



## ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION

Office of the VC & MD,  
RTC House, Vijayawada.

No: TL10/437(1)/2017-MED.

CIRCULAR No: 02 /2017-MED Dt:31.03.2017

Sub: Body Upkeep-Attention of Window Rattling and replacement of shutter glasses at Depots: Instructions issued - Reg.

- Ref:
1. Cir.No:19/2015-MED, Dt.27.11.2015
  2. Cir.No:06/2014-MED, Dt.19.03.2014
  3. Cir.No:07/2013-MED, Dt.18.04.2013
  4. Cir.No:17/2012-MED, Dt.17.07.2012
  5. Cir.No:26/2012-MED, Dt.31.12.2012

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Window rattling is the most common complaint in all types of Non-AC Buses. Window rattling noises are on account of direct contact between Shutter glass and Window frame due to missing/worn out/hardened rubber Flock Channel / Terene felt. Travel by Special Type Non AC Buses (S.Lux & U.Dlx) with window rattling sound will be a bitter experience. It is very much essential to ensure clean shutter glasses without any rattling sound.

Vide Cir.No:19/2015-MED, detailed guidelines were issued for attention of Windows at Depots (under selective minor repairs) and at ZWS/Regional/Divisional HQs (under selective major body repairs) through Outsourcing Agencies.

### I. Why Window Rattling :

- a. Worn out or missing Flocked Channel / Terene felt.
- b. Worn out E, F & H Alu. Sections of window frames.
- c. Broken window frames at corner weld joints.

### II. Types of Windows:

There are two types of windows in operation.

- a. Window frames with E-Section guide, H-section shutter frame and Terene felt (Aluminium bodies prior to 2006)
- b. Windows with Swaraj mazda F type Alu.section and Flocked channel. (All GI and Aluminum bodies from 2006).

Terene felt / Flocked channel is the fillar material between glass and Alu.frame to avoid direct contact of metal and to prevent noise / rattling. In view of specific life period for the Terene felt/ Flocked channel, It is necessary to replace these items periodically (matching with FC renewal) as below.

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|--------------------|----------------------|
| A. Terene felt     | : Once in year       |
| B. Flocked Channel | : Once in two years. |

### **III. Regular body repairs at depots:**

The following works are to be attended during sch III/IV.

- a. Replacement of missing/worn out/hardened Flocked channel / Terene felt.
- b. Replacement of broken/missing Top fixed glasses and shutters.
- c. Replacement of damaged/missing Window knobs (Finger pulls).
- d. Attention of window rattling.

### **IV. Attention of Window Rattling through Outsourcing Agencies:**

There is acute shortage of Coach Builders in Depots and one or two Coach Builders available in depots are being utilized for attending minor body repair works during sch III/IV. Thereby the windows maintenance got neglected at Depots.

In order to replace worn-out Flocked channels and repair broken frames during FC attention, Outsourcing Agencies have to be engaged through Local Tenders for each Depot in the Region.

#### **a. Labour cost for attention of windows:**

Earlier an amount of Rs. 400/- was allowed towards labour charges for removal, repair and re-fitment per window of Super Luxury Bus of 1680 mm bay vide Circular No: 26/2012-MED. Accordingly, labour charges

for a standard 1130 mm bay window of Alu. Bodies is worked out at Rs.270/-.

The same labour charges for Super Luxury and Alu. Bodies may be allowed now also i.e., Rs.400/- and 270/- respectively.

**b. Working instructions for window repairs/rattling attention at Depots:**

1. Regional Managers have to constitute a committee consisting of DyCME, AO/DyCAO and DM(Technical) and float local tenders to finalize depot wise agency and the piece rate per window for each depot in the region.
2. The rate shall be fixed at Rs.400 & Rs.270/- (max) per window for Super Luxury and Alu. Bodies respectively.
3. Work order shall be issued to outsourcing agency by Depot Manager and payment should be arranged at Depot level.
4. Depots shall provide power, tools, required material and continuous feeding of vehicles to outsourcing agencies.

**c. Materials to be stocked for Window repairs:**

DyCMEs have to assess material requirement for each Depot and place depot wise indent on Zonal Stores and ensure stocking of materials required for a minimum of 3 buses at each depot any point of time.

The following materials are to be stocked at Depots for 3 buses.

<u>MATERIAL</u>	<u>QTY/BUS</u>
1. Alu. window guide(E/F section)	40 kgs
2. Flocked channel / terene felt	135 mts.
3. Adhesive gum	1 lt.
4. Sweep rubber	21 mts.
5. Alu. section H for sweep rubber	7 kgs.
6. Finger pull section	2 kgs
7. Window locks for S.Lux	32 Nos
8. GI sheet 1.22 mm strip for L cleat	3 kg
9. Alu. flat head rivets for L cleat riveting	250 Nos
10. EPDM rubber ( for Terene felt type windows )	20 Kgs

Sizes of Window frames, Shutter glasses & Top fixed glasses and Sources for supply of Glasses, Flocked Channel & Terene felt are furnished at Annexure.

**d. Window repair works:**

1. Removal of window frames
2. Removal of shutter glasses
3. Removal of old flock channel from window guide.
4. Removal of corner cleats if corner joints are broken
5. Welding of broken window frame corners
6. Cleaning of window frame and painting with PU black paint.
7. Fitment of corner cleats with flat head Alu rivets.
8. Pasting new flock channel with rubber adhesive
9. Cutting slots on flocked channel matching to drain holes of window frame.
10. Cleaning of shutter glasses.
11. Fitment of window sliding glasses in frame.
12. Fitment of sweep rubber section & rubber with PU sealant .
13. Replacing damaged finger pulls/locks.
14. Attention of damaged waist rail, if required.
15. Replacement of Alu Z-section between window frame and waist rail, if required.
16. Re-fitment of repaired window assembly.

**e. Modified shutter frames from 2012:**

Prior to 2012, in order to replace the broken/missing Shutter glass in flocked channel type window frames, the depots are resorting to break the corner welded joints at bottom to remove the bottom member of the window frame and re-fixing it with bolts & nuts to waist rail. This is not the correct practice. This practice leads to misalignment of window and preventing free movement of shutter glasses. This also causes rattling of windows. Hence Window frame assembly totally to be removed from bus before replacement of glass/ Terene felt/Flocked Channel.

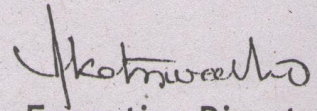
In all types of buses (S/L, DLX, EXP & TVG) fabricated from 2012, split type windows were provided to facilitate easy replacement of shutter glasses and Terene felt.

The procedure is as follows:

1. Bring both window shutter glasses to centre of the window frame.
2. Remove screws of top side removable member of window frame.
3. Take out top removable member from inside.
4. Replacement of damaged flocked channel.
5. Place the new/repaired window shutter glasses in to the grooves of Aluminium Mazda section and then position the removable member.
6. Fit the removable member with screws and check the free movement of shutter glasses.

The window repairs are to be taken up on war foot basis and complete the repairs on all buses by the end of May'2017.

DyCMEs are instructed to consolidate depot wise attention of defective windows in their region and to furnish details of buses attended for window rattling to MED/Head Office every month.

  
Executive Director (E&IT)

Copy to: Dir(V&S), ED(A&P), FA & ED(Zones) for information

Copy to: CM(F), CCOS, CME(C&B), CME(O) for information & necessary action.

Copy to: All Regional Managers for information & necessary action.

Copy to: All DyCMEs, DyCAOs & COSs (Zones) for necessary action.

Copy to: All Depot Managers & Maintenance In-Charges for necessary action.

ANNEXURE:

**DETAILS OF WINDOW SIZES**

SL. NO	TYPE OF BUS	SIZE OF TOP FIXED GLASS	SIZE OF SHUTTER GLASS	WINDOW FRAME
1	SUPER LUXURY	410 mm(H) x 1675 mm (L) 330 mm(H) x 1675 mm (L)	600 mm(H) x 820 mm(L)	678mm (H) X 1675 mm(L)
2	ULTRA DELUXE	450 mm(H)x 1125 mm (L) 330 mm(H)x 1125 mm (L)	600 mm(H) x 540 mm(L)	678mm (H) X 1125 mm(L)
3	EXPRESS	330 mm(H)x 1125 mm (L)	600 mm(H) x 540 mm(L)	678mm (H) X 1125 mm(L)
4	TELUGU VELUGU	330 mm(H)x 1125 mm (L)	600 mm(H) x 540 mm(L)	678mm (H) X 1125 mm(L)
5	CITY ORDINARY	450 mm(H)x 1125 mm (L) 330 mm(H)x 1125 mm (L)	600 mm(H) x 540 mm(L)	678mm (H) X 1125 mm(L)

**DETAILS OF SOURCES FOR MATERIALS TO CARRY OUT WINDOW REPAIRS**

SL. NO	DESCRIPTION	SOURCE
1	WINDOW SHUTTER GLASSES	1.NN SAFETY GLASS, HYDERABAD Mobile :9849805357 PRAKASH GLASS WORKS, HYDERABAD Mobile: 9849255000 HYDERABAD GLASS SAFETY, HYDERABAD Mobile: 9346662615
2	ALU EXTRUCTIONS i.e., WINDOW GUIDE(16482) SWEEP RUBBER SECTION(12691) T & F SECTIONS	KARNATAKA METAL COMPANY, SEC' BAD Mobile: AGARWAL ALUMINUM COMPANY, SEC'BAD Mobile: HYDERABAD METAL COMPANY, HYDERABAD Mobile:9848029432
3	WINDOW SHUTTER LOCKS	LUCKY BUS NEEDS, HYDERABAD Mobile:9348991665 URRJA BUS DÉCOR, BANGALORE Mobile:0943864422 NISA INDUSTRIES, HYDERABAD Mobile:9246379549
4	RUBBER ITEMS i.e., FLOCK CHANEL, SWEEP RUBBER & 1" BEADING FOR E SECTION WINDOWS	GENERAL AUTO & HARD WARE STORES, HYDERABAD Mobile:9849024481 COMMERCIAL TRADERS, HYDERABAD Mobile:9948293599 LUCKY BUS NEEDS, HYDERABAD Mobile:9348991665