



GROUP	MODEL
TRA	2015MY K900 (KH) w/8AT
NUMBER	DATE
096	August 2021

TECHNICAL SERVICE BULLETIN

SUBJECT: 8AT (A8LR1-SBW) SOLENOID VALVE REPLACEMENT AND TCU LOGIC IMPROVEMENT

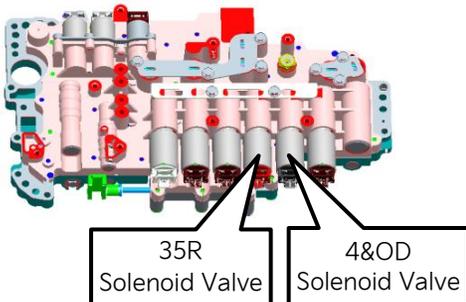
This bulletin provides the procedure to replace two (2) solenoid valves (35R and 4&OD) and improve the gear shift logic of the Transmission Control Unit (TCU) on some 2015-2016MY K900 (KH) vehicles, equipped with Tau 5.0L engine and 8-speed automatic transmission w/Shift-By-Wire (A8LR1-SBW), which may exhibit symptoms of abnormal shift shock during an upshift (2nd→3rd, 3rd→4th, 4th→5th). This condition occurs on vehicles with mileage over 12,000 miles and may be due to possible premature wear of the solenoid valve. To correct this concern, replace the 35R and 4&O/D solenoid valves with added "H" ventilation port, perform TCU relearn, and, if applicable, apply the improved logic to the Transmission system using the KDS ECU Upgrade function as described in this bulletin. For confirmation that the latest reflash has been applied to a vehicle you are working on, verify the ROM ID using the table on page 3 of this bulletin.

Model	Engine	Production Date Range	ROM ID Version
K900 (KH) w/Shift-By-Wire	Tau 5.0L GDI	January 1, 2014 to September 25, 2014	SKHOG50NB2 SKHOG50NB3 SKHOG50NB5

ⓘ IMPORTANT

The following procedures must be performed in sequence. If not, other shift problems may occur.

1. 35R & 4&OD solenoid valve replacement
2. TCU upgrade
3. Reset TCM adaptive learning values



⚠ CAUTION

If this procedure is performed on a 'standard' shift-by-cable (SBC) type vehicle, damage may occur to the transmission.

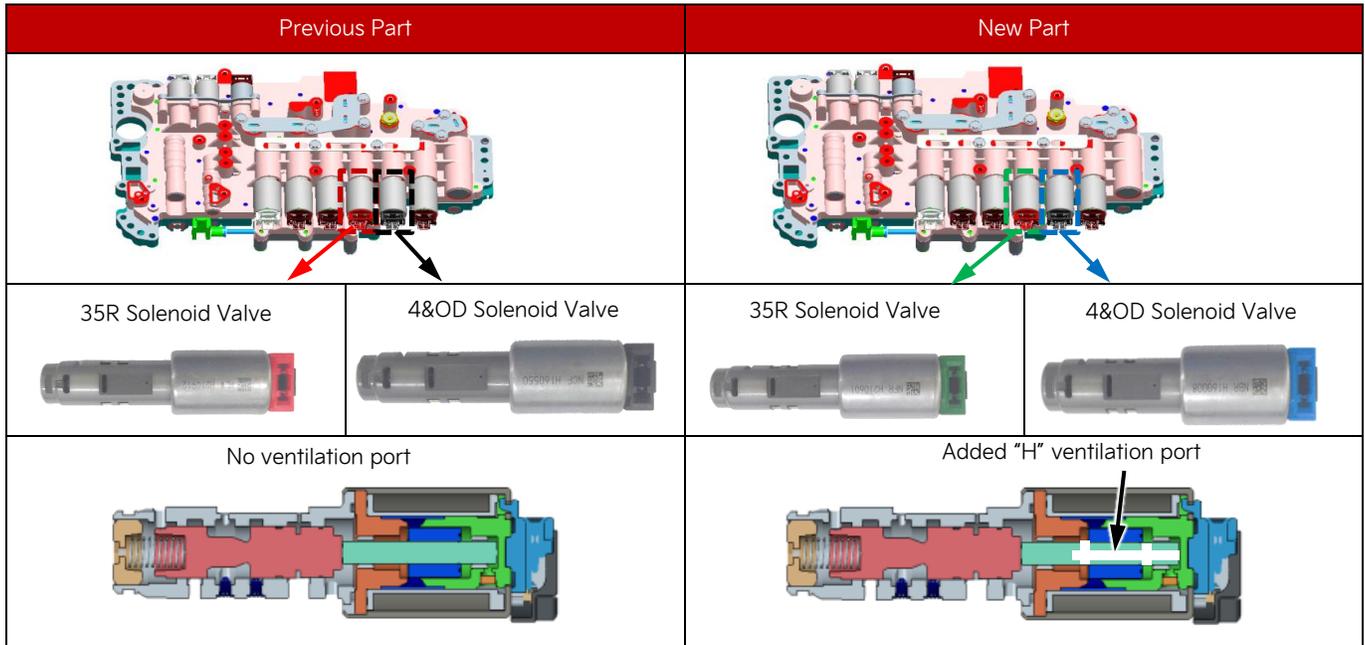
8AT TCM SOLENOID VALVE REPLACEMENT AND GEAR SHIFT LOGIC IMPROVEMENT

SUBJECT:

Solenoid Valve Replacement Procedure:

ⓘ IMPORTANT

After replacing the solenoids, check if the vehicle has the latest TCU ROM ID. If not, upgrade TCU ROM ID first, then perform TCM adaptive learning values.



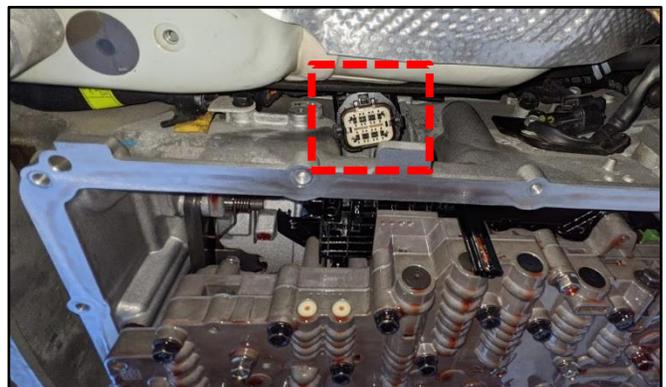
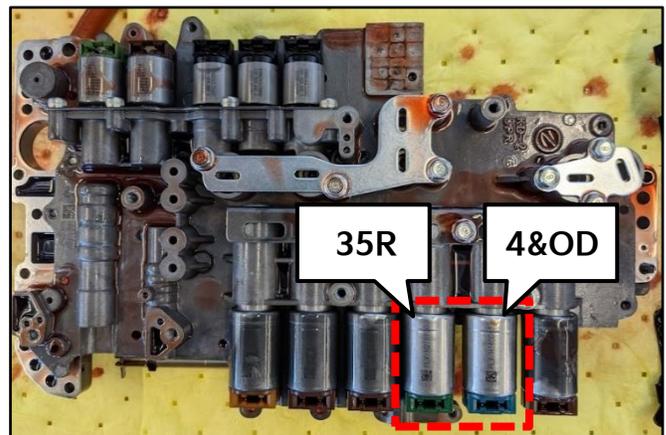
1. Replace the two (2) solenoid valves (35R and 4&O/D) by referring to the "Automatic Transmission System → Automatic Transmission Control System → 35R and 4&OD Clutch Control Solenoid Valve → Repair Procedures" chapter in the applicable Shop Manual on KGIS.

NOTE: Be sure to **CAREFULLY** follow all of the instructions outlined in KGIS.

Be sure that the wire harness connector is unlocked (located on the passenger/right side) prior to removing/lowering the valve body.

⚠ CAUTION

Damage to wire harness may occur if it is still attached/locked secure.



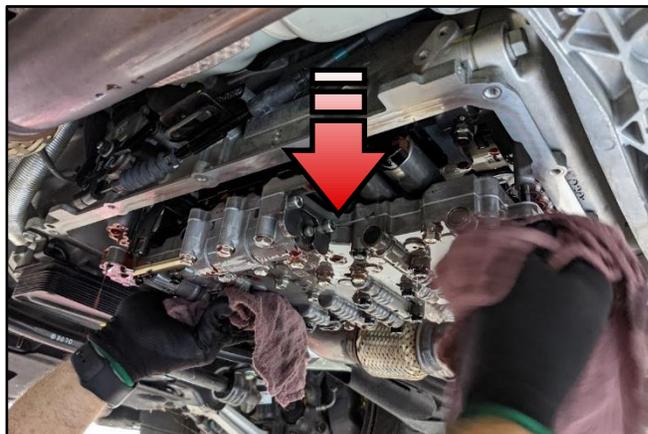
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Follow bolt removal sequence on KGIS.

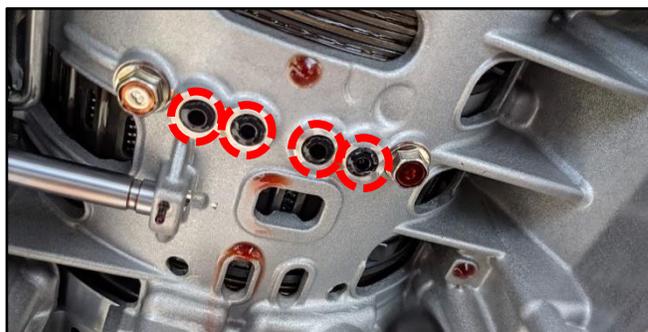
⚠ CAUTION

The valve body is heavy, carefully lower it when removing. DO NOT drop it or damage will occur.



NOTE: Be sure to **CAREFULLY** follow all of the instructions outlined in KGIS.

After removing the valve body, ensure that the **black** plugs are not missing (they may fall off/down when removing the valve body). Be sure to reinstall.

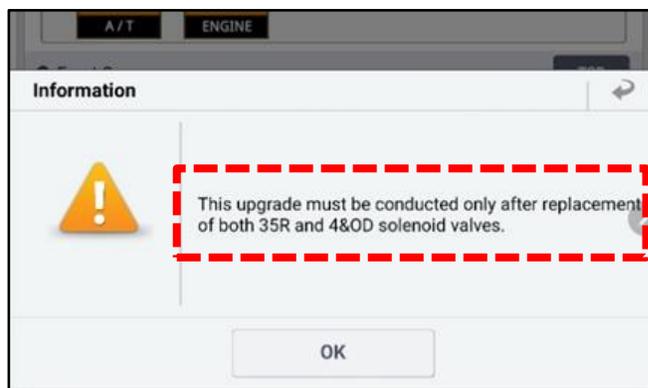


⚠ CAUTION

- Use a coated apron, latex gloves.
- An expert (Expert based on the TRP standard) should perform this service.
- Be careful to NOT allow foreign matter to enter the valve body or transmission.
- Ensure to install both 35R and 4&OD solenoid valves in the correct location.
- Up to 8.45 qts of ATF should be refilled and comply with the ATF level measuring method.
- Ensure to torque all required bolts to specifications referenced on KGIS.

2. After replacing the solenoids, check if the vehicle has the latest TCU ROM ID from page 4 using KDS.

- If not, proceed to ECU Upgrade Procedure on page 4. Select 'OK'.
- If yes, proceed to reset TCU adaptive learning values as outline on KGIS.



ⓘ IMPORTANT

Upgrade TCU ROM ID first, then perform TCM adaptive learning values.

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ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name

543. KH LAMBDA 3.8/TAU 5.0 GEAR UPSHIFT LOGIC IMPROVEMENT

NOTICE

- Confirm a fully charged battery (12.3 volts or higher is necessary) is used or utilize a fully charged jump starter box connected to the battery.
- **Ensure the KDS GDS is sufficiently charged at 60% or higher prior to reflash.**
- All ECU upgrades must be performed with the ignition set to the 'ON' position unless otherwise stated.
- **Damaged VCI II units should not be used and promptly replaced.**
- Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.
- **DO NOT start the engine during ECU upgrade.**
- DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- ONLY use approved ECU upgrade software designated for the correct application.

IMPORTANT

It is recommended to ALWAYS check the Electronic Parts Catalog (EPC) to locate the ECU Part Number respective to Auto/Manual Mode ROM IDs. DO NOT reference the parts label affixed to the ECU.

NOTICE

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the applicable model is equipped with an immobilizer  security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

ROM ID INFORMATION TABLE:

Upgrade Event #543

Model	Engine	TM	ECU P/No.	ROM ID	
				Previous	New
KH	Tau 5.0L GDI	8AT	95440 4EDB0	SKH0G50NB2 SKH0G50NB3 SKH0G50NB5	SKH0G50NB6

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

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8AT TCM SOLENOID VALVE REPLACEMENT AND GEAR SHIFT LOGIC IMPROVEMENT

NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.

NOTICE

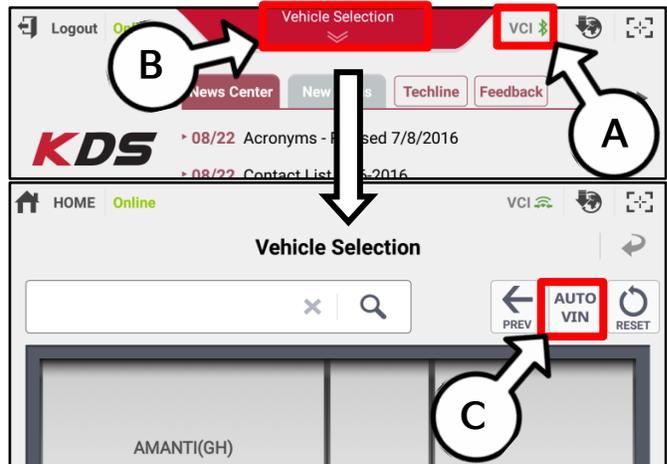
The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.



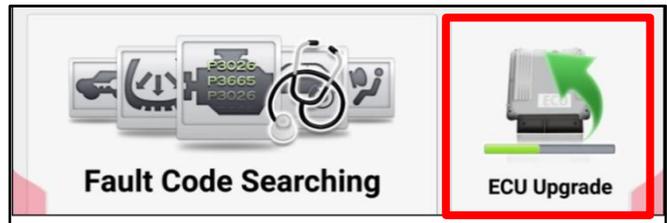
2. With the ignition ON, turn ON the KDS tablet. Select 'KDS' from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the 'AUTO VIN' (C) feature.



4. Select 'ECU Upgrade'.



**8AT TCM SOLENOID VALVE REPLACEMENT
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SUBJECT:

- The KDS will check the server for recently uploaded Events and then automatically download Upgrade Event #543.

NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.

After the download is complete, the program will shut down to install. Please wait until the program restarts.

Event	Status
271.QF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT	Downloading
273.TF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT	Ready

36%

Do not touch any system buttons while performing this function.

KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

- Select 'Manual Mode'.

CAUTION

Perform a Manual Mode upgrade. Always follow the instructions given on the KDS.

Auto Mode Manual Mode

- Select the A/T system under the System selection menu. Touch ID Check (D) and confirm that the latest update is available. Select Upgrade Event #543 and select 'Upgrade' to continue.

System

ENGINE A/T

ROM ID

Currently in Vehicle: #####

Latest Update: #####

ID Check (D)

Event Group: ###.XX -----

Previous Upgrade

- Follow the 'Manual Upgrade Procedure' on page 7.



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Manual Upgrade Procedure:

NOTICE

This upgrade can only be performed in Manual Mode. See table below for 'Manual Mode' instructions and passwords.

Manual Mode ECU Upgrade Passwords

Menu	Password
KH TAU 5.0 : 95440-4EDB0	0404

1. Within the ECU Upgrade screen displayed, select '**Manual Mode**'.
2. Select the **A/T** system under the System selection menu. Select **Upgrade Event #543** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Select **OK**.
7. Once the upgrade is complete, select **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

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SUBJECT:

AFFECTED VEHICLE RANGE:

Model	Production Date Range
K900 (KH)	January 1, 2014 to September 25, 2014

REQUIRED TOOL:

Tool Name	Figure	Comments
KDS		Kia Diagnostic System

REQUIRED PART:

Part Name	Type	Part Number		Figure	Qty.
		Old	New		
Solenoid Valve	35R	46313 4E701 (RED)	46313 4E702 (GREEN)		1
	4&O/D	46313 4E601 (BLACK)	46313 4E602 (BLUE)		1
ATF	N/A	UM014 CH065		N/A	9

WARRANTY INFORMATION:

N Code: T74 C Code: ZZ3

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
W	46313 4E702	1	AT Solenoid Valve Replacement + TCU Logic Improvement + TCU Re-learning	45613F00	1.8 M/H	46313 4E602	1
			AT Solenoid Valve Replacement + TCU Re-learning	45613F01	1.7 M/H		

Note: For ATF, manually enter part number UM014 CH065 for up to quantity of nine (9) quarts.

