| | GROUP | MODEL |
|---|---|---|
|  | **TRA** | **2017-2018MY Soul (PS) 1.6T Forte (YDm) 1.6T 2016-2018MY Optima (JFa) 1.6T** |
| | NUMBER | DATE |
| | **078** | **June 2019** |

# TECHNICAL SERVICE BULLETIN

| **SUBJECT:** | TRANSMISSION LOGIC IMPROVEMENT |
|---|---|

This bulletin provides the procedure to optimize the logic of the Transmission Control Unit (TCU) on 2017-2018MY Soul (PS) and Forte (YDm) and 2016-2018MY Optima (JFa) vehicles equipped with 1.6T GDI that have one of the following three components replaced:

- Dual Clutch Transmission (DCT) assembly
- Transmission Control Unit (TCU)
- Double Clutch Set

The friction material of the double clutch set has been changed and a TCU logic optimization must be performed in order to prevent initial shift shock. To prevent this concern, apply the optimized logic to the TCU 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.
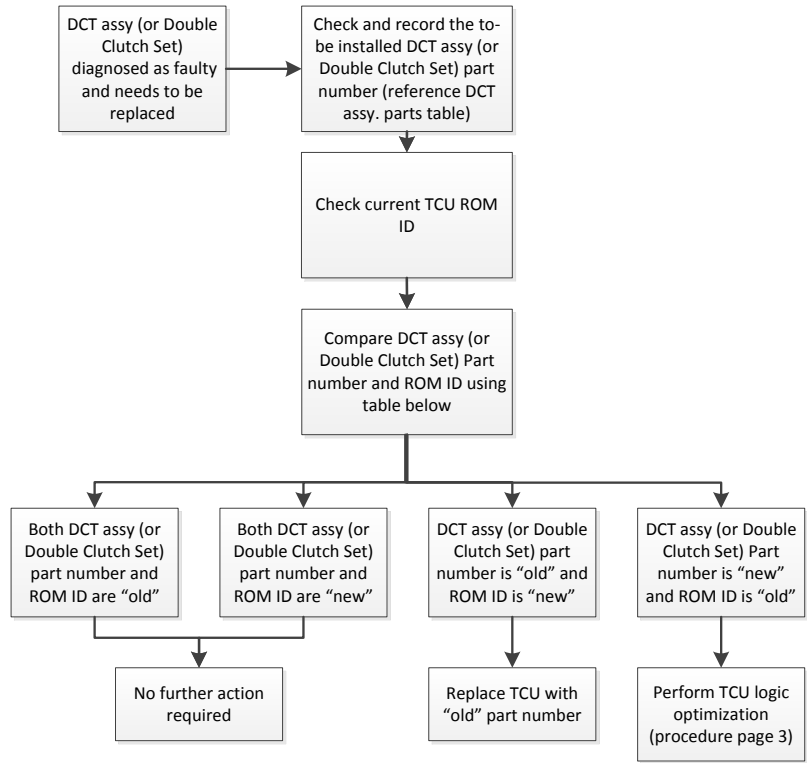


## ★ NOTICE

**If parts must be ordered, be sure to order parts using the old part numbers listed in the tables on page 2-3, if available. If old parts are no longer available, new supersession parts may be ordered.**

**File Under: <Transmission>**

**Circulate To:** ☒ **General Manager** ☒ **Service Manager** ☒ **Parts Manager**

☒ **Service Advisors** ☒ **Technicians** ☒ **Body Shop Manager** ☐ **Fleet Repair**

SUBJECT: 

# TRANSMISSION LOGIC IMPROVEMENT

## DCT Assembly / Double Clutch Set Replacement Flow Chart

DCT assy (or Double Clutch Set) diagnosed as faulty and needs to be replaced → Check and record the to-be installed DCT assy (or Double Clutch Set) part number (reference DCT assy. parts table)

↓

Check current TCU ROM ID

↓

Compare DCT assy (or Double Clutch Set) Part number and ROM ID using table below

- Both DCT assy (or Double Clutch Set) part number and ROM ID are "old" → No further action required
- Both DCT assy (or Double Clutch Set) part number and ROM ID are "new" → No further action required
- DCT assy (or Double Clutch Set) part number is "old" and ROM ID is "new" → Replace TCU with "old" part number
- DCT assy (or Double Clutch Set) Part number is "new" and ROM ID is "old" → Perform TCU logic optimization (procedure page 3)

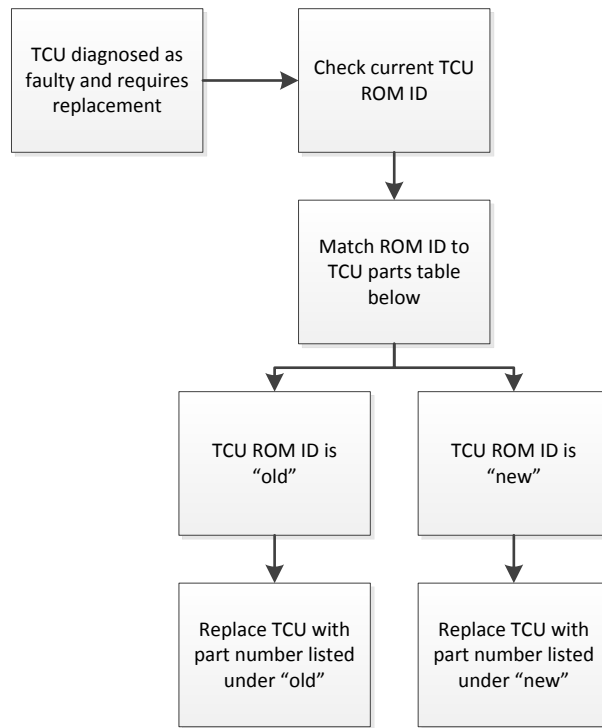| Model | ENG | TM | OLD | | NEW | |
|---|---|---|---|---|---|---|
| | | | TCU ROM ID | Dbl. Clutch Set (F833DS) | TCU ROM ID | Dbl. Clutch Set (F850) |
| JFa | 1.6T | 7DCT | DJF0T16NS0<br>DJF0T16NS1<br>DJF0T16NS2<br>DJF0T16NS3<br>DJF0T16NS4<br>DJF0T16NS5 | 41200 2D101 | DJF0T16NS9 | 41200 2D220 |
| PS | | | DPS0T16NS0<br>DPS0T16NS1 | | DPS0T16NS4 | |
| YDm | | | DYD0T16NS0<br>DYD0T16NS1<br>DYD0T16NS2 | | DYD0T16NS5 | |

| Model | ENG | TM | OLD | | NEW | |
|---|---|---|---|---|---|---|
| | | | TCU ROM ID | DCT Assembly (F833DS) | TCU ROM ID | DCT Assembly (F850) |
| JFa | 1.6T | 7DCT | DJF0T16NS0<br>DJF0T16NS1<br>DJF0T16NS2<br>DJF0T16NS3<br>DJF0T16NS4<br>DJF0T16NS5 | 43000 2D081 | DJF0T16NS9 | 43000 2D086 |
| PS | | | DPS0T16NS0<br>DPS0T16NS1 | 43000 2D190 | DPS0T16NS4 | 43000 2D195 |
| YDm | | | DYD0T16NS0<br>DYD0T16NS1<br>DYD0T16NS2 | 43000 2D101 | DYD0T16NS5 | 43000 2D106 |

TSB: TRA078 Soul (PS), Optima (JFa), Forte (YDm) May 2019

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## <u>TCU</u> Replacement Flow Chart

```
┌─────────────────┐      ┌─────────────────┐
│ TCU diagnosed as│      │ Check current TCU│
│ faulty and      │─────▶│ ROM ID          │
│ requires        │      │                 │
│ replacement     │      │                 │
└─────────────────┘      └─────────────────┘
                                  │
                                  ▼
                         ┌─────────────────┐
                         │ Match ROM ID to │
                         │ TCU parts table │
                         │ below           │
                         └─────────────────┘
                           │             │
                  ┌────────┘             └────────┐
                  ▼                               ▼
         ┌─────────────────┐            ┌─────────────────┐
         │ TCU ROM ID is   │            │ TCU ROM ID is   │
         │ "old"           │            │ "new"           │
         └─────────────────┘            └─────────────────┘
                  │                               │
                  ▼                               ▼
         ┌─────────────────┐            ┌─────────────────┐
         │ Replace TCU with│            │ Replace TCU with│
         │ part number     │            │ part number     │
         │ listed under    │            │ listed under    │
         │ "old"           │            │ "new"           │
         └─────────────────┘            └─────────────────┘
```

| Model | ENG | TM | OLD | | NEW | |
|-------|-----|-----|------|------|------|------|
| | | | **TCU ROM ID** | **TCU P/N (F833DS)** | **TCU ROM ID** | **TCU P/N (F850)** |
| JFa | 1.6T | 7DCT | DJF0T16NS0<br>DJF0T16NS1<br>DJF0T16NS2<br>DJF0T16NS3<br>DJF0T16NS4<br>DJF0T16NS5 | 95440 2DBE0 | DJF0T16NS9 | 95440 2DBE1 |
| PS | | | DPS0T16NS0<br>DPS0T16NS1 | 95440 2D850 | DPS0T16NS4 | 95440 2D851 |
| YDm | | | DYD0T16NS0<br>DYD0T16NS1<br>DYD0T16NS2 | 95440 2DDG0 | DYD0T16NS5 | 95440 2DDG1 |

## TCU Logic Optimization Procedure:

If necessary, to prevent this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

| Upgrade Event Name |
|---|
| **361.JFA GAMMA 1.6TGDI 7DCT TCU UPGRADE FOR DOUBLE CLUTCH SET REPLACEMENT** |
| **362.PS PE GAMMA 1.6TGDI 7DCT TCU UPGRADE FOR DOUBLE CLUTCH SET REPLACEMENT** |
| **363.YDM GAMMA 1.6TGDI 7DCT TCU UPGRADE FOR DOUBLE CLUTCH SET REPLACEMENT** |

## ✷ NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **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 model, year.**

## ✷ NOTICE

**Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular 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 #361, #362, and #363**

| Model | ENG | TM | ROM ID | |
|-------|-----|-----|--------|-----|
| | | | **Previous** | **New** |
| JFa | 1.6T | 7DCT | DJF0T16NS0<br>DJF0T16NS1<br>DJF0T16NS2<br>DJF0T16NS3<br>DJF0T16NS4<br>DJF0T16NS5 | DJF0T16NS9 |
| PS | | | DPS0T16NS0<br>DPS0T16NS1 | DPS0T16NS4 |
| YDm | | | DYD0T16NS0<br>DYD0T16NS1<br>DYD0T16NS2 | DYD0T16NS5 |

*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.*

## ✷ NOTICE

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

**SUBJECT:** TRANSMISSION LOGIC IMPROVEMENT

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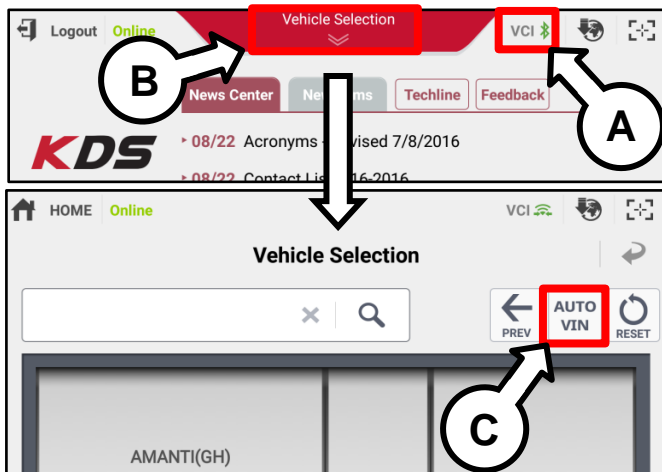
   ### ＊ NOTICE

   **The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.**
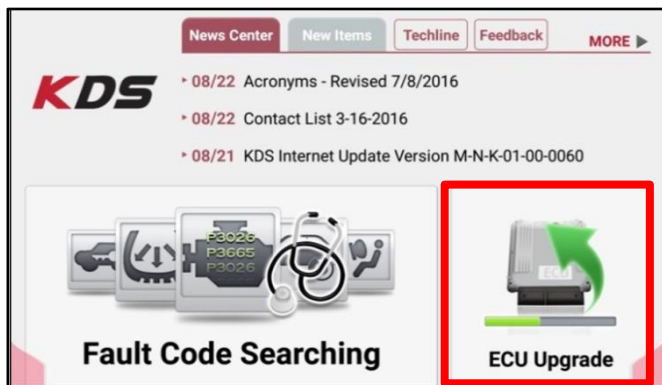
2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.

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

4. Select **ECU Upgrade**.

| SUBJECT: | TRANSMISSION LOGIC IMPROVEMENT |
|---|---|

5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #361, #362, or #363.**

> ⋆ **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.

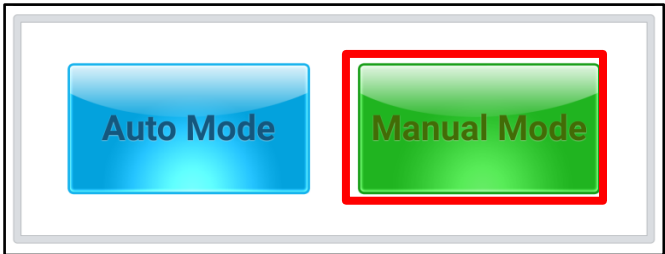| Event | Status |
|---|---|
| 271.QF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT | Downloading |
| 273.TF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT | Ready |

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.**

6. Select **Manual Mode**.

> ⋆ **NOTICE**
>
> **The ECU upgrade can only be performed in Manual Mode.**

Auto Mode     Manual Mode

## Manual Mode ECU Upgrade Passwords

| Menu | Password |
|---|---|
| JFa GAMMA 1.6TGDI 7DCT (N.A) : 95440-2DBE0 | 4120 |
| PS PE GAMMA 1.6TGDI 7DCT (N.A) : 95440-2D850 | 2850 |
| YDm GAMMA 1.6TGDI 7DCT (N.A) : 95440-2DDG0 | 1120 |

2. Select the **A/T** system under the System selection menu. Select **Upgrade Event #361, #362, or #363** and select **Upgrade** to continue.

3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 4 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. Touch **OK** to continue.

7. Once the upgrade is complete, touch **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.

**SUBJECT:**

# TRANSMISSION LOGIC IMPROVEMENT

## AFFECTED VEHICLE RANGE:

| Model | Production Date Range |
|---|---|
| Soul (PS) | 2017MY through 2018MY |
| Forte (YDm) | 2017 MY through 2018MY |
| Optima (JFa) | 2016 MY through 2018MY |

## WARRANTY INFORMATION:

**N Code: I3A   C Code: ZZ3**

| Model | Claim Type | Causal P/N | Qty. | Repair Description | Labor Op Code | Op Time | Replacement P/N | Qty. |
|---|---|---|---|---|---|---|---|---|
| PS, JFa, & YDm | W | Refer to EPC | 0 | Transmission Logic Improvement (after DCT / Double Clutch Set Replacement) | 95441F07 | 0.3 M/H | N/A | 0 |