



GROUP	MODEL
Safety Recall Campaign	2020-2021MY Soul (SK3) and 2021MY Seltos (SP2) w/2.0L Nu MPI engine
NUMBER	DATE
SC209 (Rev 4, 04/06/2022)	June 2021

## SAFETY RECALL CAMPAIGN

### ENGINE VIBRATION INSPECTION AND REPLACEMENT (SC209)

SUBJECT:

#### 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 to perform an engine vibration inspection and, if necessary, replace the engine long block on some 2020-2021MY Soul (SK3) produced from November 24, 2018 through October 24, 2020 and some 2021MY Seltos (SP2) produced from November 20, 2019 through October 15, 2020 vehicles equipped with 2.0L Nu MPI (Atkinson) Engine. The piston oil rings in the affected vehicles may have been improperly heat-treated during production, resulting in excessive oil ring hardness. Excessive oil ring hardness can lead to chipping of the piston oil ring's outer periphery and scuffing of the engine cylinder bore. A scuffed cylinder bore can lead to increased oil consumption which will eventually result in abnormal noise from the engine and/or illumination of the oil pressure warning lamp. If the vehicle is continually operated in this condition, connecting rod bearing seizure can occur. A seized connecting rod bearing can result in engine damage, thereby increasing the risk of an engine stall and/or in certain cases a fire, due to a connecting rod puncturing the engine block allowing engine oil to leak onto a hot exhaust. An engine stall increases the risk of a crash, and a fire increases the risk of injury. Before conducting the procedure, verify that the vehicle is included in the list of affected vehicles.

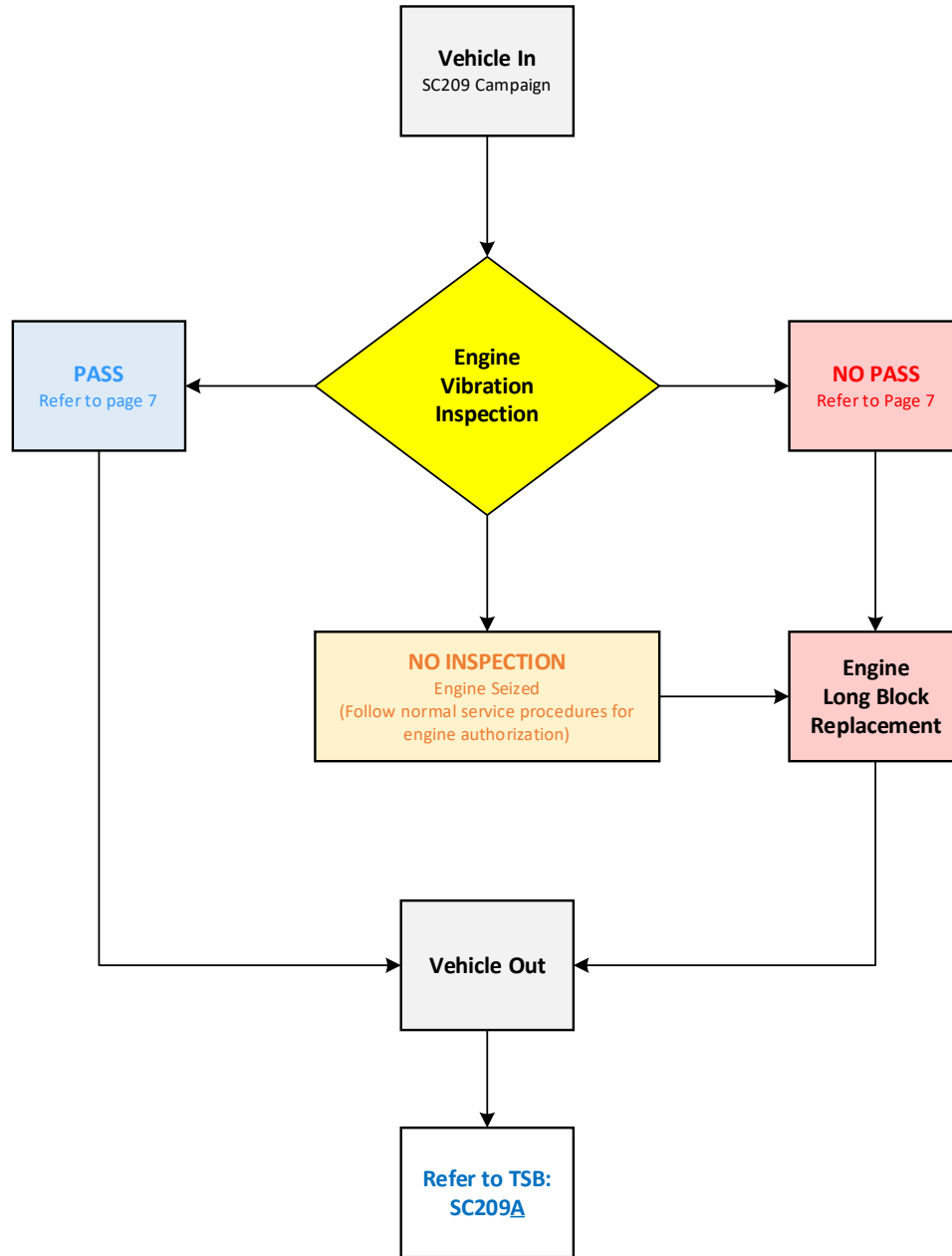
#### NOTICE

**There is no charge to the vehicle owner for this repair. Under applicable law, you may not sell or otherwise deliver any affected vehicle until it has been repaired pursuant to the procedures set forth in this bulletin.**

#### NOTICE

**To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.**

Flowchart:



**NOTICE**

**PASS (Other Conditions):** If other conditions are present (ex. engine noise) and the Engine Vibration Inspection results in a PASS, then open a Techline case for further instructions.

**RETEST (pg. 8):** If there's an error on the measured engine vibration test, check the jack input (microphone) and knock sensor connection and perform measuring test again. If the results keep displaying 'RETEST' (more than 2 times), open a Techline case online for further instructions.



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**Inspection Procedure:**

- 1a. 'START' the engine and allow to reach normal operating temperature.
- 1b. Shut engine 'OFF'.

**NOTICE**

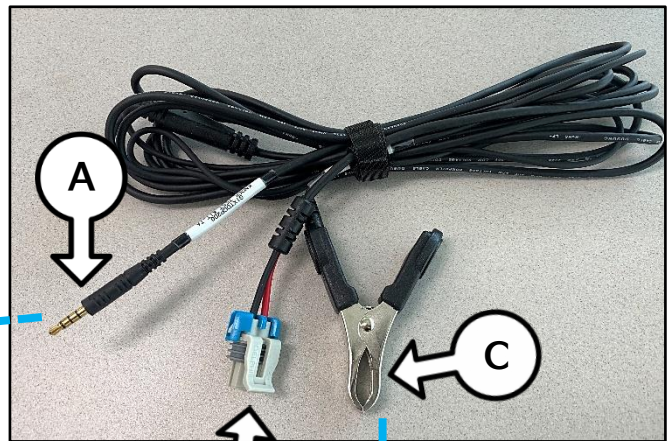
Engine coolant temperature should be above minimum test temperature: **185°F (85°C).**

- 2a. Connect the engine vibration inspection harness audio jack (A) to KDS.

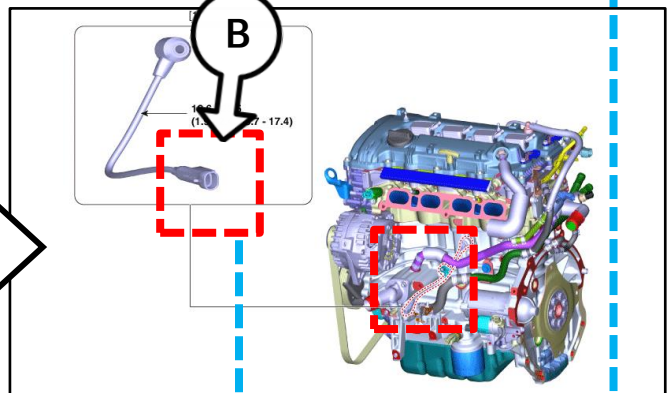
Samsung **USB Type C – 3.5mm adapter** may be required.  
Model: EE-UC10JUWEGUS

**DO NOT USE AFTERMARKET**

Refer to note(s) on pages 8-9.



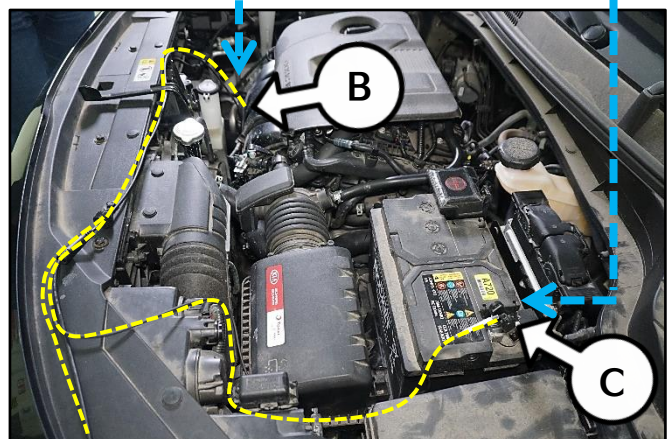
- 2b. Connect the knocking sensing connector (B) of engine vibration inspection harness to the knock sensor connector on the vehicle.



- 2c. Connect the clamp (C) to the battery (-) terminal.

**IMPORTANT**

If the vibration inspection harness is placed over the engine components, external vibration may negatively affect to the inspection result. Route the wiring around the engine (yellow outline) shown in the photo.



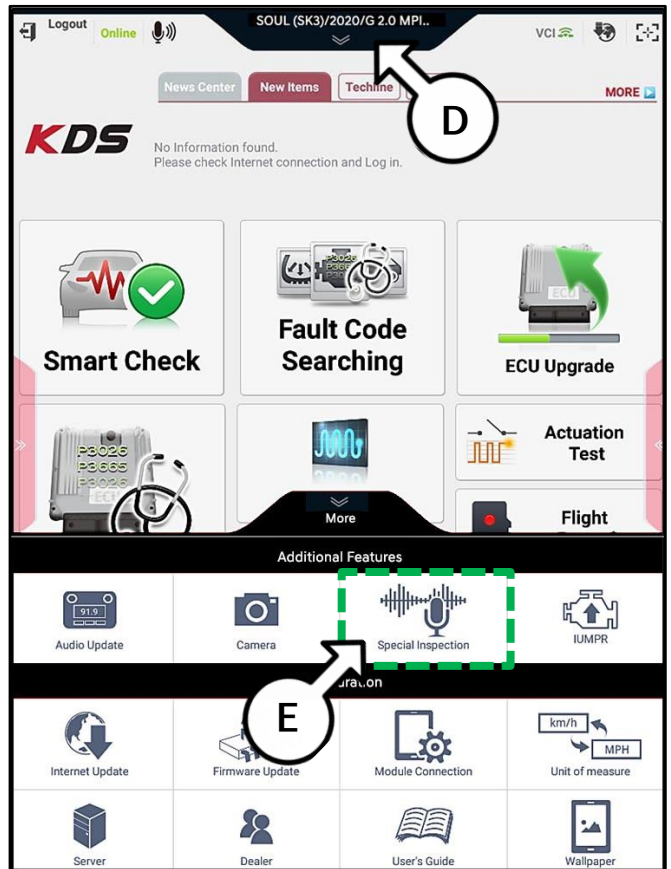
**SUBJECT: ENGINE VIBRATION INSPECTION AND ENGINE REPLACEMENT (SC209)**

3. Connect the VCI to the vehicle's OBD2 port and confirm the Bluetooth pairing condition between KDS and VCI.



- 4a. Match the vehicle model (D) on the top of KDS screen.

- 4b. Turn the ignition to 'ON'.



- 4c. Select 'Special Inspection' mode (E).

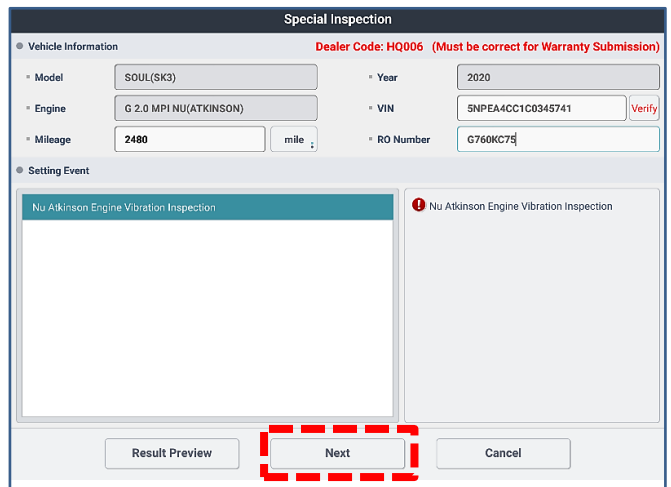
- 5a. Enter the vehicle information (Mileage, RO#). The VIN is recognized automatically.

**IMPORTANT**

Verify that the VIN is correct.

- 5b.

Select 'Nu Atkinson Engine Vibration Inspection'. And then select 'Next'.



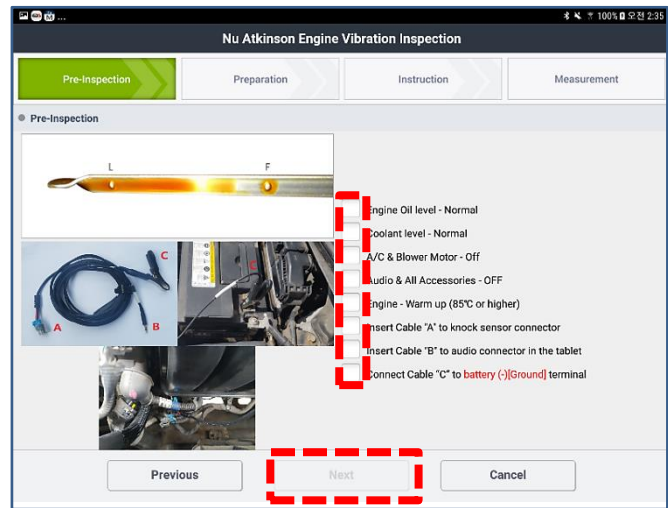
[Nu Atkinson Engine Vibration Inspection Video](#)



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6. Confirm all "Pre-Inspection" conditions by selecting the check boxes.

Once conditions are checked off, select 'Next'.

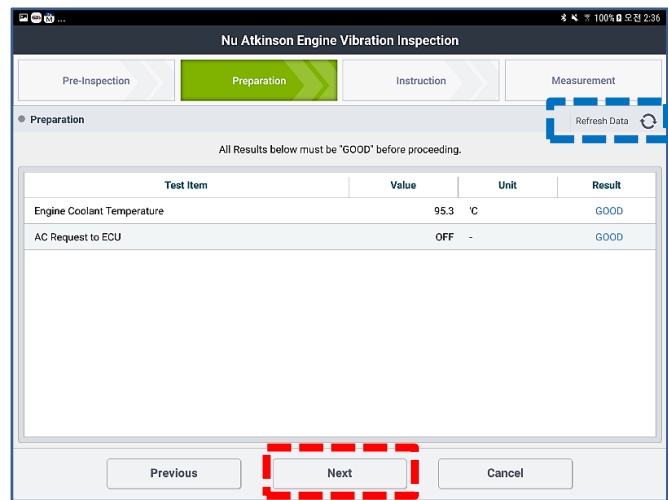


7. The program will automatically check the engine sensor data.

Once activated, select 'Next' as all conditions are now complete.

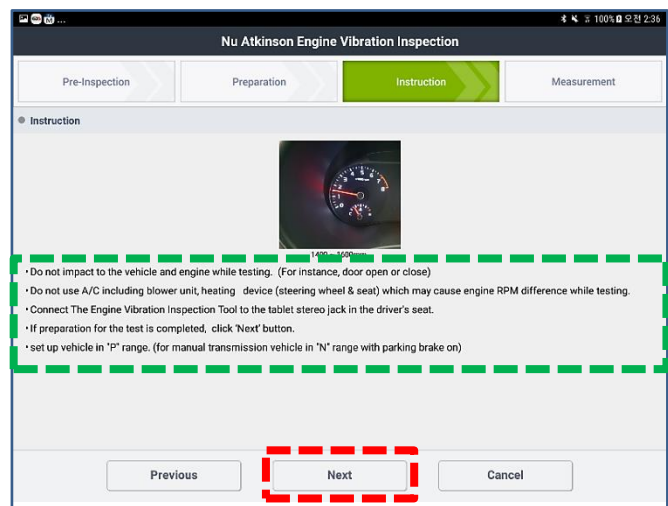
**NOTICE**

If the conditions are not met, a 'NOT GOOD' message will display. Confirm the requirements are met, then select 'Refresh Data'.



- 8a. Read and follow the instruction displayed to recognize the measuring process.

- 8b. Select 'Next'.



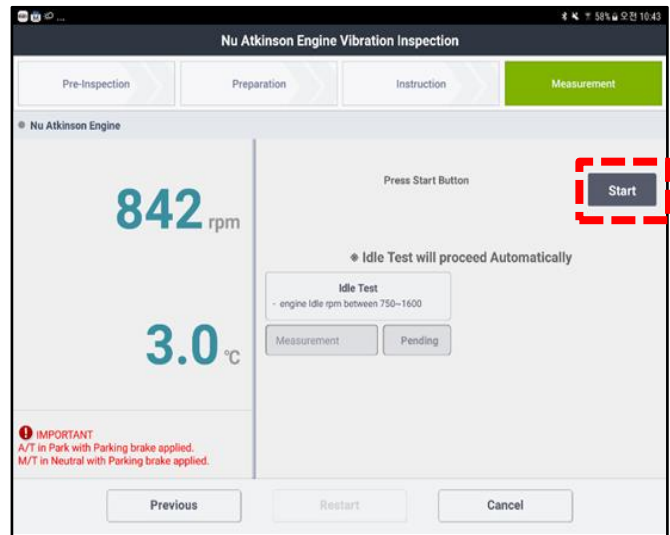
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- In the "Measurement" stage, select the 'Start' while engine is idling.

The program will test the knock sensor reading for 5 seconds to check internal system and confirm it is working normally.

**Celsius 85° = 185° Fahrenheit**

**NOTE:** If the measured vibration test is too low or abnormally higher than the set value, a pop-up message will display to check the audio jack input (microphone) or knock sensor connector.



- As the temperature increases the 'Idle Test and 1500 RPM Test' will proceed.

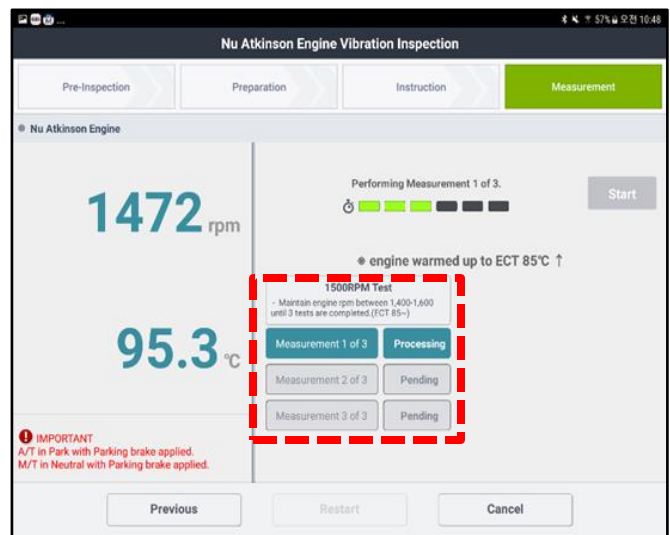
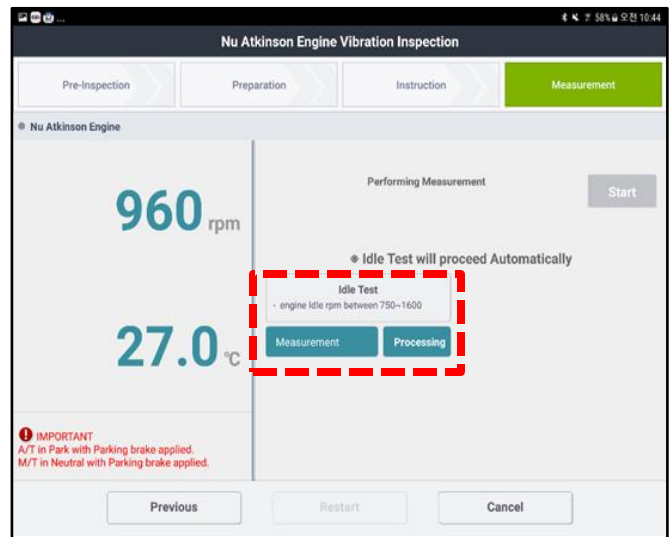
Idle Test: Allow engine RPM to idle

1500 RPM test: Maintain the accelerator pedal to hold the engine RPM +/-100 RPM.

**NOTE:** If the rpm value is above the required range, the color of rpm value displayed will change to a red color and the time counter will reset.

**Celsius 85° = 185.54° Fahrenheit**

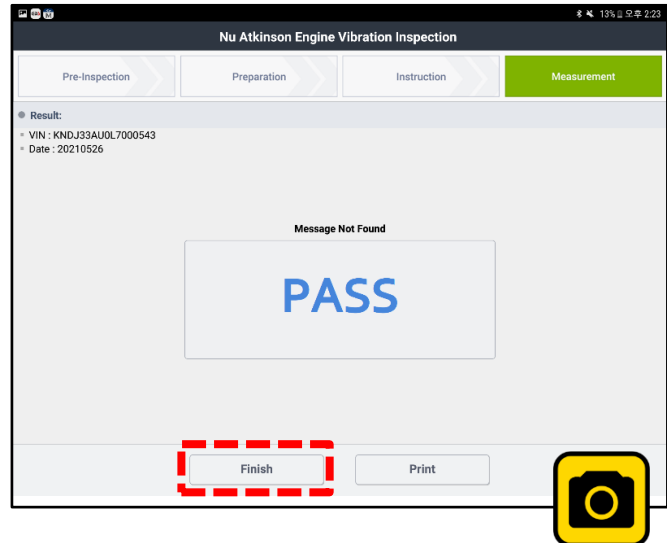
The successful measurements will display "Completed" on the screen.



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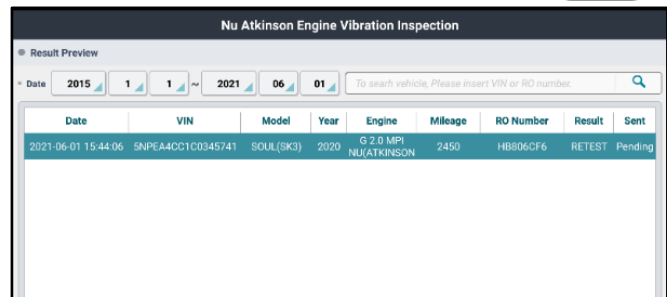
10a. **PASS:** If the measured engine vibration test has a normal condition, capture the screen image/screenshot for record keeping.

Select 'Finish'.



(Campaign is complete, no further action is required). Refer to [TSB SC209A](#).

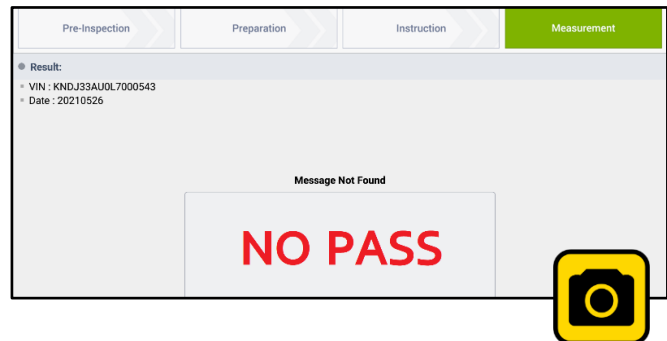
Note: All measured data value and transferring results are available by selecting 'Review Results' in the initial screen.



10b. **NO PASS:** If the measured engine vibration test is abnormal condition, capture the screen image/screenshot for record keeping.

Select 'Finish' and replace the engine long block by referring to the "Engine Mechanical System → Engine And Transaxle Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS. Refer to page 7 information.

Refer to TSB [ENG190](#) for information regarding engine replacement practices.



Engine crankcase oil specification and fill capacity:

5w20 engine oil 2.0L Nu: ~4.23 US Qts.

Required product:

Full synthetic type 5w20 API SM, ILSAC GF4 or higher grade.

**IMPORTANT**

Save a copy of the screenshot(s) for your records.

**NOTICE**

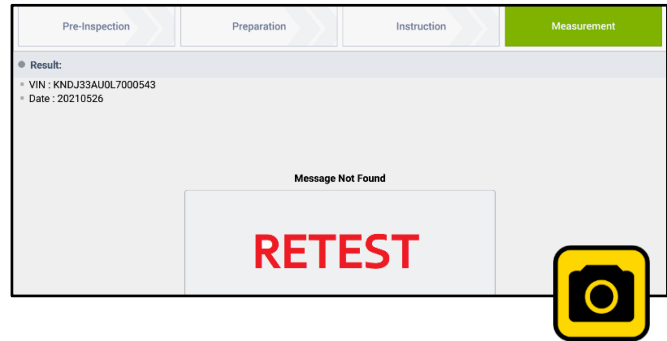
If the KDS is not connected to the internet, up to five (5) results will stay pending in the queue until the KDS is reconnected with the "Special Inspection" application open, before a sixth (6th) test can be conducted.



- 10c. **RETEST:** If there's an **error** on the measured engine vibration test, check the jack input (microphone) and knock sensor connection and perform measuring test again.



**NOTE:** If the results keep displaying 'RETEST' (more than 2 times), open a Techline case online for further instructions.



### 📌 IMPORTANT

Save a copy of the screenshot(s) for your records.

### 📄 NOTICE

If the KDS is not connected to the internet, up to five (5) results will stay pending in the queue until the KDS is reconnected with the "Special Inspection" application open, before a sixth (6th) test can be conducted.

11. Using KDS, check and clear DTC(s).


12. Refer to SC209A.




**SUBJECT: ENGINE VIBRATION INSPECTION AND ENGINE REPLACEMENT (SC209)**
**AFFECTED VEHICLE RANGE:**

Model	Production Date Range
Soul (SK3)	November 24, 2018 to October 24, 2020
Seltos (SP2)	November 20, 2019 to October 15, 2020

**REQUIRED TOOL:**


Tool Name	Part Number	Figure	Comments
Engine Vibration Inspection Harness	G1XTD CP200QQK		Connects to KDS

**REQUIRED PART: ENGINE LONG BLOCK**

Model	Part Number*	Figure	Qty.
SK3 (M/T)	21101 122ZRQQKR		1
SK3 (CVT)	21101 123ZRQQKR		
SP2 (CVT)	21101 126ZRQQKR		

\*If the Reman part (QQKR) is not available, you may be allocated a part ending in QQK. If allocated a QQK part, this may be used in the repair and for the related warranty claim submission.

**OTHER REQUIRED PARTS:**

Model	Part Name	Part Number	Figure	Qty.
ALL	Engine Service Kit**	21102 N20AKQQK		1

\*\*Some engines may not require all kit components.

USB Type C to 3.5mm Headphone Jack Adapter (Model: EE-UC10JUWEGUS) used in the repair may be required when using an older Samsung 6 tablet. **DO NOT USE AFTERMARKET, ONLY SAMSUNG IS APPROVED FOR TESTING USING KDS.**

**AFTER ENGINE REPLACEMENT:**

TOP-OFF THE ENGINE OIL AS RECOMMENDED.

**Engine crankcase oil specification and fill capacity:** 5w20 engine oil 2.0L Nu: ~4.23 US Qts.

**Required product:** Full synthetic type 5w20 API SM, ILSAC GF4 or higher grade.

SUBJECT:

**ENGINE VIBRATION INSPECTION AND ENGINE REPLACEMENT (SC209)****WARRANTY INFORMATION:****N Code: N99 C Code: C99**

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
ALL	R	23040 2E850	0	(SC209) Engine Vibration <u>Inspection</u> Pass	211081R1	0.3 M/H	N/A	0
SK3				(SC209) <u>Unable to perform</u> Engine Vibration <u>Inspection</u> Engine Replaced under Normal Warranty	211081R6	0.1 M/H		
SP2					211081R7			
SK3 (CVT)		23040 2E850	0	(SC209) Engine Vibration Inspection <u>No Pass</u> and Replacement (SK3, M/T and CVT)	211081R2	7.1 M/H	21101 123ZRQQKR and 21102 N20AKQQK	1
SK3 (M/T)					211081R9		21101 122ZRQQKR and 21102 N20AKQQK	
SP2 (FWD)		23040 2E850	0	(SC209) Engine Vibration Inspection <u>No Pass</u> and Replacement (SP2, FWD and AWD)	211081R3	6.4 M/H	21101 126ZRQQKR and 21102 N20AKQQK	1
SP2 (AWD)					211081R4			

**NOTE: You may receive an engine with a part number ending in "QQK" when a part number ending in "QQKR" was ordered. Both part numbers are interchangeable and acceptable in the warranty claim.**

Refer to Warranty Bulletin 2021-11 for claim submission procedures.

Note: Dealers will receive a one-time reimbursement for the purchase of one terminal C adapter via a parts statement credit. The credit of \$15.00 will be issued in the July parts statement.

**NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference **SC209** when accessing the WebDCS system.