



ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION

Mechanical Engineering Department, Office of the VC&MD
RTC House, VIJAYAWADA-13

No. OP1/581(16)/2018-MED

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Sub: **MAINTENANCE**: Fitment and tightening of wheel nuts & bolts - Instructions issued- Reg.

APSRTC has been enjoying the patronage from the travelling public all these days, due to the reputation built on its regular, punctual, reliable and breakdown free operations with top most emphasis on the safety of the passengers.

Safe and break down free operation of buses is ensured by carrying out Preventive Maintenance, for buses at different intervals viz., Schedule-I, Schedule-II, Schedule-III, Schedule-IV and FC Attention.

Though MED through continuous efforts, is containing the Brake Downs and MED Cancellations at the bare minimum level, some of the en-route Break Downs resulted in the recent past have been attracting adverse criticism on the condition of buses and raising doubts on safety of passengers. One of the reason which contributed to such type of failures is “**Wheels(Tyres) coming out of hub due to loosening of wheel nuts**” and in all the 4 incidents that have taken place, we are fortunate enough to end up only with Break Downs without resulting in any unpleasant incidents.

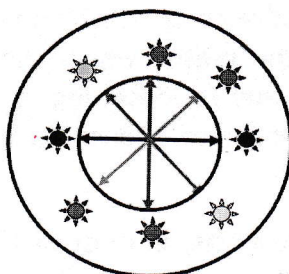
On analysis of these break downs, in most of the cases, it is observed that tyres were replaced prior to occurrence of these incidents either by drivers en-route or mechanics and helpers in garages to attend to punctured tyres and tyre rotation etc. Due to improper tightening of wheel nuts during fitment of tyres, Wheel nuts are getting loosened resulting in wheels coming out of hub. On a close study and interaction with maintenance staff it is understood that the activity of tyre replacement on buses is taken up casually by drivers en-route and also by outsourcing staff in the garages without following minimum required precautions .

In this context the precautions to be taken during fitment of tyres on buses are once again reiterated here under:

- Before taking up fitment of Tyres on to the bus, care shall be taken to thoroughly clean the accumulated dirt and dust on the following surfaces, as it may cause loosening of wheel nuts in case these surfaces are wetted due to rain or water splash when passed through shallow surfaces filled with water etc. :
 - Wheel nuts and wheel bolts
 - Wheel nut seating area on the wheel disc
 - Mating surface between the wheel disc and brake drum
 - Mating surface in between the wheel discs of rear dual tyres.
- The wheel discs must be thoroughly inspected for oblonged and cracked holes and replace if necessary.

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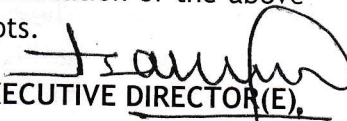
- The wheel bolts and nuts shall be thoroughly inspected for damaged threads/ broken wheel bolts/missing wheel nuts and replace them if necessary.
- The wheel bolt seating area on the hub and the shank of the wheel bolt shall be examined thoroughly during Sch. III/IV maintenance, to avoid rotation of wheel bolt while tightening the wheel nut.
- Never apply hand brakes While tightening the wheel nuts. If the brakes are applied, brake shoes prevent the wheel disc and brake drum from inward movement while tightening, thereby the wheel nuts may get loosened after releasing the brakes.
- After tyre is mounted onto the hub, all the wheel nuts must be tightened fully in wheel jacked up position only, by providing support to the wheel disc in opposite direction of tightening, to prevent its rotation and to ensure full tightening.
- Wheel nuts should be tightened in pairs i.e “opposite to each other” as shown in the figure.



- Whenever tyres are replaced on the bus due to issue of new tyres, replacement of punctured tyres, tyre rotation etc.,, the same shall be recorded in shift RG register and given as BF for next day also, to tighten the wheel nuts as is done in case of tightening the spring assembly U-clamp nuts. Tightening on the second day shall be ensured by the shift supervisors and certify the same in a separate register maintained with bus numbers, dates of fitment and tightening.

All Depot Managers and Maintenance In-charges are advised to ensure that the above instructions are followed scrupulously during the fitment of tyres to buses to avoid en-route Break Downs and untoward incidents. All the maintenance staff and drivers must be educated regarding the above precautions for implementation. Shift Supervisors shall cross check the buses taken up for Sch I/II maintenance and ensure that wheel nuts tightening is done without fail.

RMs and DyCMEs are advised to have a close monitoring on implementation of the above guidelines and cross check the buses during their inspection/visits to Depots.


EXECUTIVE DIRECTOR (E).

To

Copy to: ED(O), ED(C), FA&CAO, All EDs(Zone) for information.

Copy to: CME (M), CME(C&B) & All RMs for information and necessary action.

Copy to: All DyCMEs & WMs for information and necessary action

Copy to: All Depot Managers & Maintenance Incharges for strict implementation.

Copy to: OSD to VC & MD for information.