



ATRA Diagnostic Procedures



This material should be used to aid you in your diagnostic process. Please make sure you have filled out the "Automatic Transmission Diagnostic Worksheet" prior to contacting the ATRA HotLine.

ATRA HotLine Ph# 1-877-287-2832

Preliminary Inspection

The following items must be checked prior to beginning the diagnostic procedures:

Know and Understand the Concern

In order to correctly diagnose a concern, first understand the customer complaint or condition. Customer contact may be required in order to begin to verify the concern. Understand the conditions as to when the concern occurs, for example:

- Hot or cold vehicle temperature.
- Hot or cold ambient temperature.
- Vehicle driving conditions.
- Vehicle loaded/unloaded.

After understanding when and how the concern occurs, proceed to Verification of Condition.

Verification of Condition

This section provides information that must be used in both determining the actual cause of customer concerns and carrying out the appropriate procedures.

The following procedures must be used when verifying customer concerns for the transmission.

Determine Customer Concern

NOTE: Some transmission conditions can cause engine concerns. An electronic pressure control short circuit can cause engine misfiring. The torque converter clutch not disengaging will stall the engine.

Determine customer concerns relative to the vehicle use and driving conditions, paying attention to the following items:

- Hot or cold vehicle operating temperature.
- Hot or cold ambient temperatures.
- Type of terrain.
- Vehicle loaded/unloaded.
- City/highway driving.
- Upshift.
- Downshift.
- Coasting.
- Engagement.
- Noise/vibration — check for dependencies, RPM, vehicle speed, shift, gear, range, or temperature dependent.



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Check Fluid Level and Condition

CAUTION: The vehicle should not be driven if the fluid level indicator shows the fluid below the DO NOT DRIVE mark or internal failure could result. Under normal circumstances, the fluid level should be checked during normal maintenance. If the transmission starts to slip, shifts slowly, or has signs of fluid leaking, the fluid level should be checked.

1. Place the range selector lever in the PARK position.
2. Wipe the fluid level indicator cap and remove the indicator.
3. Wipe the indicator with a clean cloth.
4. Install the indicator back in the filler tube until it is fully seated, then remove the indicator. The fluid level should be within the normal operating temperature range.

High Fluid Level

A fluid level that is too high may cause the fluid to become aerated, causing erratic control pressure, foaming, loss of fluid from the vent tube and possible transmission malfunction and/or damage.

Low Fluid Level

A low fluid level could result in poor transmission engagement, slipping, malfunction and/or damage. This could also indicate a leak in one of the transmission seals or gaskets.

Diagnostic Strategy

Troubleshooting an electronically controlled automatic transmission is simplified by using the proven method of diagnosis. One of the most important things to remember is that there is a definite procedure to follow.

NOTE: Do not take any short cuts or assume that critical checks or adjustments have already been made.

To properly diagnose a concern, have the following publications available:

- Clutch and Band and/or Clutch Application Chart
- Code Definitions
- Pressure Locations and Specifications
- Solenoid Firing Order

Diagnostics

- Carry out on-board diagnostic procedures key on engine off (KOEO) and key on engine running (KOER).
- Record all diagnostic trouble codes (DTCs).
- Repair all non-transmission codes first.
- Repair all transmission codes second.
- Erase all continuous codes and attempt to repeat them.
- Repair all continuous codes.
- If only pass codes are obtained, further information and test drives are required.



Automatic Transmission Diagnostic Worksheet



Initial Diagnostic Information

Technicians Name _____ Shop Name _____

Vehicle Make and Model _____

Vehicle Year, Engine Size and Transmission Type _____

Customers Concern _____

What modifications, if any, are done to the vehicle? _____

On Board Diagnostic Codes _____

Transmission Fluid _____

Electrical concerns? (i.e Battery, extra cables for auxiliary components) _____

Battery Voltage _____

Engine Concerns _____

Unusual Vibrations/Noises/Concerns _____

Test Drive Diagnostics

Selector Position: P___ R___ N___ OD___ D___ 3___ 2___ 1___

(Depending on the vehicle the selector may be different)

What is the verified concern? _____

When did the problem occur? _____

What Gear does the concern happen? _____

The Vehicle was: Hot? Normal? Cold?

The Outside temp was? Hot? Normal? Cold?

Driving conditions:

Accelerating___ Decelerating___ Braking___ Engine RPM___ Coast___

Road Surface: Up Hill___ Down Hill___ Flat___ Rough___

Pressure Test: P___ R___ OD___ D___ 3___ 2___ 1___

Stall Test: R___ OD___ D___ 3___ 2___ 1___



Shop Diagnostics



Linkages/Cables_____ Exhaust System_____ Oil Leaks_____ Yoke_____

Cooler Lines_____ Mounts_____ Driveline_____ U-Joints_____

Carrier Bearing_____ Electrical Connections_____

Over all Vehicle Performance_____

Transmission Case_____ CV Boots_____

Results of the Diagnostic Routine

What did your tests results Indicate?_____

Dissassembly

What components were damaged in the Transmission?_____

Road Test After the Repair

Engagement Test_____ Driving/Operating System_____ Shift Feel_____

Speedometer_____ Cruise Control_____ Lock-Up_____

Kick Down_____ Manual Linkage_____ TR Sensor_____

Tail/Head Lights_____ Engine RPM_____ Mounts_____

U-Joints_____ Clean Vehicle_____ Floor Mats_____

Is the Vehicle ready for delivery? _____

Technicians Signature_____

Managers Signature_____

NOTES:_____
