



PROTERRA



TECHNICAL SERVICE BULLETIN

ISSUE DATE:	3-23-2021
SERVICE BULLETIN SUBJECT:	Steering Gearbox Proud Boss Check and Bolt Loctite Retrofit
VINs or MODELS AFFECTED:	Service Specified Buses
COMPLETE BY:	Next Service Opportunity
SERVICE BULLETIN #:	SC-21-48
Labor Operation Code:	SC46Z

NOTICE! It is expected that this process will require two (2) hours per bus. Please schedule appropriately to minimize vehicle downtime.

STEERING GEARBOX PROUD BOSS CHECK AND BOLT LOCTITE RETROFIT

Retrofit Description:

This procedure describes the process of checking for proud mounting bosses, replaces the steering box mounting bolts, and re-torques them using thread locker.

Tools/Parts Required

Tools and Supplies Required:

- Wheel Lifts (4 Each)
- Jack Stands (4 Each)
- Calibrated Torque Wrench Capable of Recording Breakaway Torque
- Ratchet
- 1-5/16 Inch Socket
- Alcohol
- Shop Towels
- Straight Edge
- Orange Torque Stripe Paint
- Loctite 248

Parts Required and Included in the kit:

- 018758-031 BOLT, HEX, STL, 1000HSS, GRADE 8, .88-9X4.75X2.00 4 EA

Procedure

1. Complete the Proterra approved Lockout/Tagout procedure to make the bus safe for work.
2. Using four Wheel Lifts, raise the bus into the air. Using four Jack Stands, support the bus for safety.



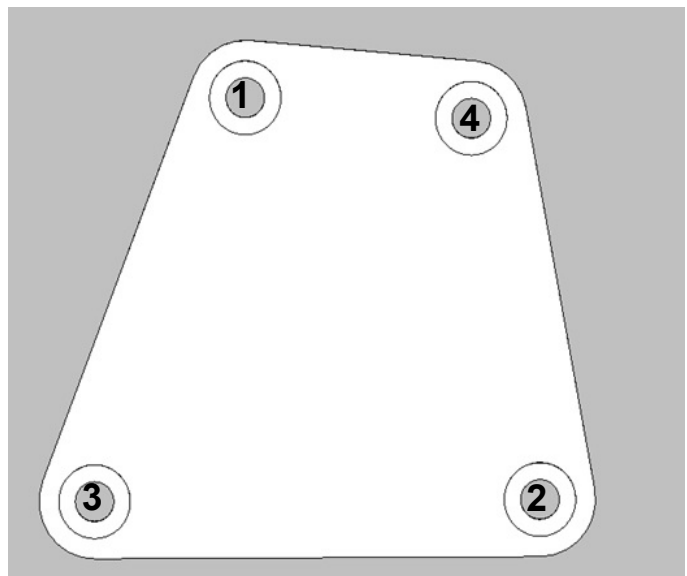
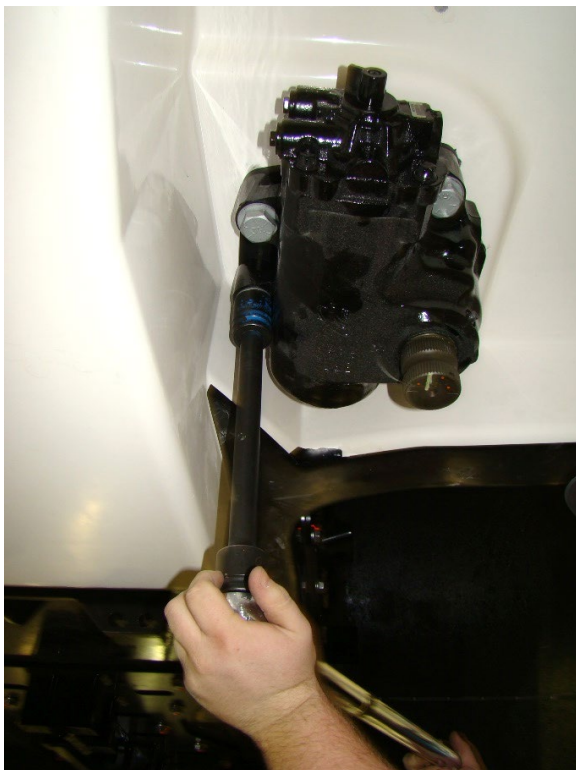
3. Access the Steering Box underneath the bus. Place a Transmission Jack or other approved lifting device underneath the Steering Box to support it.
4. Using a Calibrated Torque Wrench with a 1-5/16 Inch Ratchet/Socket, record the Breakaway Torque while loosening each of the four bolts so that body above the Gearbox Spacer Plate can be inspected. Add the recorded Breakaway Torques for each bolt in the work order.
5. Using a Straight Edge, inspect each of the mounting holes on the underside of the bus body. The bosses inside the mounting holes should be flush with the body or slightly recessed into it. There should not be a protruding or proud area inside any mounting hole.
Note: The bosses are shown below with the gearbox removed for clarity.



6. If the body has protruding areas within the holes, contact Proterra Customer Service for further instructions.
7. Using Alcohol and Shop Towels, remove any Orange Torque Stripe Paint from previous torquing operations.
8. Using a 1-5/16 Inch Ratchet/Socket, remove each bolt one at a time and replace it with a new one (018758-031). Add Loctite 248 to the threads of each new bolt. The Loctite 248 should fill the threads on the bolt where it engages the fastener.



9. The Steering Box bolts will be torqued in three steps using a Cross-torquing process. Using a Calibrated Torque Wrench with a 1-5/16 Inch Socket, **torque each of the four bolts to 150 Foot Pounds**. Cross-torque the bolts by following the sequence shown in the illustration on the right below.



10. Using a Calibrated Torque Wrench with a 1-5/16 Inch Socket, **torque each of the four bolts to 369 Foot Pounds**. Cross-torque the bolts by following the sequence shown above.
11. Using a Calibrated Torque Wrench with a 1-5/16 Inch Socket, **torque each of the four bolts to 500 Foot Pounds**. Cross-torque the bolts by following the sequence shown above.
12. Using Orange Torque Stripe Paint, mark the four bolts as shown below.



13. Remove the Transmission Jack or other approved lifting device from underneath the Steering Box.
14. Remove the four Jack Stands.
15. Using the four-Wheel Lifts, lower the bus to the ground.
16. Remove the Lockout/Tagout devices and return the bus to service.