Special Bulletin SP14-24C

Date	Expiration	Release	Page
04.2014	**04.2016**	**7**	**1(8)**

Revision C: This document supersedes previous revisions.
Updated as per DA comments.

RADIUS RODS BUSHINGS REPLACEMENT –DRIVE AXLE

Prevost vehicles

DESCRIPTION

On the vehicles affected by this bulletin, the bushings found on the drive axle longitudinal radius rods have to be replaced.

The bushings found on the transversal radius rod (a.k.a. Panhard bar) do not have to be replaced and are not involved in the bulletin.

MODEL YEAR(S) AND VEHICLES INVOLVED

NOTICE TO SERVICE CENTERS
*Verify vehicle eligibility by checking warranty bulletin status with **SAP** or via **ONLINE WARRANTY SYSTEM** available on Service / Warranty tab of Prevost website.*

Model	VIN
X3-45 Commuter Model Year : 2012	From 2PCG33495CC73***5053*** up to 2PCG33495CC73***5232*** incl.

This bulletin does not necessarily apply to all the above-mentioned vehicles, some vehicles may have been modified before delivery. The owners of the vehicles affected by this bulletin will be advised by a letter indicating the Vehicle Identification Number (VIN) of each vehicle concerned.

MATERIAL NEEDED

Order kit "**SP14-24**" for completion of one vehicle. This kit includes the following parts:

Part No.	Description	Qty
110815	RETAINER PLATE	6
110818	TABLOCK	6
630021	BUSHING, RUBBER	6
5001046	WASHER, TEMPERED FL 21/32 x 1 ½ x 3/16	12
5001372	SCREW, CAP M16-2.0 x 50 lg N500 G10.9	12

NOTE

Material can be obtained through regular channels.

REQUIRED TOOLS

PRY BAR 	**TORQUE WRENCH AND METRIC SOCKET SET** 
LARGE FLAT SCREW DRIVER 	**MEASURING TAPE** 
ENGINEER HAMMER 	**SPRAY BOTTLE AND WATER** 
PIECE OF WOOD 	**LOCKING PLIERS** 
METRIC OPEN END WRENCH SET 	

PROCEDURE

DANGER

Park vehicle safely, apply parking brake, stop engine. In the battery box, set the battery cut-off switch to the OFF position prior to working on the vehicle.

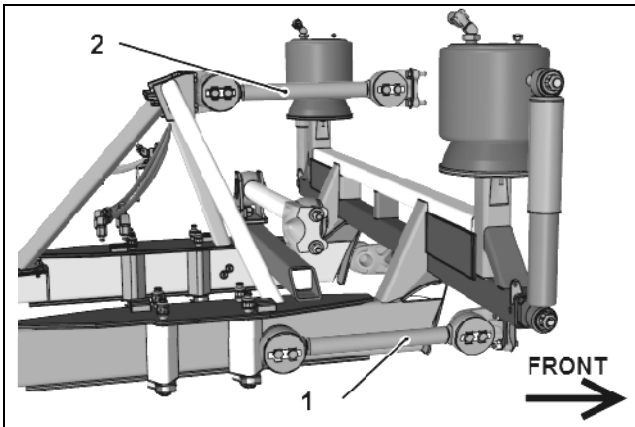

FIGURE 1: RADIUS RODS IDENTIFICATION – DRIVE AXLE SUBFRAME, CURBSIDE (DRIVE AXLE NOT SHOWN)

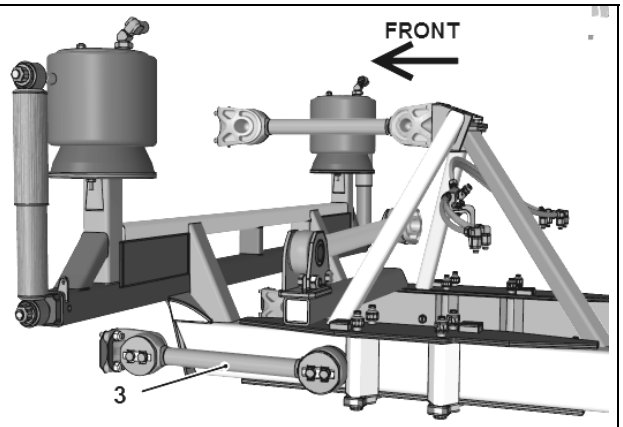

FIGURE 2: RADIUS RODS IDENTIFICATION – DRIVE AXLE SUBFRAME, STREET SIDE (DRIVE AXLE NOT SHOWN)

DRIVE AXLE	
Radius rod	completed
1	☐
2	☐
3	☐

NOTE

It is recommended to <u>proceed with one radius rod at a time</u>. Remove a radius rod, replace the existing bushings and reinstall the radius rod with the new hardware as per the following procedure then proceed to the next radius rod.

NOTE

To ease removal of the radius rods, the suspension should be at the normal ride height.

<u>Preparation</u>

1. Using six mobile column lifts, lift the vehicle from under the front wheels, the drive axle wheels and the tag axle wheels. Make sure the vehicle is level.
2. Using four appropriate jack stands, adequately support the drive axle subframe at the four locations shown on figure 3. Do not alter the normal ride height.
3. To ease access to the radius rods, remove the drive axle wheels.

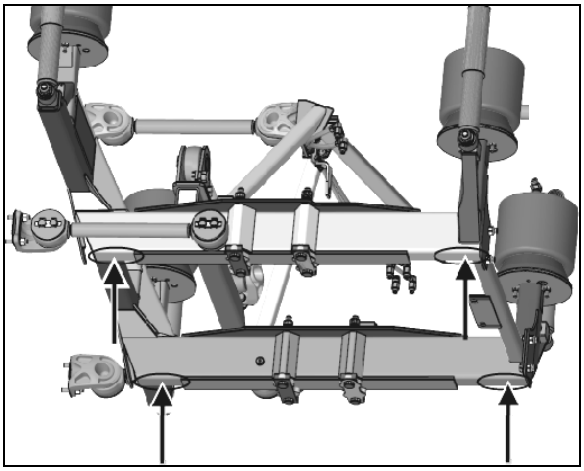

FIGURE 3: SUPPORT THE DRIVE AXLE SUBFRAME AT THE FOUR LOCATIONS SHOWN (drive axle not shown)

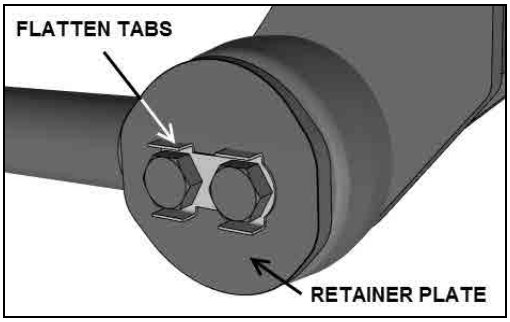

FIGURE 4

Radius Rod Removal (typical)

4. Identify the radius rods needing replacement of the bushings with figures 1 & 2.
5. At each end of the radius rod, flatten the tab washers (figure 4) which secure the retaining bolts. Unscrew the bolts and discard the bolts, the tab washers and the retainer plates.
6. Exert force to pull the radius rod ends from the attachment point. You can use a pry bar but don't knock on the radius rod.

Bushing removal (typical)

4. Extract the old bushing by knocking the radius rod end flat on a steel table to pop the bushing out (figure 5). Once the bushing has partially move out (figure 6) of the radius rod end, complete the extraction using an appropriate tool such as pliers or cylindrical piece of proper diameter to push the bushing out of the radius rod end.

FIGURE 5

FIGURE 6

Bushing installation (typical)

5. Generously spray the inner and outer surfaces of radius rod bushing with water. Rub the bushing vigorously in your hands to make the water adhere as much as possible to the rubber.

CAUTION

No lubricant or soapy water whatsoever should be used on the rubber bushing.

6. Generously spray the inner surface of the radius rod end with water.
7. Place radius rod bushing on a plane surface. Spray water once again on the inner and outer surfaces of radius rod bushing.
8. Properly place and align the bushing inside the radius rod end. Tap radius rod on bushing until it pops in place.
9. Center the bushing, even each side of the radius rod end (figures 7 & 8). You can sink the radius rod under water to ease this operation.

INCORRECT

FIGURE 7

CORRECT

FIGURE 8

Radius Rod Installation (typical)

10. Generously spray water on the cylindrical protrusion of the radius rod support and inside the bushing. Place the radius rod end over the cylindrical extension of the radius rod support.

CAUTION

It is extremely important upon installation of the rods that the proper clearance height (normal ride height) between the axle and body be maintained. Otherwise, the rubber bushings in radius rod ends will become preloaded, thus reducing their life span.

11. Tap on the bushing with an engineer hammer over a piece of wood rather than on the radius rod itself, it helps keeping the bushing centered in the radius rod end.

NOTE

Make sure the rod end is still centered over the bushing or even slightly out. Compressing the bushing on one side only tends to push the rod in too much. Centering the rod on the bushing is very important. Doing so will extend life of the bushing.

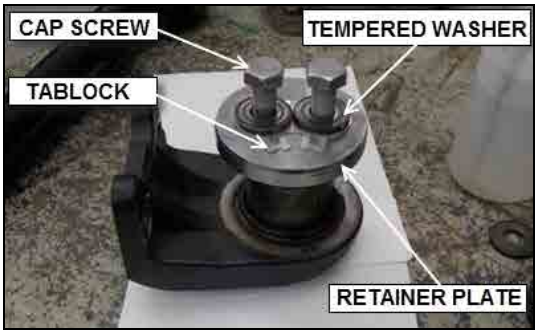

FIGURE 9

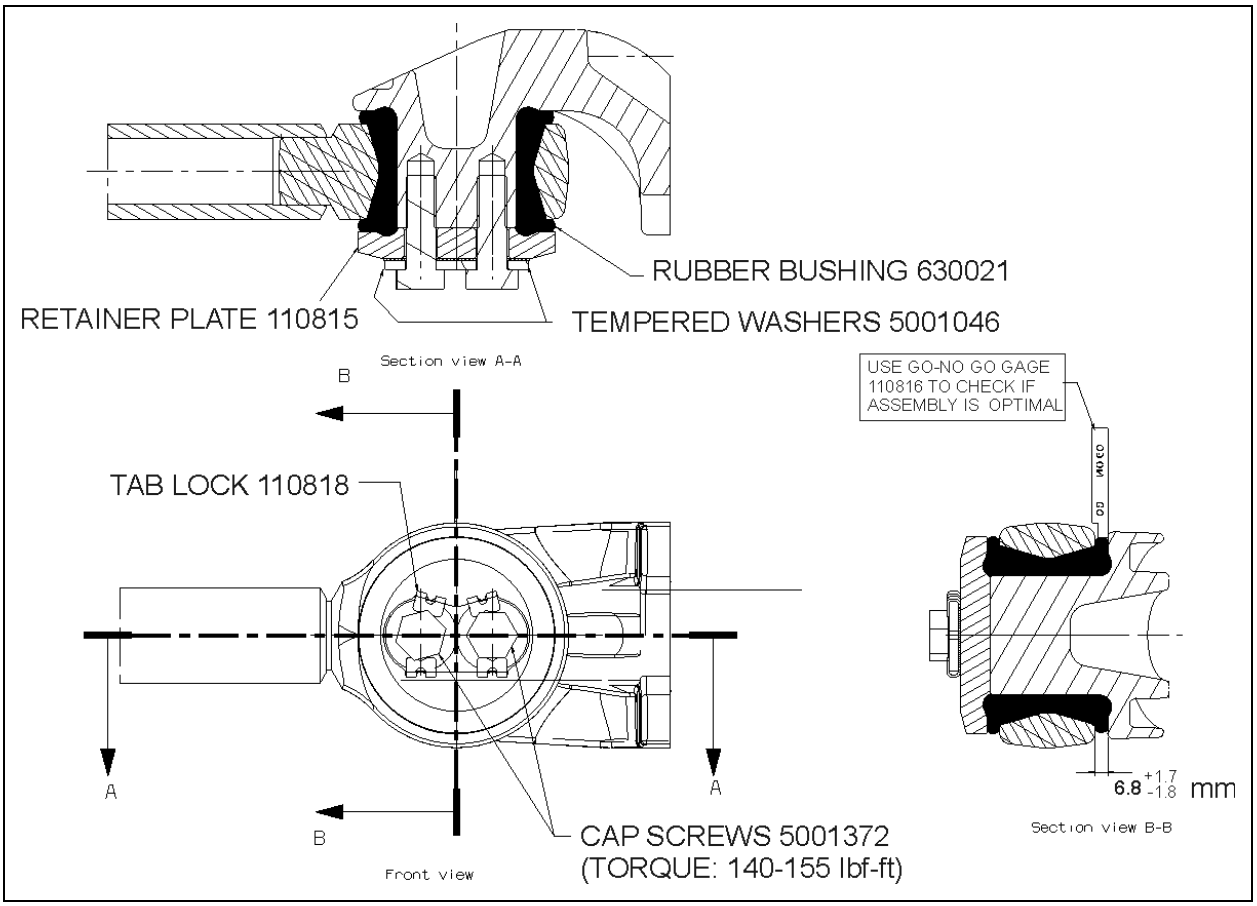

FIGURE 10

12. Install the retainer plate, the tab lock, the tempered washers, the cap screws (finger-tight) in this order (figure 9 & 10). **Do not** apply lubricant, Loctite or anti-seize compound whatsoever on the cap screws. Do not bend the tab locks at the moment.

13. 3 steps tightening. Tighten the cap screws at one side of the radius rod to a torque of 50 lbf-ft and then do the same at the other end of the radius rod (use a 24mm socket).

14. Tighten the cap screws at one side of the radius rod to a torque of 100 lbf-ft and then do the same at the other end of the radius rod.

15. Apply final torque of 140-155 lbf-ft at one end of the radius rod and then to the other end.

16. Inspect the final installatio**n. Appraise the rubber bulges on each side of both bushings. They should be equal and similar** (see figures 11 & 12). If the dimension is in question use the go-nogo gauge # 110816 as illustrated in figure 10. If the rubber bulges are too dissimilar, unscrew and reposition the radius rod. Tighten again as previous described.

NOTE

Note that the rod always has a tendency to move inboard on the support. We recommend starting the rod a little out on the bushing to prevent this situation.

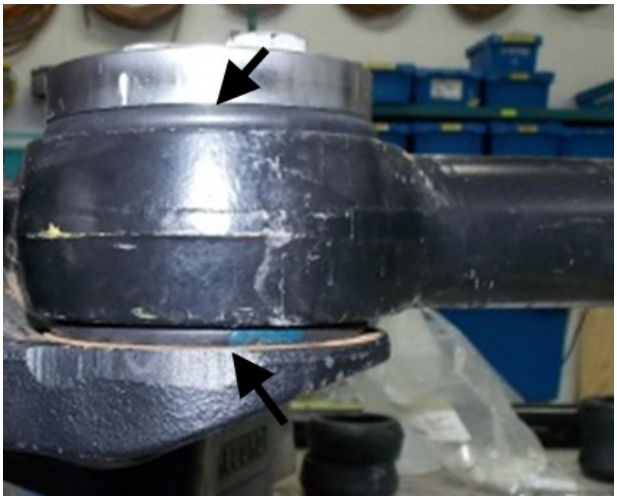

FIGURE 11 - STILL ACCEPTABLE

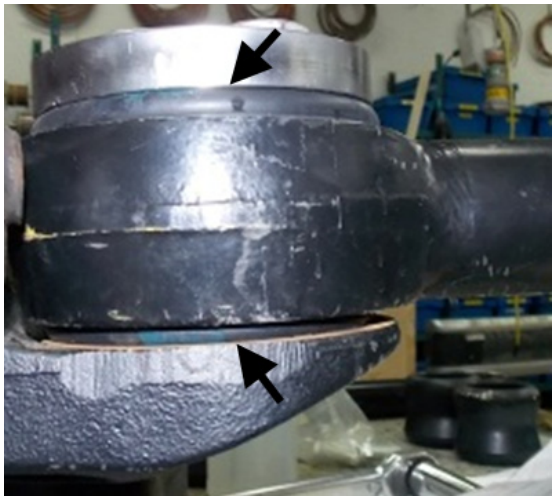

FIGURE 12 - NOT ACCEPTABLE

CAUTION

Always use new tab washers at installation.

17. When proper installation is achieved, bend the tab lock on the cap screw head.

18. Proceed to the next radius rod as previous described.

Final steps

19. Reinstall the drive axle wheels. Tighten the wheel studs to a torque of 450-500 lbf-ft dry.

20. Lower the vehicle and lower the tag axle.

PARTS / WASTE DISPOSAL

Discard waste according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

ESTIMATED TIME

The time required to perform this special bulletin is approximately 4 ½ hours.

OTHER

VBC Bulletin	n/a
Fail Code	16.03
Defect Code	09
System Condition	B
Causal Part	630021

Prevost engages in a continuous program of testing and evaluating to provide the best possible product. Prevost, however, is not committed to, or liable for updating existing products.