



SUBJECT

8-Speed ZF Automatic Transmission Diagnosis and Troubleshooting Hints

MODEL

All

With the ZF 8HP automatic transmission

SITUATION

Specialized assistance is often needed in diagnosing symptoms involving 8-speed automatic transmissions and determining the root cause of complaints.

Due to the high cost and complexity of the 8-speed automatic transmissions, an Enhanced Technical Support process has been developed to help identify the root causes of customer complaints relating to automatic transmission concerns.

All diagnostic and troubleshooting steps listed in this Service Information bulletin should be performed prior to submitting a TC case.

A TC case may be submitted ONLY after all appropriate diagnostic steps and/or hints listed below were performed and diagnostic results are inconclusive, or when a component replacement (transmission or Mechatronic) is requested.

IMPORTANT

TC Cases will NOT be processed and will be rejected as "unjustified" if the basic diagnostic troubleshooting procedures, fault test plan(s), and corresponding information required by this SIB are not performed and included in the case notes.

PROCEDURE

WHEN DIAGNOSING 8-SPEED AUTOMATIC TRANSMISSION COMPLAINTS, THE FOLLOWING TROUBLESHOOTING STEPS SHOULD BE PERFORMED, AND ALL REQUIRED INFORMATION INCLUDED IN THE TC CASE:

1. Customer Concern

- Drive the vehicle so as to reproduce the customer's complaint.
- Be as specific as possible when describing the issue at hand, including the exact driving and environmental conditions required to reproduce the complaint. ("Transmission is shifting badly" will create more questions than answers.)
- If the complaint cannot be verified, contact the customer to obtain a specific description of the problem. If possible, test drive with the customer, observing any unusual driving habits (e.g., "two-footed driver").

○ **IMPORTANT!**

Under no circumstances should you program the vehicle and/or reset the EGS adaptations if the complaint cannot first be verified.

2. FASTA Data

- Perform a "Short Test" and transmit the FASTA data prior to any programming or troubleshooting. In many instances, the "uncontaminated" FASTA information may be helpful in determining the root cause.

3. Transmission Fluid Level/Fluid Condition

- Check the fluid level for **all** transmission concerns, even if there are no obvious signs of external leakage.
- Prior to starting the test plan, it is recommended that the correct fluid be in parts stock if it is required for topping off. If you do need to add fluid, please note how much fluid was needed to obtain the correct level, and report this amount in the work-performed section of the TC case.
- Follow the appropriate fluid level checking procedures. The main items to remember are:
 - Fluid level can only be checked using test plan ABL-DIT-AS2460_GSOEA_8HP, and FASTA data must support that this test plan was completed properly.
 - If the fluid does not flow out when the plug is removed, add the appropriate amount until it just trickles out. **DO NOT insert your fingers into the filler hole to check where the transmission fluid is!**

4. Transmission Shift Concerns and Fluid Leaks

- Adjust and/or correct the fluid level (**see the above paragraph**), and then clear the EGS adaptation values and test drive. The transmission should be warmed up and the vehicle driven at various speeds for at least five miles.
- If the shift issue is resolved, locate the root cause of the leak and submit a TC case for further instruction. Oil leak repairs without a TC case are subject to claim debit as outlined in [SI B24 04 12](#).
- If the shift issue is not resolved, submit a TC case.

5. External Damage

- • Inspect the transmission oil pan for obvious signs of impact.
- • Inspect the emergency release screw or cable adjustment, bracket and lever (**as equipped**).

6. Transmission Fault Codes

- Diagnostic fault codes are an essential tool for troubleshooting. Print and secure the fault codes before clearing. Perform all applicable ISTA test plans as prompted by the EGS fault codes stored.
- All ratio monitoring codes will ask the technician whether the fluid level was checked. This question should be answered with "No," and the test plan for oil balancing, **ABL-DIT-AS2460_GSOEA_8HP**, will be added automatically.

As noted above, FASTA data must support that this test plan was performed and completed properly.

- Prioritize the relevance of all drivability-related faults stored in the DME, DSC or EGS control modules. For example, if the vehicle ran out of fuel and the engine stalled, the consecutive misfire and transmission gear monitoring faults (slippage faults) are irrelevant.
- Any verified engine drivability complaints, e.g., stumbling, poor running or hesitation, may also result in transmission shift quality complaints and must be resolved first.

7. Aftermarket Equipment

- Inspect the vehicle for the presence of any aftermarket equipment (including wheels and tires), or software which may affect vehicle performance or cause customer concern.
- Mention any modifications to the vehicle (e.g., "Conversion to a stretch limo") in the submitted PuMA case.

8. Programming Replacement Transmissions and Mechatronics

- Refer to [SI B24 18 07](#) (Programming of Replacement Transmission or Mechatronic) for helpful hints on EGS programming.

9. Repair History

- Review the repair history to see if there were any recent repairs that could affect the proper operation of the transmission. (If the vehicle returns with a transmission slippage concern after an oil leak repair, chances are that the transmission fluid level is incorrect, causing a new drivability complaint.)

10. SI Bulletins

- Check if there are any Service Information bulletins that apply to your specific complaint, making sure that both the "subject" content and the affected vehicle model match your case.

11. Vehicle VIN Number

- Double check that the VIN number is correct before submitting a TC case, so that the current FASTA information is available.

12. Transmission Serial Number/Part Number

- Always provide the transmission serial number and part number, which is etched into the **transmission case**. The transmission serial number is an essential piece of information needed by the ZF specialists, as it is especially useful on repeat complaints after a transmission replacement.

13. PuMA Reporter and Valid Phone Number

- Preferably, the reporter listed in the TC case should also be the person who works on the vehicle. If it is not possible, mention your name in the "Work performed" section of the case.
- Always provide **a direct and a valid phone number** so that you can easily be contacted, if necessary, by the ZF specialist.

WARRANTY INFORMATION

Not applicable.