


Title:	Loose Torque Box to Frame Bolts			
Number:	SB_556	Release Date:	06/11/2024	
Revision Number:	Not Applicable	Revision Date:	Not Applicable	
Chassis Type:	85'/100' Rear Mount Platforms, 100'/105' Rear Mount Ladders			
Component Description:	Magni-Black 3/4-10 x3.75 bolts and 3/4-10 nuts			
Parts:	Screw (Pierce PN 82-2019-0375), Locknut (Pierce PN 82-4066), Spacer (Pierce PN 3140644)			
Tools:	Backing wrench, dial analog torqued wrench (with updated torqued values)			

Subject:

Identification of loose torque box to frame bolts during 3rd Party Inspections and/or preventive maintenance intervals.

Purpose:

The following procedure should be followed when a customer or dealer identifies loose, missing, or broken torque box mounting bolts. This applies to 85'/100' rear mount platforms, 100'/105' rear mount ladders, and mid mount aerials utilizing 0.75" fasteners.

Procedure:

IMPORTANT: Start an incident with Pierce Aftermarket if proceeding with the procedure outlined below!

- **Confirm that during the inspection process, the concerned fastener(s) were inspected with a backing wrench preventing the bolt from rotating while checking the nut torque.**
 - **If a backing wrench was not used during inspection, repeat inspection with a backing wrench.**
 - **After checking the torque while using a backing wrench, proceed to the following procedures if the concerned fastener(s) are still not torque to specifications.**
1. Within the technical incident, document job number and type of aerial product.
 2. Within the technical incident, document the exact location of all loose, missing, or broken torque box mounting bolts. Have a photo or drawing marked up identifying each loose, missing, or broken fastener locations. Be sure it shows which joint (i.e., left front, right front, left rear, right rear).
 3. Using a backing wrench on the bolt head, and preferably a dial analog torque wrench (not a click torque wrench), document the current torque by recording the torque at which the nut starts to rotate of any loose fasteners and how it was measured. These values can be added to the photo or drawing above, stated in step 2.



Figure 1

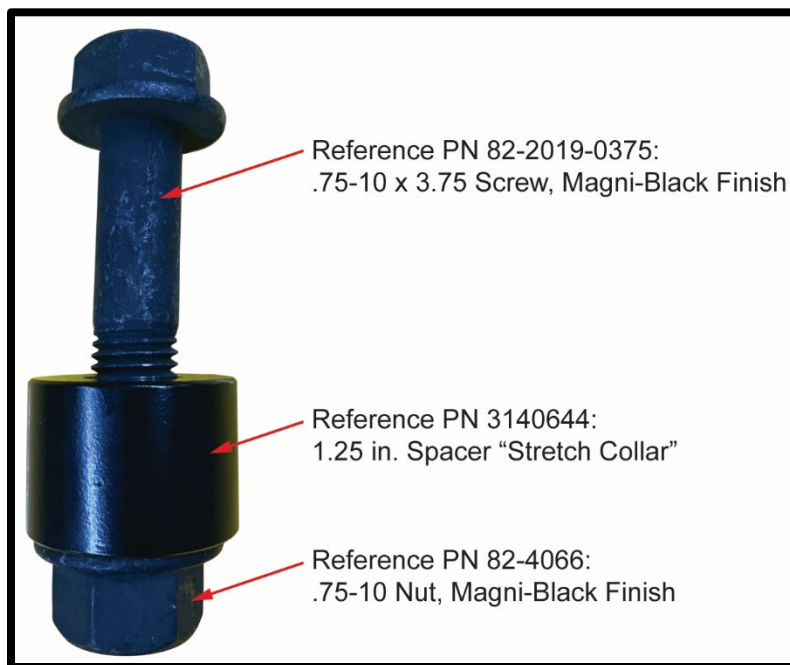


Figure 2

4. Confirm that the concerned fasteners meet the current production configuration. This configuration consists of $\frac{3}{4}$ -10 Magni-Black finish flange head type nuts and bolts. The front torque box bolts should also include a 1.25" spacer "Stretch collar". See **Figure 1** and **Figure 2** for images of current fasteners.
5. If the concerned fasteners meet the current production configuration stated in Step 5, do not replace the fasteners, proceed with retorquing the fasteners. If the fasteners do not meet the current production configuration in Step 4, proceed to Step 6.
 - a. Torque fastener per specification listed on data placard. This data placard will be located on the aerial device turntable console. This torque is typically 424 lb-ft (575 N·m).

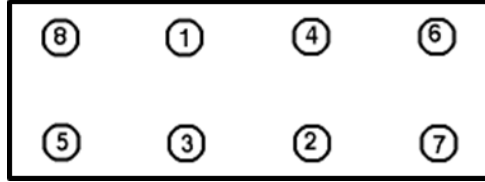


Figure 3

b. Torque per the proper torque sequence (See **Figure 3**) and apply torque sealer.

6. Focusing on **ONE joint at a time:**

NOTE: One side of chassis is to be done first, mounting tight to rail (front and rear).

- a. Remove ALL fasteners and discard.
- b. Using a brake or parts cleaner, clean the join to remove any dirt of grease between the two mating surfaces.
- c. Install new hardware (Screw [Pierce PN 82-2019-0375], Locknut [Pierce PN 82-4066], Spacer [Pierce PN 3140644]; See **Figure 2**).
- d. Torque fastener per specification listed on data placard. This data placard will be located o the aerial device turntable console. This torque is typically 424 lb-ft (575 N·m).
- e. Torque per the proper torque sequence (See **Figure 3**) and apply torque sealer.
- f. Once the first side is mounted tight to the frame rail, proceed to the opposite side.



Slide shims up from bottom. No sharp shim edges at rail bottom. Shim both Front and Rear as needed (same side).

Figure 4

NOTE: If eliminating the gap on one side is not possible, shimming on both sides is acceptable. See following step.

- g. Inspect for gaps between frame rail and torque box mounting. If gaps are present, install strips of 0.030" thick 304 stainless steel shims between the bolt holes to fill gaps as much as possible (See **Figure 4**). Common shims used in production are approximately 2.5" wide by up to 9.0" long. These can be slid up from the bottom or from the sides. Thicker shims or doubling of shims may be required. Remove sharp edges on the shims to minimize scraping of paint during installation.

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- h. Install new hardware (Screw [Pierce PN 82-2019-0375], Locknut [Pierce PN 82-4066], Spacer [Pierce PN 3140644]; See **Figure 2**).
 - i. Torque fastener per specifications listed on data placard. This data placard will be located on the aerial device turntable console. This torque is typically 424 lb-ft (575 N·m).
 - j. Torque per the proper torque sequence (See **Figure 3**) and apply torque sealer.
7. After the joint(s) have been cleaned, shimmed, and new fasteners installed, operate the aerial device as follows to apply a working load to the joint(s):
- a. Fully extend PS front stabilizer beam.
 - b. Fully extend PS front jack and fully retract.
 - c. Fully extend PS rear stabilizer beam.
 - d. Fully extend PS rear jack and fully retract.
 - e. Repeat above steps for DS.
 - f. Properly set up stabilizers for aerial operation.
 - g. Raise the aerial high enough to clear the cab roof for rotation.
 - h. Fully extend the aerial.
 - i. Rotate the aerial over the left front corner of the truck.
 - j. Fully elevate aerial to maximum elevation.
 - k. Fully lower the aerial to minimum elevation.
 - l. Raise aerial to level and rotate until over the left rear corner of the truck.
 - m. Fully elevate aerial to maximum elevation.
 - n. Fully lower aerial to minimum elevation.
 - o. Raise aerial to level and rotate until over the right rear corner of the truck.
 - p. Fully elevate aerial to maximum elevation.
 - q. Fully lower the aerial to minimum elevation.
 - r. Raise aerial to level and rotate until over the right front corner of the truck.
 - s. Fully elevate aerial to maximum elevation.
 - t. Fully lower the aerial to minimum elevation.
 - u. Raise aerial to level and rotate over front of truck (or rear if mid mount aerial).
 - v. Repeat steps “a – u” rotating the opposite direction.
 - w. Retract and bed aerial.
 - x. Fully retract both front stabilizer jacks.
 - y. Fully extend rear stabilizer jacks. NOTE: Watch for front bumper clearances.
 - z. Fully retract rear stabilizer jacks.
 - aa. Fully extend front stabilizer jacks. NOTE: Watch for rear bumper clearances.
 - bb. Fully retract rear stabilizer jacks.
 - cc. Fully extend both PS stabilizer jacks.
 - dd. Fully retract both PS stabilizer jacks.
 - ee. Fully extend both DS stabilizer jacks.
 - ff. Fully retract both DS stabilizer jacks.
 - gg. Stow all stabilizers.

IMPORTANT: Steps 7-8 must be repeated until the clamp load is maintained.

8. Verify torque. Re-torque to 424 lb-ft (575 N·m) if clamp load is not met.

If any additional support is needed, please open a technical support incident on Pierceparts.com.