Service Bulletin No. 329

MODEL	TYPE	SECTION/GROUP	DATE
D4505 Coaches	Field Change Program	12–Suspension	July 10, 2009

SUBJECT: **KONI SHOCKS ON FH946 TAG AXLES**

CONDITIONS:

Ref. NHTSA Recall No.: 09V–200

Customer Complaint:

Shock failure during vehicle travel in rear rise mode could result in the tag suspension exceeding its design rebound limit, causing interference between the upper portion of the suspension and the driveshaft.

Cause:

Increasing the tag axle load capacity from 12,000 lbs to 14,000 lbs resulted in larger tag axle suspension air springs. These larger springs are capable of generating forces that, under certain conditions, could exceed the allowable tensile strength of the Koni tag axle shock absorbers that MCI had offered as an option for these models. The condition that can result in shock failure is when the coach is moving in rear rise mode. This situation can be found on D4505 coaches equipped with Koni shocks and a FH946 tag axle.

Corrective Action:

MCI strongly encourages customers operating D4505 coaches equipped with Koni shocks and a FH946 tag axle to install the parts referenced in this bulletin and to reduce the maximum pressure of the vehicles' rear rise pressure regulator from 100 psi to 85 psi.

As a result, MCI advises that owners of D4505 model coaches between the range of, and including, unit numbers 58953–58973, 58990, 59017–59021 and 59025–59026 should implement the specified steps in this procedure as soon as possible.

Parts

Qty.	Old P/N		Description
4	12-05-1177		Shock, KONI, Drive axle
2	12-05-1179		Shock, KONI, Trailing axle
Qty.		**New P/N**	**Description**
4		12-05-1199	Kit–Shock, Gabriel, Drive axle *Kit Contents Are:* Washer Bushing Locknut
2		12L-5-114	Kit–Shock, Gabriel, Trailing axle *Kit Contents Are:* Washer Bushing Locknut
a/r		21-7212-18	Locktite

Service Procedure:

General notes

Read this entire procedure before beginning work.

Use Safe Shop Practices At All Times.

REFER TO MANUAL

Refer to Section 12 / Suspension / Shock Absorbers, in the MCI D Series Maintenance Manual, in conjunction with this procedure.

1. Turn the main battery disconnect switch to the OFF position. Chock both sides of the tires.

⚠ WARNING

To prevent personal injury and component damage, block the drive and tag axles by positioning stands so that the weight of the axles is fully supported.

2. Using the manual tag axle dump valves, dump the air from the tag axle air bellows.
3. Position stands under the drive and tag axles.
4. Locate the four (4) drive axle and two (2) tag axle shock absorbers.

NOTICE

Remove and replace one (1) shock absorber at a time.

DO NOT re-use rubber mounting bushings, as improper bushing pre-load may result.

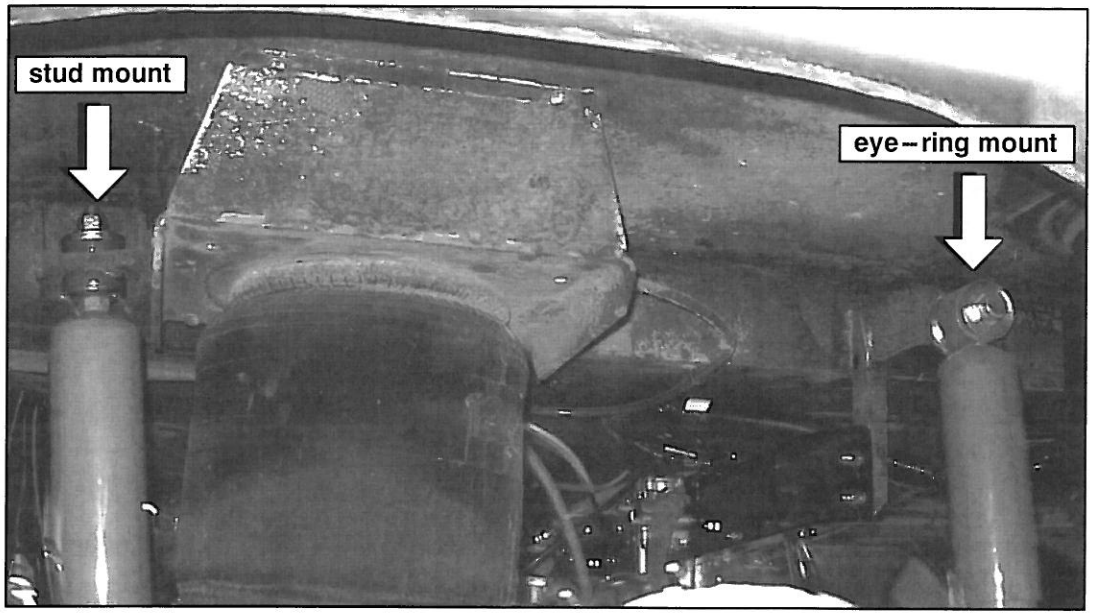

Figure 1. Reference photo.

5. To remove the stud mount shock absorber (refer to Figure 1) :
   a. unfasten and remove hex nut, retaining washers and rubber bushings from both ends of the shock,
   b. collapse the shock and withdraw from the upper mount,
   c. lift stud end out of mounting hole in the suspension support,
   d. discard the shock absorber, rubber bushings and mounting hardware.
6. To install the stud mount shock absorber (refer to Figures 1 and 2) :
   a. apply S-23 lubricant to the threads of the lower shock mount,
   b. place two (2) upper retaining washers over bushings before installing shocks,
   c. install upper stud end into its mount and position lower stud end over mounting hole,
   d. install two (2) lower retaining washers and hex nut and torque to attain proper bushing pre-load.

NOTICE

Shocks must be tightened with the axle at ride height, and must not have any hanging or pushing weight on either end of the shock.

Shock stud connections should be tightened, crushing the rubber bushings so that they are flush with the steel washers. When the shock is not perfectly perpendicular to the mounting plate, the rubber bushings should be flush with the steel washers at one (1) point, and proud (over flush) of the steel washer at all other points (refer to Figure 3).

7. Repeat Steps 5. and 6. to remaining stud mount shock absorbers.

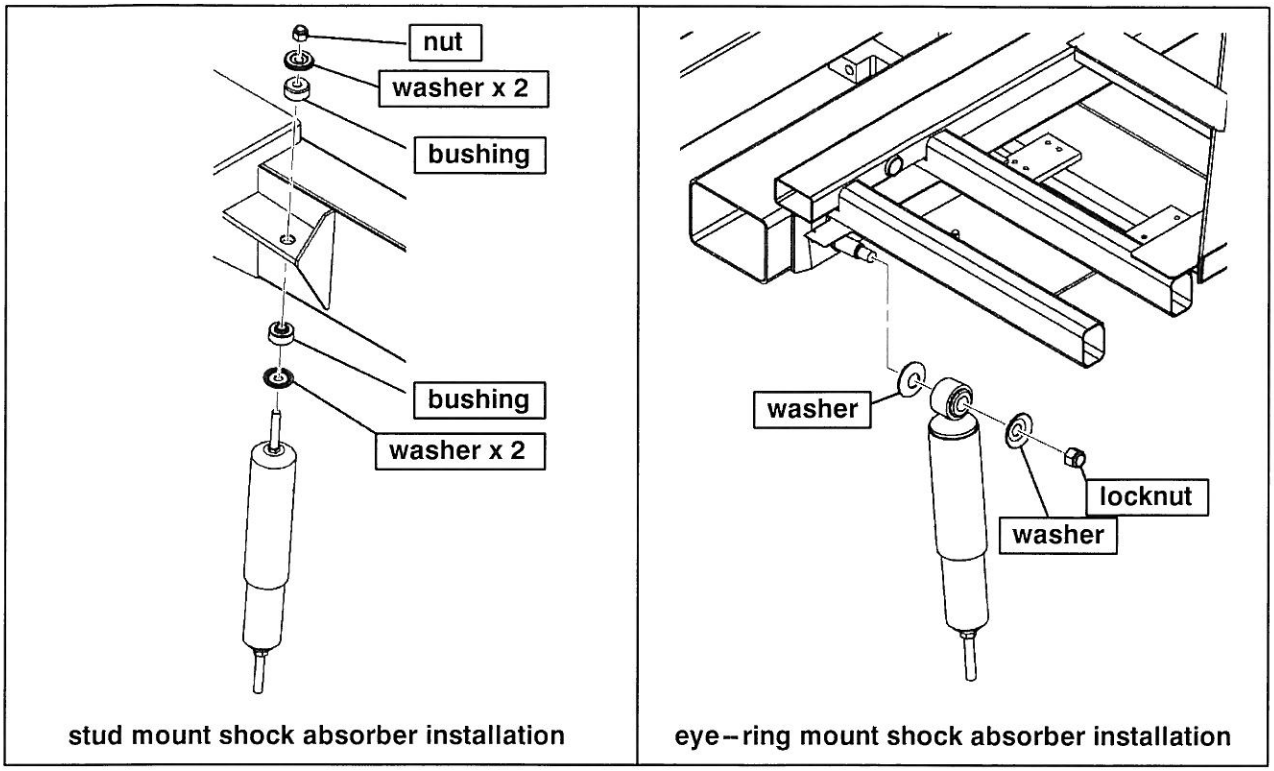

Figure 2.

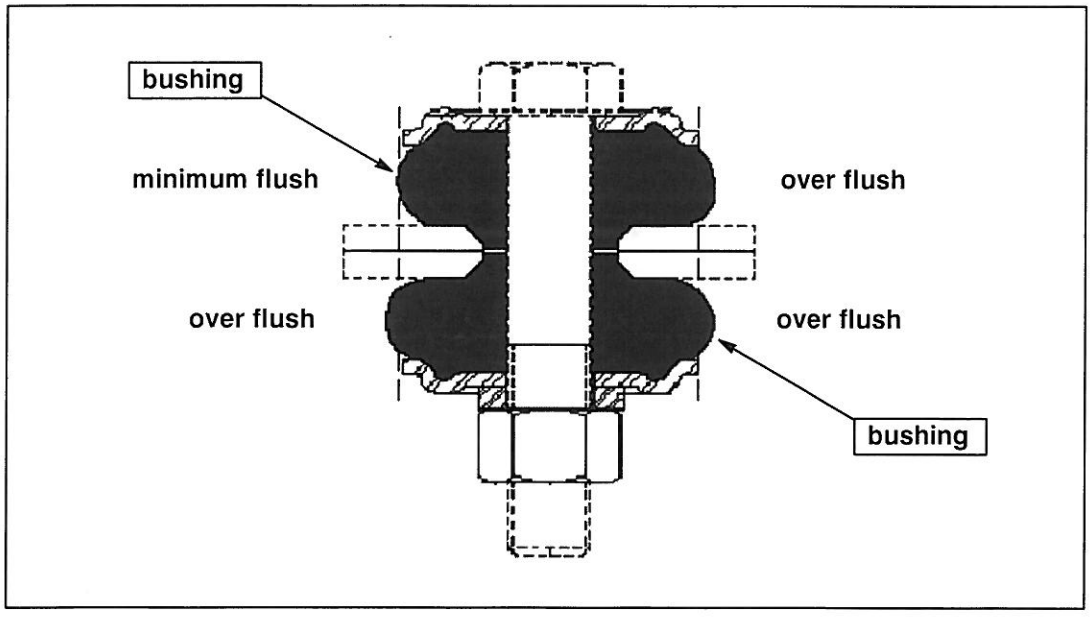

Figure 3. Bushing deflection.

NOTICE

Remove and replace one (1) shock absorber at a time.

DO NOT re-use rubber mounting bushings, as improper bushing pre-load may result.

8. To remove the eye-ring mount shock absorber (refer to Figure 1) :
   a. unfasten and remove hex nut, retaining washers, slide shock and conical bushings off shock mounting stud,
   b. unfasten and remove hex nut, retaining washers and rubber bushings from the bottom shock mount,
   c. collapse shock and remove from suspension support,
   d. discard the shock absorber, rubber bushings and mounting hardware.
9. To install the eye-ring mount shock absorber (refer to Figures 1 and 2) :
   a. apply S-23 lubricant to the threads of the lower shock mount,
   b. place inner retaining washers over bushings before installing shocks,
   c. install upper stud end into its mount and position lower stud end over mounting hole,
   d. apply locktite, p/n 21-7212-18 to locknut. Install outer retaining washer and locknut. Torque eye-ring mount locknut to 71-79 lbs-ft.
10. Repeat Steps 8. and 9. to remaining eye-ring mount shock absorbers.

11. Open the curbside, rear side service compartment door. Locate the accessory fill port.
12. Using clean shop air, fill the accessory fill port ensuring that the coach is at full coach pressure on the accessory side.
13. Disconnect the two (2) Packard connectors at the high rise control solenoid and pressure switch (refer to Figure 4).

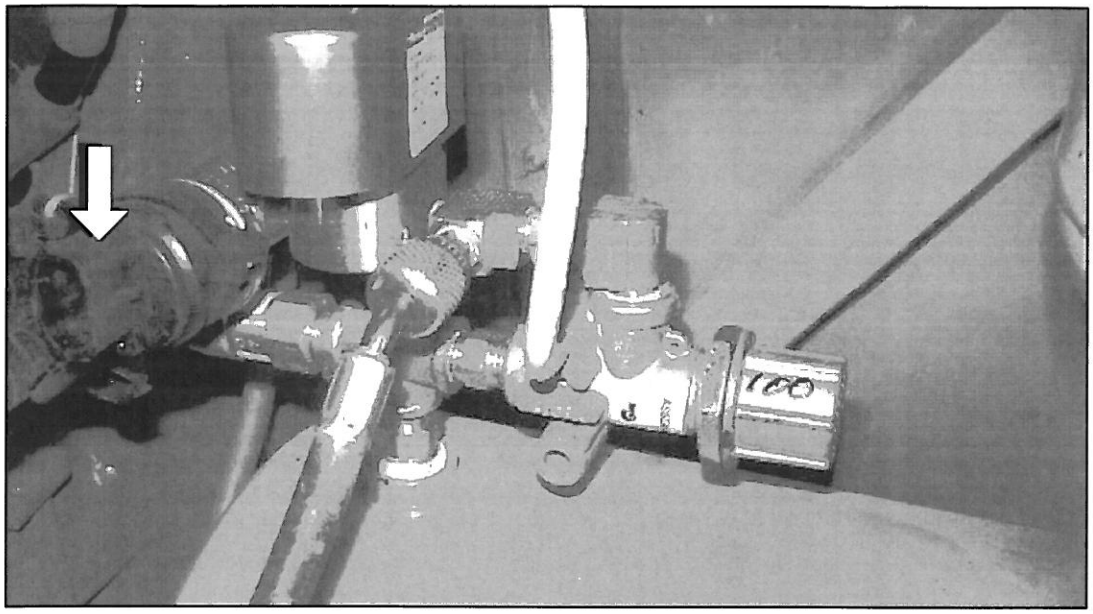

Figure 4. High rise control solenoid and pressure switch.

14. Connect an air gauge at regulator test port. Verify that 100 psi is displayed on the air gauge.
15. Using two (2) wrenches, carefully loosen the regulator jam nut, and rotate adjustment knob counter–clockwise until 50 psi is displayed on the connected air gauge (refer to Figure 5).

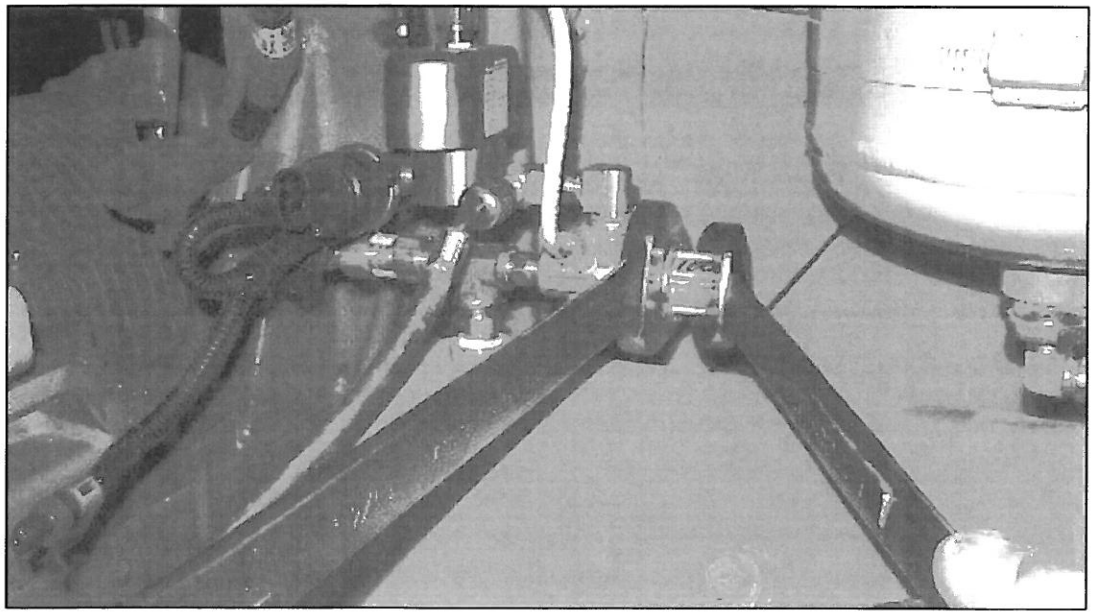

Figure 5.

16. Using two (2) wrenches, slowly rotate knob clockwise until the connected air gauge displays 85 psi.
17. Let air pressure stabilize. Verify full coach pressure, and recheck test port at 85 psi.
18. Wipe to remove the 100 psi identification on knob. Mark the new 85 psi setting on knob (refer to Figure 6).

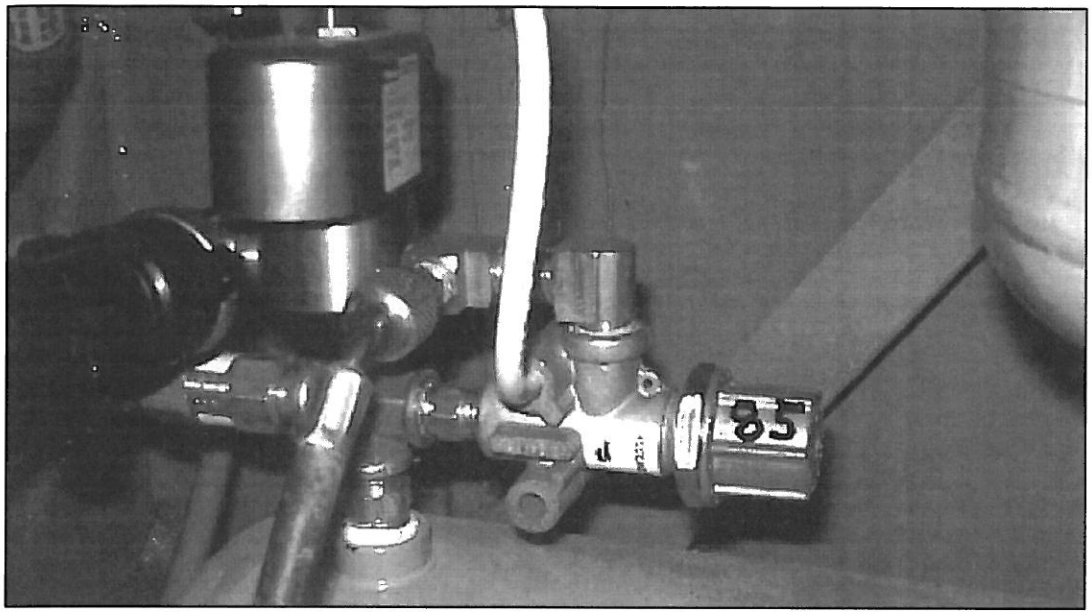

Figure 6.

19. Plug in the 2 Packard connectors at the high rise control solenoid and pressure switch.
20. Locate the rear rise solenoid harness (refer to Figure 7). Verify that the rear rise solenoid harness, with red and black cables, is connected. If disconnected, check both harness ends for plugs and discard if plugs are present. Re-connect the two ends of the harness and secure by tyrapping to sensor.

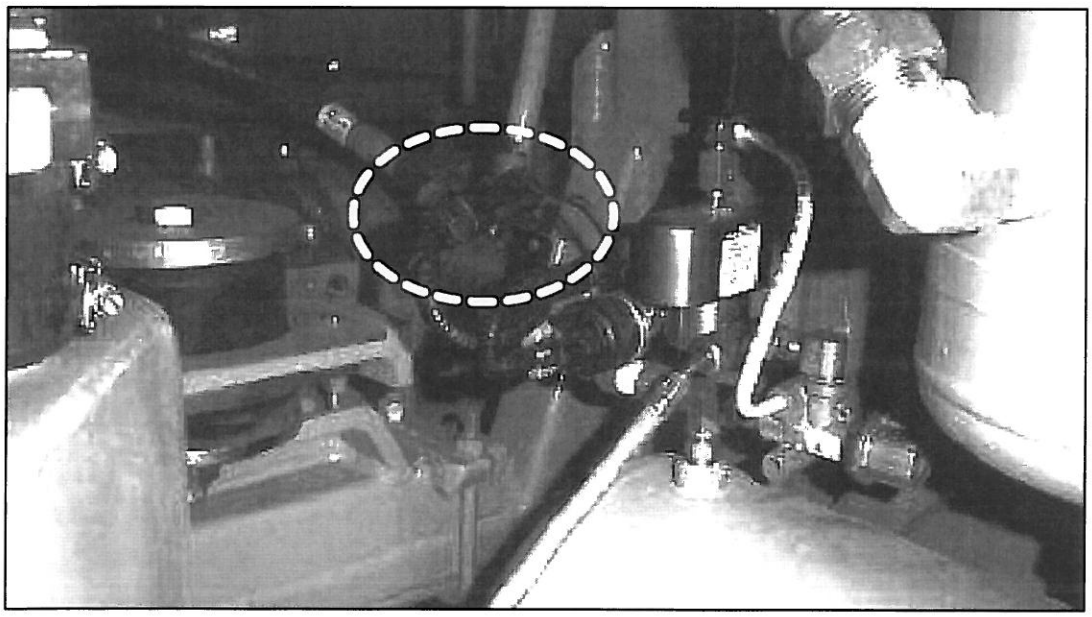

Figure 7.

21. Close the curbside, rear side service compartment door. Remove axle stands.
22. Close the manual tag axle dump valves.
23. Start–up the coach. Actuate the high rise switch on the driver switch panel to verify correct rear rise function.

Procedure complete.

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Mail or fax the completed warranty claim form to MCI's warranty department, or photocopy and mail it to:

MCI Fleet Support
Attn.: Warranty Department
7001 Universal Coach Drive
Louisville, KY 40258
Fax Number 1-800-360-8886

to receive credit for the hours used to complete this task. Contact the MCI Fleet Support Technical Center at 1-800-241-2947 for any further information.

Field Change Program Conditions:

The parts required for this change will be supplied without charge.

A labor allowance of 3.0 hours will be granted for the procedure of installing the specified part(s) in this bulletin on D4505 coaches equipped with Koni shocks and a FH946 tag axle

This labor allowance will be credited to your MCI Fleet Support Parts Account on receipt of a "Warranty Claim Form" as detailed in your Owner Warranty manual.

Motor Coach apologizes for any inconvenience resulting from this campaign, but urges you to implement this change as soon as possible.

Sincerely,

Motor Coach Industries
U.S. and Canadian Service Departments.