



Service Bulletin No. 1036

For ABC/ICP staff only

MODEL	: T2100 Series
TYPE	: Distributor information
MANUAL & SECTION	: Maintenance Manual : Chapter 8 - Suspension (air system) Spare Parts Manual : Section 641205 - Drive axle : suspension
DATE	: March 31 st , 2000
SUBJECT	: Drive axle suspension kit
CONDITIONS	: -

DESCRIPTION:

Van Hool have developed a drive axle load leveler suspension kit for T2100 coaches.

The kit is fitted to the drive axle C-beams and includes four universal support brackets, four 1G22 air bellows, four Ø 200 mm / 7 ⁷/₈ inch pistons, and sundries. The service procedure attached to this Bulletin explains in detail how the conversion should be made.

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TO FIT T2100 DRIVE AXLE LOAD LEVELER SUSPENSION KIT

1. Parts required :

Part No.	Description	Qty
VH 10696315	Universal support bracket	4
VH 10669193	1G22 air bellows, tapered	4
VH 624315810	Ø 200 mm / 7 7/8 inch piston*	4
VH 10562451	Bushing*	4
VH 634304040	Rubber spring*	4
VH 660222604	Bolt (M8x1.25x35-8.8)*	4
VH 660299557	Flush head Allen bolt (M12x1.75x35-8.8)	8
VH 660207406	Self-locking nut (M12x1.75-8)	8

(*) The part numbers marked with an asterisk have been pre-assembled. These part numbers are for reference only.

Figure 1 shows the parts required to replace one air spring assembly. All four C-beam air spring assemblies should be replaced, when making this conversion.



Figure 1 : Replacement parts for air spring assembly

2. Tools required :

- metric socket and ratchet set
- metric Allen keys
- pry bar or rim tool
- rubber lubricant.

3. Technician's profile :

The technician carrying out the conversion should have a thorough knowledge of the T2100 suspension system.

4. Cautions and basic safety rules :

To avoid personal injury, when working on or around air systems and components, the following precautions should be taken :

1. Always block the vehicle wheels and shut down the engine. Venting the coach air system may cause the vehicle to roll. Keep hands away from chamber push rods and slack adjusters ; they may apply, as the system pressure drops. Stay away from deflating air bellows.
2. Vent all air pressure from the coach system.
3. Never connect or disconnect a hose, tube or line containing air pressure. It may whip, as air escapes. Never remove a component or open a line, unless you are certain all system air pressure has been vented.
4. Never exceed the recommended air pressure and always wear safety glasses, when working on air systems.

5. Service procedure :

!!!CAUTION!!!

**OBSERVE SAFE SHOP PRACTICES AT ALL TIMES.
READ THE ENTIRE PROCEDURE BEFORE STARTING TO WORK.**

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a. Preparations :

1. Park the coach on a level surfaced service pit with the front wheels straight. Shut down the engine. Make sure the vehicle is empty.
2. Lower the suspension front and rear, using the raise/lower switch on the instrument panel. For more details refer to the Operator's Guide Book section 2B.
3. Turn off the ignition and the master switch.
4. Chock the front road wheels.
5. Working underneath the coach, vent all remaining pressure from the rear suspension bellows by removing the rubber couplings of the tag axle leveling valves from their anchor brackets and pulling the retaining rods down (see Figure 2). Do not reconnect the rubber couplings until later in the procedure.

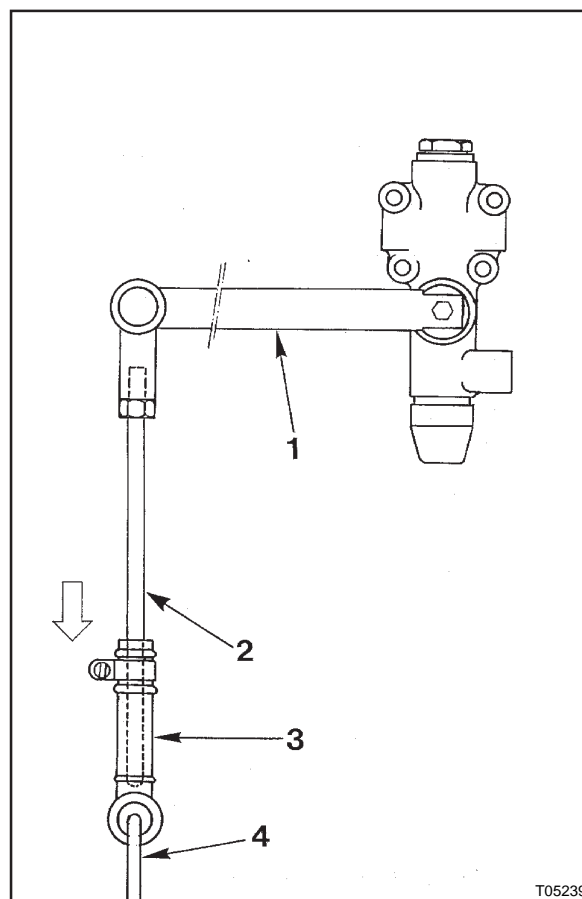


Figure 2 : Leveling valve link connection

1. Control lever
2. Retaining rod
3. Rubber coupling
4. Anchor bracket

6. Repeat step 6 at the front axle (one leveling valve only).

7. Jack up the rear of the coach at the drive axle differential housing (see Figure 3), until the drive wheels are off the ground.

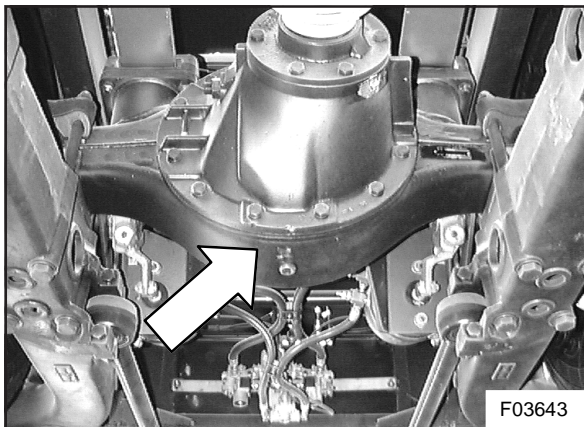


Figure 3 : Drive axle differential jacking point

8. Support the chassis frame with a steel box girder and a wooden block (see Figure 4) at the foremost C-beam track rod anchor points (see Figure 5).

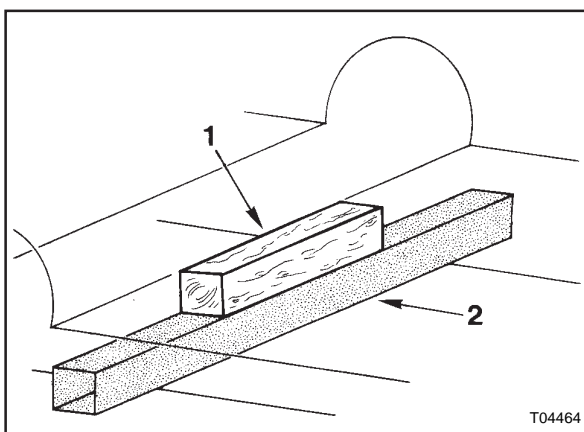


Figure 4 : Chassis frame support

- 1. Wooden block
- 2. Steel box girder

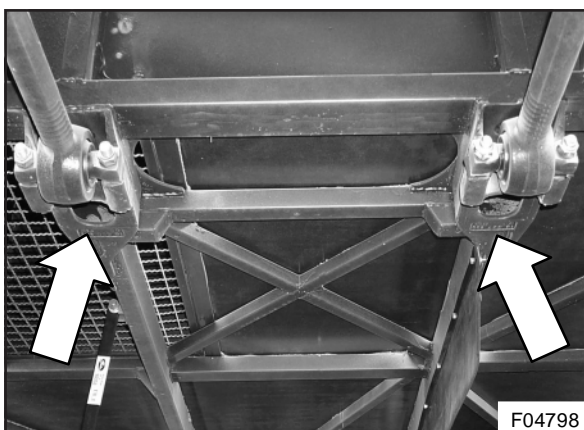


Figure 5 : Foremost C-beam track rod anchor points

9. Remove the wheels from the tag axle.
10. Lower the coach again, until the wheels of the drive axle barely touch the ground. Leave the jack in place.
11. Inside the luggage compartment, remove both panels giving access to the foremost suspension bellows (see Figure 6).

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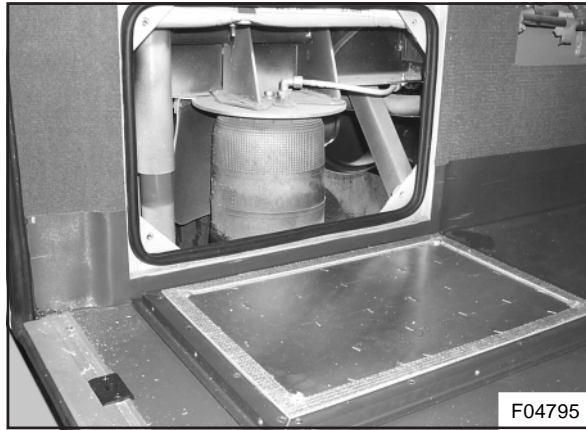


Figure 6 : Access to foremost suspension bellows

b. To replace drive axle air bellows :

To remove rearmost OE (cylindrical) bellows and piston

1. Undo and remove the two bolts securing the piston and bellows assembly to the C-beam.
2. Insert a pry bar between the top rim of the bellows and its mounting plate. Lever the bellows off the seat and remove it together with the piston.
3. Thoroughly clean the bellows mounting plate and C-beam mounting surface (see Figure 7).

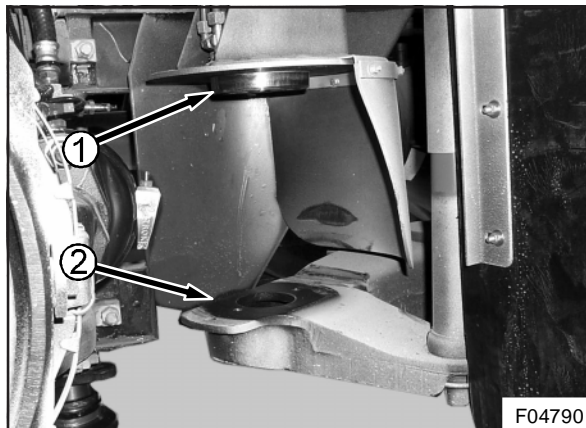


Figure 7 : Top mounting plate (1) and C-beam mounting surface (2) - (tag axle side)

To remove the foremost OE (cylindrical) bellows and piston

This piston and bellows assembly can be removed in a similar way through the access opening in the luggage compartment, but it will be necessary to separate the bellows from the piston.

To fit 1G22 (tapered) bellows and piston assembly

NOTE :

Figures 9 through 11 show the different steps as to fitting the parts from the suspension kit. To facilitate installation the piston and bellows may be preassembled as shown in Figure 8, prior to tightening the two flathead Allen bolts securing the support to the C-beam.

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Figure 8 : Preassembled piston and bellows

1. Fit the support bracket to the C-beam with the widest part of the base plate pointing outwards (see Figure 9). Slide the flathead bolts through the countersunk holes in the base plate and through the piston mounting holes in the C-beam. Run up the self-locking nuts and tighten to a torque of 115 Nm/85 ft.lbf.



Figure 9 : Support bracket fitted to C-beam

2. Put the preassembled piston with rubber spring on top of the support bracket (see Figure 10). Make sure it is properly centered and seated.



Figure 10 : Piston with rubber spring, on top of support bracket

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3. Referring to the Maintenance Manual, Chapter 8 section 1, install the bellows between the piston and the mounting plate as shown in Figure 11.



Figure 11 : Air bellows snugly fitted to mounting plate

4. Replace the remaining C-beam air springs.
5. With the suspension kit fitted reinstall the tag axle road wheels. Increase tag axle tire pressure to 7,6 bar/110 psi.
6. Lower the coach, pressurize the air system and check and adjust the air bellows height as explained in the Maintenance Manual Chapter 8 and Van Hool Service Bulletin No. 1019.

Service procedure complete.

6. Service information :

Tapered bellows and piston assemblies should be used for this application only.

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