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## W21-760-3114 Mercedes 3 Series Sprinter

### **INSTALLATION INSTRUCTIONS**

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 parts list provided. Identify the various components and familiarise yourself with them using drawings and information provided.

#### **WARNING**

*Do not inflate this assembly when it is unrestricted. When installed, a minimum of 10 psi should be maintained in the air bellows at all times to avoid damage. Do not inflate beyond 100 psi.*

#### **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.*



## Parts List

| Description                | Quantity |
|----------------------------|----------|
| Bottom Plate               | 2        |
| 3mm Plate For Under AirBag | 2        |
| Upper Bracket              | 2        |
| Top Left Bracket           | 1        |
| Top Right Bracket          | 1        |
| Clamp For Top Brackets     | 2        |
| U-Bolt                     | 4        |
| Bracket                    | 2        |
| Clamp                      | 2        |
| M10x90 Bolts               | 4        |
| M10 Flat Washers           | 4        |

| Description                             | Quantity |
|---|----------|
| M8x30 Bolts                             | 8        |
| M8 Locknuts                             | 8        |
| M8 Flat Washers                         | 8        |
| Cable Ties                              | 15       |
| Thermal Sleeves                         | 2        |
| Flat Head Allen Bolt for tapered sleeve | 2        |
| Tapered Sleeve Air Bellows              | 2        |
| 3/8 x 3/4 UNC Bolt                      | 4        |
| 18 ft. 1/4" Tubing                      | 1        |
| 1/4" Elbow                              | 2        |
| 1/4" Inflation Valve                    | 2        |

## 1. PREPARATION

The product you purchased consists of all necessary parts to make a successful installation onto your vehicle. All parts are tested and checked thoroughly. Please make sure you take all necessary safety precautions while fitting the kit.

Note: you should first read these instructions carefully and then take all parts out of the box and pre-assemble them as far as possible before fitting them onto your vehicle.

In order to fit this kit on your Mercedes Sprinter, an air spring is fitted on each side of the vehicle in front of the axle. The top-mounting bracket consists of 3 different parts.

Part one is the main bracket. This main bracket fits exactly around the bottom of the chassis rail and will also stabilize it. On the inside of the chassis rail it is held in place by a second bracket, a third bracket is fitted onto the main bracket on the outer side of the chassis rail. This last bracket rests against the chassis clamping the seam and will prevent torsion of your chassis rail. The combination of these three brackets makes an ideal fit and will strengthen the chassis rail considerably, which is necessary when fitting the air suspension.

Due to the location of the shock absorber it was necessary to make 2 different main brackets. Make sure that the overhanging side, where the air spring is fitted, points to the front of the vehicle.

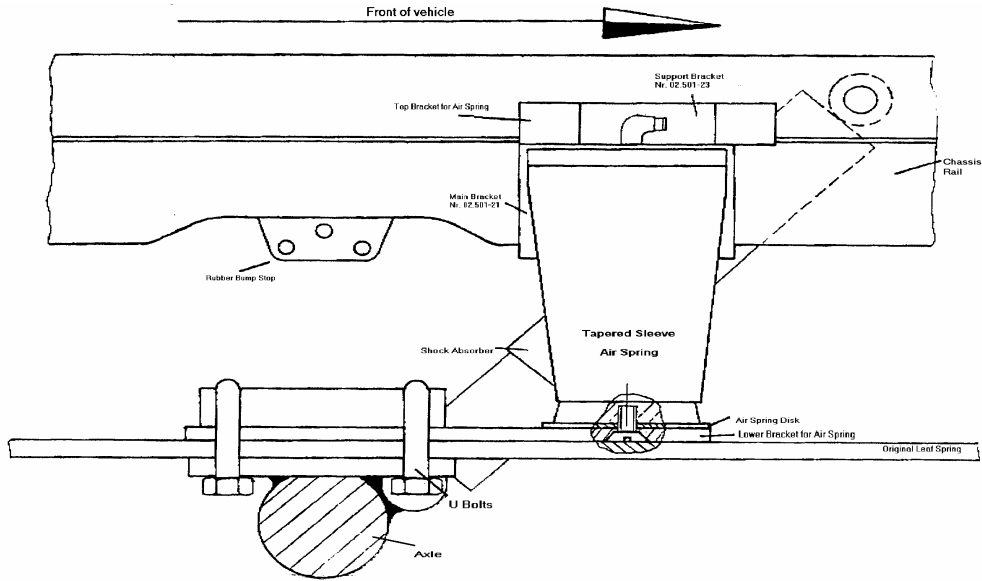
The next step would be to fit the total top bracket onto the chassis rail but do not tighten the bolts. This is necessary because after fitting you might have to vertically align the air spring by moving the bracket.

The elbow provided goes into the top of the air spring in the designated threaded hole. This elbow fitting is already supplied with a sealant to prevent air leaking. The thread of the air bellows is already provided with a sealing material, so that no leakages can develop.

Now you can fit the lower bracket onto the air spring (place the provided disk in between the air spring and the lower bracket). This bracket is produced out of original spring material and after fitting the air spring onto it, it is mounted on top of the main leaf spring, using the new supplied U bolts. When this has been done you will be able to vertically align the air spring and all bolts can be tightened.

Make sure that after fitting, the air spring is free from movement and that even in inflated situation, no contact is possible with anything that can cause damage to the spring. If this happens anyway, your warranty claim cannot be processed.

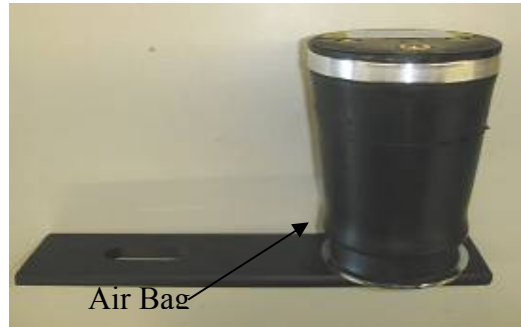
If it is impossible to mount the kit in front of the axle due to unforeseen circumstances, you can mount the kit behind the axle.



## 2. INSTALLATION

Bolt the air bag disc and lower bracket together using the countersunk screw.

A rough adjustment of the bag should already have taken place. The fine adjustment takes place if necessary via shifting the bracket.



If the bag stands perpendicularly, then all screws must align. The bag must be installed in such a way that neither construction units or wheels can rub or touch the bag.



If there is a possibility that the brake hose will rub the bag, then it must be tied back using a cable strap.



Chafed through bags cannot be replaced in the case of warranty.

**Fitting the bump stop bracket:**

This bracket is fitted under the bump stop onto the axle so that it will prevent further lowering of the vehicle and as a result possible damage to the air spring (see photo).



**TORQUE SETTINGS:**

(valid for the most usual mobile travel vehicles)

**Wheel bolts:**

| Motor vehicle type: | Wheel bolt | Torque Settings      |
|---------------------|------------|----------------------|
| Fiat Ducato 10/14   | M14 x 1,5  | 160 Nm* <sup>2</sup> |
| Fiat Ducato Maxi    | M16 x 1,5  | 180 Nm* <sup>2</sup> |
| Mercedes Sprinter   | M14 x 1,5  | 180 Nm* <sup>2</sup> |

**Heart pin (centering bolt) 8,8 \*<sup>3</sup>**

|      |       |
|------|-------|
| M 8  | 25 Nm |
| M 10 | 47 Nm |
| M 12 | 86 Nm |

**U – bolts:**

|     |                      |
|-----|----------------------|
| M 8 | 25 Nm* <sup>3</sup>  |
| M10 | 47 Nm* <sup>3</sup>  |
| M12 | 118 Nm* <sup>3</sup> |
| M14 | 130 Nm* <sup>2</sup> |

**Shock absorber:**

|                     |                      |                    |
|---------------------|----------------------|--------------------|
| Fiat Ducato         | 160 Nm* <sup>2</sup> |                    |
| MB Sprinter 208-316 | above 80 Nm          | below 70 Nm Screws |
| 8.8                 |                      | 110 Nm Schraube    |
| 10.9                |                      |                    |
| MB Sprinter 408-416 | above 140 Nm         | below 140 Nm       |

\*<sup>2</sup> manufacturer data


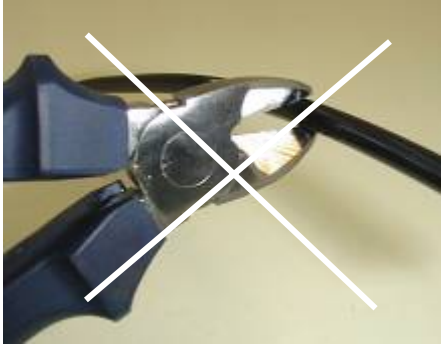

\*<sup>3</sup> DIN 13, sheet 33 shank end screws quality 8,8, coefficient of friction  $m = 0,14$

**TO AVOID LEAKAGES:**

The kits are supplied with compressed air via nylon hoses with an outside diameter of ¼ “. The connections are called “Plug-in” connections. This kind of connection allows you to attach the air hose without a tool. Here the hose must be put so far into the connection, until it locks. The correct fit can be examined by easily pulling on the hose. To recognize if it is the correct fit, during pulling the hose, the ring of the connection moves along with the hose. For the loosening of the hose connector the hose must be pushed toward the Plug in connection. Subsequently, with the ring held, the hose can be taken off.

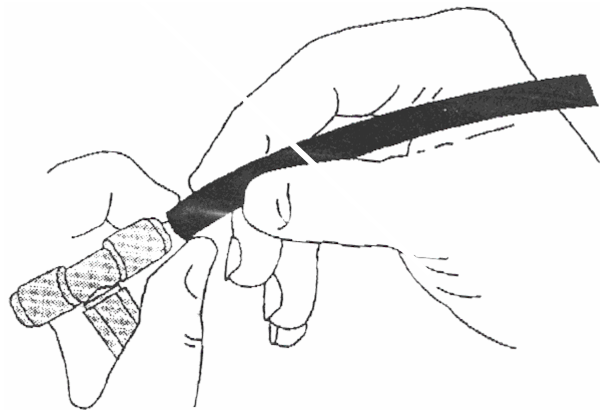
Note: With the pulling to check if the ring is too far pulled out, a leakage can occur!

Note: In order to avoid slow air losses, the nylon hose should be cut straight with a sharp blade. Do not use a side cutter.

|   |  |
|---|--|
|  <p><b>Correctly cut.</b> Straight cut off.</p> |  <p><b>Wrong.</b></p> |
| <p>With frequent assembly use a nylon-tubing cutter.</p>  |                      |

**Air fittings:**

All air fittings are supplied with an easy “push to connect” fitting. To prevent leaking of air though, make sure that all tubing is cut squarely. These fittings make it easy to fit the air tubing and also to replace it if necessary.



**Brittle:**

Like all flexible rubber construction units, a certain natural embrittlement occurs with the air bag. This procedure is natural, since the softeners in the plastic evaporate. If this occurs, then this leads to a cracking at the surface layer of the bag. If the auxiliary pneumatic spring is driven with a wrong operating pressure the embrittlement is increased.

**Air loss/leakage:**

If within 24 hours the air pressure drops more than 0.2 bar a leak may be on the kit. If this is the case, then the complete kit must be sprayed with soap solution (leak detection spray). The leak is detected on the basis that bubbles appear. Most frequently the bubbles will be seen at the junction points after initial assembly. Mostly the reason for this is because of the non right-angled cut of hoses. As previously stated cutting off should take place by means of a straight cutter and not with the side cutter!

**Note:**

When driving on a ferry or when driving through a large bump on the road the possibility exists that at short notice the kit will be hit with a higher filling pressure (maximum 8 bar) than the vehicle is permitted to drive. Therefore, depending upon motor vehicle type and loading, the rear of the vehicle rises. This measure must be cancelled again however during normal travel, since this affects the braking action of your vehicle. If one drives on a high air pressure, then the brake delay of your vehicle can be reduced. Always guarantee that while driving the maximum operating pressure is kept in accordance with partial appraisals or registration papers.