



# HYUNDAI Technical Service Bulletin

Group	TRANSAXLE
Number	05-40-006
Date	JUNE, 2005
Model	1999- SONATA, 2001- ELANTRA, SANTA FE & XG, 2003- TIBURON, 2005- TUCSON

Subject  
**ATA SOLENOID DIAGNOSTIC CODES P0740, P0741, P0742, P0743, P0746, P0748, P0750, P0755, P0760, P0765, P0770**

<b>CIRCULATE TO:</b>	<input type="checkbox"/> GENERAL MANAGER	<input checked="" type="checkbox"/> PARTS MANAGER	<input checked="" type="checkbox"/> TECHNICIAN
<input checked="" type="checkbox"/> SERVICE ADVISOR	<input checked="" type="checkbox"/> SERVICE MANAGER	<input checked="" type="checkbox"/> WARRANTY MGR	<input type="checkbox"/> SALES MANAGER

***This bulletin supersedes TSB# 03-40-06 to include repair information for DTCs P0746 and P0748 (Variable Force Solenoid).***

**DESCRIPTION:**

Incorrect operation of the transaxle solenoids may result in the following symptoms:

- Erratic shift
- Check Engine Light illuminated
- Transaxle held in 3rd gear Fail-Safe
- Diagnostic Trouble Codes P0740, P0741, P0742, P0743, P0746, P0748, P0750, P0755, P0760, P0765 or P0770 set

**NOTE: Do NOT replace the transaxle for solenoid codes listed as open/short. Instead, follow the repair procedure shown below.**

**REPAIR PROCEDURE:**

1. Using a Hi-Scan Pro, check for DTC in both the "Engine" and "Automatic Transaxle" menus. **Record the DTC and description.**
2. From the Hi-Scan Pro, select:
  - "Hyundai Diagnosis" menu
  - Vehicle
  - "Auto Transaxle" menu
  - "Actuation Test"

- Press the F1 button (STRT) and test the LR, UD, 2ND, OD, DCC and FSV solenoid (if applicable). Listen for a solenoid sound from the engine compartment.
- If all solenoids test:
  - Incorrectly, go to Step 3.
  - Correctly, the wiring between the PCM/TCM has no open or short circuits. Go to Step 5.

1.4 ACTUATION TEST		02/13
<b>LOW REVERSE SOLENOID VALUE</b>		
<b>DURATION</b>	<b>5 SECONDS</b>	
<b>METHOD</b>	<b>ACTIVATION</b>	
<b>CONDITION</b>	<b>IG.KEY ON ENGINE OFF</b>	
<b>PRESS [STRT], IF YOU ARE READY ? SELECT TEST ITEM USING UP/DOWN KEY</b>		
<b>STRT</b>		

**NOTE: This test functions properly on all listed vehicles except 2003~Elantra SULEV. For 2003~Elantra SULEV, go to Step 3.**

**NOTE: This test confirms the wiring harness does not have an open or short circuit. It does not confirm the proper functioning of the solenoids under all conditions of heat and vibration or a solenoid with an intermittent open/short condition.**

- If Step 2 shows an inoperative solenoid, visually check the wiring harness between the TCM and transaxle for a damaged wire or a short circuit to ground. Disconnect the connectors to the solenoids at the transaxle and the PCM/TCM and check for a bent pin or a pin not fully inserted into the connector. If so, repair or replace the ECM control harness, P/N 914XX-XXXXX.
- Check the harness inside the transaxle oil pan for a short circuit to ground. Replace the harness if damage is found or if **three or more** solenoid DTCs are found in Step 1. (Refer to TSB# 04-40-015 for instructions).

MODEL	Harness P/N
2001~ Elantra, Santa Fe, 2003 Tiburon, Tucson, 1999~2005 Sonata	46307-39050
2006~ Sonata	46308-3A550
XG300/350	46308-39550





# HYUNDAI Technical Service Bulletin

Group

TRANSAXLE

Number

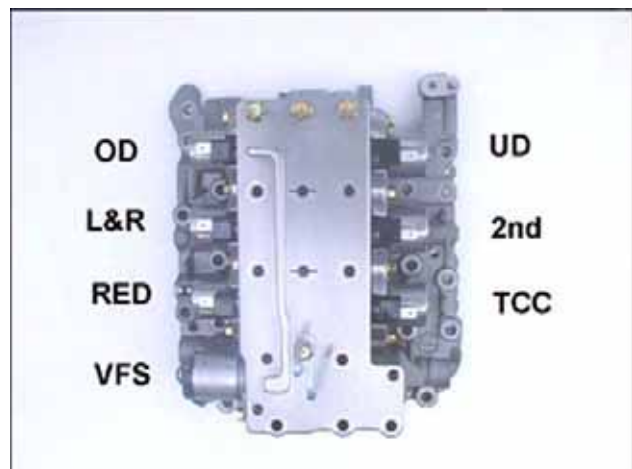
05-40-006

5. Refer to the DTC recorded in Step 1 and follow the repair procedure shown below:

DTC	REPAIR PROCEDURE
<ul style="list-style-type: none"> <li>• P0743, P0746, P0748, P0750, P0755, P0760, P0765, P0770, or</li> <li>• P0743 (if P0740, P0741 or P0742 also set)</li> </ul>	Replace the related solenoids (Step 6).
<ul style="list-style-type: none"> <li>• P0740 (T/C clutch control system problem) only</li> <li>• P0741 (T/C clutch stuck off) only</li> <li>• P0742 (T/C clutch stuck on) only</li> </ul>	Check "Engine" and "Transaxle" menu for DTC: <ul style="list-style-type: none"> <li>• If DTC P0335 or P0725: Follow procedure below.</li> <li>• If <u>no</u> DTC P0335 or P0725: Replace the TCC solenoid. If DTC returns after two key-on to key-off driving cycles, replace the transaxle.</li> </ul>
<ul style="list-style-type: none"> <li>• P0335 (Crankshaft position sensor malfunction)</li> <li>• P0725 (CKP sensor - open circuit)</li> </ul>	Check harness and connectors to CKP sensor and ECM/TCM. If OK, replace CKP sensor. Delete solenoid DTC.
<ul style="list-style-type: none"> <li>• P1529 - TCM MIL request signal</li> <li>• P0700 - TCM MIL request signal</li> </ul>	Delete code.

## SOLENOID REPLACEMENT:

- Remove the battery.
- Drain the radiator. Remove the lower radiator hose from the radiator.
- Drain the ATF.
- Remove the valve body cover from the transaxle.
- Refer to the DTC recorded in Step 1 and replace the related solenoid according to the diagram shown. Tighten the bolts to 4-5 lb.ft (50-70 kg.cm). Go to Step 11.



- Apply Permatex Ultra Gray Sealer or Hyundai Ultra Gray Gasket Sealer, P/N 00231-13800 to the valve body cover and reinstall the cover. Tighten the bolts to 6-7 lb.ft (80-100 kg.cm).

12. Add approximately five quarts of Hyundai SPIII ATF and check the level with the engine idling in Neutral. Recheck the ATF level when the ATF is at normal operating temperature (70-100°C, 159-212°F).
13. Clear the codes and test drive the vehicle for two driving cycles (two key-on to key-off driving cycles, including 1-2-3-4 upshifts and 4-3-2-1 downshifts). If the DTC returns, perform the following repairs:

DTC	REPAIR
<ul style="list-style-type: none"> <li>• P0743, P0746, P0748, P0750, P0755, P0760, P0765, P0770, or</li> <li>• P0743 (if P0740, P0741, P0742 also set)</li> </ul>	<p>Replace the TCM. If the DTC returns, repair or replace the ECM control harness, P/N 914XX-XXXXX.</p>
<ul style="list-style-type: none"> <li>• P0740 (T/C clutch control system problem) only</li> <li>• P0741 (T/C clutch stuck off) only</li> <li>• P0742 (T/C clutch stuck on) only</li> </ul>	<p>Replace the transaxle (if not replaced in Step 5). If the DTC returns, replace the TCM. If the DTC returns, repair or replace the ECM control harness, P/N 914XX-XXXXX.</p>

**PARTS INFORMATION:**

MODEL	PART NUMBER	PART NAME
1999~ Sonata	46313-39051	Solenoid Valve (Qty 1)
2006~ Sonata 2.4L		
2001~ Santa Fe		
2001~ XG300/350		
2001~ Elantra		
2003~ Tiburon		
2005~ Tucson		
2006~ Sonata 3.3L	46313-3A050	Variable Force Solenoid (Qty 1)

**WARRANTY INFORMATION:**

MODEL	OP CODE	OPERATION	OP TIME	OP QTY	NATURE CODE	CAUSE CODE
1999~05 Sonata	45775R00	Replace Solenoid	2.6 M/H	1	*N27	**C31
2001~ Santa Fe						
2001~05 XG300/350						
2003~ Tiburon						
2005~ Tucson						
2001~06 Elantra	45775R0B	Replace Solenoid	0.3 M/H			
All	45775RP0	Scan Tool Operation				

**\*N27: Impossible shift (3rd Hold)**

**\*\*C31: Sticking, Seized**