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GROUP: Transmission and Transfer Case

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HELP USING THE wiTECH DIAGNOSTIC APPLICATION FOR FLASHING AN ECU IS AVAILABLE BY SELECTING “HELP” THEN “HELP CONTENTS” AT THE TOP OF THE wiTECH DIAGNOSTIC APPLICATION WINDOW.

THE wiTECH SOFTWARE VERSION MUST BE AT 15.01 OR HIGHER TO PERFORM THIS PROCEDURE.

SUBJECT:

845RE Transmission Quick Learn Procedure

OVERVIEW:

This bulletin provides information on how to perform the new scan tool based transmission Quick Learn procedure. This procedure is required after certain transmission repairs or to remedy a customer’s concern of poor shift quality.

MODELS:

2014 - 2015	(DS)	Ram 1500 Pickup
2014 -2015	(LD)	Charger
2014 -2015	(LX)	300C
2014 - 2015	(WD)	Durango
2014 - 2015	(WK)	Grand Cherokee
2015	(LA)	Challenger

NOTE: This bulletin applies to vehicles equipped with the 845RE (Sales Codes DFL).

DISCUSSION:

The 845RE Automatic Transmission uses a sophisticated shift algorithm that includes learned information so that the shift quality remains excellent even as the transmission wears. This learned information is recorded in memory cells referred to “Adaptation Memory Cells”. Each applied clutch records the amount of time it takes to fill the clutch (Fast Filling Counter/Filling Time) and the amount of pressure (Filling Counter/Filling Pressure). The adaptation memory cells are set to zero (0) on every new transmission (new in vehicle and/or replaced for service) and when the transmission control module is replaced for service. In addition, the adaptation memory cells are set to zero (0) when the transmission control module adaptation memory cells are cleared using the wiTECH diagnostic scan tool. Until the adaptation has been learned/relearned, the transmission shift quality may not meet the customers expectations.

NOTE: Anytime the transmission has been overhauled (unless the Valve Body/TCU assembly (mechatronic) was replaced), the adaptation memory cells must be cleared using the wiTECH diagnostic scan tool.

The adaptation memory cells appear on the wiTECH for every clutch. Each clutch will include:

- Fast Filling Counter = the number of filling time events that has taken place
- Filling Time = +/- number of ms (milliseconds) from zero (standard set value).
- Filling Counter = the number of filling pressure events that has taken place
- Filling Pressure = +/- mb (millibar)/PSI (Pounds Per Square Inch) from zero (standard set value)

If the adaptation memory cell “counter” is zero (0), than the adaptation memory cell has not been updated. The filling counter ideally should be at least 12 and Fast Filling counter at least 4 to improve shift quality and with each subsequent count, shift quality will improve even more.

Typical wiTECH Display of Adaptation Memory Cells				
Graph	Name	Value	Unit	Type
	Clutch A- Filling Pressure	0	PSI	Sensors
	Clutch A- Filling Counter	6	Counts	Sensors
	Clutch A- Filling Time	0	ms	Sensors
	Clutch A- Fast Filling Counter	2	Counts	Sensors
	Clutch B - Filling Pressure	0	PSI	Sensors
	Clutch B - Filling Counter	6	Counts	Sensors
	Clutch B - Filling Time	0	ms	Sensors
	Clutch B - Fast Filling Counter	2	Counts	Sensors
	Clutch C- Filling Pressure	1	PSI	Sensors
	Clutch C- Filling Counter	6	Counts	Sensors
	Clutch C- Filling Time	18	ms	Sensors
	Clutch C- Fast Filling Counter	2	Counts	Sensors
	Clutch D- Filling Pressure	1	PSI	Sensors

	Clutch D- Filling Counter	6	Counts	Sensors
	Clutch D- Filling Time	-6	ms	Sensors
	Clutch D- Fast Filling Counter	2	Counts	Sensors
	Clutch E- Filling Pressure	2	PSI	Sensors
	Clutch E- Filling Counter	6	Counts	Sensors
	Clutch E- Filling Time	2	ms	Sensors
	Clutch E- Fast Filling Counter	3	Counts	Sensors

SYMPTOM/CONDITION:

Customers may indicate that their transmission shift quality does not meet their expectations.

DIAGNOSIS:

Using a Scan Tool (wiTECH) with the appropriate Diagnostic Procedures available, verify all vehicle systems are functioning correctly. If any DTCs are present, record them on the repair order and repair as necessary before proceeding further with this bulletin.

If the above symptom/condition is present, perform the Repair Procedure

SPECIAL TOOLS/EQUIPMENT REQUIRED:

NPN	wiTECH VCI Pod Kit
NPN	Laptop

REPAIR PROCEDURE:

NOTE: Transmission Quick Learn must be performed anytime the transmission is repaired/replaced and/or the Valve Body/TCU assembly (mechatronic) is replaced. It must also be performed when the adaptation memory cells are cleared with the wiTECH diagnostic scan tool. Transmission Quick Learn is also one of the first steps to remedy a transmission shift quality concern on these vehicles.

1. Are there any active DTCs in the TCM's memory?
 - a. YES>>> Using current published service information, diagnose and repair the conditions that set the DTC(s) before proceeding with this bulletin.
 - b. NO>>> Proceed to [Step #2](#).

NOTE: 2015 model year vehicles equipped with the 845RE already contain software in the TCM to enable the Quick Learn procedure. However, 2014 model year vehicles require the Transmission Control Module to be updated to the latest software level.

2. Is your vehicle a 2014 model year?
 - a. Yes>>> Proceed to [Step #3](#).
 - b. No>>> Proceed to [Step #5](#).
3. Check the TCM calibration and see if it is up to date. Does the TCM software need to be updated?
 - a. Yes>>> Proceed to [Step #4](#).
 - b. No>>> Proceed to [Step #5](#).
4. Flash the TCM to the latest software level available referring to current applicable TCM flash Service Bulletins available in Service Information. If no other bulletins apply, use the provided LOP in this bulletin to perform the update. Proceed to [Step #5](#).
5. Start the engine and monitor the transmission temperature on the EVIC.
6. With the vehicle located in a suitable area, allow the transmission to warm up to minimum of 55°C (131°F) by performing the following steps:
 - a. Apply the service brake.
 - b. Shift Transmission from Park to Reverse.
 - c. Shift Transmission from Reverse to Drive.
 - d. Accelerate the vehicle to minimum of 45 mph to allow the transmission to cycle through each gear.
 - e. Drive the vehicle until the transmission temperature reaches 50°C (122°F).
7. Connect wiTECH diagnostic scan tool to the vehicle.
8. Check for TCM DTC (Diagnostic Trouble Codes). Do not perform the Quick Learn procedure if TCM DTCs are present. Repair transmission as required.
9. Select the TCM module in wiTECH.
10. Select the "Misc Functions" tab.
11. Select "Reset Adaptive Values" and follow the on-screen instructions to reset the clutch adaptive values.
12. Next select the "Quick Learn" procedure, and follow the on-screen instructions to learn new clutch adaptive values. The Quick Learn procedure will take 2-5 minutes to complete.
13. Shift the transmission into Park and shut off the engine. The procedure is now complete. If there is still a customer concern of poor shift quality after performing this procedure, please perform the Transmission Adaptation Drive Learn Procedure outlined in service bulletin 21-012-14 or later version.

POLICY:

Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:

Labor Operation No:	Description	Skill Category	Amount
18-19-05-L9	Module, Transmission Control (TCM) - Reprogram w/ 845RE Transmission Quick Learn Procedure (1 - Semi-Skilled) (2014 Model Year Vehicles Only)	2- Automatic Transmission	0.5 Hrs.
08-19-05-M9	845RE Transmission Quick Learn Procedure	2- Automatic Transmission	0.4 Hrs.

FAILURE CODE:

FM	Flash Module	18-19-05-L9
ZZ	Service Action	08-19-05-M9