



GROUP  
ENG

MODEL  
2011-2013MY  
Optima (QF, TF)

NUMBER  
201

DATE  
March 2019

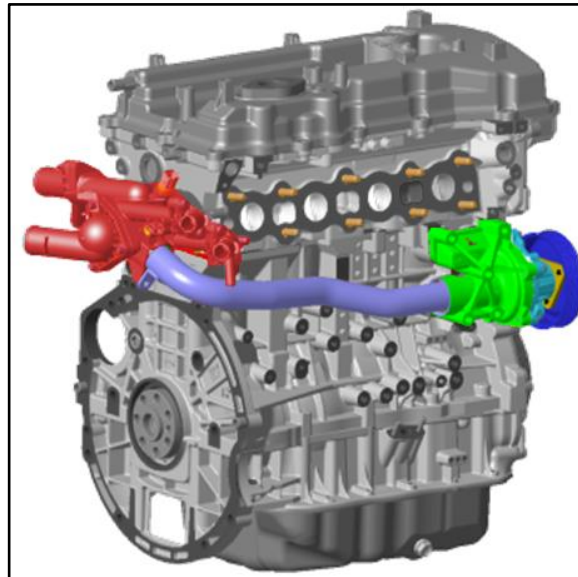
## TECHNICAL SERVICE BULLETIN

**SUBJECT:** THETA ENGINE SERVICE KIT

This bulletin provides the procedure to install the Theta Engine Service Kit on 21101 2GK05QQKR engines for 2011-2013MY Optima (QF, TF) vehicles. Due to process changes, certain components of these assemblies were not installed during the manufacturing process. Follow the procedure in this bulletin to install the listed components during the engine replacement procedure outlined in related bulletins (SC147, PI1803W/3, etc.).

### Components to be installed:

- Exhaust Manifold Studs
- Intake Manifold Studs
- Fuel Pipe & PCSV Hose Bracket Stud
- Water Pump, Pipe, & Gasket
- Water Temperature Control Assembly & Stud



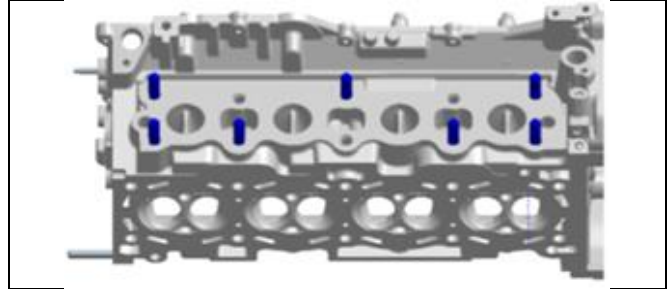
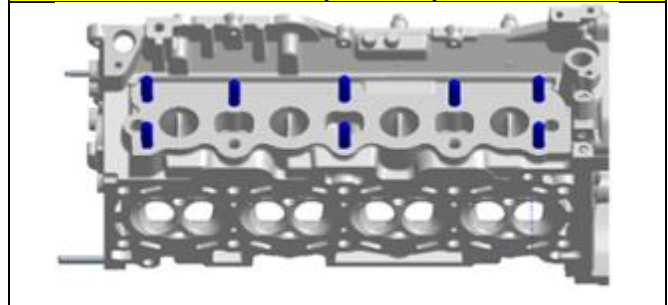
**File Under: <Engine>**

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

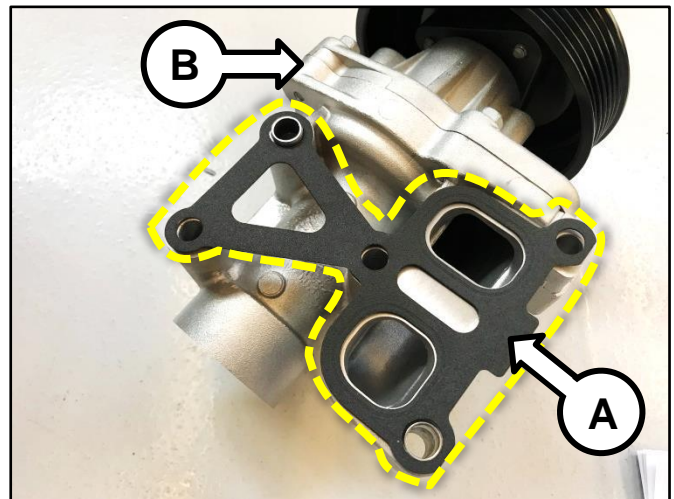
**Service Procedure:**

- Using the pictures to the right, install and tighten the seven (7) new exhaust manifold studs. Location and quantity differs between SULEV and ULEV engines. Obtain one (1) extra stud from the removed engine for ULEV.

**Stud P/N: 22125 2C000**

**SULEV (7 studs)****ULEV (8 studs)**

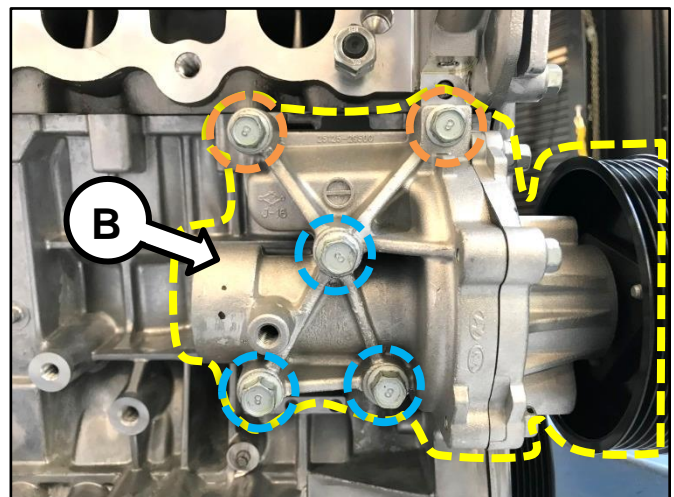
- Align the water pump gasket (A) on the water pump (B).



- Install the water pump (B) with gasket (A) and torque the bolts to specifications.

**\* IMPORTANT**

Note the two (2) different length bolts. The **shorter** bolts should be installed at the upper two (2) locations and **longer** bolts at the lower three (3) locations.

**Tightening Torque:**

**Shorter:** 7.2 – 8.7 lb.ft (9.8 – 11.8 N.m, 1.0 – 1.2 kgf.m)

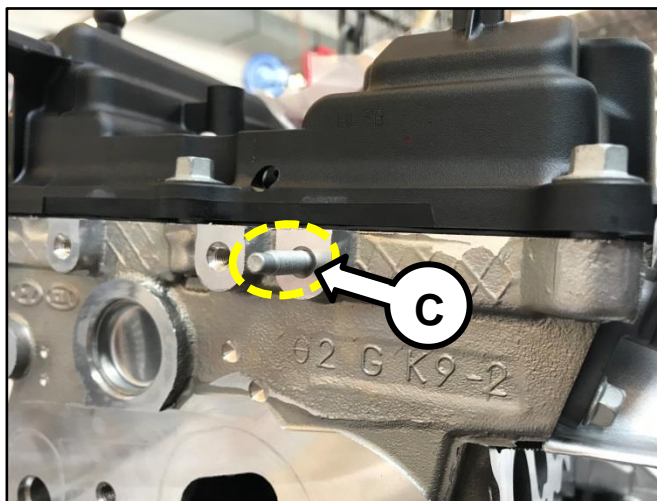
**Longer:** 13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

SUBJECT:

## THETA ENGINE SERVICE KIT

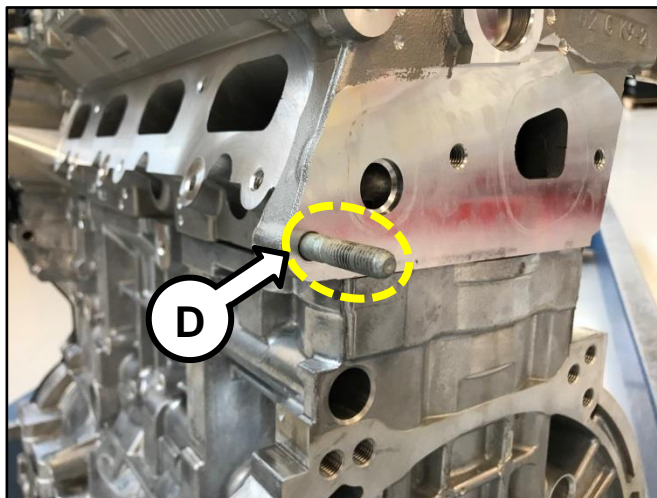
4. Install the fuel hose and PCSV hose bracket stud (C) as shown.

**Stud P/N: 22131 25000**

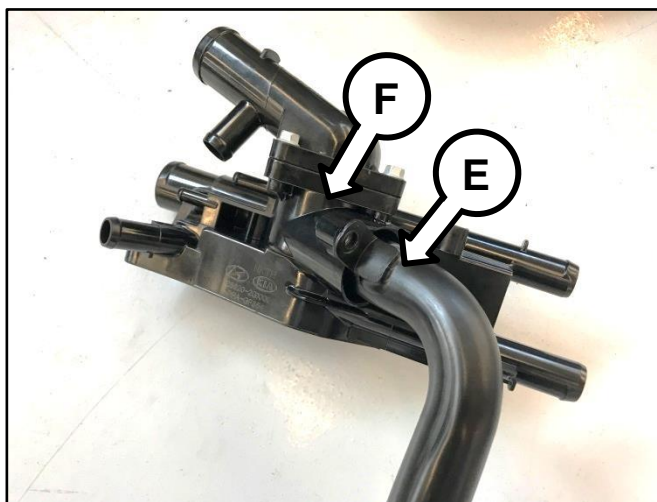


5. Install the water temperature control assembly stud (D) as shown.

**Stud P/N: 11513 08406K**

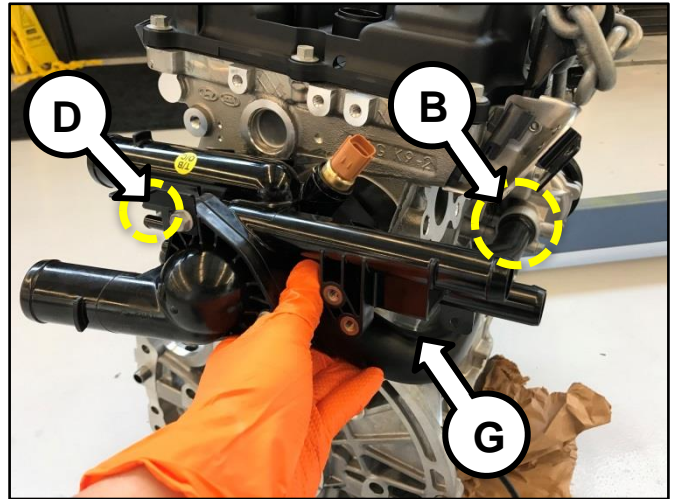


6. Lubricate both O-rings of the water pump pipe (E) and then insert the water pump pipe (E) into the water temperature control assembly (F) as shown.



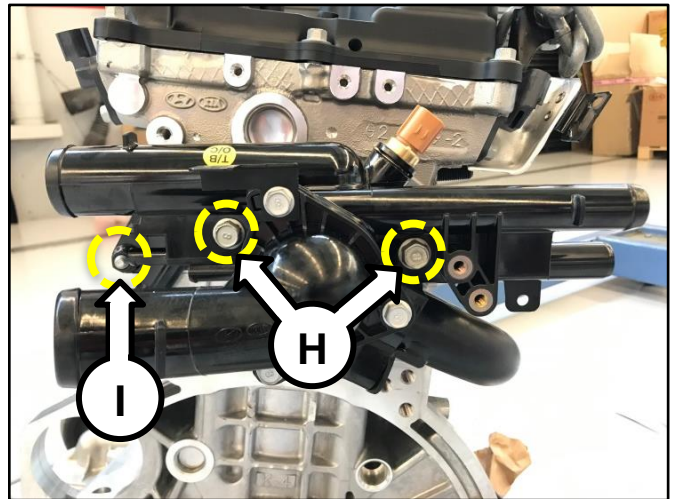


7. Align and install the water temperature control and water pump pipe assembly (G) to the installed stud (D) and water pump (B).



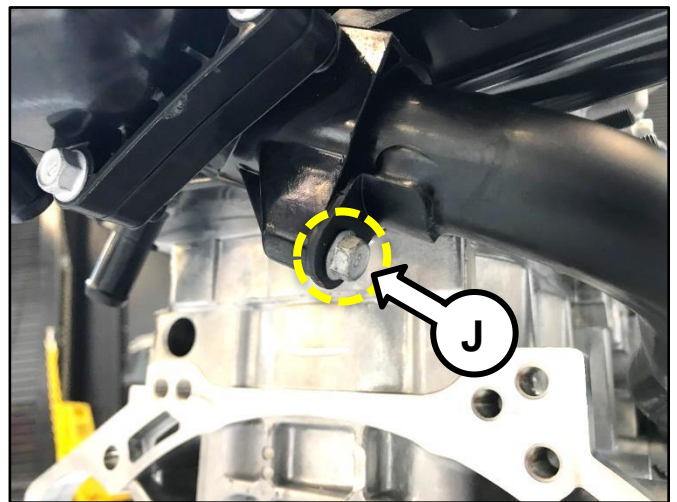
8. Torque the water temperature control assembly retaining bolts (H) and nut (I) to specifications.

**Tightening Torque:**  
**10.8 – 14.5 lb.ft (14.7 – 19.6 N.m,**  
**1.5 – 2.0 kgf.m)**



9. Install and torque the water pump pipe retaining bolt (J).

**Tightening Torque:**  
**7.2 – 8.7 lb.ft (9.8 – 11.8 N.m,**  
**1.0 – 1.2 kgf.m)**

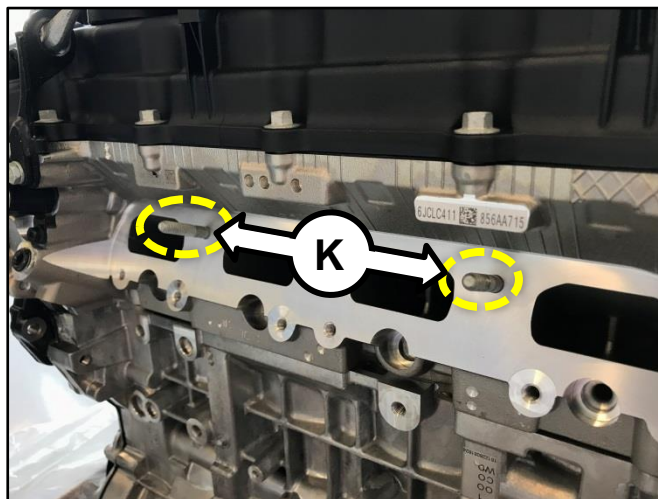


SUBJECT:

## THETA ENGINE SERVICE KIT

10. Install the two (2) intake manifold studs (K) as shown.

**Stud P/N: 22131 2G000**



11. Proceed with engine replacement procedure as outlined in the applicable Engine Replacement TSB (SC147, PI1803W/X, etc.).


SUBJECT:

## THETA ENGINE SERVICE KIT

## AFFECTED VEHICLE RANGE:

Model	Production Date Range
Optima (QF, TF)	2011MY through 2013MY

## REQUIRED PART:

Part Name	Part Number	Figure	Comments
Theta Engine Service Kit	N/A		Shipped with 21101 2GK05QQKR Engines

## WARRANTY INFORMATION:

N Code: B11 C Code: ZZ7

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF, TF)	G	25100 2G400	0	2.4L Theta Engine Service Kit Installation	190020R0	0.4 M/H	N/A	N/A