



GROUP
TRA

MODEL
2016-2020MY
Multiple Models
with 7-Speed DCT

NUMBER
083 (Rev 1, 08/24/2021)

DATE
December 2020

TECHNICAL SERVICE BULLETIN

SUBJECT: 7-SPEED DCT JUDDER INSPECTION AND
DUAL CLUTCH ASSEMBLY REPLACEMENT

* NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides the procedure to replace Dual Clutch Assembly and upgrade the TCU on some 2016-2020MY Kia vehicles listed in the table below, equipped with the 7 Speed Dual Clutch Transmission (DCT), which might exhibit clutch judder when accelerating from a stop. If the vehicle body vibrates without the steering wheel shuddering when performing creep driving test (driving the vehicle up to 3mph), the vehicle is exhibiting clutch judder. The creep test can be conducted by driving at a speed slower than 5 mph after releasing the brake. In order to remedy clutch judder, the Dual Clutch Assembly must be replaced and the TCU will need to be upgraded.

Model	Production Date
Optima 1.6L T-GDI (JFa)	08/28/2015 - 06/01/2020
Soul 1.6L T-GDI (PS)	08/08/2016 - 10/27/2016
Soul 1.6L T-GDI (SK3)	11/24/2018 - 04/02/2020
Forte 1.6L T-GDI (YDm)	09/10/2016 - 12/28/2016
Forte (BDm)	07/09/2018 - 08/03/2020

* NOTICE

For **Optima (JFa) ONLY**, confirm that the latest S/W is installed PRIOR to performing this bulletin (TRA083), refer to [TRA098](#) for latest software.



File Under: <Transmission>

Circulate To: General Manager Service Manager Parts Manager
 Service Advisors Technicians Body Shop Manager Fleet Repair

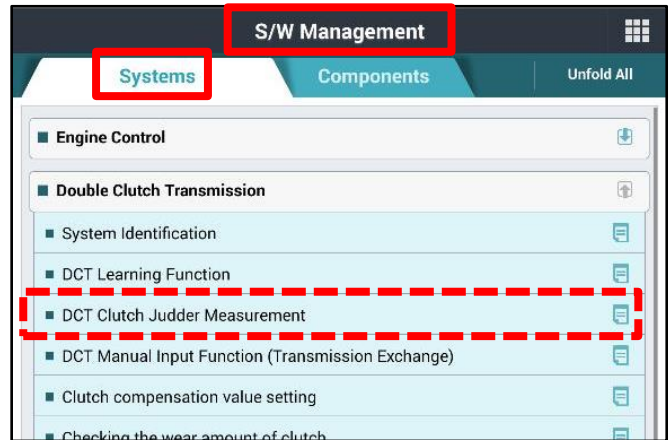
SUBJECT: 7-SPEED DCT JUDDER INSPECTION AND DUAL CLUTCH ASSEMBLY REPLACEMENT

Clutch Judder Inspection:

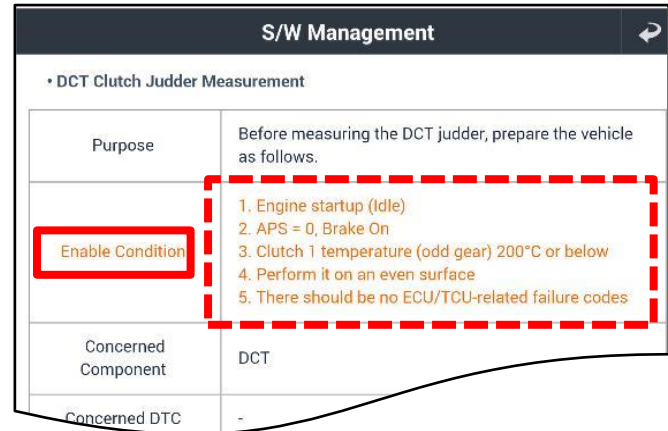
*** NOTICE**

For Optima (JFa) ONLY, confirm that the latest S/W is installed PRIOR to performing the procedures outlined in this bulletin (TRA083), refer to [TRA098](#) for latest software.

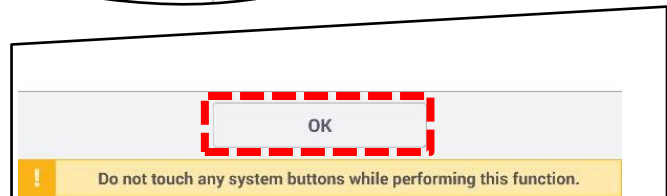
1. Park vehicle on a flat surface.
2. Using KDS, select **'S/W Management'** from the Home screen.
3. In the **'Systems'** tab, under 'Double Clutch Transmission', select **'DCT Clutch Judder Measurement'**.



- 4a. Confirm the 'Enable Condition' list.



- 4b. Select **'OK'**.



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- 5a. Under 'Test preparation' follow the preparation instructions on KDS.

- 5b. **Diagnosis equipment position:** Place the KDS on the right passenger floor as shown.

- 5c. Select 'OK'.

- 6a. Under 'Condition test', satisfy the listed conditions on KDS.

- 6b. Select 'OK'.

S/W Management

■ DCT Clutch Judder Measurement

Test preparation Condition test Judder measurement Test completed

Before measuring the DCT judder, prepare the vehicle as follows.

1. Engine startup (Idle)
2. APS = 0, Brake On
3. Clutch 1 temperature (odd gear) 200°C or below
4. Perform it on an even surface.
5. There should be no ECU/TCU-related failure codes.
6. Remove the floor mat, and then fix the diagnosis equipment on an even floor of the passenger seat.

Diagnosis equipment position



OK Cancel

Do not touch any system buttons while performing this function.

S/W Management

■ DCT Clutch Judder Measurement

Test preparation Condition test Judder measurement Test completed

Click the [OK] button when it satisfies the condition.

Test Items	Reference value	Current Value	Status
DTC Check	-	-	PASS
Vehicle Speed	0 km/h	0 km/h	PASS
Shift Lever Position	D	D	PASS
Brake SW	ON	ON	PASS
Clutch1 Temperature (Odd Gear...	200 °CBelow	160 °C	PASS

OK Cancel

Do not touch any system buttons while performing this function.

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- 7a. Under ‘**Judder measurement**’ review the ‘Procedures’ outlined on KDS to measure DCT judder and follow the instructions on the screen to start creep driving.

- 7b. Release the brake and let the vehicle move forward without the pressing the pedal.

S/W Management

■ DCT Clutch Judder Measurement

Test preparation Condition test **Judder measurement** Test completed

[Procedures]

1. Position the steering wheel to drive in a straight line when the engine is idling.
2. Change gear to the D position, and take off the brake. Then, start driving the vehicle in a creep mode without pressing the APS.
3. Follow instructions and stop the vehicle with the brake on after driving the vehicle in creep mode for 4–5 s.
4. Repeat the above process five times and measure it.

1Times	2Times	3Times	4Times	5Times
--------	--------	--------	--------	--------

Start creep driving.

Judder is measuring.

1Times	2Times	3Times	4Times	5Times
OK	OK			

Measurement complete!! Turn on the brake.

Cancel

Do not touch any system buttons while performing this function.

Note: Performed a total of five (5x) times.

- 8. After completing the measurement test, apply the brake as instructed on KDS screen.

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9. Under 'Test completed', take the appropriate action based on the 'Result' as follows:

1) If the result is "Good": No further action is required.

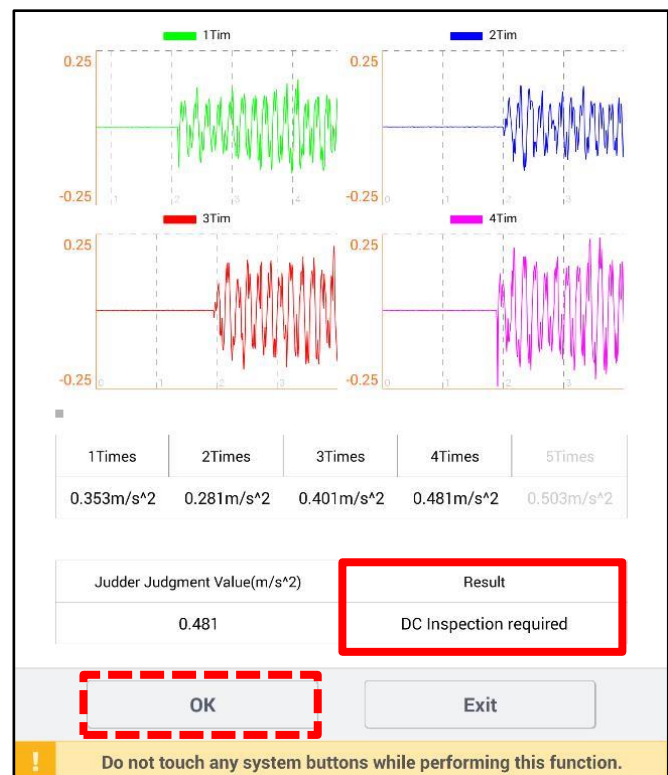
2) Select 'OK' to complete.



- 3) If the result is "DC Inspection required", replace the Double Clutch Set by referring to the DCT Replacement Procedure outlined on page 6.

Note: Double Clutch (DC)

4) Select 'OK' to complete.



Replacement Procedure:

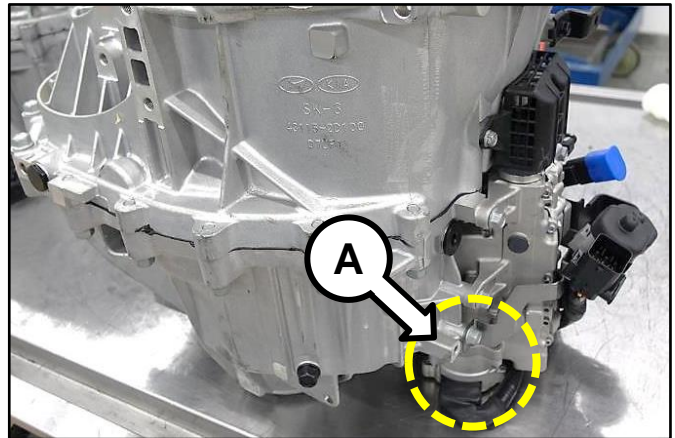
1. Remove the DCT assembly by referring to “DCT (Dual Clutch Transmission) System → DCT (Dual Clutch Transmission) System → DCT (Dual Clutch Transmission) System → Repair procedures” chapter in the applicable Shop manual on KGIS.

Or refer to [Dual Clutch Assembly](#) video.

2. Place the DCT clutch housing facing up as shown.

*** NOTICE**

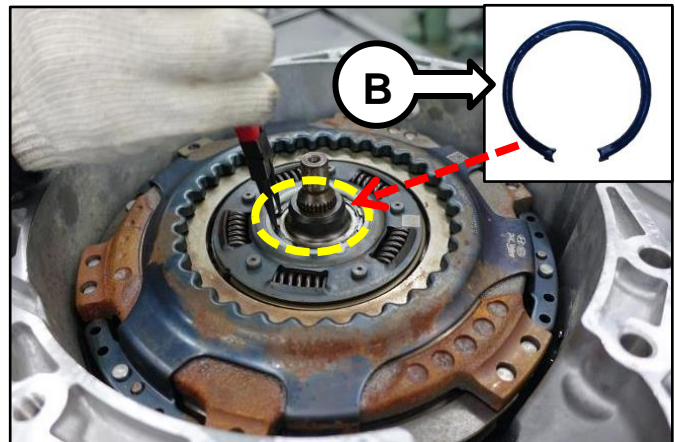
When putting the DCT assembly down, be careful to not damage the clutch actuator motor connector (A).



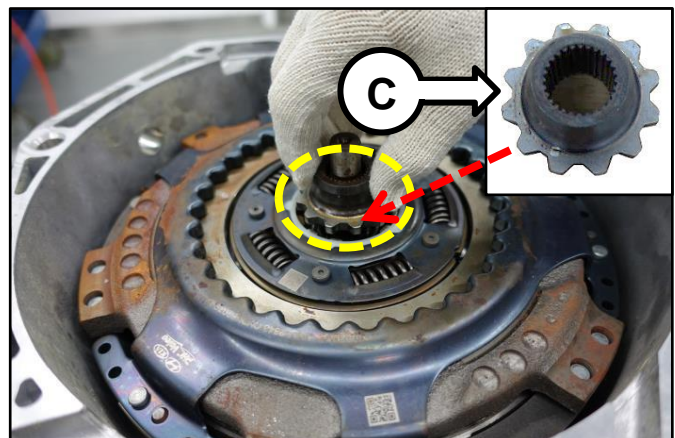
3. Remove the retaining ring (B) using snap ring pliers.

*** NOTICE**

DO NOT re-use the snap ring. Replace with a new part.



4. Remove the spline hub (C).



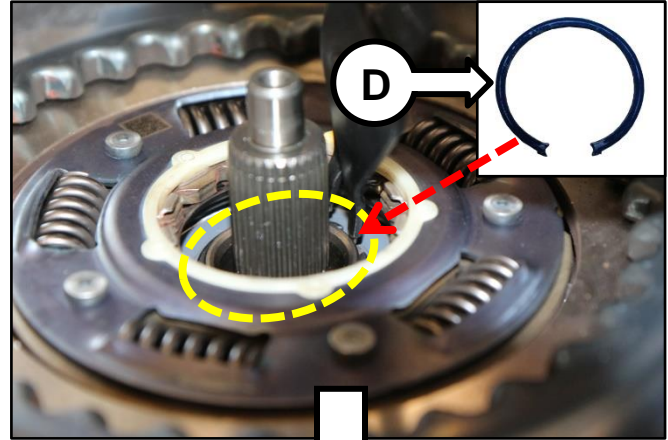
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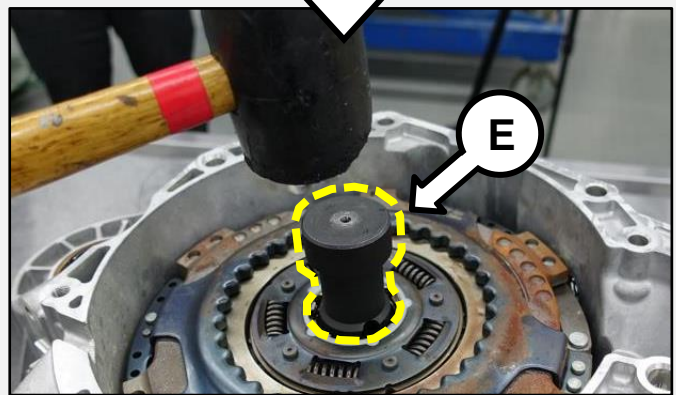
- 5a. Remove the retaining ring (D) using snap ring pliers.

* NOTICE

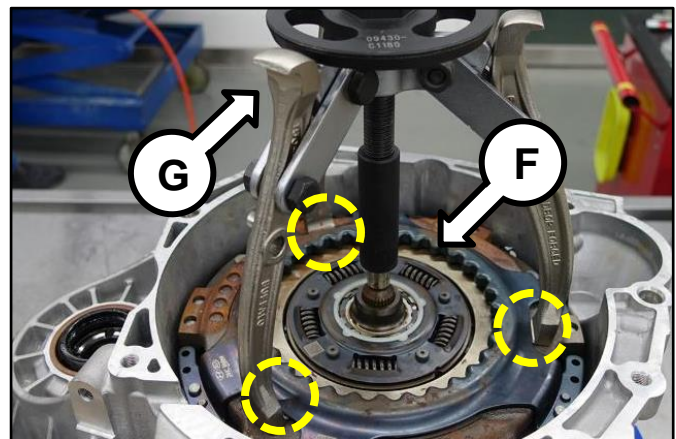
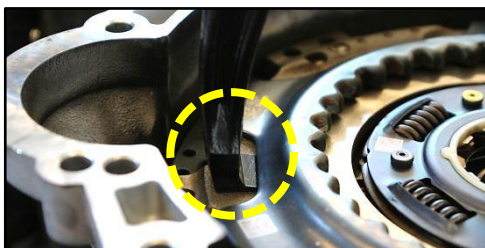
Be careful not to damage the rubber seal of the dual clutch support bearing when removing the snap ring. **DO NOT** re-use the snap ring; replace.



- 5b. (OPTIONAL) If the retaining snap ring is stuck, insert the **SST 09430 2A240** (E) and hit the top of the SST with a rubber hammer to release the stuck snap ring.



6. Locate the 3 points shown on the dual clutch assembly (F) and install the **SST 09430 C1180** (G) between the clutch connecting plate and the pressure plate where shown.



7. Turn the top bolt head clockwise on the SST to pull and release the dual clutch set from the DCT.

* NOTICE

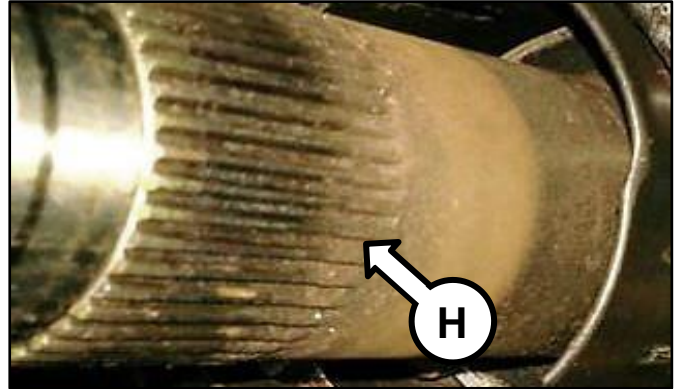
Be careful not to drop the dual clutch assembly when removing from DCT.



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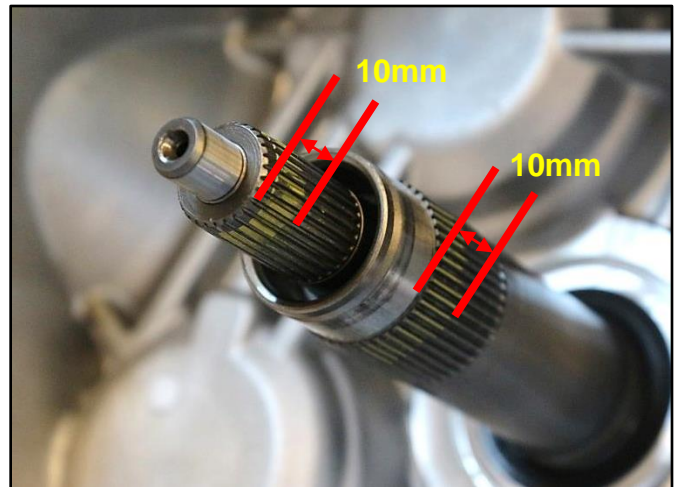
8. Remove any foreign substance from the DCT input shaft (H). Clean using a soft brush and non-lubricant solution. **DO NOT use sandpaper, wire brush or WD40 type cleaning materials.**



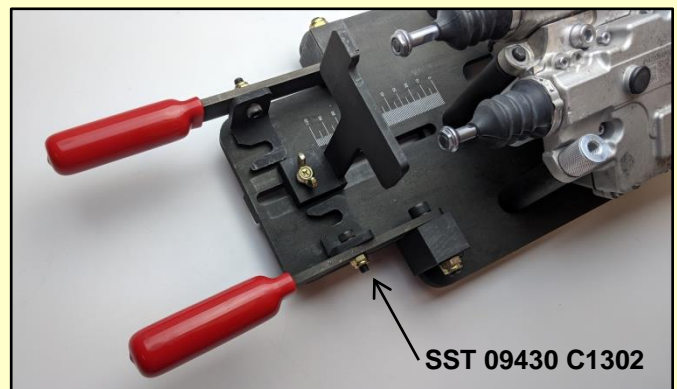
9. Apply 0.15 – 0.25g of MCLUBE MoS2-400 grease evenly around the upper and lower input shaft circumferences, as wide as 10mm from the spline end area where shown.

* NOTICE

DO NOT use more than the recommended amount of grease. Excess grease can spread and cause clutch to slip.



10. **Before** proceeding to the next step, refer to TSB [TRA085](#) “DCT Actuator Rod Length Adjustment” procedure. The Clutch Actuator Adjustment Jig SST 09430 C1302 shown will be required.



11. Install the new dual clutch assembly into the DCT housing using **SST 09430 C1180** (I) in the reverse order of removal. Be sure to align the input shaft properly. DO NOT press dual clutch assembly as damage may occur.

* NOTICE

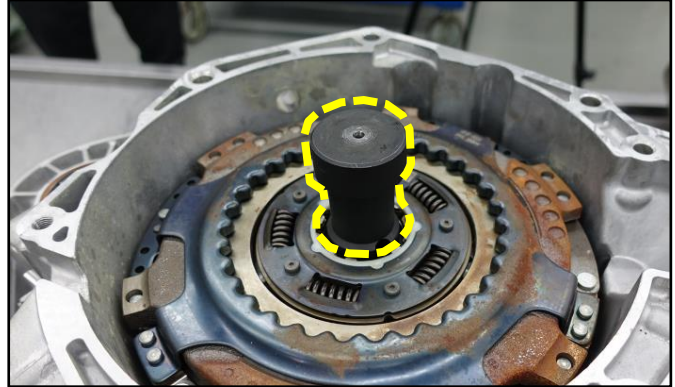
Be careful not to drop the dual clutch assembly when removing from DCT.



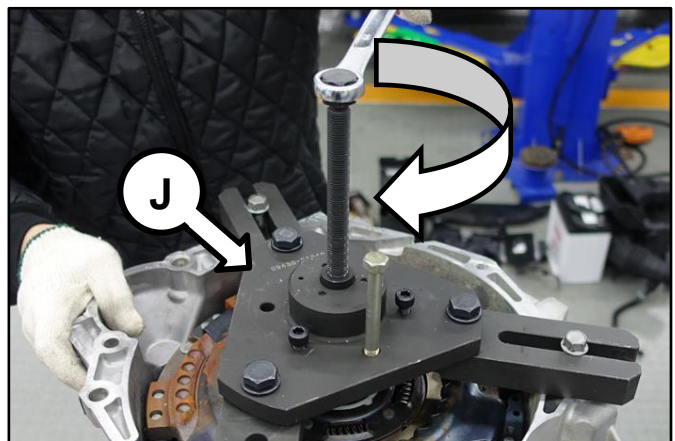
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12. Insert the **SST 09430 2A240** over the support bearing as shown.



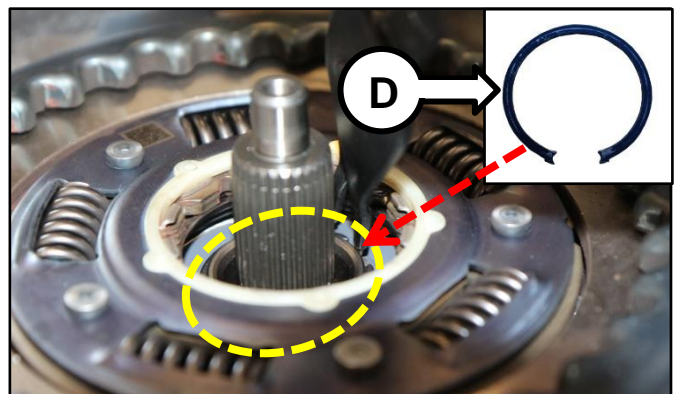
13. Secure the **SST 09430 2A240 (J)** onto the clutch housing as shown and then turn the bolt head clockwise until the dual clutch assembly is secured.



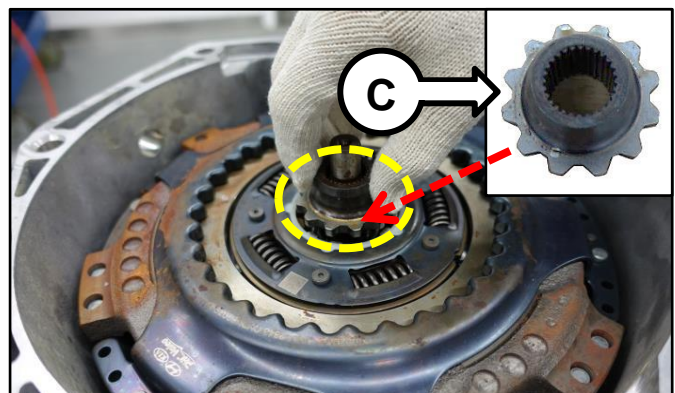
14. Install and secure the new retaining ring (D) using snap ring pliers.

*** NOTICE**

The retaining must be able to move freely left to right.



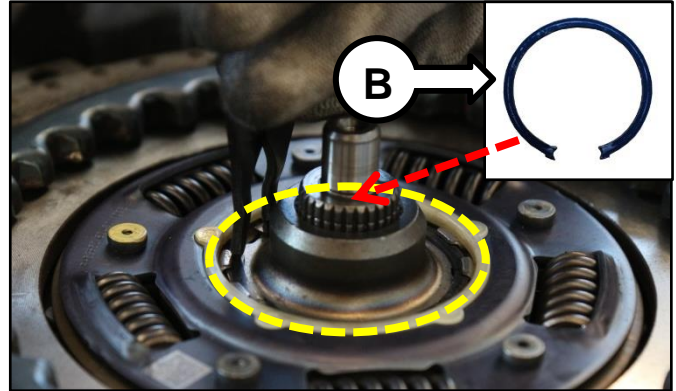
15. Install the spline hub (C).



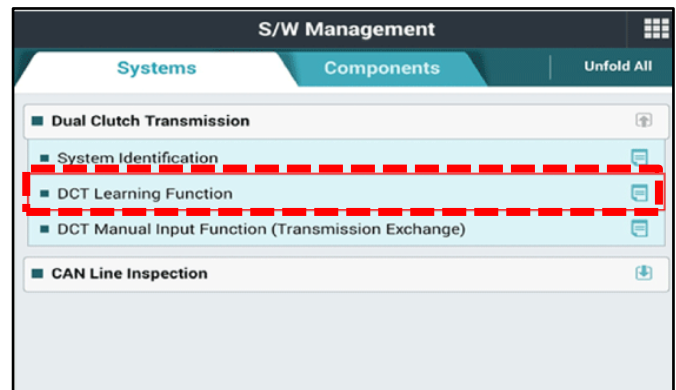
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16. Install the new retaining ring (B) using snap ring pliers.



17. Install all of the parts in the reverse order of removal.
18. Using KDS, clear any DTCs stored.
19. Perform the DCT Learning Function procedure using KDS.



20. Follow the applicable **TCU Logic Optimization Procedure** from TSB [TRA078](#) (pages 3-6 only) to upgrade the TCU logic. Use the applicable Op Code from this bulletin, page 11.



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AFFECTED VEHICLE RANGE:



Model	Production Date Range
Optima (JFa) 1.6L T-GDI GAMMA	August 28, 2015 – June 1, 2020
Soul (PS) 1.6L T-GDI GAMMA	August 8, 2016 – October 27, 2016
Soul (SK3) 1.6L T-GDI	November 15, 2018 – April 02, 2020
Forte (YDm) 1.6L T-GDI GAMMA	September 10, 2016 – December 28, 2016
Forte (BDm)	July 9, 2018 – August 08, 2020

REQUIRED TOOL:

Tool Name	Part Number	Figure
Dual Clutch Installer	09430 2A240	
Dual Clutch Remover	09430 C1180	

Note: Refer to TSB [TRA085](#) for additional tools required.

REQUIRED PART:

Part Name	Part Number	Figure	Qty.
Dual Clutch Assembly	41200 2D220FFF		1
Dual Clutch Snap Ring	41068 2D000FFF		2

WARRANTY INFORMATION:

N Code: V81 C Code: ZZ6

Claim Type	Model	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.	
W	ALL	41200 2D220	0	Dual Clutch Judder Inspection (KDS)	41200F19	0.3 M/H	N/A	0	
W	PS		0	0	Dual Clutch Assembly Replacement and Dual Clutch Judder Inspection (KDS)	41200F14	3.5 M/H	41200 2D220FFF <u>and</u>	1
	SK3					41200F13	3.4 M/H		
	JFa					41200F15	3.7 M/H		
	BDm					41200F10	3.2 M/H	41068 2D000FFF	2
	YDm					41200F07	4.0 M/H		