



GROUP
Transmission/
Driveline

MODEL

All

NUMBER
003 (Revision 4)

DATE
May 2006

TECHNICAL SERVICE BULLETIN

SUBJECT:

KIA AUTOMATIC TRANSMISSION PROGRAM

NOTE: This bulletin replaces TSB Transmission/Driveline 003 Revision 3, dated June 2003. Discard all previous TSB Transmission/Driveline 003 issues and revisions.

This bulletin outlines the following updates to the Kia Automatic Transmission Program:

- A/T Diagnostic Worksheet
- Allowed external repairs (on car repairs)
- Changes to diagnostic service procedures
- On-line Dealer Communications System (DCS) entry of diagnosis and core information for all Kia automatic transmissions. **This process will be used to return ALL A/Ts, regardless of whether they are replaced by a new or remanufactured unit. Failure to return the A/T core will forfeit the warranty claim.** See Parts Bulletin 1910-0006 for more information.

*NOTICE

This Technical Service Bulletin contains many changes to the current Remanufactured Automatic Transmission Program. Failure to comply with the changes could result in charge back of all or portions of OEM or remanufactured A/T claims and/or core credit.

File Under: Transmission/Driveline

Circulate To: General Manager Service Manager Parts Manager
 Service Advisor(s) Technician(s) Body Shop Manager Fleet Repair

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ALLOWABLE EXTERNAL REPAIRS:

ONLY the following components can be repaired/replaced (if necessary) in the dealership:

PASSENGER CARS:

	Labor Op	Rio '01-'04	Rio '05-	Optima '02-'06	Optima 2006.5-	Amanti '04-	Sephia '93-'00	Spectra '01-'04	Spectra '04.5-'05 '06-CA	Spectra '06-Fed
Vehicle Speed Sensor (VSS)	96420R00	NA	YES	YES	YES	YES	YES	YES	YES	NO
Pulse (Sensor) Generator	45644R00	YES	YES	NA	NA	NA	YES	YES	NA	NA
Input Speed Sensor	42620R00	NA	NA	YES	YES	YES	NA	NA	YES	YES
Output Speed Sensor	42621R00	NA	NA	YES	YES	YES	NA	NA	YES	YES
Inhibitor/Range Switch	21440R00	YES	YES	YES	YES	YES	YES	YES	YES	YES
Oil Level Gauge (Dipstick)	46505R00	YES	YES	YES	YES	YES	YES	YES	YES	YES
Oil Cooler Line	TT	YES	YES	YES	YES	YES	YES	YES	YES	YES
ATM Lever (Shift) Cable	43882R00	YES	YES	YES	YES	YES	YES	YES	YES	YES
Shift Lock Cable	43767R00	YES	YES	YES	YES	YES	YES	YES	YES	YES
External A/T Filter*	Customer Pay	NA	NA	YES	YES	NA	NA	NA	YES	NA

TRUCK (MPV):

Part Description	Labor Op	Sedona '02-'05	Sedona '06-	Sorento '02-	Sportage '95-'02	Sportage '05-
Vehicle Speed Sensor (VSS)	96420R00	YES	YES	YES	YES	YES
Pulse (Sensor) Generator	N/A	N/A	N/A	N/A	N/A	N/A
Input Speed Sensor	42620R00	YES	YES	YES	NO	YES
Output Speed Sensor	42621R00	YES	YES	YES	NO	YES
Inhibitor/Range Switch	21440R00	YES	YES	YES	YES	YES
Oil Level Gauge (Dipstick)	46505R00	YES	YES	YES	YES	YES
Oil Cooler Line	TT	YES	YES	YES	YES	YES
ATM Lever (Shift) Cable	43721R00	YES	YES	YES	YES	YES
Shift Lock Cable	43760R00	YES	YES	YES	YES	YES
External A/T Filter*	Customer Pay	YES	N/A	N/A	N/A	N/A

* If equipped

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KIA AUTOMATIC TRANSMISSION PROGRAM***NOTICE**

Detailed procedures regarding on-line entry to the DCS return entry screen are provided in Kia Parts Bulletin No: 1910-0006 and Kia Warranty Information Communication (KWIC) No. 2006-06.

DIAGNOSIS AND SERVICE PROCEDURES:

1. Open a repair order and with the customer, complete the top section of the A/T Diagnosis Worksheet (WRTY127 - 3/06, available on kdealer.net and KGIS or copy attached form).
2. Give the repair order and A/T Diagnosis Worksheet to the technician to begin diagnosis of customer concern to determine if there is an internal problem requiring the installation of a remanufactured A/T. The technician should follow the Kia A/T Diagnosis Flow Chart (see attached) and use the Automatic Transmission Tester. Record the results on the A/T Diagnosis Worksheet.
3. If it is determined that an A/T assembly is necessary, send the RO and A/T Diagnosis Worksheet to the Parts Department to order the correct California or Non-California remanufactured unit for the vehicle. Retain the RO and the A/T Diagnosis Worksheet in Parts Department* . Upon receipt of the remanufactured unit, forward the A/T assembly with the RO and A/T Diagnosis Worksheet to the technician.
 - *(See Parts Bulletin No. 1910-0006)
 - If your dealership resides in the state of California, you must use a “CA” unit regardless of where the vehicle was sold, currently registered, or its emission standard.
 - If your dealership resides outside the state of California, use the non-CA remanufactured transmissions, regardless of where the vehicle was sold, currently registered, or its emission standard.

***NOTICE**

Retain the reusable plastic shipping container and use it to return the removed unit to the Kia Remanufacturing Center. Failure to return the A/T in the authorized shipping container may result in forfeiture of core credit. Refer to Parts Bulletin 1910-0006.

A plastic document bag is included with each remanufactured unit.

4. Complete all necessary fields on the A/T Diagnosis Worksheet.
5. Completely drain the transmission unit of Automatic Transmission Fluid (ATF) prior to removing it from the vehicle.
6. Remove the Automatic Transmission per the Service Manual.

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7. Flush the transmission oil cooler using the aerosol can of Kia Transmission Cooler Flush (P/N: UM990 CH001) that is supplied with the remanufactured unit (refer to detailed instructions in this TSB).

ALL MODELS:

8. Transfer the vehicle speed sensor, fill tube, etc., as required. Install the remanufactured unit according to the appropriate Service Manual instructions. **Fill the remanufactured unit with the correct, Kia Automatic Transmission Fluid.** Ordering information can be found in the kdealer.net Parts, Programs & Incentives section.

Note: When verifying the repair, especially when the A/T has been replaced, it is critical the A/T has the correct amount of ATF. Confirm with the service information (KGIS) that:

- The ATF is at normal operating temperature,
- The vehicle itself is level,
- Shift selector lever has moved through all gear positions
- A/T is in the proper gear selection (Park or neutral) for checking ATF level.
- ATF level is at the correct mark on the dip-stick (gauge) indicating A/T is properly filled with ATF.

Note: Some models are particularly challenging to determine proper ATF level, i.e., 2002 – 2005 Sedona. Pay extra attention to detail in confirming the proper ATF level on such models. Refer to service information for details.

AUTOMATIC TRANSMISSION FLUID TABLE:

Vehicle Type	ATF Type	Part Number
Front wheel drive (ALL)	SP-III	UM010 CH002
Rear wheel drive (except Sorento 5-speed A/T)	Dextron III	Obtain locally
Sorento 5-speed A/T	Kia RED-1	UM040 CH020

Note: ATF cannot be ordered via DCS. Ordering information can be found online at www.kiachemicals.com.

Use of incorrect A/T fluid can result in damage to the transmission, which is not covered by Warranty.

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SEPHIA/SPECTRA:

Transfer the vehicle speed sensor, fill tube, bracket, and mount (1995-1997MY) from the removed unit to the remanufactured unit. The cooler pipe that bolts to the rear of the transmission has been deleted on P/N: RK2A6 19090. The cooler pipe must be transferred from the removed unit to the remanufactured unit using the new copper sealing washers supplied with the remanufactured unit. For additional information, see Technical Service Bulletin, Transmission/Driveline 006.

***NOTICE**

When adding ATF, allow sufficient time for all air to be purged from the transmission and cooler. With engine idling, move the gear selector through all ranges, and check fluid level with selector in NEUTRAL position. Run vehicle on lift and ensure fluid level before proceeding to road test. The fluid level must be re-checked and adjusted after performing a thorough test drive.

9. Secure the removed torque converter to the removed transmission using the hold-down bracket and bolt supplied with the remanufactured unit. Install all plastic/rubber plugs and two (2) plastic side gear retainers removed from the remanufactured unit into the removed unit before packaging to prevent ATF leaks and side gears from falling out of position. Record the serial number of the removed unit on the A/T Diagnosis Worksheet. Place the removed unit in the plastic shipping container.
10. Enter all information from the A/T Diagnosis Worksheet into the DCS Dealer Parts Core Return Entry screens (see Parts Bulletin No: 1910-0006) and print the transmission ATM Core Return Form. **Place the following documents into the plastic document bag, provided with the remanufactured transmission.**
 - Kia transmission ATM Core Return Form (Printed from DCS)
 - Kia A/T Diagnosis Worksheet (WRTY 127-03/06)
 - Copy of Repair Order (RO) with Technician's notes

Securely close the bag and place inside of the A/T shipping container. Secure lid with retaining straps.
11. Arrange shipment of the removed transmission in accordance with instructions provided in Parts Bulletin No: 1910-0006.
12. Applicable core reimbursement will be issued following receipt and inspection of core and ATM Core Return Form.

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***NOTICE**

Do not disassemble any part of the removed transmission unit.

***NOTICE**

KMA may deny/charge back all or portions of OEM or remanufactured A/T claims and/or core credit if:

- **A/T cooler is not properly flushed causing the remanufactured unit to fail.**
- **Remanufactured or OEM unit damaged due to:**
 1. **Abuse/Accident damage**
 2. **Improper installation/removal**
 3. **Improper packaging**
 4. **Improper diagnosis**
 5. **Parts missing or damaged**
 6. **Incorrect ATF**
- **No trouble found/incorrect diagnosis**
- **Missing plastic/rubber plugs and retainers**
- **Missing or incomplete A/T Diagnosis & Shipping Document**
- **RO missing**
- **Missing or incomplete Kia A/T Diagnosis Worksheet**

For a complete list of core charge debits see Parts Bulletin 1910-0006.

***NOTICE**

Lost packaging forms or A/T Cooler Flush must be ordered at the dealer's expense:

- **Lost Packaging - including the Kia authorized Returnable Container - Call Parts Hotline at 800-542-5611.**
- **A/T Diagnosis Worksheet (WRTY 127) download via www.kdealer.net or KGIS**
- **Lost Cooler Flush - Order P/N UM990 CH001 via DCS Order Entry.**

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The table below lists the Service Publications applicable to diagnosis and repair of A/T - related conditions at time of publication. Refer to KGIS for the latest A/T related service publications.

PUBLICATION	LOCATION	TOPIC
Technical Service Bulletin (TSB)	Vol. 2, Trans/Driveline 007 (2001)	Sephia, Spectra, Rio TCM Logic Revision
Technical Service Bulletin (TSB)	Vol. 3, Trans/Driveline 009 (2002)	Optima A/T 2-3 Shift Flare
Technical Service Bulletin (TSB)	Vol. 3, Trans/Driveline 010 (2004)	2005 MY Sorento 5-Speed A/T
Technical Service Bulletin (TSB)	Vol. 3, Trans/Driveline 012 (2005)	A/T Range Switch - DTC P0705, P0707, P0708
Technical Service Bulletin (TSB)	Vol. 3, Trans/Driveline 013 (2005)	2004MY Spectra 2.0L Low Speed Driveline Bump/Shock
Technical Service Bulletin (TSB)	Trans/Driveline 014 (2006)	2005 MY 2.7L Sportage TCM Reprogramming
Technical Service Bulletin (TSB)	Trans/Driveline 015 (2006)	2005 MY 2.0L Sportage/Spectra TCM Reprogramming
Technical Service Bulletin (TSB)	Trans/Driveline 003 Rev. 4 (2006)	Kia Remanufactured Automatic Transmission Program
Parts Bulletin	No: 1910-0003	Reman A/T Cooler Pipe Deletion
Parts Bulletin	No: 1910-0006	Electronic A/T Core Return System (Rev.) 3/06
Warranty Claim Processing Manual	Chapter 2, Section 2.2	A/T Claim Entry (Pre-Claim)
Technician Times	Vol. 6, Issue 1 (2003)	Adding Fluid to Sedona A/T
Technician Times	Vol. 6, Issue 2 (2003)	Optima/Sedona A/T Diagnosis
Technician Times	Vol. 6, Issue 5 (2003)	External Filters for Optima A/T Units
Technician Times	Vol. 7, Issue 1 (2004)	Proper Installation of A/T Replacement Units
Technician Times	Vol. 7, Issue 5 (2005)	Transaxle Tester Connection
Technician Times	Vol. 7, Issue 5 (2005)	A/T Removal and Test Port Leaks
Technician Times	Vol. 7, Issue 5 (2005)	TechLine FAQ 2004 Spectra 1.8L ATM Shifting
Technician Times	Vol. 9, Issue 1 (2006)	Resetting A/T Adaptive Values

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AUTOMATIC TRANSMISSION COOLER FLUSHING:

DANGER

- Wear safety glasses and gloves when flushing.
- Wear long sleeves and long pants.
- Use aerosol flush product with adequate ventilation, preferably in an open-air environment.
- Avoid contact with eyes and skin.
- Do not breathe vapors or mist.
- Keep away from sources of ignition.
- Wash hands after using and handling and before eating.
- Refer to and follow the Material Safety Data Sheets for Kia SP III Automatic Transmission Fluid (P/N: UM010 CH002) Kia RED-1 Automatic Transmission Fluid (P/N: UM040 CH020) and for Kia Transmission Cooler Flush (P/N: UM990 CH001), provided at www.kiachemicals.com.
- **Failure to follow these warnings can lead to personal injury or, in cases of extreme exposure, death.**

Whenever an automatic transmission is replaced, the cooler must be flushed to remove contaminants such as metal particles or clutch friction material. Improper flushing or the lack of flushing may result in severe damage to the replacement transmission.

1. After removing the A/T from the vehicle, locate the A/T cooler outlet hose (refer to Kia service information).



**Flushing Through A/T Cooler Outlet Hose
(Sephia/Spectra/Rio Shown)**



**Flushing Through A/T Cooler Inlet Hose
(Sephia/Spectra/Rio Shown)**

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2. Insert the nozzle of the Kia Transmission Cooler Flush into the A/T cooler outlet hose and secure with the metal spring clamp. Place a waste container under the other hose (A/T cooler inlet hose).

NOTE If necessary, temporarily substitute a screw-type hose clamp to securely attach the cooler hose to the nozzle on cooler flush can (also applies to Step No. 4).

3. Hold transmission cooler flush can upright, remove protective flip-up cap and press button to release the flushing fluid. Continue to hold the button until clear liquid comes out of the cooler inlet hose.
4. Reverse the hoses and flush the cooler in the other direction until clear liquid comes out of the cooler outlet hose. Use the entire contents of the can to ensure thorough A/T cooler flushing.

Clear liquid must flow freely in both directions through the A/T cooler. If not, the A/T cooler is restricted and the radiator or A/T cooler assembly must be replaced.



Invert Can to Clean Out Flush Fluid



Drying A/T Cooler With Shop Air

5. After all of the flushing fluid is used, turn the can upside down and blow any remaining liquid out of the A/T cooler with transmission cooler flush propellant. After disconnecting the transmission cooler flush can, blow shop air (approximately 90 psi) through the cooler (in both directions) to dry it out.

⚠ CAUTION

Dispose of the A/T cooler flush waste solution and can in compliance with local state and federal regulations. DO NOT ship the aerosol flush can back to the remanufacturing center.

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PART NUMBER INFORMATION:

A/T REMANUFACTURED PROGRAM MATERIALS ORDERING INFORMATION:

Description	Part Number/Source
Transmission Cooler Flush*	UM990 CH001
A/T Diagnosis Worksheet	Available on kdealer.net & KGIS

* Transmission Cooler Flush must be ordered from the KMA Parts System.

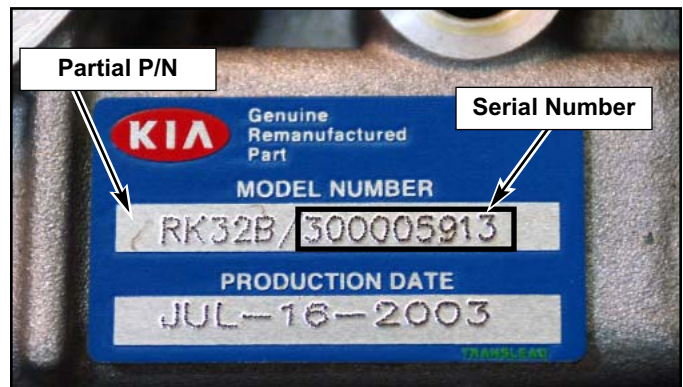
KIA AUTOMATIC TRANSMISSION SERIAL NUMBER LOCATIONS:

Note: Record serial number of removed unit on Form WRTY 127 3/06 for ALL A/T replacements (new or remanufactured units).

The following are examples. Refer to Kia's electronic service information for OEM serial number location.



**New Style OEM
Serial Number**



**New Style Reman
Serial Number**



**Old Style Rio/Sephia/Spectra
OEM Serial Number**



**Old Style Rio/Sephia/Spectra
Reman Serial Number**



A/T Diagnosis Worksheet

To be used and submitted with all A/T repairs & replacements

SERVICE ADVISOR SECTION

REPAIR TYPE: CUSTOMER PAY WARRANTY NON U.S. VEHICLE (Over the Counter) OTC KIA DLR CODE: _____

RO NUMBER: _____ - RO DATE: / / / / /

VIN: _____ MILEAGE: _____ , _____ , _____

Describe concern in detail: (Customer states...) _____

_____ Occurring how long? _____ Days

NATURE CODE (Circle the one that best describes the nature or condition):

- | | | | |
|-----------------------------------|-----------------------------------|---------------------------|----------------------|
| NA1: Shuddering, vibration | NA2: Excessive shock | NA3: Will not move at all | NA4: Noisy A/T |
| NA5: Poor/No "R" gear | NA6: Poor/Harsh upshift | NA7: Poor/Harsh 1-4 Shift | NA8: ATF leak-Top |
| NA9: Poor/Harsh downshift - Decel | NB1: Gear selection - Stiff/Binds | NB2: ATF leak - Bottom | NB3: Other ATF leaks |

TECHNICIAN DIAGNOSIS SECTION

Check if 2nd or subsequent repair attempt IF SO, STOP & OPEN A TECHLINE WEBCASE

TechLine Case Number: _____

INSPECT & TEST DRIVE TO CONFIRM CONCERN. CIRCLE THE BEST ANSWER:

- | | |
|---|--|
| ATF level between "Full" range: [YES] [NO] | ATF Color: [RED] [PINK] [BROWN] [OTHER] |
| ATF Odor: [OK] [BURNT] | Unknown Fluid: [YES] [NO] |
| Range Switch: [OK] [NG] | Lag Test N to D range: [OK] [Slow] N to R range: [OK] [Slow] |
| Malfunction Indicator Light (MIL): [On] [Off] | If On, retrieve, record DTC _____ and erase |

Was vehicle test driven? [YES] [NO] Was concern verified: [YES] [NO] A/T in Fail-safe: [YES] [NO]

If the concern cannot be duplicated customer should be contacted to explain or demonstrate the concern

Engine Operating Condition: [OK] [Poor] Idle Speed: _____ RPM TPS (idle): _____ % _____ mV

External Leak: [YES] [NO] Location: _____ Physical Damage: [YES] [NO]

A/T Related Noise: [YES] [NO] At Speed (MPH): _____ In Gear: _____

Occurs During: [Acceleration] [Cruise] [Deceleration] Noise Type:* [Whine] [Grinding] [Clunk]

*If A/T related noise, inspect for location of noise & compare to same model & year vehicle. If worse contact TechLine.

IF A/T PERFORMANCE CONCERN: INSPECT & TROUBLESHOOT BY COMPLETING ALL THAT APPLY:

Checked vehicle repair history & analyzed related service information: [YES] [NO]

Battery voltage: _____ Volts MIL: [On] [Off] If On, retrieve, record DTC _____ & diagnose

Using scan tool, inspect current A/T data. Is all data within specifications? [YES] [NO] If no, diagnose data.

Shift Quality: [OK] [Shock] [Slipping] [Delay] At throttle application: [Light] [Medium] [Heavy]

DCC Lock-up: [YES] [NO] DCC Occurs: [Always] [Intermittent] When: [Hot] [Cold] Shift: From _____ to _____ gear

USE THE A/T TESTER PRO AS OUTLINED IN THE A/T TESTER MANUAL (all vehicles except Sorento 5-speed A/T)

Automatic shift (normal mode) gear test: [Normal] [Delay] [Slip] [Harsh] [Open/Short Error]

Manual shift (test mode) gear test: [Firm/Harsh Shift] [Slip] [Open/Short Error]

Damper Clutch Control (DCC) (test mode): [OK] [NG]

Stall test in D range: [OK] [NG] List RPM _____ Stall test in R range: [OK] [NG] List RPM _____

Inspect A/T related wire harness and connectors: [OK] [NG] Inspect Grounds: [OK] [NG]

Technician comments: _____

If ordering Remanufactured A/T under warranty, has DPSM authorized repair? [YES] [NO]

NOTE: If A/T is replaced, Adaptive Learn Memory must be cleared with scan tool.

CAUSAL CODE (circle one that best describes the root cause of the failure):

- | | | | | |
|------------------------|------------------------|---------------------|-----------------------|----------------------|
| CA1: Burnt fluid | CA2: Cracked case | CA3: Porous casting | CA4: Lack of/low ATF | CA5: Sticking/Seized |
| CA6: Failed Test - DCC | CA7: Failed A/T Tester | CA8: Leaking - Seal | CA9: Leaking - Gasket | |

A/T PARTS SECTION

Part number of installed unit: _____ Part number of removed unit: _____

Serial number of removed unit: _____

KIA A/T DIAGNOSTIC FLOWCHART

