



Service Bulletin No. 331B

MODEL D4500 / D4505 Series Coaches	TYPE Field Change Program	SECTION/GROUP 12--Suspension	DATE Sept. 11, 2009
SUBJECT TAG AXLE TIE ROD LOCK CLAMPS REPLACEMENT			
CONDITIONS			

THIS BULLETIN SUPERSEDES SERVICE BULLETIN 331 IN ITS ENTIRETY.

Ref. NHTSA Recall No.: 09V-350

Defect and Cause:

The steerable tag axle is a self-steering system that caster steers the tag axle while the coach is operating below approximately 20 MPH, which improves the vehicle's turning radius. There is a tag axle locking system located on the front of the tag axle assembly. When the coach speed exceeds approximately 20 MPH, the axle automatically locks the wheels in a straight-ahead position by an air-operated locking pin that locks the tag axle tie rod to the tag axle, thereby eliminating the self-steering system. The locking occurs when the locking pin descends into and engages the air cylinder lock plate, which in turn is clamped to the tag axle tie rod. The location of the cylinder lock plate on the tie rod is set so that when the tag axle is locked, the wheels are in a straight-ahead position. Due to insufficient clamping force of the cylinder lock plate, it may move from its normal set position, which in turn could result in the tag axle not automatically locking, or locking with the wheels not in a straight-ahead position. If the tag axle does not lock above 20 MPH, there is a loss of lateral force control of the tag axle that can affect the steering of the vehicle. Also, if the tag axle does not lock above 20 MPH, during a turn the rear of the vehicle will swing further out in the opposite direction of the turn than anticipated, and could result in the coach striking another vehicle in an adjacent lane of traffic or otherwise causing an accident. If the tag axle does lock but with the locking plate in an incorrect position due to its movement on the tie rod, the wheels would not be in a straight-ahead position and could result in potential tire failure or premature tire wear.

The cause of the defect is insufficient clamping force, due to paint on the clamping surfaces, between the tie rod and the cylinder locking plate on the tie rod with the Meritor FH 946 14000 lb. rated tag axle. This allowed relative movement of the cylinder locking plate on the tie rod, which resulted in the tag steering system either not automatically locking above approximately 20 MPH, or locking with the tag wheels not in a straight-ahead position.

Corrective Action:

MCI strongly encourages customers to replace the clamps and remove all traces of paint and grease from the tie rod and cylinder lock plate casting mating surfaces.

As a result, MCI advises that owners of D4500 / D4505 model coaches between the range of, and including, unit numbers 58892, 58949, 58950, 58953 to 58979, 58990, 58992 to 59000, 59002, 59004 to 59011, 59013, 59015, 59017 and 59018 should implement the specified steps in this procedure as soon as possible.

Parts

Qty.	New P/N	Description
2	12-04-1153	Clamp
4	19-1-1439	Capscrew
8	19-2-284	Washer, Flat
4	19-3-366	Nut, 1/2 - 20 UNF
a/r	21-7212-18	Loctite

Service Procedure:

General notes

Read this entire procedure before beginning work.

Use Safe Shop Practices At All Times.

1. Drive the coach over a pit, or use a lift to access the tag axle locking mechanism.
2. Unlock the tag axle locking mechanism cylinder pin by making sure the tag lock switch is in the "OFF" position, then shutting the engine down by turning the ignition to the "OFF" position, and then positioning the ignition to the "ON" position.
3. Turn the main battery disconnect switch to the OFF position.
4. Dump tag air. Remove the air from the front and rear air suspension by pulling the drain valve ring on all front and rear auxiliary air suspension tanks (located behind the tag axle in the rear, behind the front curbside tire and ahead of the front roadside tire).

! WARNING

If the steps in this procedure are performed over a pit, apply the park brake and chock both sides of the tires.

If the steps in this procedure are performed with the coach on a lift, raise coach to desired height. Position jackstands at the front and rear frame support points, according to Figure 1, to ensure that the coach is securely supported before attempting work underneath the coach.

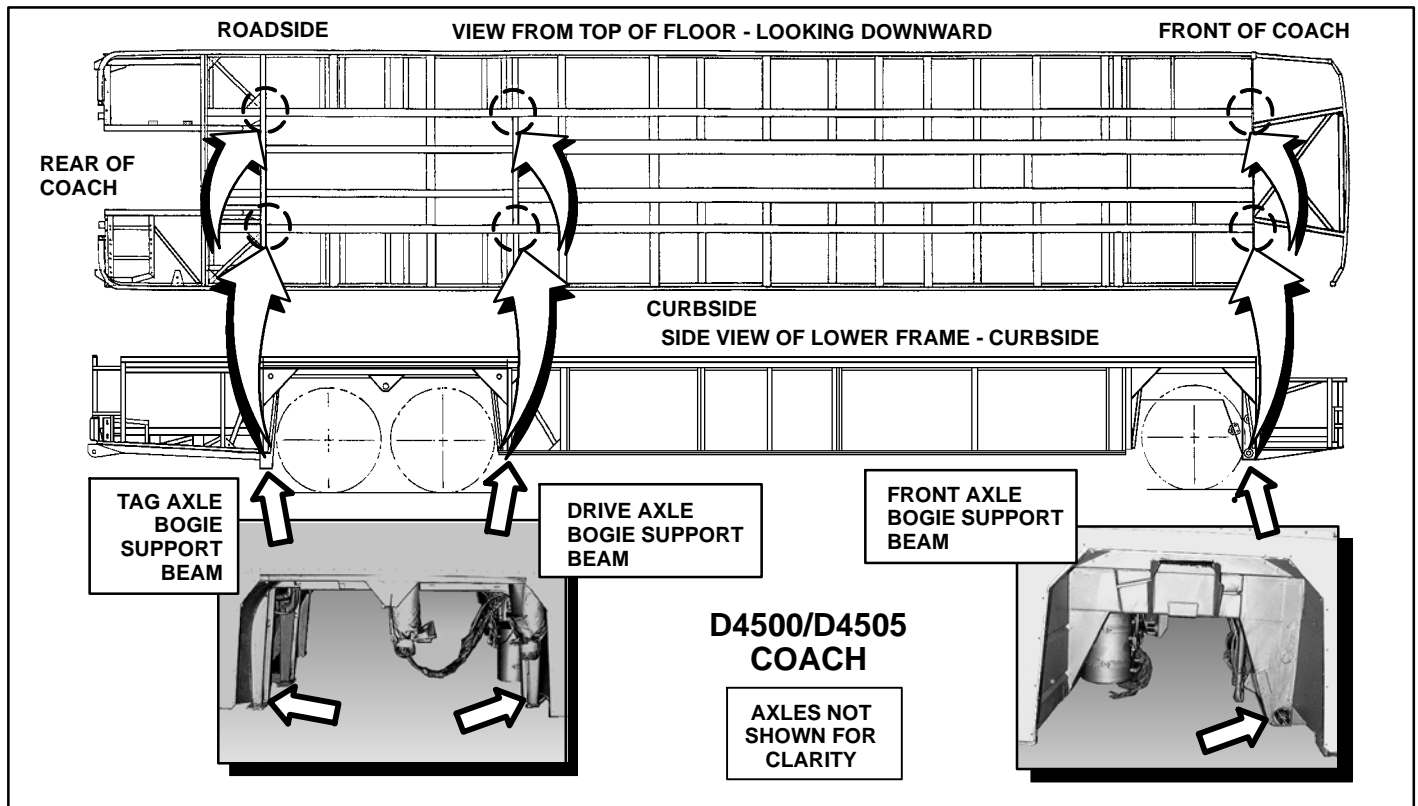


Figure 1 Underframe Jackstand Support Points (Section 3G / Maintenance Manual)

! WARNING

Refer to Section 3F / Lifting and Towing, in the D4500 Maintenance Manual, for the basic rules, procedures and safety precautions that must be followed before a coach is to be lifted.

5. Locate the tag axle locking mechanism (refer to Figure 2).

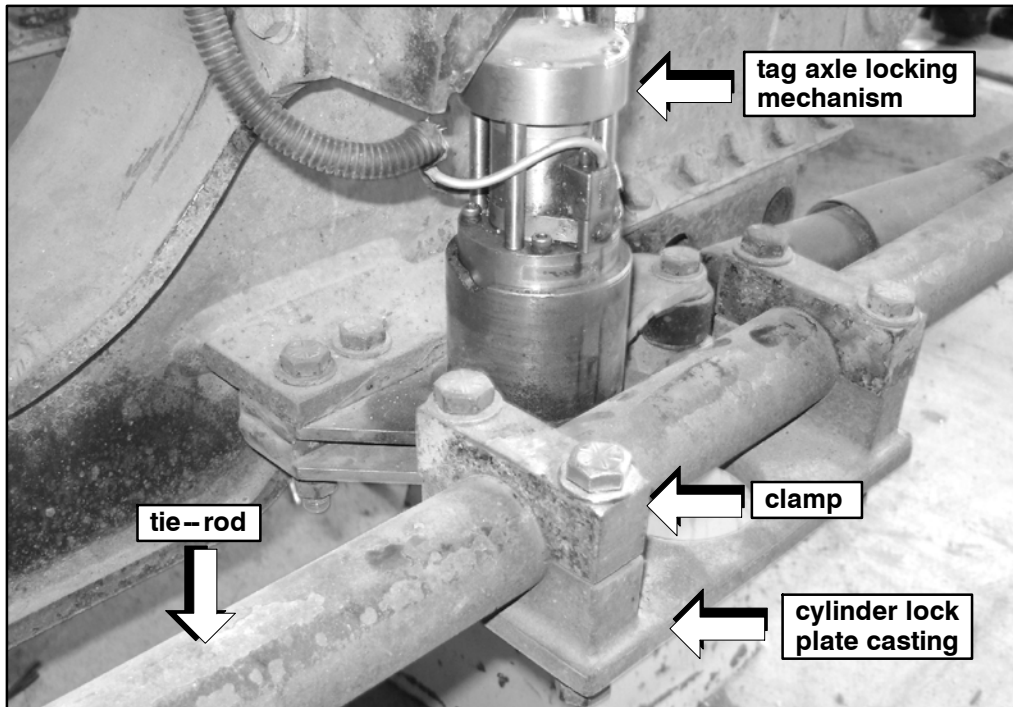


Figure 2.

6. Using a clean cloth, remove any dirt or grease from the tie rod and clamps (refer to Figure 2).
Visually inspect the tie rod for scuff or drag marks indicating that the tie rod has moved within the lock clamps.

NOTICE

Upon inspection, if scuff or drag marks are present indicating tie rod movement within the lock clamps, loosen the clamp hardware and re-orientate the tie rod / clamp relationship by aligning the beginning of the scuff marks on the tie rod with the edge of the applicable clamp.

Upon inspection, if scuff marks are not present, proceed to Step 7.

7. Using masking tape, mark each side of each clamp to indicate the tie rod / clamp relationship for re-installation at a later step in this procedure (refer to Figure 3).

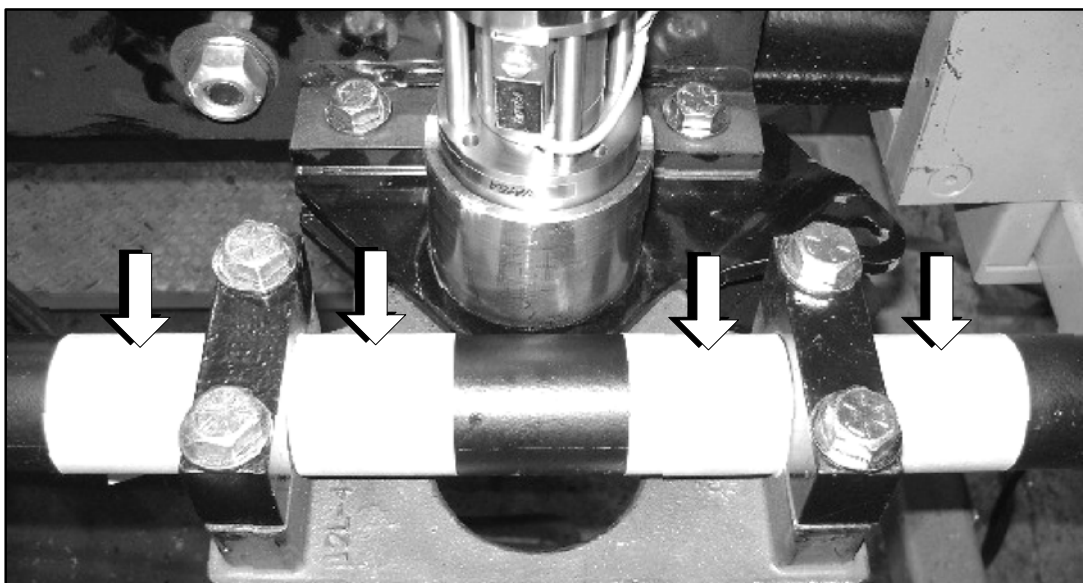


Figure 3.

8. Remove and discard the mounting hardware and clamps.
9. Loosen the cylinder lock plate casting capscrews (refer to Figure 2), to slide out the cylinder lock plate casting. Lower the cylinder lock plate casting one-half (1/2) the diameter of the tie rod to access the bottom of the tie rod and the lock casting (refer to Figure 4).



Figure 4.

10. Using a scraper and cloth, remove all traces of graphite coating, paint and grease from the cylinder lock plate casting and the tie rod (refer to Figure 5).



Figure 5. Reference photo.

11. Re-assemble lock casting into the lock cylinder plate (refer to Step 9.).
12. Apply loctite, p/n 21-7512-5, to the threads of the capscrews, p/n 19-1-1439.
13. Using the new hardware provided, align and install new clamps, p/n 12-04-1153, in between the masking on the tie rod (refer to Figures 3 and 6).
14. Line up the lock plate with the lock cylinder. Snug up all bolts to secure the clamps in position.
15. Turn coach ignition to the OFF position, locking the cylinder into the plate.

NOTICE

To achieve proper clamp load, the gap must be maintained between the upper and lower clamps (refer to Figure 6).

16. Torque the lock cylinder plate capscrews to 85–90 lbs.-ft. Torque nut, p/n 19-3-366, to 70–80 lbs.-ft.

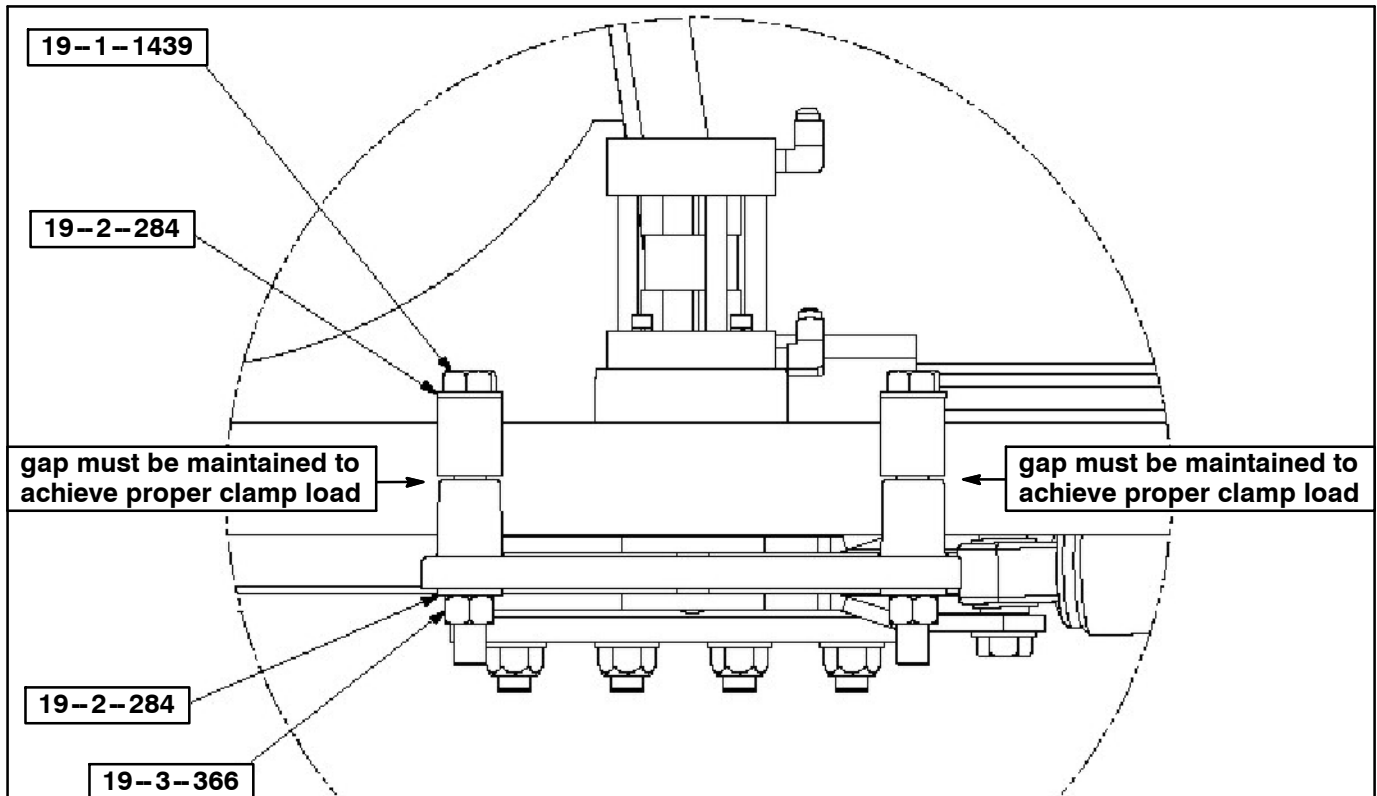


Figure 6.

NOTICE

Upon inspection, if scuff marks were present indicating tie-rod movement within the clamps, the coach will require aligning the tag axle scrub angle.

Procedure complete.

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.

ONLY ONE (1) CLAIM CAN BE FILED AGAINST THE COACH VIN, SB 331 OR SB 331B.

A labor allowance of 0.7 hours will be granted against claim SB 331B.1, for the procedure of inspection, removal of clamps, removal graphite and grease and installation of new clamps.

A labor allowance of 1.2 hours will be granted against claim SB 331B.2, for the procedure of inspection, removal of clamps, removal graphite and grease, installation of new clamps and aligning the tag axle scrub angle to the center-point of the drive 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.