



PROTERRA



SERVICE BULLETIN

ISSUE DATE:	10/2/2018
SERVICE BULLETIN SUBJECT:	Front Axle Control Arm Retrofit (RL75EC to RL82EC)
VINs or MODELS AFFECTED:	Service-specified Vehicles
COMPLETE BY:	Next Service Opportunity
SERVICE BULLETIN #:	SB-18-74

FRONT AXLE CONTROL ARM RETROFIT

NOTICE! It is expected that this process will require 8 hours per bus. Please schedule appropriately to minimize vehicle downtime.

Retrofit Description:

This retrofit replaces the Control Arms on the front axle to allow a higher front axle weight.

Tools/Parts Required

Tools and Supplies Required:

- Heavy Duty Floor Jack
- Standard Floor Jack
- Jack Stand
- Schrader Valve Tool
- Torque Wrench
- Torque Multiplier (If Needed)
- 55mm Impact Socket (Snap-on P/N IMM553TW Recommended by ZF)
- 30mm Impact Socket
- 1/2 Inch Breaker Bar
- Air Impact Tool
- Yellow Torque Stripe Paint

Parts Required:

- 037090 ASSEMBLY, SERVICE KIT, RL75 to RL82 QTY 1 EA



Procedure

1. Complete the Proterra approved Lockout/Tagout procedure to make the bus safe for work.
2. Place a heavy-duty floor jack underneath the jacking point near the front tire. Make sure that the jack only contacts the jacking point.

Note: The floor jack should be positioned on jack pad prior to deflating the air bags.

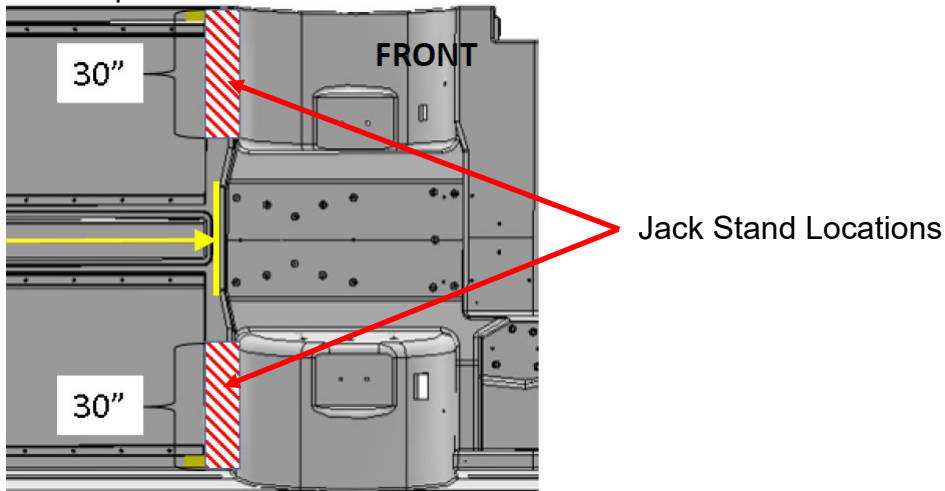


3. Using a Schrader Valve tool, remove the four valve cores (shown, at streetside rear of the vehicle) to drain the air from the air bags.



Remove Valve Cores

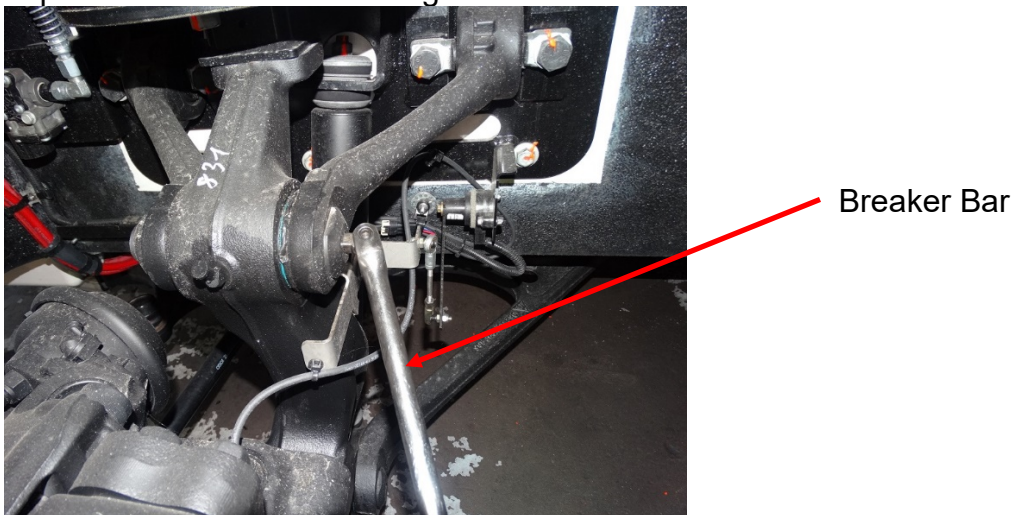
- Using the heavy-duty floor jack, raise the bus high enough to remove the tire.
- Place a jack stand underneath the bus for safety. Use the following illustration to determine the area to place it.



- Using an air impact wrench and a 33mm socket, remove the lug nuts and tire.

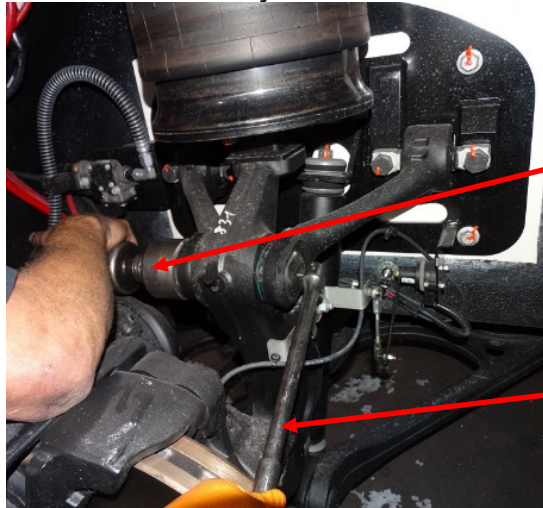


- Insert the head of a 1/2-Inch Breaker Bar into the square hole on the Control Arm bolt as shown to prevent the bolt from turning.



8. Using an air impact wrench with the 55mm socket and the breaker bar, remove the nut from the Control Arm Bolt.

Note: The nut may be heated to loosen the Loctite and make removal easier.



Air Wrench

Breaker Bar

9. Using a standard floor jack, support the axle assembly so that it does not fall when the Control Arm bolt is removed.



that it

10. Using a 30mm Socket with an Impact Tool, remove the two bolts that secure the frontmost Control Arm.



Remove Two Front
Control Arm Bolts

11. Remove the Front Control Arm from the vehicle and place aside.



12. Using a Hammer and a Large Punch, remove the Control Arm Bolt.



Remove Control Arm Bolt

13. Using a 30mm Socket with an Impact Tool, remove the two bolts that secure the rearmost Control Arm.



14. Remove the Rear Control Arm from the vehicle and place aside.



15. The bearing and seal will likely be removed with the rear Control Arm. Retain the bearing and Retaining Rings for reuse. New seals are provided in the kit.

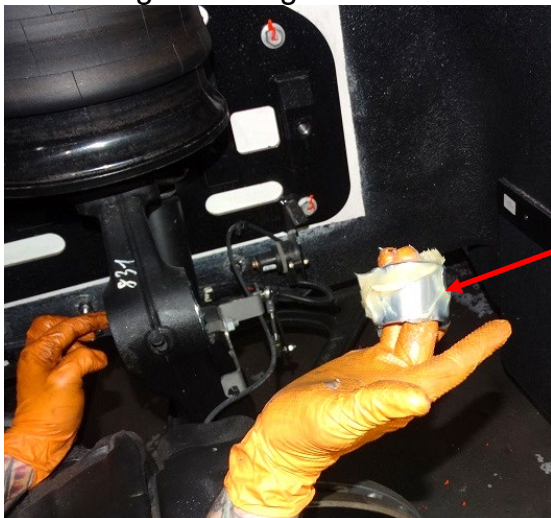


Bearing

Seal

Retaining Ring

16. Remove the spacer installed in the assembly between the Control Arm Bearings and inspect it for scoring or damage. Reinstall the undamaged Spacer between the Control Arm Bearings.



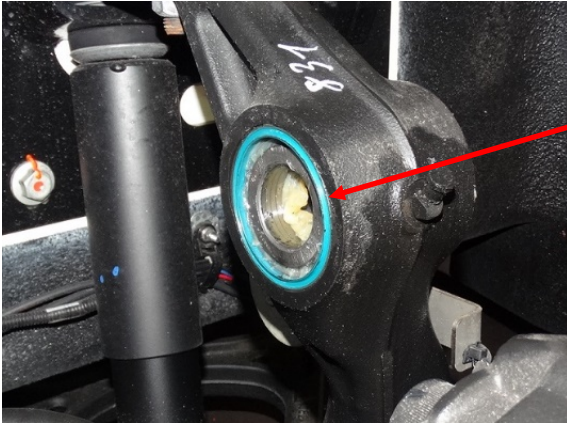
Spacer

17. Using a flat blade screwdriver and/or pry bar remove the front seal.



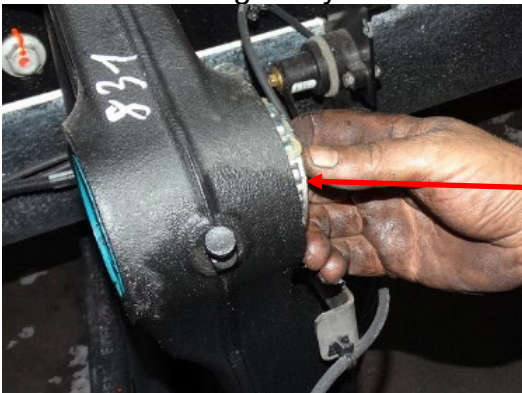
18. Replace the seal with a new one from the kit.

Note: The beveled edge of the seal should face the bearing and the open end should be out as shown.



New Seal

19. Place the bearing that your removed earlier into the Axle assembly.

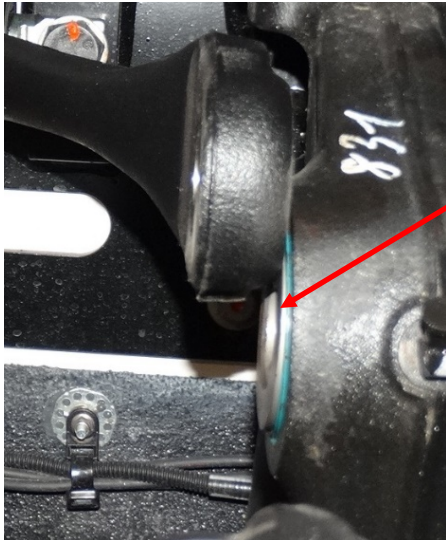


Reinstall Bearing

20. Place a retaining ring on the bearing. The beveled side of the retaining ring should face the seal and bearing. Repeat this for the front side bearing as well. The front and rear bearing with the installed seal and ring should appear as shown in the second photograph.

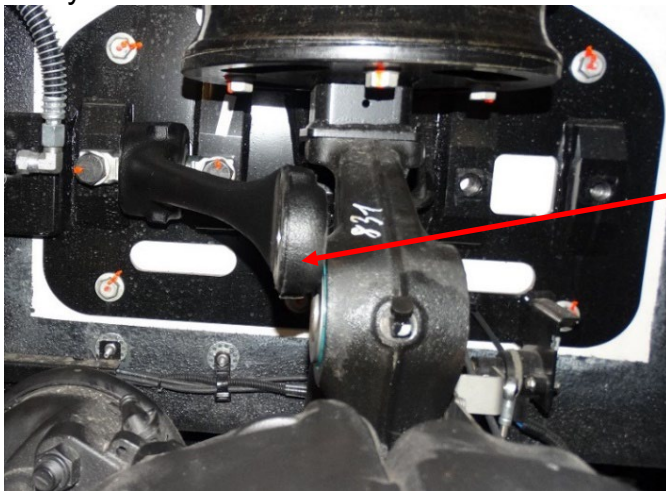


Ring



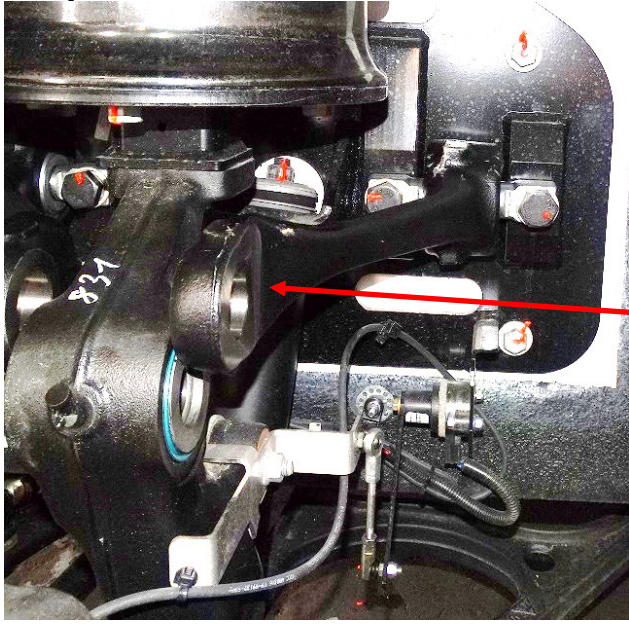
Installed Ring and Seal

21. Using a 30mm Socket with an Impact Tool, install the new Front Control Arm using the bolts that you removed earlier.



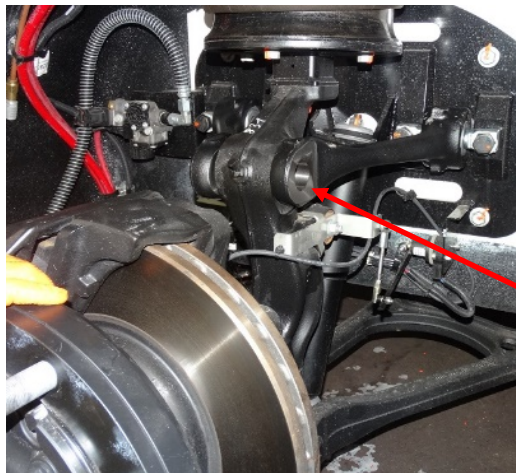
Replace the Front Control Arm with the new one from the kit

22. Using a 30mm Socket with an Impact Tool, install the new Rear Control Arm using the bolts that you removed earlier.



Replace the Rear Control Arm with the new one from the kit

23. Using the Floor Jack under the axle assembly, raise the axle until the Control Arms are aligned to install the control arm bolt.



Align Control Arms

24. Screw the Control Arm Bolt onto the Pin Installer tool.

IMPORTANT! Make sure that the sleeve on the tool protects the threads on the Bolt.

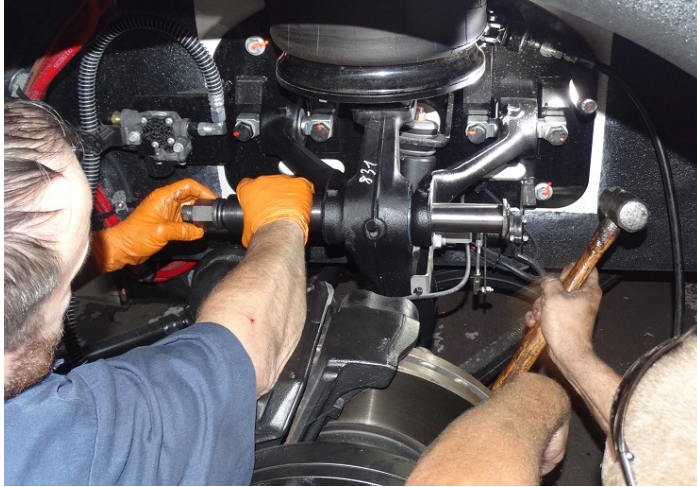


Pin Installer Tool

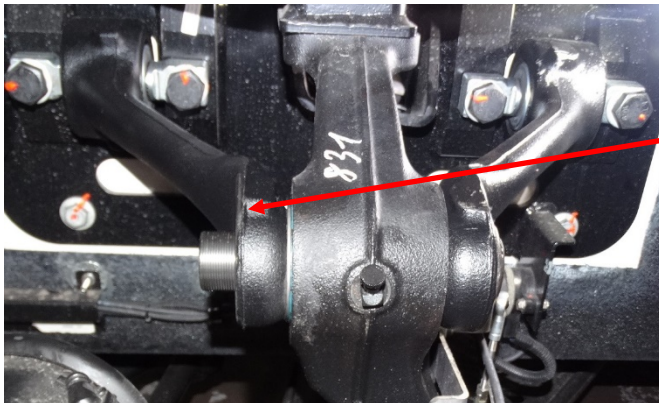
Screw this part down to protect threads

25. Using the Pin Installer Tool, insert the bolt through the Control Arm as shown. The Bolt is installed by tightening the nut and tapping with a hammer. The bolt may be cooled to make installation easier.

Note: The threads must face the front of the bus.

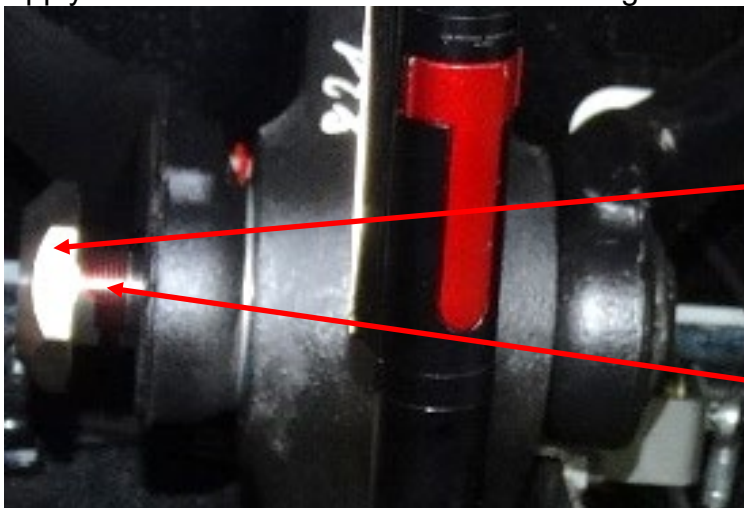


26. When the Bolt is fully inserted it should appear as follows.
IMPORTANT! Ensure threads are towards the front of the bus.



Threads Facing Front of Bus

27. Apply Loctite 262 to the threads and hand tighten the new Nut from the kit onto the bolt.

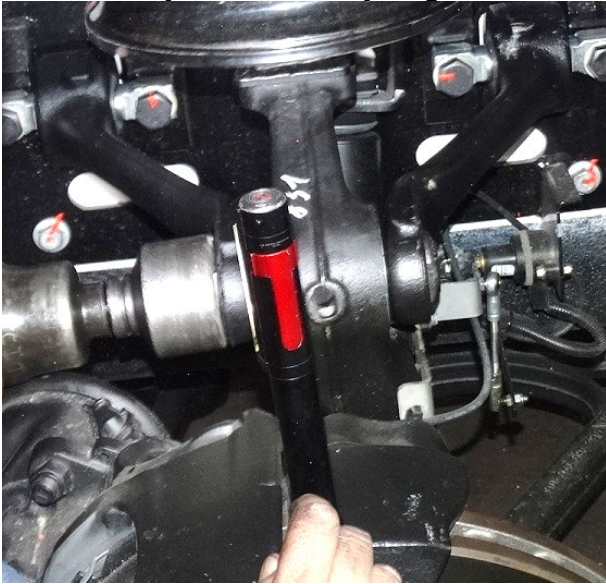


Nut

Loctite 262

28. Using an Impact Tool and a 55mm Socket, tighten the nut.

Note: It may be necessary to grind the 55mm Socket to better fit the replacement nut.



29. Using a Calibrated Torque wrench and a 55mm Socket, **torque the nut to 738 ft-lb.**

Note: A torque multiplier is shown and can be used if necessary.



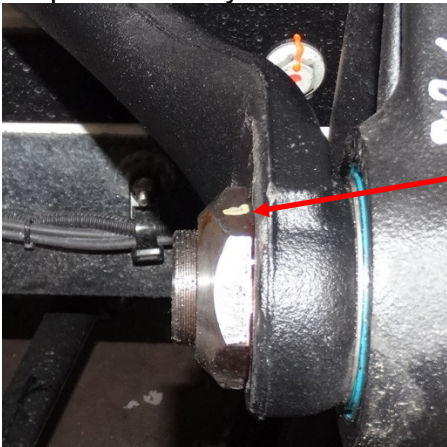
30. Using an Impact Tool with a 30mm Socket and Extension, tighten each of the four bolts that secure the Control Arms.



31. Using a Calibrated Torque wrench with a 30mm Socket and Extension, **torque the four control arm bolts to 321 ft-lb.**



32. Apply Yellow torque stripe paint to the nut and bolts to show that the fasteners have been torqued correctly.



Yellow Torque Stripe Paint

33. Using a 33mm Socket with an Impact Tool, replace the tire.



34. Using a calibrated Torque Wrench with a 33mm Socket, **torque the lug nuts to 450 ft-lb.**



35. Replace the Lug Nut indicators, if used.



36. Using a Schrader Valve tool, replace the four valve cores that you removed earlier.



Replace Valve Cores

37. Remove the Lockout/Tagout devices.

38. Start the Bus and allow the air bags to inflate.

39. Remove the heavy-duty floor jack from underneath the jacking point near the front tire.

40. Repeat the process for the other side of the bus.