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Coding Information

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Title: 2013-2015 N13 Required Torque Wrench to Complete Connecting Rod Bolt Torque Procedure

Applies To: 2013-2015 N13 APR Liner Upgrade

Change Log

Please refer to the change log text box below for recent changes to this article:

05/14/2018- Changed format, added links to APR and connecting rod IK articles.
 02/8/2018 - Added Spanish translation and updated French translation
 01/30/2018- Add updates to torque wrench download, notes, and WPL 18-002G information
 12/14/2017 - French translation added
 11/27/2017 - Initial Article Release

Description

In some instances an N13 can have a catastrophic engine failure due to improperly torqued connecting rod bolts after installation of the APR liner.

Symptom(s)

Low oil pressure, misfire faults, excessive lower-end noise, broken & stretched connecting rod bolt(s), spun connecting rod bearing(s) and or ventilated engine block.

Required Tool(s)

Each service department has been issued one Snap-On Torque Wrench and Digital Torque Wrench Checker.

Tool Description	Tool Number and Specifications
Snap-On Torque Wrench	CTECH3R250A (12.5-250 ft-lb) (16.9-339.0 Nm)
Snap-On (3/4")Torque Wrench Checker	6004-F-DDT (60-600 ft-lb) (81.3-813.6 Nm)

Torque Wrench Tester Set-Up

Refer to tool instruction document 4328553 for proper set-up of the Snap-On Digital Torque Wrench Tester: [Tool Instruction: 4328553 Digital Torque Tester Kit](#)

NOTE:

- Prior to torquing a connecting rod bolt validate torque wrench operation and calibration with the digital torque tester.

Torque Wrench Set-Up

Refer to tool instruction document 4328552 for proper set-up of the Snap-On Digital Torque Wrench: [Tool Instruction: 4328552 CTECH3FR250A Digital Torque Wrench Set-Up](#)

Prior to use ensure the following for proper torque wrench operation:

- Check and set the wrench with correct date/time including proper torque settings: (PSET 1) 22 lb/ft (30 Nm), (PSET 2) 77 lb/ft (105 Nm), (PSET 3) 90 degrees

- Check and clear previous torque wrench data.
- Always check wrench operation and calibration prior to use.

NOTE:

- Whichever occurs first one year or 5,000 cycles the torque wrench will require calibration.

- Average battery life is approximately 80 hours.

- If the batteries have been removed or replaced exceeding 20 minutes the wrench will default back to the original factory settings.

Installation & Repair Step(s)

Review the following IK articles:

[IK1201157 N13 2013-14 Oil Consumption](#)

[IK1201260 N13 2015 Oil Consumption](#)

[IK1201384 Partially Blocked or Blocked Connecting Rod Oil Passage N13](#)

NOTE:

- Connecting rod bolts are torque to yield one time use, discard after removal.
- Engine damage will occur if one or multiple connecting rod cap(s) are installed backwards.
- Do not use an impact to tighten the connecting rod bolts.
- Do not use any universal adapters and swivels during torque procedure.
- Remove the oil pick up tube assembly for access.

1. Review the N13 **Engine Service Manual** prior to disassembly and assembly.
2. Review **General Inspection Procedure** listed within the N13 service manual prior to installation of engine components.
3. Clean all foreign material from the crankshaft journals and connecting rod assemblies.
4. Install one upper and lower connecting rod bearing, lubricate each with clean engine oil or Lubriplate #105.
5. A total of (12) new connecting rod bolts are required to complete connecting rod installation. Lubricate each bolt with clean engine oil first (3-4 threads) and flange, **do not submerge the whole bolt in oil, excessive engine oil can cause a connecting rod bolt to hydro-lock during installation.**
6. Install the connecting rod cap making sure the cap is centered and installed correctly aligning marks with upper portion of the connecting rod.

**NOTE:**

- Complete connecting rod torque sequence prior to rotating the crankshaft.

7. Complete installation and torque sequence by hand threading both bolts into the connecting rod alternating back and forth while seating the cap. Start with cylinder #1 and complete in pairs (1/6), (2/5) and (3/4). Torque connecting rod bolts in three steps starting with preset: **(PSET1) 22 ft-lbs (30 Nm), arrow up, (PSET2) 77 ft-lbs (105 Nm), arrow up, (PSET3) 90 degrees.**

8. Continue to downloading torque wrench data.

NOTE:

- If a connecting rod bolt is over torqued both bolts have to be replaced and the cap has to be recentered.
- If one bolt is replaced premature failure will occur due to uneven clamp load across the connecting rod, both bolts have to be replaced and retorqued.
- Please repeat steps: 4, 5, 6 and 7.

NOTE:

- If an overtorque situation occurred please add comments to the repair order and iApprove case file stating which cylinder was overtorqued.
- Torque wrench data can be reviewed by holding ENTER for 3 seconds and highlighting SHOW DATA press ENTER, scroll UP and DOWN to review data.

Downloading Electronic File Stored in Torque Wrench

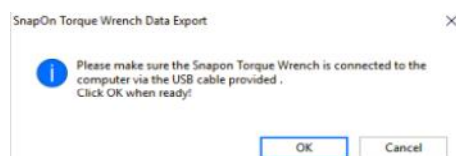
1. Software and drivers are to be downloaded from **IK2700065 (A2) Snap-On Torque Data Export Tool** prior to downloading any torque wrench data:
[IK2700065 EZ-Tech Download Center](#)

Desktop Icon



2. Follow the prompts after clicking on the icon.

3. Click "OK" after connecting the torque wrench to an EZ-Tech computer using the supplied USB cord.



4. Download the "zipped" file to the desktop.

5. Access the service portal chassis/VIN number and click on iApprove.

N13 Connecting Rod Torque Upload	N13 Connecting Rod Torque Upload	Launch Process
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6. Attach the "zip file" to the iApprove from the desktop by clicking browse. Add comments to the description section if there were any added steps to the torque procedure.

VIN	3HSDJ5NR0GN070480		
Technician			
* Dealer			
* Customer Name			
* RO #			
* RO Open Date			
* Miles or KM	249605	MI	Vehicle Scan is loaded.
* Engine Hours	0		

Issue Description

[How to reduce image size](#)

No Attachments

7. iApprove case file is set: **Auto Close**

NOTE:

Do NOT manipulate the torque data or change the csv.file information.

Warranty Information

All repair orders dated February 5, 2018 or later will require digital torque wrench usage and data to be uploaded into the iApprove case file system for all N13 APR repairs.

Potential warranty chargebacks can occur if the torque wrench or data is not used or downloaded into the iApprove system.

[WPL 18-002G- Required Use of New Torque Wrench](#)

Torque Wrench Troubleshooting/Information

- Maintenance & Service: Clean the wrench with a damp cloth. **DO NOT** use solvents such as thinners, brake cleaner, carburetor cleaners. **DO NOT** immerse the entire wrench into anything.
 - Display: persistent **TORQUE ZERO ERROR** at power on, the wrench is damaged and must be returned for repair.
 - Display: **ANGLE ERROR** in angle mode, fastener rotation speed has exceeded capacity of wrench.
 - Display: **TORQUE UCAL** wrench needs to be calibrated.
 - Display: **MEMORY ERROR** clear data memory.
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Standard Repair Time(s):

Refer to the [SRT Manual](#) for Repair Times

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Feedback Information

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