absorbers have been torqued at ride height and to the correct torque setting	☐
4. Front struts have been torque at ride height and to the correct torque setting	☐
5. All other nuts and bolts are secure and torqued where stated	☐
6. Harness, air-line and connectors are secure	☐
7. The system was checked for air leaks	☐
8. There is 15mm clearance around the airsprings	☐
9. The ECU, compressor and valve block have been connected to the harness. An audible click is heard when the connection is sealed.	☐
10. Height sensors connection are in their correct side and have been connected to the harness. An audible click is head when the connection is sealed.	☐
11. When the airsprings are fully deflated the arm of the height sensor does not come into contact with the vehicles body.	☐
12. When the axle is hanging the arm of the height sensors are not under tension and cannot invert.	☐
13. The back page titled “Service Information” on the User Operation Manual (which will be kept in the vehicles glove box) has been completed.	☐
14. User Operation Manual has been placed in the glove box	☐

For troubleshooting please refer to the “User Operation Manual” supplied with this kit.

Note:

The “User Operation Manual” should be stored in the vehicle that has been installed with the air suspension. This can be referred to by the end user for reference.

Height Settings



Rear Ride Height (mm)=	
Front Ride Height (mm)=	
Rear Lower Height (mm)=	
Front Lower Height (mm)=	
Rear Upper Height (mm)=	
Front Upper Height (mm)=	

Height Sensor Interference Check

Check that the front height sensors do not come into contact with any of the vehicle components throughout the full suspension travel.

- The height sensor components must not touch any vehicle components at any point through the suspension travel or at any point during full steering lock in both directions.

CHECK ☐

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