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## W21-760-3461 Mercedes 4 Series Sprinter Kombi, Bus, Commercial Vehicle

### **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 |
|----------------------------------|----------|
| Rear Top Airspring Bracket Right | 1        |
| Rear Top Airspring Bracket Left  | 1        |
| Plate 100x50x5                   | 2        |
| Plate 100x40x5                   | 2        |
| Bracket Spacer                   | 2        |
| M14 x 1.5 Locknut                | 4        |
| Front Bottom Airspring Bracket   | 2        |
| M12 x 25 Bolts                   | 2        |
| 3mm Plate for Airspring          | 4        |
| Bolt M10 x 90                    | 4        |
| U-Bolt M10                       | 4        |

| Description              | Quantity |
|--------------------------|----------|
| M10 Hex Nut              | 4        |
| M8 x 20                  | 4        |
| M8 Hex Nut               | 4        |
| Cable Ties 2.6mm x 160mm | 20       |
| Thermal Sleeves          | 4        |
| Tapered Sleeve Spring    | 4        |
| Palnut for 7095          | 4        |
| Elbow for 7095           | 4        |
| 1/4" Elbow               | 2        |
| 1/4" Inflation Valve     | 2        |
| 18 ft. 1/4" Tubing       | 1        |

## 1. PREPARATION:

### Assembly Instructions for 4<sup>th</sup> series Sprinter Van.

The product you purchased consists of all parts necessary to make a successful completion of fitting it onto your vehicle. All parts are tested 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.

Your product is an air suspension unit in which 4 air springs are fitted onto your vehicle. This means that on either side of the vehicle, on the leaf spring, 1 air spring is fitted in front and 1 behind the axle.

Before assembly of the pneumatic spring can be accomplished, appropriate preparations must be done to the two upper assembly brackets, as well as the two lower brackets with accessories. First the upper bracket is fastened to the vehicle. Take the bracket for the left side in driving direction. If you put this bracket on the vehicle you will see that the two mounting holes are congruent. These must be only drilled out on the diameter of 15 mm.

Now fasten the upper bracket by firstly putting on the washer and then the nut onto the appropriate fixing bolt. Put the screw including case into the upper bracket and vehicle frame, so that the thread on the framework back comes out. Use now the appropriate support plate and fasten the assembly bracket with the pertinent locknut. Additionally, the assembly bracket and support plate are screwed on to the lower surface of the vehicle frame.

Now take the two air bags out of the packing. Attach both with the 1/8" elbows into the thread at the top of the bag. Likewise, take the lower bracket as well as the steel washer out of the packing. Put the steel washer on the lower bracket, before you bolt these with the bag. Now set up the spring bag including lower bracket on the spring rod and fasten these with the U bolt provided.

### **Assembly Instructions for auxiliary pneumatic spring Sprinter.**

Your product is an air suspension unit in which 4 air springs are fitted onto your vehicle. This means that on either side of the vehicle, on the leaf spring, 1 air spring is fitted in front and 1 behind the axle. This kit was thus developed for the series chassis and for the series wheel/tire combination. With a series vehicle if changes at the wheel tire combination are made, then attention must be made to the free movement of the wheels in all operating conditions. If air bellows is damaged by touching, then no warranty claim exists!

## **2. INSTALLATION:**



### **Preparation of the lower Bracket:**

The lower bracket is bolted firmly with the two air bags. For this purpose the air bags are screwed together by means of socket-head cap screws, and round disc sheet metal (see photo).



### **Lower Pre-mounted bracket:**

The inner holes on the lower bracket are used for the assembly of the 4th series van.



In order to mount the lower bracket the U-bolt must be used.

The pre-mounted lower bracket is now attached onto the leaf spring with the provided U-bolt at the original spring fastening.

|   |  |
|---|--|
|    | <p>It must be examined whether the bags stand perpendicularly, and/or whether sufficient free space is available to the tire to allow the lower bracket shift 5 mm laterally inward.</p> <p><b>The bags should be installed in such a way that neither construction units nor wheels can rub at the bags.</b></p> <p>Bags that are chafed through can not be replaced in the case of warranty.</p> |
|   | <p>Lower bracket must be fastened to the vehicle.</p> <p>The metal disk and the nylon spacer are only for the motor home and flat bed.</p> <p><b>Usually all assembly brackets are only tightened once. Only after the air bags are aligned, both the upper and the lower bracket bolts are firmly bolted.</b></p>   |
|  | <p>The upper bracket is fastened to the air bag with the metal nuts provided.</p>  |

|   |  |
|---|--|
|  | <p>After fastening the air bag, the air angle connections are screwed in.</p> <p><b>Note:</b><br/>The threads of the air angle connection are conical. Do not tighten too firmly when pivoting into the air bellows.</p> |
|---|--|

### 3. 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

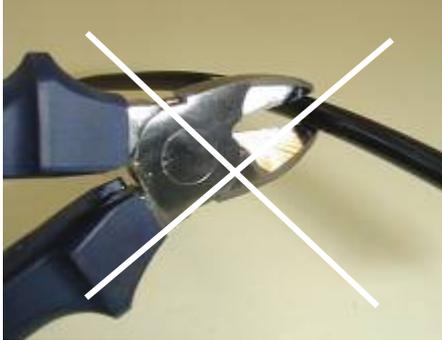
\*<sup>3</sup> DIN 13, sheet 33 shank end screws quality 8,8, coefficient of friction  $m = 0,14$

**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.

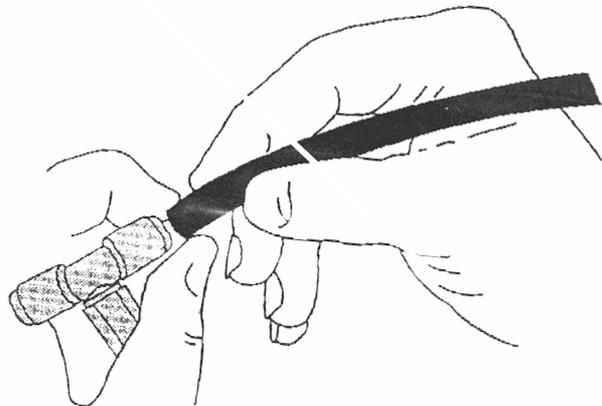
Note: With the pulling to check if the ring is too far pulled out, a leakage can occur!

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.