

**** SOLUTION ****

Title	Vehicles Equipped With An Automated Manual Transmission (AMT) - Input Shaft /Spigot Bearing Repair, Replacement, Inspection And Reuse Guidelines - US07 And Newer Emissions, Model Year 2008 And Newer
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Mack Models

Mack Model	AN - Anthem , CHU - Pinnacle, Axle back , CXU - Pinnacle, Axle front , GR - Granite , GU - Granite , PI - Pinnacle , TD - Titan
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Volvo Models

Volvo Model	VN , VNL , VNM , VNR , VNX , VAH , VHD , VT
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Emission Standard

Emission Standard	US07 , US10 , US10+OBD13 , US14+OBD13 , US14+OBD15 , US14+OBD16 , US17+OBD16 , US17+OBD18 , US17+OBD19
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Transmission

Transmission	AMT-F Without Crawler Gears , AMT-C , AMT-D , AMT-C , AMT-D , AMT-F Without Crawler Gears
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**** SOLUTION ****

Cause	Process for inspecting an AMT gearbox for suitability for repair or requirement for replacement of the input shaft after the spigot bearing and input shaft have been determined to be damaged or failed. This document can be used as a basis for other repairs that involve the components that are associated with the input shaft replacement procedure to allow repair of gearboxes without the need for replacing a major component like the main gearbox.
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Solution**Important Notes**

- Many of these items may have already been evaluated during the diagnostic process and as such there is not a SRT associated with this list as it is just a list of items to check and evaluate to be sure the unit can be repaired at the dealer level.
- The Transmission Reuse or Replacement Guidelines document should be used as a visual reference as needed to accompany this inspection. Individual components that are removed during this repair should be inspected on their own merit and replaced as needed.
- Failures that have large amounts of debris in the gearbox must have the oil pump inspected and cleaned out or replaced. The pressure relief valve must be replaced and the filter housing completely disassembled and cleaned out.

Procedure

Items 1-7a are critical to the viability to a rebuild option. If you have made it that far without being told to replace the gearbox then the repair of the gearbox is acceptable.

1. Remove control housing if not already removed and inspect gears.
 - a. Is there damage to any of the gears on the main shaft or countershaft of the gearbox?
 - i. Yes ---replace short gearbox
 - ii. No----continue with inspection
2. Remove range housing assembly
3. Remove Lube tube from rear of Main shaft.
 - a. Are there metal flakes built up inside the main shaft and visible on the tube and o-rings?
 - i. Yes---replace short main box and replace oil cooler.
 - ii. No-proceed with inspection.
4. Remove one of the rear bearing retainer covers.
 - a. Does the cover have a pin in it?
 - i. Yes-proceed with repair
 - ii. No-Update to current configuration of pinned bearings during repair or install short gearbox.
5. Remove clutch housing and inspect components for damage.
 - a. Is the Input shaft or spigot bearing damaged?
 - i. Yes - continue with disassembly and inspection.
 - ii. No- continue with disassembly and inspection.
 - b. Is the end of the main shaft or lube tube damaged or blue?
 - i. Yes---replace short gearbox
 - ii. No- continue with disassembly and inspection.
6. With gearbox in horizontal position lift the main shaft to disengage the front gear on main shaft from countershaft gear and spin the gear.
 - a. Does the gear and bearing rotate freely and smoothly
 - i. Yes-proceed with inspection
 - ii. No-Replace short gearbox

Please click here to view the [Pre-load worksheet](#).

The shim kit required to complete the repair is part number **85152839**. Click [here](#) access the Shim Thickness Calculator.

If at this point if you have not been instructed to replace the gearbox, the input shaft repair can proceed. Please refer to the published repair methods for further information.

Solution visibility	Dealer distribution
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Function(s)/component(s) affected

Function affected	Input Shaft , Main Shaft , Front Housing (Gearbox)
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Function Group

Function Group	431 gearbox, manual , 451 propeller shaft , 453 centre bearing; mounting
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Customer effect

Main customer effect	noise , vibration , judder , slipping
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Conditions

Vehicle operating mode	acceleration , in reverse , during engagement
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Administration

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Dealer ID	A169304
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