

ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION

OFFICE OF THE MANAGING DIRECTOR
MUSHIRABAD:HYDERABAD – 20

No.TL6/437(2)/2004-MED

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Sub : MAINTENANCE - Introduction of Air Suspension on TATA fleet in APSRTC -
Instructions issued on Air Suspension Maintenance - Reg.

INTRODUCTION :

Corporation is introducing Air Suspension on all the Inter-State and Long Distance Hi-tech buses which are having more than 400 KMs route length to improve the ride comfort for the passengers

Conventional leaf spring suspension absorbs road shocks without passing them to the chassis and passengers. This absorption is best done when suspension stiffness is the least for a given load As load keeps varying, suspension stiffness needs to vary correspondingly to have better shock absorption. This cannot be achieved in conventional leaf spring.

Air Suspension uses air spring to bear the load. Air springs offer lower stiffness for a given load carrying capacity In conjunction with the valves, the air spring offers variable stiffness for varying load conditions, which improves the ride comfort in any seat located in the vehicle. It extends a longer life to the body and chassis components and also lowers natural frequency to provide a higher ride comfort. Above all, it reduces fatigue to the driver

The major components of Air Suspension System are:

1. Air Spring Assembly
2. Control Arms (Links)
3. Levelling Valve
4. Anti-Roll Bar
5. Shock Absorber

Each rear air suspension provided on TATA vehicles will have: 4

Nos. of air springs 2 Nos. of levelling valves 4 Nos. of shock
absorbers 1 Compound Link & 2 Parallel Links

No lubrication is required for air suspension as all joints are having
spherilastic bushes.

In case air spring gets punctured, for example if LH Front Air Spring gets punctured the vehicle will be tilted to LH side since the air in the LH Rear air spring will be slowly exhausted. The vehicle can be made straight by exhausting the air from RH air springs by disconnecting levelling valve from axle. Now the vehicle will rest on piston through bump stop. The vehicle can be taken to nearest workshop at slower speed.

To jack up the vehicle, place the jack below the parallel link axle and bracket and jack the axle.

The following instructions are issued regarding periodicity of maintenance of Air Suspension and the items to be attended at the prescribed mileage/period.

I. DAILY :

1. Check for Bolts Torque

Torque Details:

a) M22 (Axle Mounting Bolt) - 250 Nm.

b) Chassis mounting Brackets and other bolts:

SIZE OF BOLT		TORQUE
M 24	-	300 Nm
M 16	-	214 Nm
M 14		140 Nm
M 12		85 Nm
M 10	-	50 Nm

2. Check Air Spring Static Height for 265 mm. If the static height is not 265 mm, adjust the levelling valve to achieve the same.

3. Check the Shock absorbers for oil leakage, rubber mounting failures and damping loss.

4. Drain the Air Reservoir to maintain the air supply free from Moisture

II. MAINTENANCE TO BE DONE IN EVERY SCHEDULE - II.

Remove any deposit of foreign particles in between Piston & Diaphragm. Use soft cloth clean the sand particles or dust in between the Piston & Diaphragm

III. MAINTENANCE TO BE DONE IN EVERY SCHEDULE-III.

Check Pneumatic line for air leakage and correct if any leakage is found.

IV. MAINTENANCE TO BE DONE IN EVERY SCHEDULE-IV.

1. Check Shock Absorbers. If the vehicle is having undamped motion, replace the defective shock absorbers.
2. Check the bushes. Change all the worn out bushes.

V. MAINTENANCE TO BE DONE IN EVERY FC.

1. Check levelling valve. Correct the levelling valve lever position.
2. Check the bushes. Change all the worn out bushes.

VI. The following things shall not be done on Air Suspension System:

1. Do not disturb the levelling valve lever position as it will give bumpy ride.
2. Do not change the air spring static height as it will give poor ride comfort.
3. Do not allow the vehicle to be driven without shock absorbers.
4. Do not allow the vehicle to be run without air in the air spring assembly.

VII. The following are the contact persons for service support.

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All DMs with Tata fleet are instructed to ensure the implementation of circular instructions besides educating the Supervisors and Mechanical staff on the salient features of the air suspension system and its maintenance.

All the Regional Managers, Divisional Managers and Dy. CMEs are advised to review the implementation of the Circular instructions at the depots to which these vehicles are allotted during the inspection of depots.

Please acknowledge.



EXECUTIVE DIRECTOR (E)