



# Service Bulletin No.1019

MODEL	: T-900 Series, T 2100 Series
TYPE	: <b>Service information</b>
MANUAL & SECTION	: <b>Maintenance Manual: Chapter 8-Suspension</b>
DATE	: <b>March 20<sup>th</sup>, 1998</b>
SUBJECT	: <b>Suspension height control and adjustment</b>
CONDITIONS	: <b>Service information only</b>

**DESCRIPTION** : As part of preventive maintenance procedures, suspension air bellows height should be checked on a scheduled basis. Proper height adjustments are important for the following reasons:

- to ensure that the vehicle is level
- to ensure adequate ground clearance
- to ensure that the suspension system operates within the designed movement range and body clearance

This Bulletin highlights the service procedures that need to be followed when performing the suspension height check required by the B-type maintenance interval.

Service Bulletins are issued to supplement or supersede information in the Van Hool manuals. Note Service Bulletin number, date and subject on the register at the end of the relevant chapter(s). File Service Bulletin separately for future reference.

## **SERVICE PROCEDURE**

**!!! CAUTION !!!**

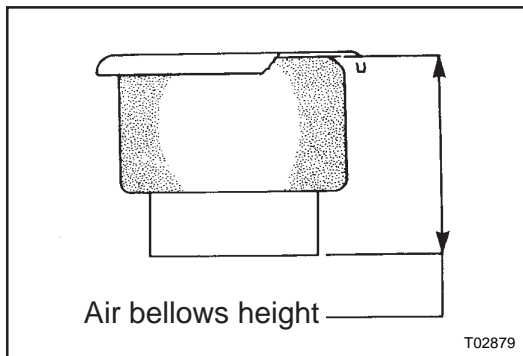
**USE SAFE SHOP PRACTICES AT ALL TIMES.  
READ ENTIRE PROCEDURE BEFORE BEGINNING WORK.**

### **1. General**

Pressurized air from the auxiliary air tank to the air suspension bellows is controlled by three height control or levelling valves. One valve is located on the left of the front axle, two are located at the tag axle, one on each inner side of the rear wheel housing. The valves are mounted to the subframe and connected to the axles through an arm and link connection. This connection allows the valve to regulate air pressure in the air bellows to the vehicle load, maintaining normal ride height.

### **2. To check air bellows height**

The correct vehicle ride height is checked by measuring the height of the left air bellows of the FRONT AXLE and the left and right rear air bellows of the DRIVE AXLE. This height should be 11 to 11.4 inches at most. Refer to Figure 1 to identify the correct location where the measurement has to be taken.



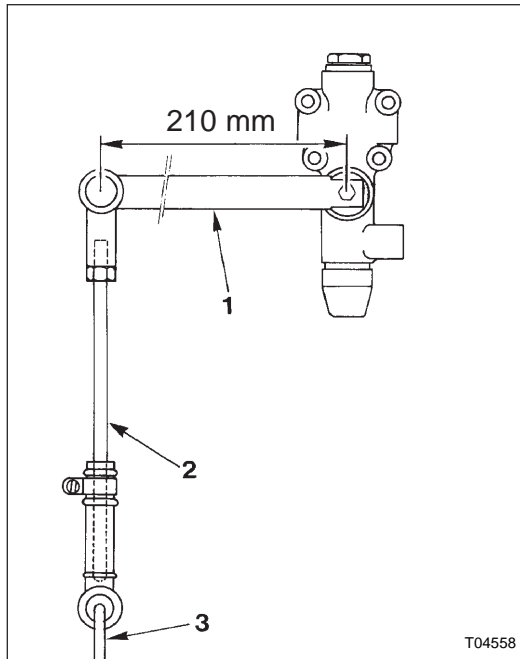
**Figure 1: Correct location of height measurement**

When measuring air bellows height, make sure that:

- the motorcoach is parked on a flat level surface
- the suspension system is in the normal driving position, after having been cycled from normal ride height to low ride height and back to normal ride height again.
- there are no air leaks in the system
- the vehicle is at normal operating air pressure

### **3. To adjust air bellows height**

When adjustment is required, the control lever (1, Figure 2) should be moved up to raise the height of the vehicle, and down to lower it. This is done by adjusting anchor bracket (3, Figure 2) of retaining rod (2, Figure 2) up or down.



**Figure 2: Levelling valve link connection**

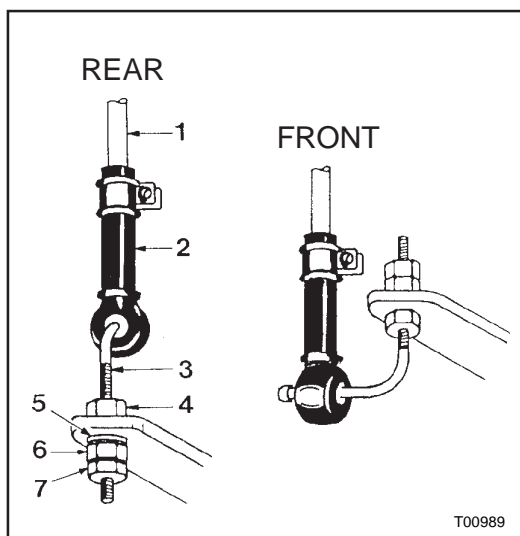
1. Control lever
2. Retaining rod
3. Anchor bracket

**NOTE:**

*Adjustments must be made on fill cycle. This means that air must be released from bellows first, then bellows must be inflated again. If it is necessary to lower vehicle height, release sufficient air to well below required height and adjust to required height on fill cycle.*

a. To adjust suspension height, proceed as follows:

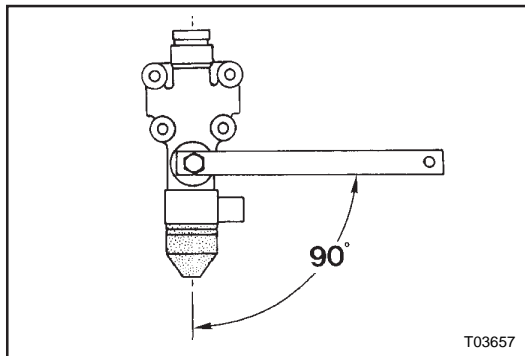
1. With the vehicle at normal operating pressure, disconnect rubber coupling (2, Figure 3) of retaining rod (1, Figure 3) from anchor bracket (3, Figure 3). Undo and remove retaining nuts (6 and 7, Figure 3) and screw adjusting nut (4, Figure 3) upwards as far as it will go.



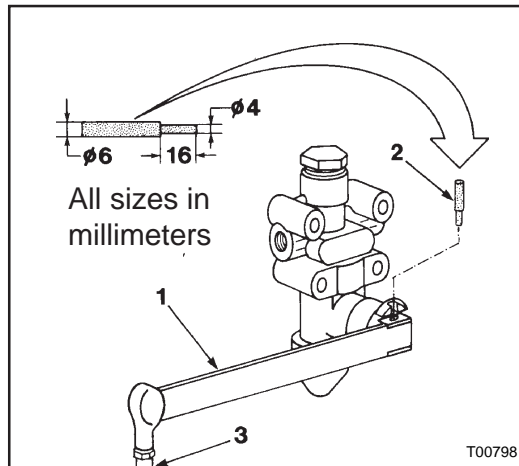
**Figure 3: Anchor brackets and retaining rods front and rear**

1. Retaining rod
2. Rubber coupling
3. Threaded anchor bracket
4. Adjusting nut
5. Lock washer
6. Retaining nut
7. Retaining nut

2. Lower coach body by pulling retaining rod downwards, releasing air from bellows.
3. Inflate bellows again by raising the control lever until desired height is reached.
4. Return control lever to neutral position (see Figure 4) to shut off levelling valve. Lock control lever with dowel pin (see Figure 5).



**Figure 4: Levelling valve. Control lever in neutral position**



**Figure 5: Levelling valve. Locking overtravel lever with dowel pin**

1. Control lever
2. Dowel pin
3. Retaining rod

5. With the dowel pin keeping the control lever in the neutral position, refit the rubber coupling of the retaining rod to the anchor bracket, and adjust anchor bracket to fit. Secure adjusting nuts and remove dowel pin.
6. If there is not enough play on the adjusting nuts, it is possible to make further adjustments by loosening the clamps on the rubber coupling and bringing the retaining rod up or down.

**NOTE:**

*Allow suspension to stabilize before taking reading.*

**b. Sequence of adjustment**

Since changing the height of one bellows has an influence on the height of the others, following sequence of adjustment should be followed:

1. On the left hand side of the coach, adjust height of both DRIVE AXLE bellows by changing the overlever position of the levelling valve above the TAG AXLE. Adjust clearance of DRIVE AXLE bellows to read between 11 and 11.4 inches. DO NOT ATTEMPT TO ADJUST THE HEIGHT OF THE TAG AXLE BELLOWS. TAG AXLE BELLOWS WILL SELFADJUST AUTOMATICALLY.
2. Repeat the procedure of item 1 on the right hand side of the coach.
3. Adjust height of air bellows of front axle to read between 11 and 11.4 inches.
4. Recheck height of DRIVE AXLE bellows left and right. Leave height of TAG AXLE bellows as it is. Readjust if necessary.
5. Make a short test drive on a winding road and readjust drive axle bellows height, if necessary.

*Procedure complete*

