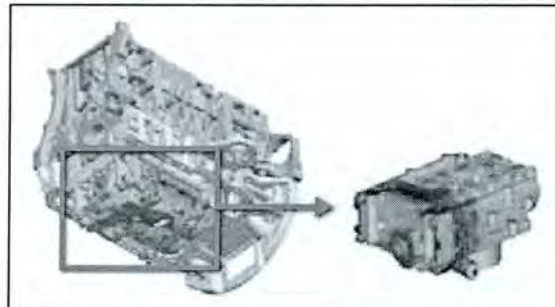
	GROUP Engine	MODEL Sportage (SL), Forte (TD), Optima Hybrid (TF HEV) w/2.4L 2012MY
	NUMBER 119 [Rev 1], 6/29/12	DATE June 2012
<b>TECHNICAL SERVICE BULLETIN</b>		
SUBJECT: SERVICE ACTION: BALANCE SHAFT MODULE (BSM) REPLACEMENT (SA125)		

**\*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 information relating to some Sportage, Forte, and Optima Hybrid vehicles with 2.4L engine produced from April 9, 2012 to April 20, 2012 that might experience a whistle noise emanating from the Balance Shaft Module (BSM) when engine is at operating temperature and at 2000 RPM. To correct this condition, replace the BSM following the Service Procedure below. Kia is requesting the completion of this Service Action on all affected Sportage, Forte, and Optima Hybrid vehicles prior to delivery. Before conducting the procedure, verify that the vehicle is included in the list of the affected VINs.



*Balance  
Shaft  
Module  
(BSM)*

**\*NOTICE**

A Service Action is a repair program without customer notification that is performed during the warranty period. Any dealer requesting to perform this repair outside the warranty period will require DPSM approval.

Repair status for a VIN is provided on WebDCS (Service> Warranty Coverage> Warranty Coverage Inquiry> Campaign Information). Not completed Recall / Service Action reports are available on WebDCS (Consumer Affairs> Not Completed Recall> Recall VIN> Select Report), which includes a list of affected vehicles.

This issue number is SA125.

File Under: <Engine>

- Circulate To:       General Manager     Service Manager     Parts Manager  
 Service Advisor(s)  Technician(s)       Body Shop Manager    Fleet Repair

SUBJECT:

SERVICE ACTION: BALANCE SHAFT MODULE (BSM) REPLACEMENT (SA125)

Service Procedure:

**▲ WARNING**

For Optima Hybrid repair:

**This repair must be conducted only by Kia Hybrid trained technicians.**

**Be sure to remove the hybrid battery safety plug before performing this repair, and keep the plug in your possession until complete. If not, electric discharge injury may result from high-voltage current.**

**Follow safety procedures and use personal protective equipment defined by KGIS (Service Info > Shop Manual > General Information > General Safety Information and Cautions).**

Replace the Balance Shaft Module (BSM) with the new part following the applicable Service Procedure on KGIS (Engine Mechanical System - Lubrication System - Oil Pump) and the timing mark information on page 3.



**\* NOTICE**

Bolts for BSM cannot be re-used, always use new bolts when installing.

BSM assembly bolts require multi-step tightening: Initial torque followed by specified angle of rotation. Ensure all fasteners are properly torqued in the proper sequence, and use a Torque Angle Gauge when necessary.



**▲ CAUTION**

To help prevent damage, remove oil pan carefully; use oil pan removal tool (09215-3C000).

**SUBJECT:**

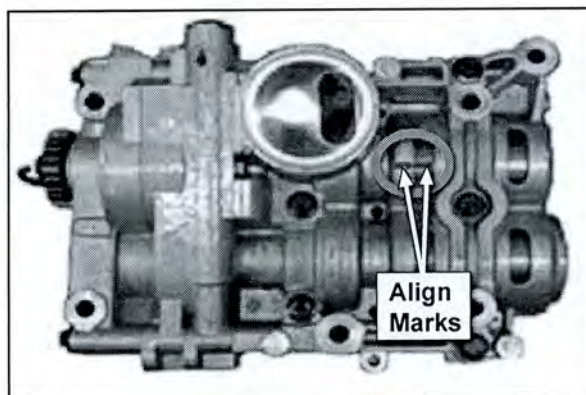
**SERVICE ACTION: BALANCE SHAFT MODULE (BSM) REPLACEMENT (SA125)**

**\*NOTICE**

**Record existing timing mark positions (phasing) before disassembling BSM/oil pump timing chain.** Timing mark position indicators may vary depending on engine design or date of production, and not all variants may be correctly shown or referenced in service documentation.

**▲ CAUTION**

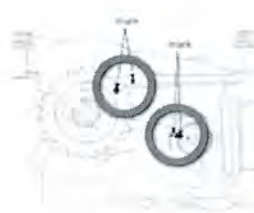
If new BSM/oil pump was inadvertently rotated, re-align marks by rotating the gear up to 5 revolutions to re-establish correct phasing before installing the timing chain.



*Optima (HEV) version shown above, refer below for Forte/Sportage.*

**Forte/Sportage BSM Installation:**

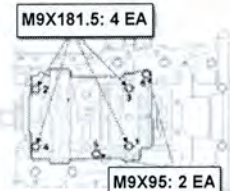
1. Confirm the balance shaft & oil pump module timing marks. Timing marks to be visually aligned with centers of adjacent cast timing notches.
2.
  - a) Install/tighten the bolts in numerical order as shown, with seating torque of 21.7 lb-ft. (29.4 Nm).
  - b) Loosen the bolts in reverse order (6-5-4-3-2-1).
  - c) Tighten the bolts in specified order in same increments as shown on the right.



**Tightening Torque:**

**M9x181.5 bolts:**  
 16.6~19.5 lb-ft  
 (22.6~26.5 Nm) + 88~92°

**M9x95 bolts:** 16.6~19.5 lb-ft (22.6~26.5 Nm) + 43~47°

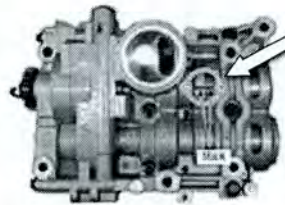


**SUBJECT:**

**SERVICE ACTION: BALANCE SHAFT MODULE (BSM) REPLACEMENT (SA125)**

**Optima Hybrid BSM Installation**

1. Confirm the balance shaft & oil pump module timing marks. Timing marks to be visually aligned with centers of adjacent cast timing notches (see arrow).
2.
  - a) Install/tighten the bolts in numerical order as shown, with seating torque of 21.7 lb-ft. (29.4 Nm).
  - b) Loosen the bolts in reverse order (6- 5-4-3-2-1).
  - c) Tighten the bolts in specified order in same increments as shown on the right.



**Tightening Torque:**

**M9x181.5 bolts:**  
**16.6~19.5 lb-ft**  
**(22.6~26.5 Nm) + 88~92°**

**M9x95 bolts: 16.6~19.5**  
**lb-ft (22.6~26.5 Nm) +**  
**43~47°**



3. Re-assemble/re-install all components in reverse order of removal. Once repair is completed, start engine and allow to warm up to operating temperature, then check for proper operation, absence of whistle noise, and any oil/fluid leaks; correct or adjust as necessary.

**AFFECTED VEHICLE PRODUCTION RANGE:**

<b>Model</b>	<b>Production Date Range</b>
Sportage, Forte, Optima Hybrid w/2.4L	April 9, 2012 to April 20, 2012

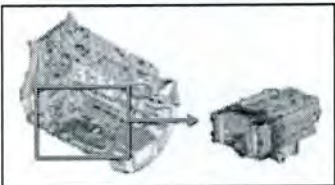
**Do not order parts!**

Parts will be auto-shipped (only) to dealers with affected vehicles currently in stock, and those who retailed any affected vehicles.

**SUBJECT:**

SERVICE ACTION: BALANCE SHAFT MODULE (BSM) REPLACEMENT (SA125)

## REQUIRED PARTS:

Part Name	Part Number	Remarks	
Balance Shaft Module (BSM)		Sportage/Forte and Optima (HEV) modules are NOT interchangeable.	
BSM mounting bolt (long and short)	-	6 EA (long: 4 EA, short: 2 EA)	
Gasket (drain plug)	21513 23001	1 EA	
Oil Filter	26300 35503	1 EA	
Forte, Sportage	BSM	23300 25220QQK	1 EA
	BSM long bolt	21390 2G020QQK	4 EA
	BSM short bolt	21390 2G050QQK	2 EA
Optima HEV	BSM	23300 2G560QQK	1 EA
	BSM long bolt	21390 2G020QQK	4 EA
	BSM short bolt	21390 2G050QQK	2 EA

## WARRANTY CLAIM INFORMATION:

Claim Type	Causal P/N	Qty.	N Code	C Code	Repair Description	Labor Op Code	Op Time	Related Parts	Qty.
V	23300 25220	0	N29	C23	(SA125) Forte (TD) BSM Replace	120032R0	4.1 M/H	23300 25220QQK 21390 2G020QQK 21390 2G050QQK UM010 CH046 21513 23001 26300 35503	1 4 2 1 1 1
	23300 2G560	0	N29	C23	(SA125) Optima Hybrid (TF HEV) BSM Replace	120032R1	4.1 M/H	23300 2G560QQK 21390 2G020QQK 21390 2G050QQK UM010 CH046 21513 23001 26300 35503	1 4 2 1 1 1
	23300 25220	0	N29	C23	(SA125) Sportage (SL) BSM Replace	120032R2	4.0 M/H	23300 25220QQK 21390 2G020QQK 21390 2G050QQK UM010 CH046 21513 23001 26300 35503	1 4 2 1 1 1

**Note: Use sublet code X1 for reimbursement of engine oil (\$16.40 per claim).**

**SUBJECT:**

SERVICE ACTION: BALANCE SHAFT MODULE (BSM) REPLACEMENT (SA125)

**\*NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SA125 when accessing the WebDCS system.