

INSTRUCTION SHEET NO. 353
P/N XXXXXXXX
March, 2014
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SUBJECT: 3K/4K Rear Housing Repair Kit J-51059

MODELS AFFECTED: All 3000 and 4000 Series Product Family Transmissions

Introduction:

3K/4K Rear Housing Repair Kit J-51059 has been developed to aid in the repair of damaged bolt hole threads located at the rear of the 3000/4000 Series Product Family transmission rear housing. This repair kit is available at allison.service-solutions.com.

Rear Housing Repair Kit J-51059 includes the following hardware:

- Rear Housing Plate – J-51059-1
- Hex Head Cap Screw – 214490 – Quantity three (3)
- Reclosable Pouch – J-36316-A
- Instruction Sheet #353



NOTE: 3K/4K Rear Housing Repair Kit J-51059 MUST be used in conjunction with Filter Cover Bolt Hole Repair Kit J-42385-AT. Kit J-51059 functions primarily as a drill guide and requires the contents of kit J-42385-AT to perform the thread repair process. Filter Cover Bolt Hole Repair Kit J-42385-AT is an essential Allison tool.

Additional Tools Required:

- Light Machine Oil (WD-40®) or equivalent)
- Shop Air/Vacuum
- Safety Glasses

Rear Housing Thread Repair Procedure

The following rear housing bolt hole thread repair procedure is performed after the following transmission components have been removed. Refer to Service Manual SM4013EN (3000 Product Family) or SM4014EN (4000 Product Family):

- Retarder
- Adapter Housing
- Oil Cooler
- Rear Cover

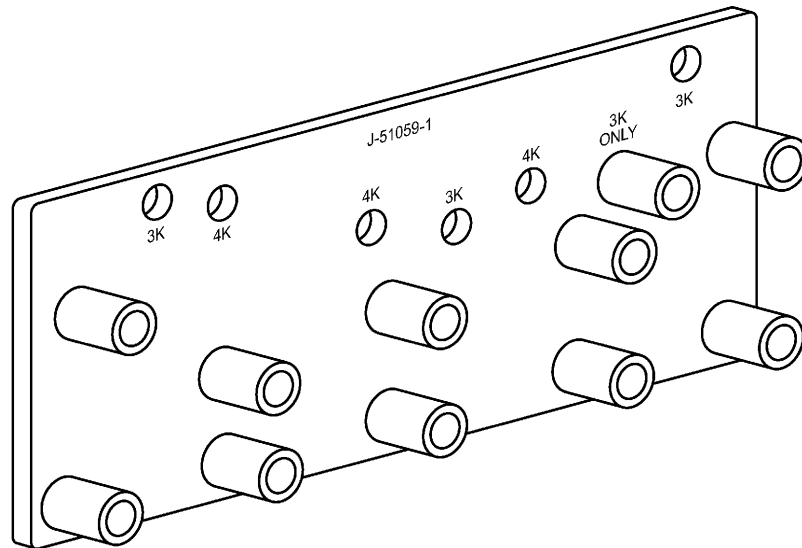
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NOTE: The three (3) mounting bolts are in different locations for 3000 and 4000 Series Product Families. The mounting bolt locations are stamped on Rear Housing Plate J-51059-1 (refer to [Figure 1](#)).



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Figure 1. Rear Housing Plate J-51059-1

1. Align the Rear Housing Plate J-51059-1 to the transmission rear housing using the two (2) Alignment Pins J-42385-308 included in Filter Cover Bolt Hole Repair Kit J-42385-AT. Install the tapered ends of the Alignment Pins into the Rear Housing Plate drill guide spacers as required (refer to [Figure 2](#)). Secure the Rear Housing Plate to the rear housing with the three (3) mounting bolts provided. Refer to [Figure 3](#) and [Figure 4](#).

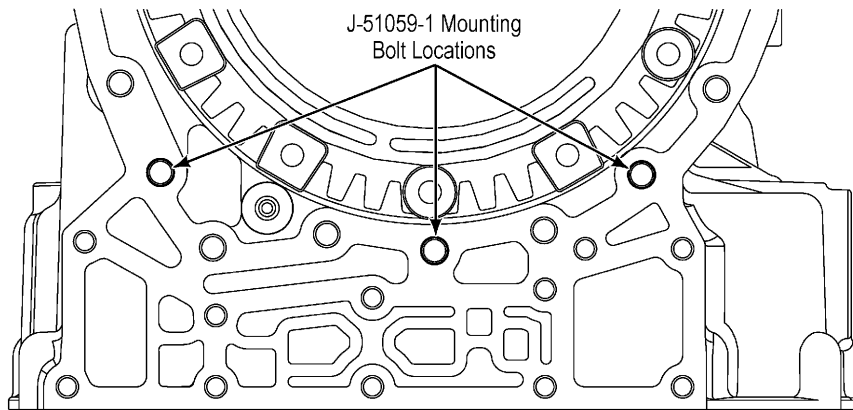


NOTE: The Alignment Pins J-42385-308 (included in Kit J-42385-AT) must be utilized to ensure that the Rear Housing Plate J-51059-1 is positioned properly on rear housing prior to drilling and Time-Sert® insert installation.



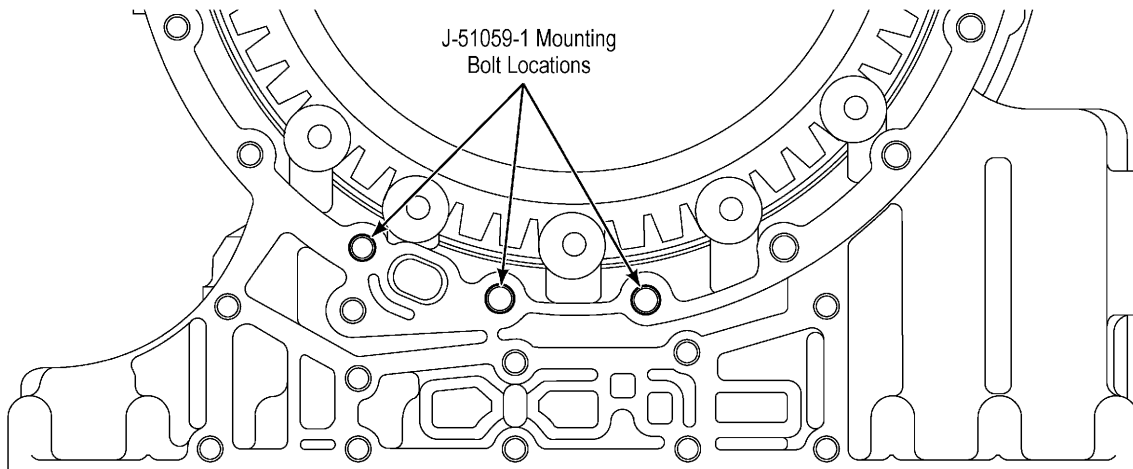
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Figure 2. Alignment Pin J-42385-308



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Figure 3. J-51059-1 Mounting Bolt Hole Locations (3000 Series Product Family)



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Figure 4. J-51059-1 Mounting Bolt Hole Locations (4000 Series Product Family)

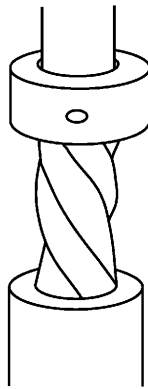


NOTE: Do not allow metal chips to enter the transmission. Cover and clean components as necessary. Ensure that the transmission housing is clean following the drilling and tapping procedure.



NOTE: Light machine oil, such as WD-40® or equivalent, is recommended for all drilling and tapping operations.

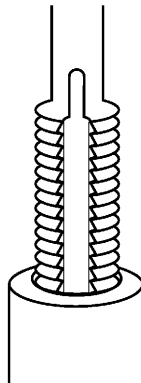
2. Using safety glasses, drill out the damaged threads using the M10 Step Drill Bit J-42385-231 included in Kit J-42385-AT. The collar on the drill bit must contact the rear housing plate. Clean out ALL chips and foreign material.



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Figure 5. M10 Step Drill Bit J-42385-231

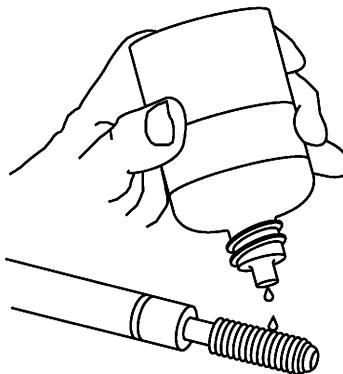
3. Apply light machine oil to Tap J-42385-232 and use Tap Wrench 510260 (included in Kit J-42385-AT) to thread new hole(s). Exercise care to avoid breaking the tap while tapping to the bottom of the drilled hole. Clean out ALL chips and foreign material. Retap if necessary.



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Figure 6. Tapping Bolt Hole Threads

4. Remove Rear Housing Plate J-51059-1 from the rear housing. Verify that the holes are free of chips and debris.
5. Lubricate the threads of Insert Driver J-42385-233 with Driver Oil J-42385-110.



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Figure 7. Applying Driver Oil to Insert Driver Threads

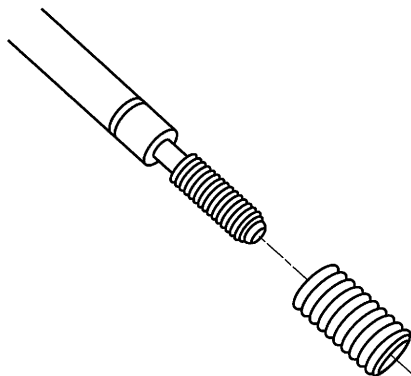


NOTE: Driver Oil J-42385-110 must be used on the Insert Driver.

6. Install the Time-Sert® insert onto the Insert Driver.



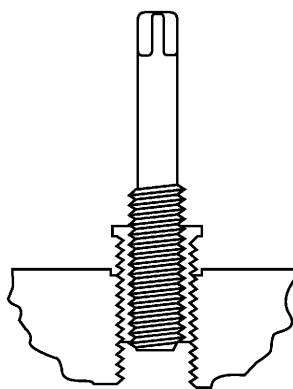
NOTE: Do not allow oil or foreign material to contact the outside of the Time-Sert® insert.



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Figure 8. Installing Time-Sert® Insert on Insert Driver

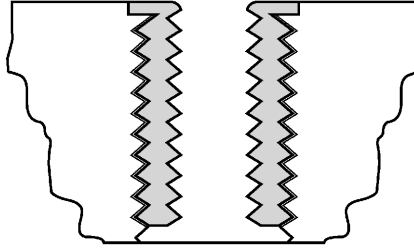
7. Install the Time-Sert® insert into the hole until it is seated in the counterbore. Continue to rotate the Insert Driver through the Time-Sert® insert. The Insert Driver will tighten up before screwing completely through the Time-Sert® insert. This is normal because the bottom threads of the Time-Sert® insert are being formed and mechanically locked into the hole. Lightly bottom the Insert Driver in the hole to ensure complete threading and insert lock-in. Remove the Insert Driver.



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Figure 9. Installing the Time-Sert® Insert

8. Inspect the Time-Sert® insert for correct installation. The Time-Sert® insert must be flush or below the base surface (refer to [Figure 10](#)).



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Figure 10. Inspection of Time-Sert® Insert Installation