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सत्यमेव जयते

भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
Government of India - Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011

AN ISO 9001
CERTIFIED
ORGANISATION

No. SV.Bogie.General

Date: 06.09.2017

✓ EDME (Coaching),
Railway Board,
Rail Bhawan,
New Delhi.

Sub: Issues with V-belts and corrective action proposed

As directed by Board, I, the undersigned visited Alambagh Workshop to exactly assess the problem of pre-mature failure of V-belt in AC and Non-AC coaches and a detailed report on the issues and corrective action to be taken is enclosed herewith. Summary of action to be taken is as under:

Short-term recommendations:


1. Various SMIs/instructions issued by RDSO time to time should be implemented in order to ensure proper maintenance.
2. Availability of various tools and gauges required for checking of V-belts, belt tensioning device and pulleys in workshops/depots may be ensured.
3. Improvement suggested by Railways for increasing reliability of bushes provided in bogie frame bracket to be examined by ICF and CAI incorporating change in bracket, change in bush length and change in pin length to be issued by ICF for implementation by Railways. Being on outer side, bogie frame bushes have to be sturdier than Alternator bushes.
4. Although, rotation of pin will facilitate uniform wear of pin but because of excessive vibrations being encountered by the suspension assembly of alternator due to rail wheel interaction, further movement in pin may cause increased wear of bushes. As such, all the modifications suggested by Railways for holding the pin in position should also be incorporated while issuing the CAI by ICF.
5. CAIs as stated above should be issued separately for both AC and Non-AC coaches.

Long-term recommendations:

1. RDSO shall issue the standard list of M&P and T&P required to be set up in the workshop/depots to ensure the proper maintenance/replacement of V-belts/Alternators.
2. Since V-belts are now ICF controlled item, ICF may conduct quality audits of various manufacturers to ensure quality.
3. Suitable press fit hub to be provided on the axle on which a bolted design pulley should be mounted so as to ensure perpendicularity of pulley with axle similar to one provided in LHB coaches for disc brake mounting arrangement. This will ensure rigid and perpendicular connection of pulley with axle, as at present it is being mounted by providing a rubber sheet on the axle. With this modification and alternator be rigidly mounted with respect to axle with the help of rigid bracket mounted on the bogie frame and to compensate the axle movement with respect to bogie frame during running, tensioning rod will take care of the requirement.

With above changes proposed there is all the possibility to improve reliability of V-belt.

DA: As above


(Indrajit Singh)
Executive Director /Carriage

Copy to:

1. AMME, Railway Board, Rail Bhavan, New Delhi
2. EDEE (G), Railway Board, Rail Bhawan, New Delhi
3. ED/PS & EMU, RDSO, Lucknow
4. CDE/ICF to issue CAI to Railways as stated above. If necessary, FEM of bogie bracket be also done.

21/5/17
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