



## Microbird T-Series Driveline Guards SERVICE NOTICE #18-0105REVC



### Proper Driveline Protection Required

New York State Department of Transportation has determined that the Microbird T-Series units (Ford Transit Chassis) have an issue where the brake lines are not properly protected should the driveline fail.

New York Bus Sales has worked with the New York State Department of Transportation and Microbird to provide a method which meets the requirements.

At the forward end of the driveline just aft of the transmission, the brake lines can be seen running above the driveline (FIGURE #1).

Regulation 720.4(Y)(i) States:

**Drive Shaft Guard:** The longitudinal drive shaft on buses with a capacity of 10 passengers or more shall be protected by a metal guard or guards to prevent the front end from dropping to the ground, as well as preventing any damage to the brake and fuel lines and exhaust system or from whipping through the floor in the event of a fracture or disconnection.

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The method for checking to make sure the requirement is meant is as follows:

Place a straight line device that is as long as the driveshaft parallel and against the top of the tube. Hold one end of the device against the driveshaft and rotate the opposite end outward from the tube until the straight line device contacts the guard.

Repeat for the opposite end. If the straight line device comes into contact with any of the components listed in 720.4 (Y) (1) (i) requiring protection, prior to contacting the driveshaft guard write OOS Item 43.03.1 (C) or 43.03.2 (C) as appropriate. One or more loops that will prevent either end of the driveshaft from hitting the ground or the aforementioned components may meet the requirements of the regulation. Guards may be placed on individual components when a loop does not provide all the protection necessary.

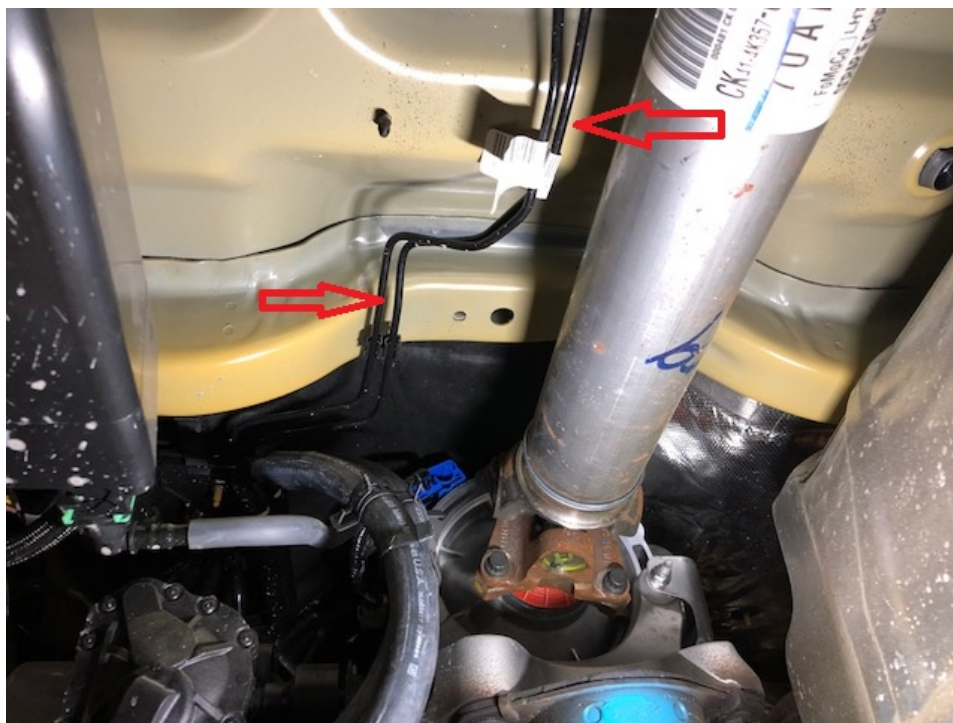


FIGURE #1

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It was also determined that the guards in the rear of the units needed to have additional protection above the driveline and a “kit” has been designed to address ALL issues using 3/16” X 1” steel flat stock, #14 X 3/4” stainless steel hex head self tapping PK fasteners and 1/4” X 1” bolts with serrated flange nuts and SS wire loom fasteners. (FIGURE #2)



FIGURE #2

The first step is to move the plastic line “separator” forward as shown with the arrow in FIGURE #3. You should also notice that the forward cross member is “fabricated” and not formed into the floor pan as the one to the rear.

PLEASE NOTE- The formed portion of the floor should NOT be drilled into nor should any screws be put into it. The black plastic “nub” which protrudes and is circled in red (FIGURE#3) is the holder for a wire loom which runs across the cavity formed! This steel is much harder and will require pre-drilling with a 13/64” drill bit.

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Next put the SS wire loom fasteners around the brake lines and position them on the fabricated cross member as in FIGURE #4. PLEASE NOTE- This steel is much harder and will require pre-drilling with a 13/64” drill bit. Drill and secure with PK fastener. Using the smaller square bracket, mark the forward cross member as in FIGURE #4, drill and install the bracket using 2 PK fasteners as in FIGURE #5

Next, the flat curved bracket with the partial “loop” will be installed above the driveline using the same holes as the OEM Ford front guard (FIGURE#6) you will notice that one of the holes in the bracket is slotted to allow for minor differences in the bolt hole spacing. Install by bolting the end with the “un-slotted” hole to the driver side which is the same side as the welded partial “loop” doing so will protect the brake lines as well as the emergency brake cable as in FIGURE #7.

To complete, you will notice that there are 2 driveline guards toward the rear of the driveline as in FIGURE #8. Using the 2 longer brackets, position them above the driveline and inside the brackets as in FIGURE #8, the forward bracket at the highest point where it “bends” and with the rear at roughly the same distance above as the lower bend is below the driveline. Using the holes in the provided brackets drill the chassis mounted guards and secure with the 1/4” X 1” bolts and serrated flange nuts as in FIGURE#9

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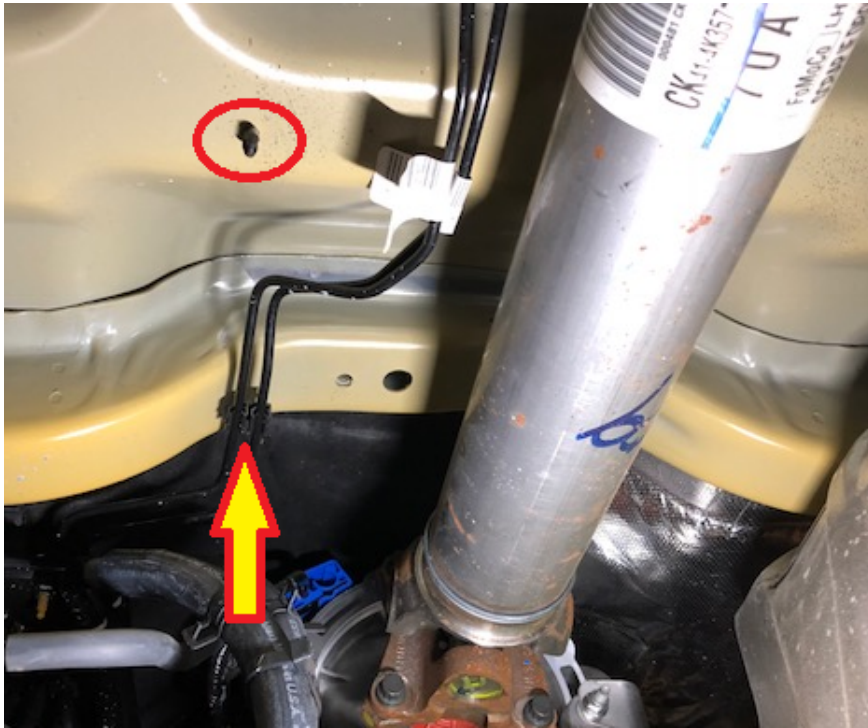


FIGURE #3



FIGURE #4

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FIGURE #5

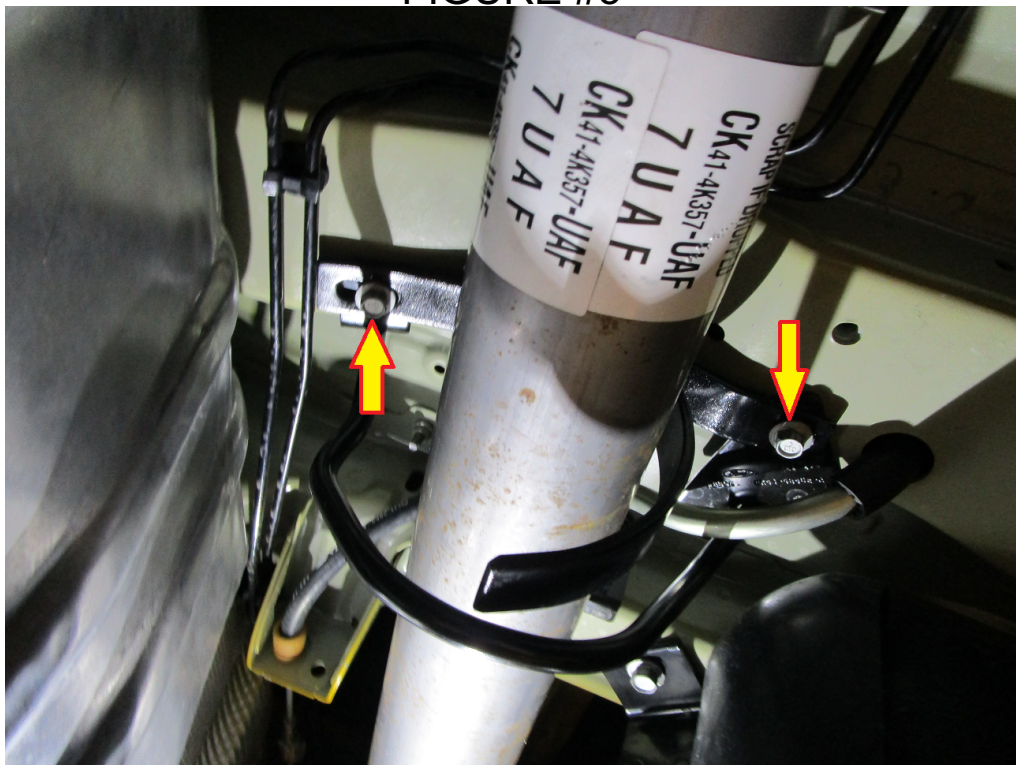


FIGURE #6

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FIGURE #7

**KIT PART NUMBER**

**NYB-078**

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FIGURE #8



FIGURE #9

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## UPDATE 2-10-19:

Recently we have heard of electrical issues with units which were taken to Ford dealers for repair. What was found was that when the driveline guard was installed the self-tapping screw went through a wire harness that runs across the floor in the molded recess. There is a harness clip that can be seen on the underside (Circled in **RED** on Figure #10).

Care must be taken to follow the steps and only drill or screw into the fabricated crossmember indicated with the **GREEN** arrows in Figure #10. The repair is costly as the driver seat and flooring must be removed and the harness replaced.

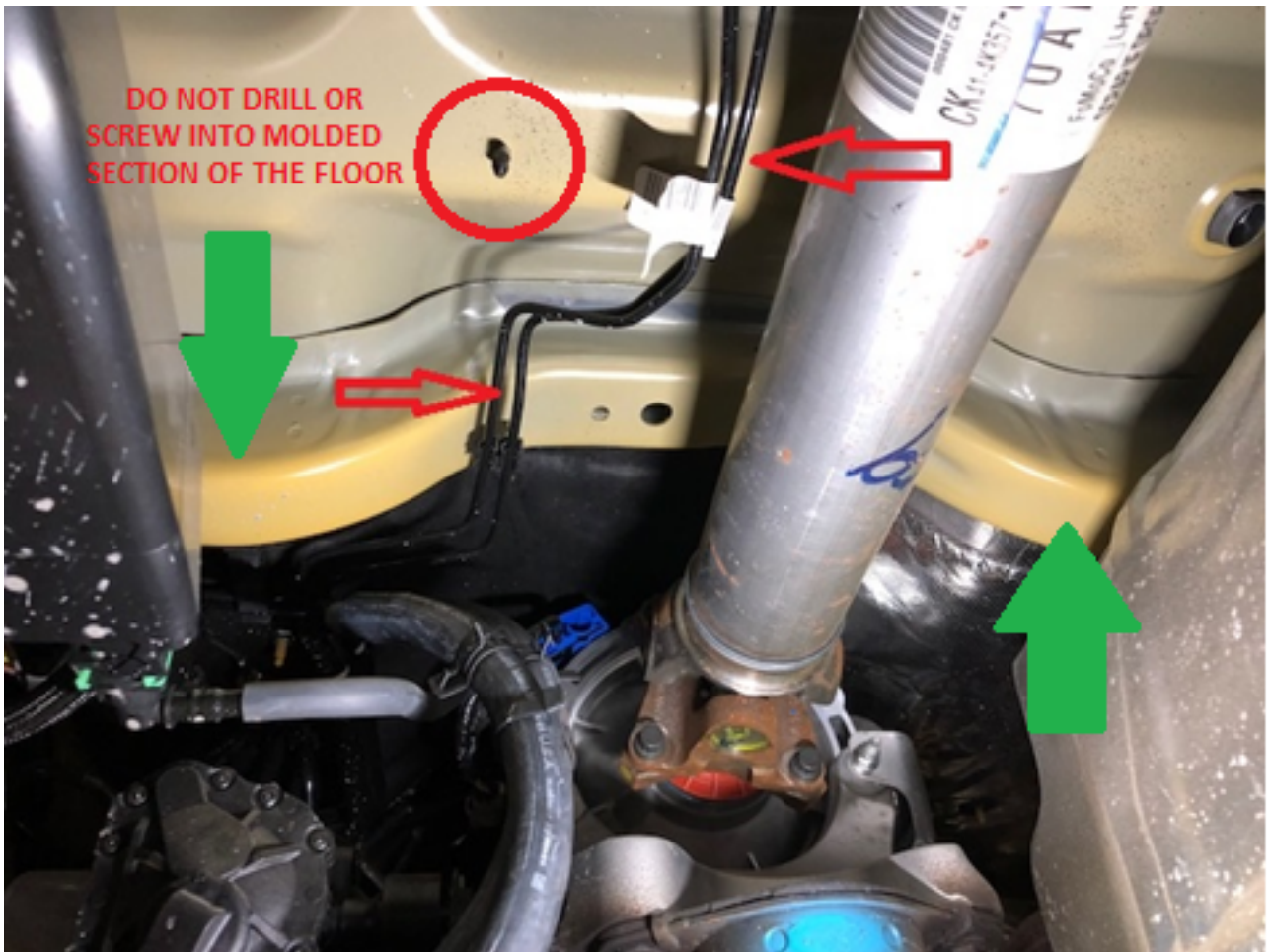


FIGURE #10

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## CONTACT OUR SERVICE OR PARTS DEPARTMENT WITH ANY QUESTIONS

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