

Group:
TRANSAXLE

Number:
05-40-006-1

Date:
August, 2005

Models:
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

This TSB supersedes TSB # 05-40-006 to include DTC descriptions in Step 10.

DESCRIPTION:

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

1. Check Engine Light illuminated
2. Transaxle held in 3rd gear "Fail-safe"
3. 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"



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

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^ Press the F1 button (STRT) and test the LR, UD, 2ND, OD, DCC and FSV solenoid (if applicable). Monitor the Hi-Scan and listen for a solenoid sound from the engine compartment.

^ If Hi-Scan shows:

^ "TEST FAILURE" and no solenoid sound is heard, go to Step 3.

^ "COMPLETED" and solenoid sound is heard, the wiring between the PCM/TCM has no open or short circuits. Go to Step 5.

NOTE: This test confirms only that the wiring harness does not currently 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 internal intermittent open/short condition.

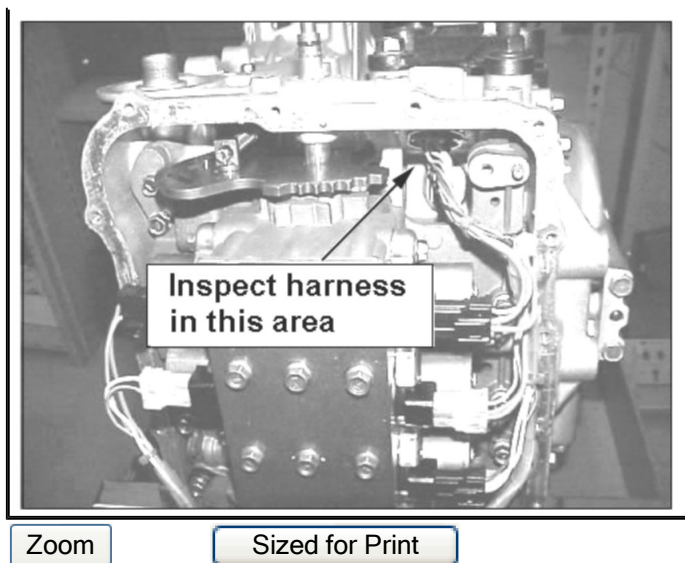
3. Visually check the wiring harness between the [TCM](#) and transaxle for a damaged wire or a short circuit to ground. Disconnect the connectors to the solenoids at the transaxle and the PCM/TCM and check for a bent pin or a pin not fully inserted into the connector. If so, repair or replace the [ECM](#) control harness, P/N 914XX-XXXXX.

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

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4. 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).

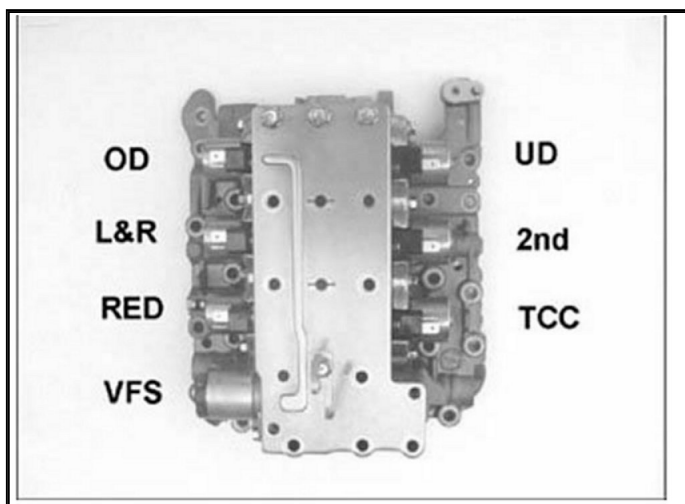
DTC	REPAIR PROCEDURE
<ul style="list-style-type: none"> • P0743, P0746, P0748, P0750, P0755, P0760, P0765, P0770, or • P0743 (together with P0740, P0741 or P0742) 	Replace the related solenoids (Go to Step 6).
<ul style="list-style-type: none"> • P0740 (T/C clutch control system problem) only • P0741 (T/C clutch stuck off) only • P0742 (T/C clutch stuck on) only 	Check "Engine" and "Transaxle" menu for DTC: <ul style="list-style-type: none"> • If DTC P0335 or P0725: Follow procedure below. • 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.
<ul style="list-style-type: none"> • P0335 (Crankshaft position sensor malfunction) • P0725 (CKP sensor - open circuit) 	Check harness and connectors to CKP sensor and ECM/TCM. If OK, replace CKP sensor. Delete solenoid DTC.
<ul style="list-style-type: none"> • P1529 - TCM MIL request signal • P0700 - TCM MIL request signal 	Delete code.



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

SOLENOID REPLACEMENT:

6. Remove the battery.
7. Drain the radiator. Remove the lower radiator hose from the radiator.
8. Drain the ATF.
9. Remove the valve body cover from the transaxle.



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10. 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.

NOTE:

- ^ P0743 - TCC solenoid open/short
- ^ P0746 - VFS solenoid performance
- ^ P0748 - VFS solenoid open/short
- ^ P0750 - LR solenoid open/short
- ^ P0755 - UD solenoid open/short
- ^ P0760 - 2nd solenoid open/short
- ^ P0765 - OD solenoid open/short
- ^ P0770 - RED solenoid open/short

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).

DTC	REPAIR
<ul style="list-style-type: none"> • P0743, P0746, P0748, P0750, P0755, P0760, P0765, P0770, or • P0743 (together with P0740, P0741, P0742) 	<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"> • P0740 (T/C clutch control system problem) only • P0741 (T/C clutch stuck off) only • P0742 (T/C clutch stuck on) only 	<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>

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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 repairs shown.

MODEL	PART NUMBER	PART NAME
1999~2005 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)

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PARTS 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				
All	45775RP0	Scan Tool Operation	0.3 M/H			

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

****C31: Sticking, Seized**

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