June 12, 2025 Version 9

Safety Recall: 2016 and 2018–19 Pilot Connecting Rod Bearing

Supersedes Version 8, dated March 13, 2025, to revise the information highlighted in yellow.

AFFECTED VEHICLES

Year	Model	Trim Level	VIN Range
2016	Pilot	ALL	Check the iN VIN status for eligibility.
2018–19	Pilot	ALL	Check the iN VIN status for eligibility.

REVISION SUMMARY

This bulletin has been extensively revised; American Honda recommends reviewing this information in its entirety.

Make sure to use the correct application tool and service bulletin to complete this recall:

- If the recall was started using the V-SMART application **on or before June 11, 2025,** continue using the V-SMART application and follow the instructions in the service bulletin linked here: (Click HERE)
- If the repair was started **on or after June 12, 2025**, use the new BEARING INSPECTION application on your American Honda Authorized mobile device and the information in **this** service bulletin. For BEARING INSPECTION application instruction, refer to this Job Aid: (Click HERE)
- **Do not** use the new BEARING INSPECTION application to complete a repair that was started with V-SMART or vice versa. A warning message will appear indicating the wrong application tool is being used, return to the correct application tool to complete the inspection and repair.

BACKGROUND

On November 9th, 2023, Honda announced a **STOP SALE** and **safety recall** for a certain number of 2016 and 2018–19 Pilot units. These vehicles may have engines containing internal damage at the connecting rod bearings, possibly leading to engine failure. If an engine fails, the vehicle may lose motive power, increasing the risk of crash, fire and resulting injury.

During engine manufacturing, some crankshafts may have been built with improper connecting rod journal dimensions, resulting in increased friction between the journals and their bearings. This increased friction could lead to accelerated engine deterioration and possible failure due to a lack of lubrication and excessive heat.

CUSTOMER NOTIFICATION

Owners of affected vehicles have been sent a notification of this campaign.

Do an iN VIN status inquiry to make sure the vehicle is shown as eligible.

Some vehicles affected by this campaign may be in your new or used vehicle inventory.

Failure to repair a vehicle subject to a recall or campaign may subject your dealership to claims or lawsuits from the customer or anyone else harmed as a result of such failure. To see if a vehicle in inventory is affected by this safety recall, do a VIN status inquiry before selling it.

IMPORTANT NOTICE

MANDATORY: The self-study training module, *ENC67 - Multiple ConRod Repair with the Bearing Inspection Application,* is available on the Online University. Make sure to complete the module before starting the inspection procedure.

CUSTOMER INFORMATION: The information in this bulletin is intended for use only by skilled technicians who have the proper tools, equipment, and training to correctly and safely maintain your vehicle. These procedures should not be attempted by "do-it-yourselfers," and you should not assume this bulletin applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Honda automobile dealer.

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CORRECTIVE ACTION

Do an iN **VIN** status inquiry to make sure the vehicle is shown as eligible for an inspection. Removal of the connecting rod bearings and taking/sending photos via the BEARING INSPECTION application for inspection to the Bearing Inspection Inquiry Team are required. This team will conduct a judgment and recommend the appropriate repair for the technician to complete.

In the event that parts are not available, the **STOP SALE** remains in effect for that vehicle. To see if a vehicle in inventory is affected by this safety recall, do a **VIN** status inquiry before selling it. Some vehicles affected by this campaign may be in your new or used vehicle inventory.

PARTS INFORMATION

Repair parts will be automatically allocated based on repair direction.

American Honda Parts will automatically place orders for all parts necessary for this repair. These parts should be visible in iN within **24 hours** of the Bearing Inspection Inquiry.

If replacing the crankshaft the must-replace parts **will not** be shipped until the journal and bore codes from the new crankshaft are sent to the Bearing Inspection Inquiry Team.

Due to shipping constraints, please make sure **all** the required parts are received prior to beginning the repair.

To check the status of the auto-ordered parts, refer to Order Reference Number (for example: SCR0004X) using the code matrix:

1. SCR: Standard Connecting Rod
2. 0000: Last 4 digits of the VIN
3. X: Alpha Character Used for Separate Orders

REQUIRED MATERIALS

Part Name	Part Number	Quantity
0W-20 Full Synthetic Motor Oil	-	5.7 Qt. or 6.4 Qt. (Depending on Repair)
Hondabond HT Silicone Gasket	08718-0004	3 tubes per 2 vehicles
Antifreeze / Coolant Type 2	OL999-9011A	8.8 L (2.54 Gal.) (Repair #2, #3, and #4)
Oil Filter	15400-PLM-A02	1 (Repair #3 and #4)

TOOL INFORMATION

Tool Name	Tool Number	Quantity Per Repair
Bearing Photo Box, [BOX, BEARING PHOTO]	07AAK-5J2A200	1
Photo Box Light Set [SET, PHOTO BOX LIGHT]	07AAK-5J2A210	1 set
M8 Rod Holder, [HOLDER, M8 ROD]	07AAB-5G0A100	1
Crank Angle Gauge, [GAUGE, CRANK ANGLE]	07AAJ-5G0A100	1
Piston Stopper, [STOPPER, PISTON]	07AAB-5G0A200	1 set
Radiator Protector [PROTECTOR, RADIATOR]	07AAK-5A2A100	1
Transmission Pins, [PIN, MISSION ALIGN]	07AAG-5J4A100	1 set
Subframe Guide, [PIN, SUBFRAME GUIDE]	07AAG-TZ3A100	2
Subframe Support, [JIG, SUBFRAME SUPPORT]	07AAK-TZ3A100	1
9AT Transmission Cap (CAP, 9AT PROTECTING)	07AAK-5J4A101	1
PARTS CART	PR1-A	1

NOTE:

- These tools have been auto-shipped to your dealer. There is no need to order at this time as quantities are limited. Contact the Special Tools Hotline **(833) 949-4672** and/or email special_tools@ahm.honda.com for information.
- Once your dealership is identified as a requiring a short block replacement, additional special tools (PARTS CART, Subframe Support, and Transmission Pins) will be shipped along with the replacement engine block.

Tool Name	Tool Number	Quantity Per Repair
American Honda Authorized Mobile Device	CDW5001003PK	1
Large Zip Tie	Commercially Available	2
LOAD LEVELER	NRI78115H	1
LIFT TABLE	KLS6227500	1
ENGINE BALANCE BAR ATTACHMENT	VSB02C000044 with VSB02C000019	1
Automatic Center Punch	SKE18A	1

NOTE:

- The Automatic Center Punch has been auto-shipped to your dealer. This tool is commercially available, which can be purchased at most tool supply stores.
- These are existing required tools that dealers should have available. If additional tools are needed, they are available for purchase, contact the Tool and Equipment Program at **(888) 424-6857** and/or email AHMTE@snapon.com

WARRANTY CLAIM INFORMATION

Important Notice:

- Warranty claim information extends across multiple pages; please select the correct table.
- For repair method other than Connecting Rod Bearing replacement, the repair must be matched with the appropriate inspection and repair template to process the warranty claim.

The Bearing Inspection Inquiry Team will send an email to the address provided containing a summary of the failed part numbers and the corresponding warranty codes to use.

Connecting Rod Bearing Repair

INSPECTION A, plus repair

NOTE:

- For inspections that resulted in a repair, you will need to create **two repair lines** in the repair order- **one for inspection** and **one for repair**.
- Both repair lines must be done for completion of **this claim**.
- Enter the bearing part number(s) (provided by the Bearing Inspection Inquiry Team) under the appropriate repair template below.

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
1115G5	Inspection procedure A - conrod bearings (includes photos)	1.2hr	6JA00	YHR00	A24001A	13010-R9P-A00
1111ER	Replace connecting rod bearings for **6AT** (includes photos) 2016, 2018–2019 model years	2.2hr	6KC00	XH400	A24001D	13321-5J6-A01
1111ER	Replace connecting rod bearings for **9AT** (includes photos) 2016, 2018–2019 model years	2.2hr	6KC00	XH400	A24001E	13341-R9P-A01
1111ER	Replace connecting rod bearings for **6AT** (includes photos) 2019 model years	2.2hr	6KC00	XH400	A24001F	14260-R70-A01
1111ER	Replace connecting rod bearings for **9AT** (includes photos) 2019 model years	2.2hr	6KC00	XH400	A24001G	14270-RCA-A01

INSPECTION B, plus repair

NOTE:

- For inspections that resulted in a repair, you will need to create **two repair lines** in the repair order- **one for inspection** and **one for repair**.
- Both repair lines must be done for completion of **this claim**.
- Enter the bearing part number(s) (provided by the Bearing Inspection Inquiry Team) under the appropriate repair template below.

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
1115G6	Inspection procedure B - conrod & main cap bearings (includes photos)	2.5hr	6JA00	YHR00	A24001B	13050-R9P-A00
1111FM	Replace connecting rod bearings for **6AT** (includes photos) 2016, 2018–2019 model years	2.2hr	6KC00	XH400	A24001H	13324-5J6-A01
1111FM	Replace connecting rod bearings for **9AT** (includes photos) 2016, 2018–2019 model years	2.2hr	6KC00	XH400	A24001J	13344-R9P-A01
1111FM	Replace connecting rod bearings for **6AT** (includes photos) 2019 model years	2.2hr	6KC00	XH400	A24001K	14100-5MR-A00
1111FM	Replace connecting rod bearings for **9AT** (includes photos) 2019 model years	2.2hr	6KC00	XH400	A24001L	14200-RLV-A00

VIN and Engine Number Identification Query through the application tool–No Repair

NOTE:

- No further warranty claim required; vehicle is considered fixed by **engine number verification**.
- Use only this labor operation if the engine number identification query through BEARING INSPECTION was done and resulted in "*Engine Not Affected*."
- **Do not** use this warranty table for either **Inspection A** or **Inspection B**.
- The Bearing Inspection Inquiry Team **must still** be contacted to complete a claim. See ENGINE NUMBER VERIFCATION section for more details.

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
1115G2	Inspect VIN/EIN-Engine not affected (Includes photos)	0.3hr	6KC00	XH400	A24001C	11200-5J6-A11

Important Notice: For repair method other than Connecting Rod Bearing replacement, the repair must be matched with the appropriate inspection and repair template to process the warranty claim.

INSPECTION A or B

NOTE:

- For inspections that resulted in other than a connecting rod bearing replacement, you will need to create **two repair lines** in the repair order- **one for inspection** and **one for repair**.
- Both repair lines must be done for completion of **this claim**.

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
1115G5	Inspection procedure A - conrod bearings (includes photos)	1.2hr	6JA00	YHR00	A24001A	13010-R9P-A00
1115G6	Inspection procedure B - conrod & main cap bearings (includes photos)	2.5hr	6JA00	YHR00	A24001B	13050-R9P-A00

Short Block Replacement

NOTE:

- Based on the Bearing Inquiry Team's recommended repair, select the appropriate repair template below.
- Both repair lines must be done for completion of **this claim**.

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number

2016, 2018, 2019 FWD

1111ES	Replace Short block **6AT** (includes align)	13.8hr	6KC00	XH400	A24001M	13322-5J6-A01

2016, 2018, 2019 AWD

1111ES	Replace Short block **6AT** (includes align)	13.9hr	6KC00	XH400	A24001N	13322-5J6-A01

2019 FWD

1111ES	Replace Short block **6AT** (includes align)	13.8hr	6KC00	XH400	A24001P	13322-5J6-A01

2019 AWD

1111ES	Replace Short block 6**AT** (includes align)	13.9hr	6KC00	XH400	A24001Q	13322-5J6-A01

2016 and 2018 FWD

1111ES	Replace Short block **9AT** (includes align)	13.8hr	6KC00	XH400	A24001R	13342-R9P-A01

2016 and 2018 AWD

1111ES	Replace Short block **9AT** (includes align)	13.9hr	6KC00	XH400	A24001S	13342-R9P-A01

2016 and 2018 AWD with ATF Cooler

1111EW	Replace Short block **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A24001T	18121-5J6-A01

2019 FWD (VIN up to KB024752)

1111ES	Replace Short block **9AT** (includes align)	13.8hr	6KC00	XH400	A24001U	13342-R9P-A01

2019 AWD (VIN up to KB051620)

1111ES	Replace Short block 9**AT** (includes align)	13.9hr	6KC00	XH400	A24001V	13342-R9P-A01

2019 AWD with ATF Cooler (VIN up to KB051620)

1111EW	Replace Short block **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A24001W	18121-5J6-A01

2019 FWD (VIN start from KB024753)

1111ES	Replace Short block **9AT** (includes align)	13.8hr	6KC00	XH400	A24001X	13342-R9P-A01

2019 AWD (VIN start from KB051621)

1111ES	Replace Short block **9AT** (includes align)	13.9hr	6KC00	XH400	A24001Y	13342-R9P-A01

2019 AWD with ATF Cooler (VIN start from KB051621)

1111EW	Replace Short block **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A24001Z	18121-5J6-A01

Short Block Replacement with New Cylinder Heads

NOTE:

- Based on the Bearing Inspection Inquiry Team's recommended repair, select the appropriate repair template below.
- Both repair lines must be done for completion of **this claim**.

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number

2016 FWD

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.8hr	6KC00	XH400	A2401AA	13323-5J6-A01

2016 AWD

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.9hr	6KC00	XH400	A2401AB	13323-5J6-A01

2018, 2019 FWD (VIN up to KB024752)

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.8hr	6KC00	XH400	A2401AC	13323-5J6-A01

2018, 2019 AWD (VIN up to KB051620)

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.9hr	6KC00	XH400	A2401AD	13323-5J6-A01

2019 FWD (VIN start from KB024753)

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.8hr	6KC00	XH400	A2401AE	13323-5J6-A01

2019 AWD (VIN start from KB051621)

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.9hr	6KC00	XH400	A2401AF	13323-5J6-A01

2016 FWD

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.8hr	6KC00	XH400	A2401AG	13343-R9P-A01

2016 AWD

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.9hr	6KC00	XH400	A2401AH	13343-R9P-A01

2016 AWD with ATF Cooler

1111EX	Replace Short block & Cyl Heads **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A2401AJ	10004-5MR-A00

2018 FWD

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.8hr	6KC00	XH400	A2401AK	13343-R9P-A01

2018 AWD

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.9hr	6KC00	XH400	A2401AL	13343-R9P-A01

2018 AWD with ATF Cooler

1111EX	Replace Short block & Cyl Heads **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A2401AM	10004-5MR-A00

2019 FWD (VIN up to KB024753)

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.8hr	6KC00	XH400	A2401AN	13343-R9P-A01

2019 FWD (VIN start from KB024753)

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.8hr	6KC00	XH400	A2401AP	13343-R9P-A01

2019 AWD (VIN up to KB051620)

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.9hr	6KC00	XH400	A2401AQ	13343-R9P-A01

2019 AWD (VIN start from KB051621)

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.9hr	6KC00	XH400	A2401AR	13343-R9P-A01

2019 AWD with ATF Cooler (VIN up to KB051620)

1111EX	Replace Short block & Cyl Heads **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A2401AS	10004-5MR-A00

2019 AWD with ATF Cooler (VIN start from KB051621)

1111EX	Replace Short block & Cyl Heads **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A2401AT	10004-5MR-A00

Radar Aim (For Applicable Trims, create a third repair line)

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
7453C0	Perform Radar aim	0.5hr	6JA00	YHR00	A2401AU	36802-TG7-A01

Inspection Procedure for Complete Engine Failure

NOTE:

- For complete engine failure inspection, you will need to create **two repair lines** in the repair order- **one for inspection** and **one for repair**.
- Based on the Bearing Inspection Inquiry Team's recommended repair, select inspection template A2401AV and the appropriate repair template below.
- Both repair lines must be done for completion of **this claim**.

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
1115G7	Inspect for broken conrod only (Includes photos)	0.5hr	6JA00	YHR00	A2401AV	11221-5G0-A00

2016 FWD

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.8hr	6KC00	XH400	A2401AA	13323-5J6-A01

2016 AWD

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.9hr	6KC00	XH400	A2401AB	13323-5J6-A01

2018, 2019 FWD (VIN up to KB024752)

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.8hr	6KC00	XH400	A2401AC	13323-5J6-A01

2018, 2019 AWD (VIN up to KB051620)

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.9hr	6KC00	XH400	A2401AD	13323-5J6-A01

2019 FWD (VIN start from KB024753)

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.8hr	6KC00	XH400	A2401AE	13323-5J6-A01

2019 AWD (VIN start from KB051621)

1111ET	Replace Short block & Cyl Heads **6AT** (includes align)	13.9hr	6KC00	XH400	A2401AF	13323-5J6-A01

2016 FWD

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.8hr	6KC00	XH400	A2401AG	13343-R9P-A01

2016 AWD

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.9hr	6KC00	XH400	A2401AH	13343-R9P-A01

2016 AWD with ATF Cooler

1111EX	Replace Short block & Cyl Heads **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A2401AJ	10004-5MR-A00

2018 FWD

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.8hr	6KC00	XH400	A2401AK	13343-R9P-A01

2018 AWD

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.9hr	6KC00	XH400	A2401AL	13343-R9P-A01

2018 AWD with ATF Cooler

1111EX	Replace Short block & Cyl Heads **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A2401AM	10004-5MR-A00

2019 FWD (VIN up to KB024753)

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.8hr	6KC00	XH400	A2401AN	13343-R9P-A01

2019 FWD (VIN start from KB024753)

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.8hr	6KC00	XH400	A2401AP	13343-R9P-A01

2019 AWD (VIN up to KB051620)

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.9hr	6KC00	XH400	A2401AQ	13343-R9P-A01

2019 AWD (VIN start from KB051621)

1111ET	Replace Short block & Cyl Heads **9AT** (includes align)	13.9hr	6KC00	XH400	A2401AR	13343-R9P-A01

2019 AWD with ATF Cooler (VIN up to KB051620)

1111EX	Replace Short block & Cyl Heads **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A2401AS	10004-5MR-A00

2019 AWD with ATF Cooler (VIN start from KB051621)

1111EX	Replace Short block & Cyl Heads **9AT** with ATF cooler (includes align)	14.3hr	6KC00	XH400	A2401AT	10004-5MR-A00

Radar Aim (For Applicable Trims, create a third repair line)

Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
7453C0	Perform Radar aim	0.5hr	6JA00	YHR00	A2401AU	36802-TG7-A01

CONTENT REFERENCE

Important Notice:

NOTE: DO NOT contact Tech Line for any inquiries about this safety recall. If instructed by the application tool, call the Bearing Inspection Inquiry Team at (800) 824-6632 (Select Option #9).

This information has been designed to work best when viewing through iN. It is **strongly suggested** (due to final page count and complexity) that the technician use iN to fully utilize this service bulletin's functions.

Furthermore, the technician is also advised to prepare their workstation for the tasks ahead. This includes: An American Honda Authorized mobile device that is fully charged, tools laid out, verify strong connection to Wi-Fi, and *access* to this service bulletin in its entirety via iN.

For BEARING INSPECTION application instruction, refer to this Job Aid: (Click HERE)

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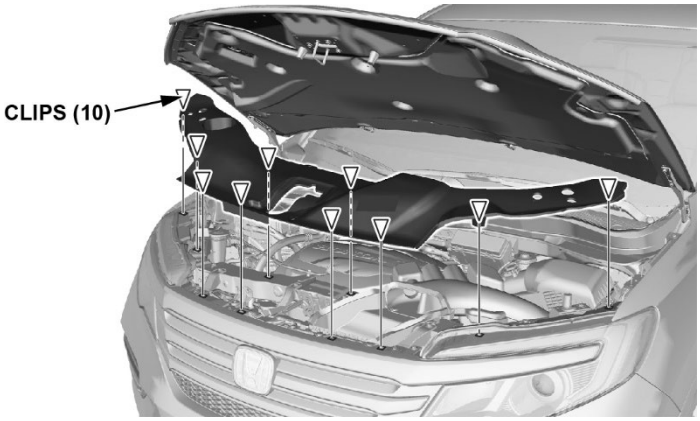
NOTE: **Click** on a section title to go there.

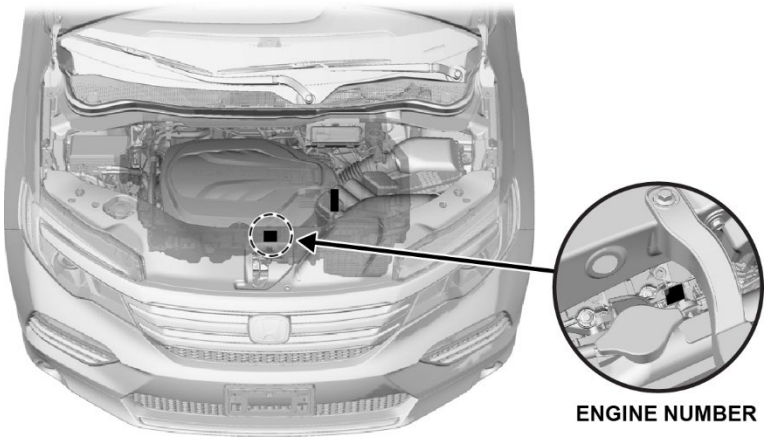
ENGINE NUMBER VERIFICATION

NOTE: DO NOT contact Tech Line for any inquiries about this safety recall. If instructed by the application tool, call the Bearing Inspection Inquiry Team at (800) 824-6632 (Select Option #9).

1. Remove the front bulkhead cover.



2. Locate the engine identification number.



3. Log into the BEARING INSPECTION application tool and scan or manually enter the VIN, then enter the RO#.

   NOTE: For BEARING INSPECTION application instruction, refer to this Job Aid: (Click HERE)

4. Use the BEARING INSPECTION application to capture a photo of the engine serail number.

   Once the engine number has been confirmed by the BEARING INPSECTION application, proceed to either **INSPECTION A or INSPECTION B** as directed by the application.

   - Link to **INSPECTION A,** (Click HERE)
   - Link to **INSPECTION B,** (Click HERE)

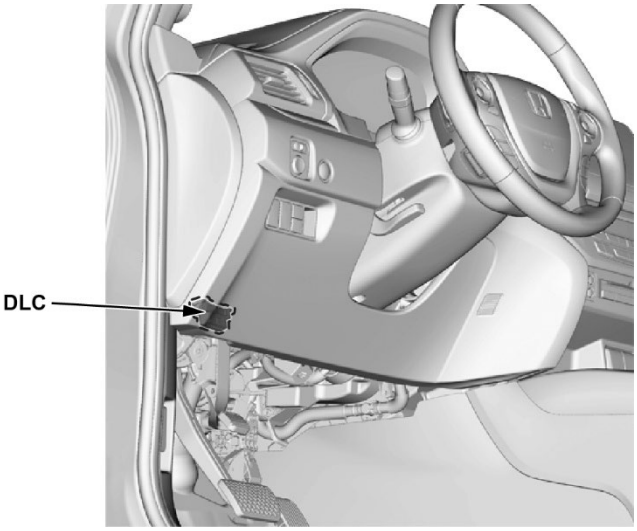
INSPECTION A

NOTE: DO NOT contact Tech Line for any inquiries about this safety recall. If instructed by the application tool, call the Bearing Inspection Inquiry Team at (800) 824-6632 (Select Option #9).

1. Turn the steering wheel all the way to the right.
2. Relieve the fuel pressure.

With the i-HDS:

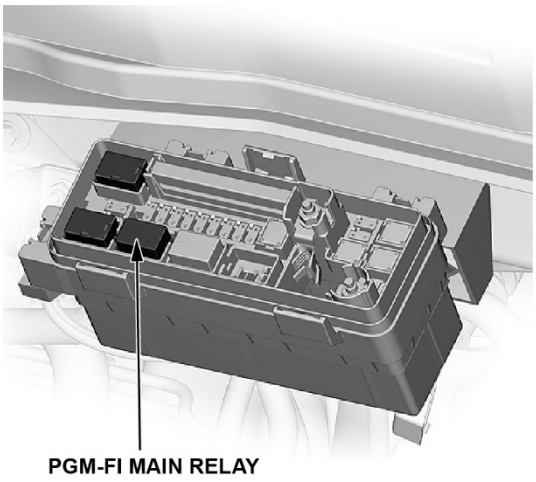
- Plug an interface tool into the DLC (located under the driver's side of the dashboard) and load i-HDS.



- From the **INSPECTION MENU,** select **FUEL PUMP** OFF.
- Start the engine and idle until it stalls.
- Turn the vehicle to the OFF (LOCK) mode.

Without i-HDS:

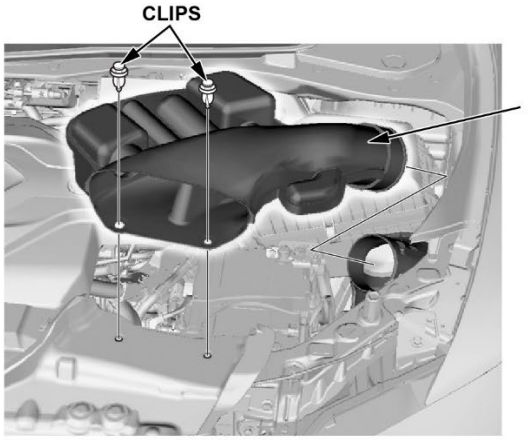
- Remove the PGM-FI main relay 2 from the auxiliary under-hood fuse/relay box.

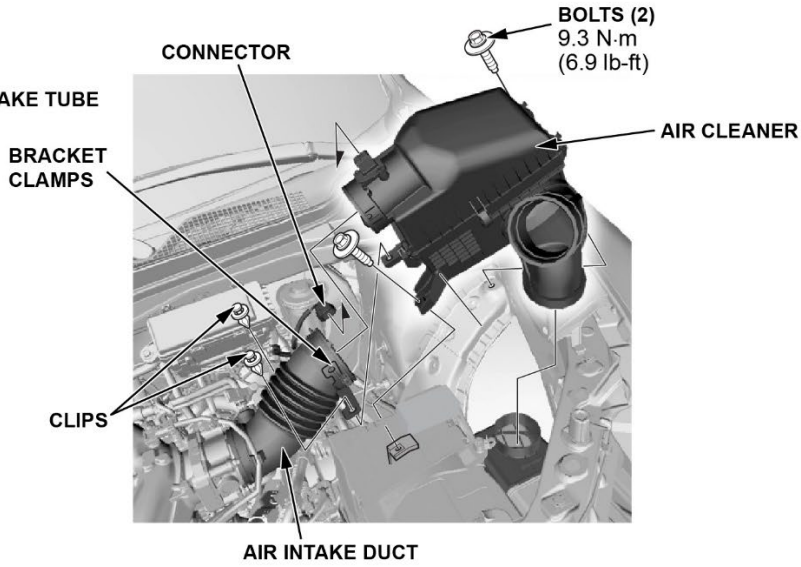


- Start the engine and idle until it stalls.

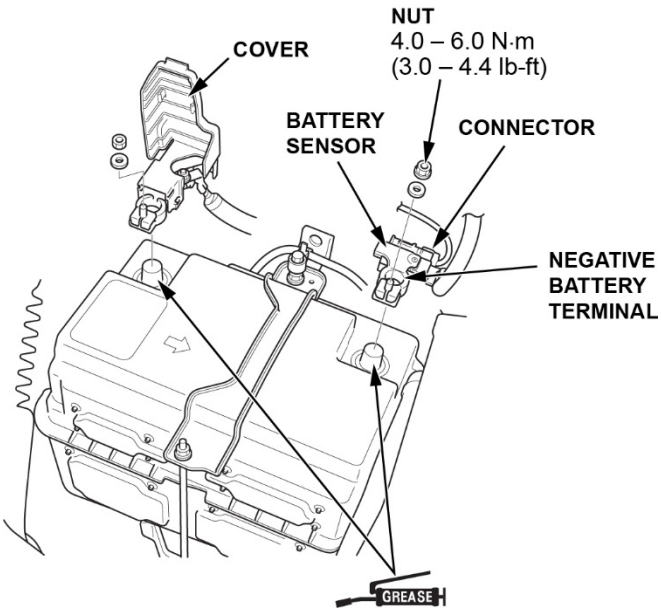
  NOTE: If any DTC's are stored, clear and ignore.
- Turn the vehicle to the OFF (LOCK) mode.
- Install the PGM-FI main relay 2.

3. Remove the air intake tube and air cleaner.

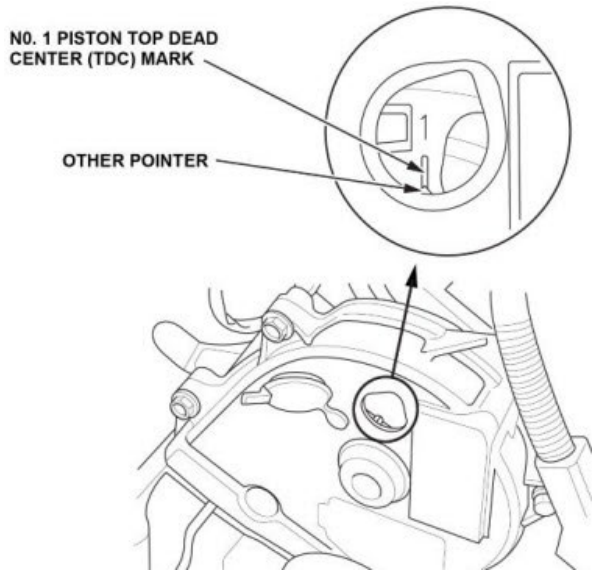




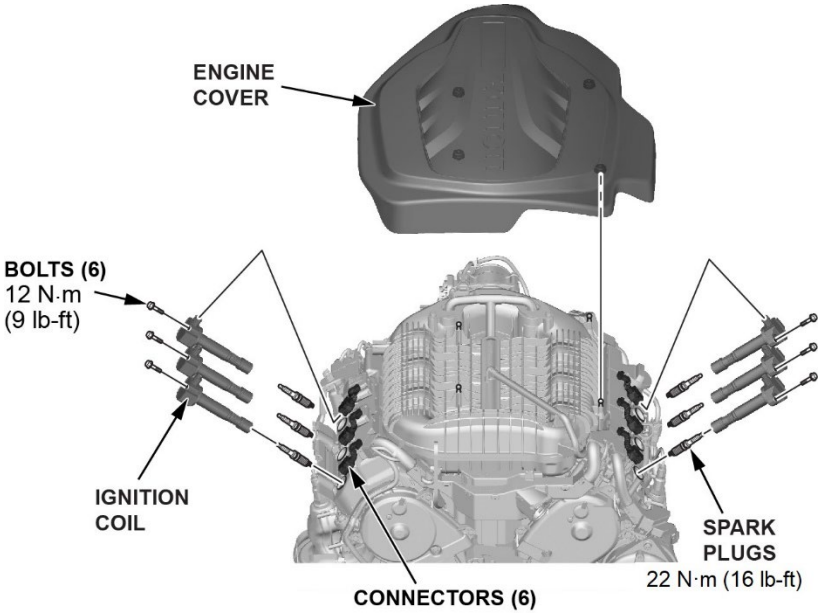
4. Disconnect the negative battery cable from the battery.



5. Remove the engine oil dipstick.
6. Remove the strut tower bar.
7. Set the engine to TDC.

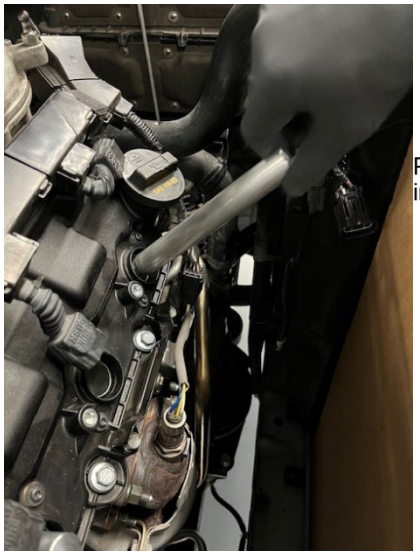


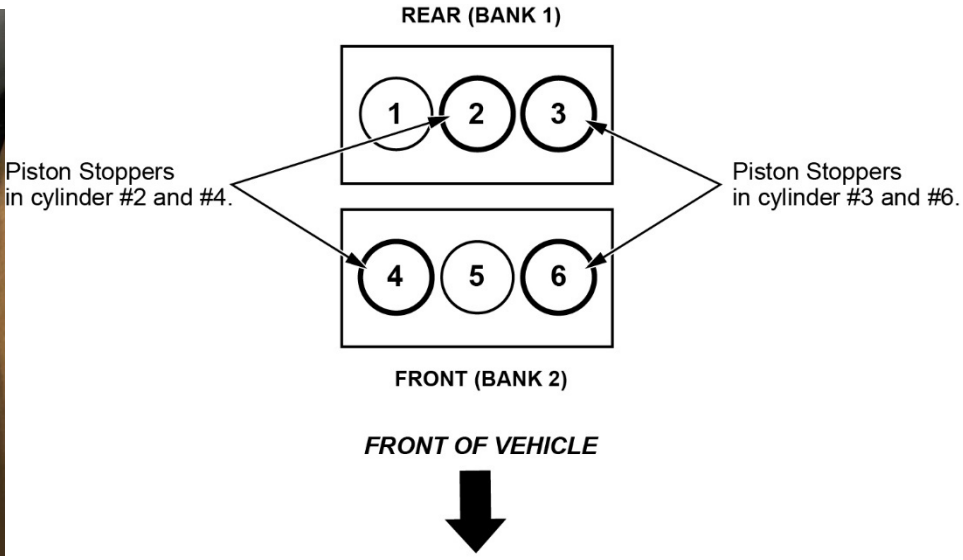
8. Remove the ignition coils and spark plugs.

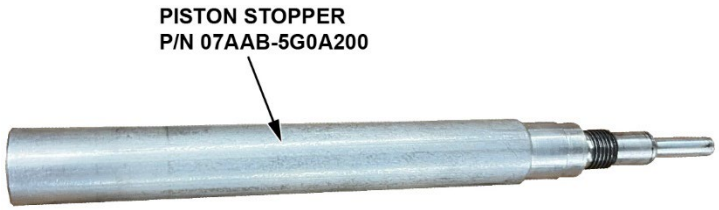


9. Install piston stoppers to **cylinder 2,3,4, and 6**.

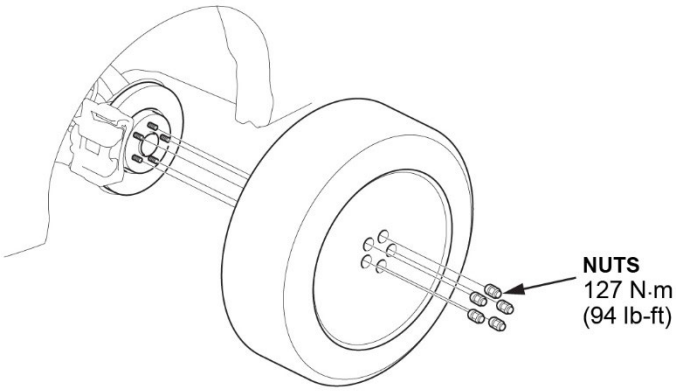
   NOTE: Make sure the stopper is clean and hand tighten only!





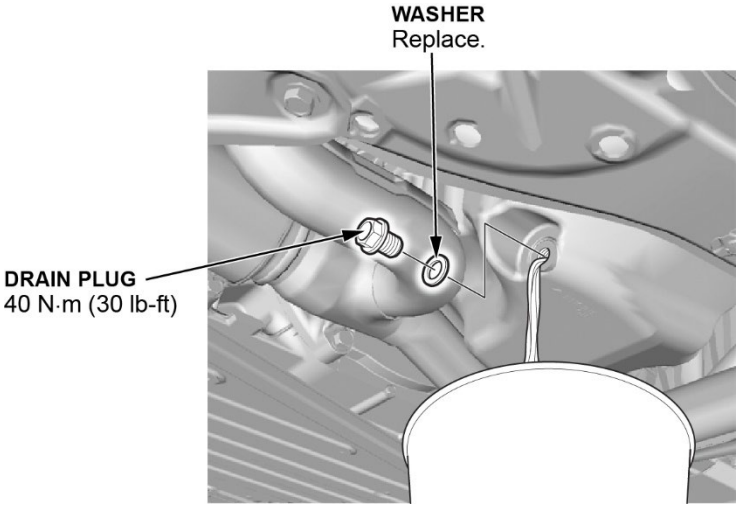


10. Lift the vehicle to a good working height.
11. Remove the passenger side front wheel **127 N·m (94 lb-ft)**.

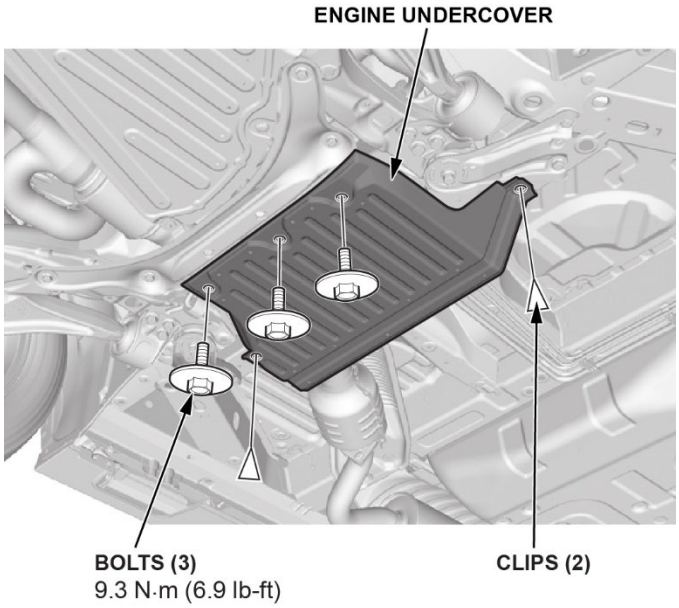


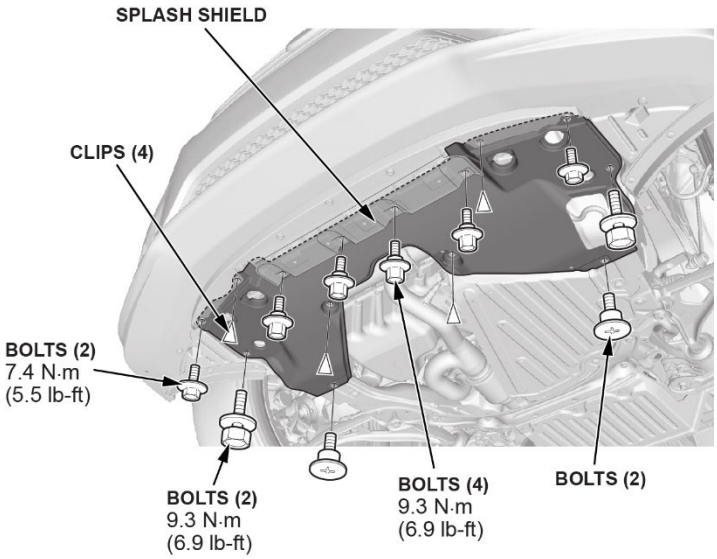
12. Pull back the fender liner to gain access to the crank pulley.

13. Drain the engine oil, **40 N·m (30 lb-ft)**.



14. Remove the engine undercover and splash shield.





15. With the crankshaft at TDC, mark the crankshaft pulley with a vertical line at the 6 o'clock position.

16. Attach the crank angle gauge to the crankshaft pulley with **position #1** correctly aligned at the 6 o'clock position, also the mark made in step 15.

    Click here to view a video: ► PLAY VIDEO

    NOTE: The gauge has a magnetic reverse side that will hold onto the crankshaft pulley.

CRANK ANGLE GAUGE
P/N 07AAJ-5G0A100

17. Attach a large, commercially available zip tie to the subframe below the crankshaft pulley. The zip tie will be a **reference indicator** for a correct crank angle gauge position.

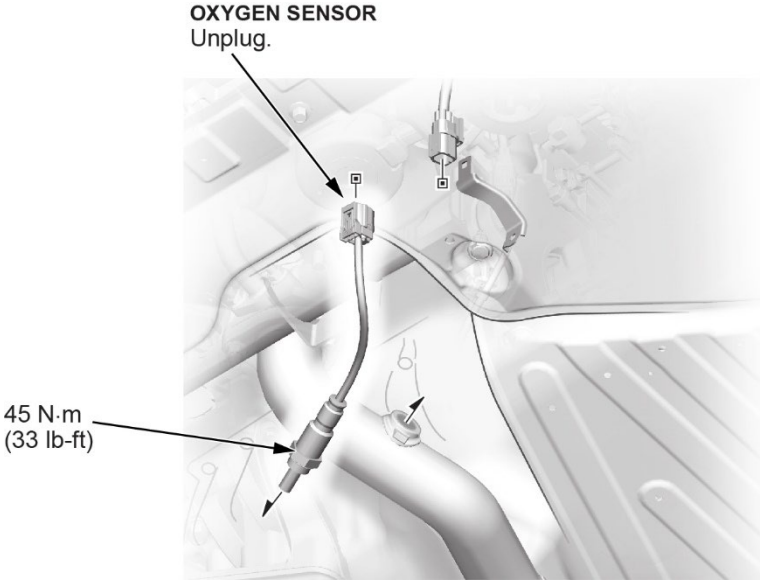
    NOTE:

    - Make sure it is pointing up at the 6 o'clock position on the pulley.
    - The zip tie should extend roughly **8" to 12"** over the subframe.

ZIP TIE
Attach a zip tie to the frame and line up as shown.

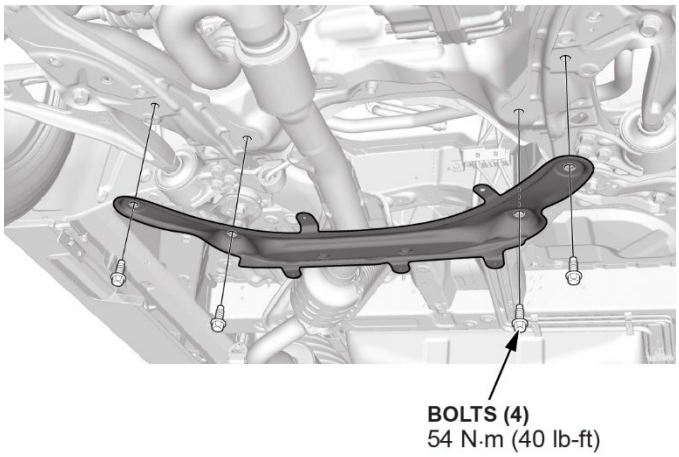
18. Unplug bank 2 oxygen sensor.

    NOTE: Exhaust may be HOT!



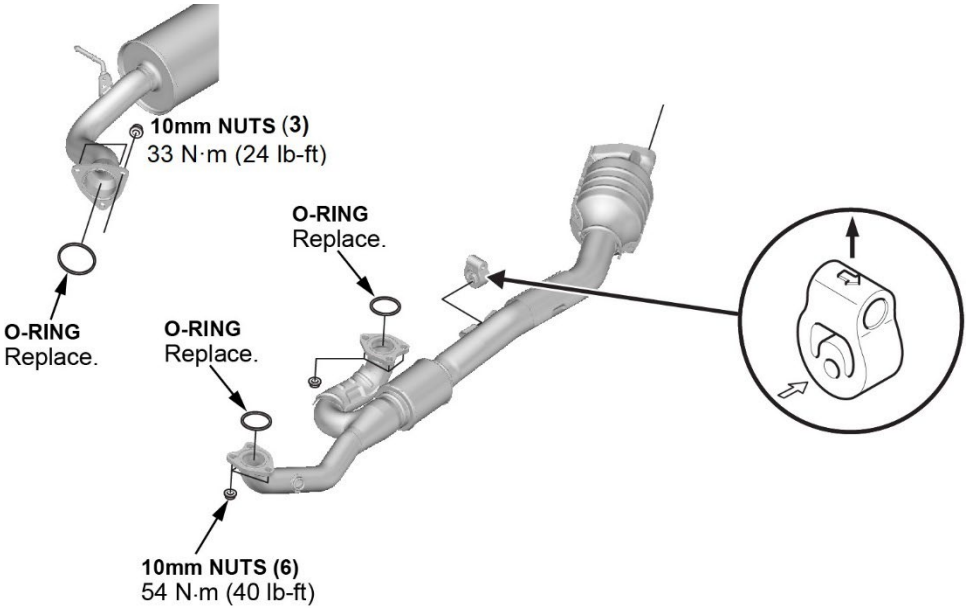
19. Remove the sub frame stiffener plate.

    NOTE: The bolts are a must replace part.

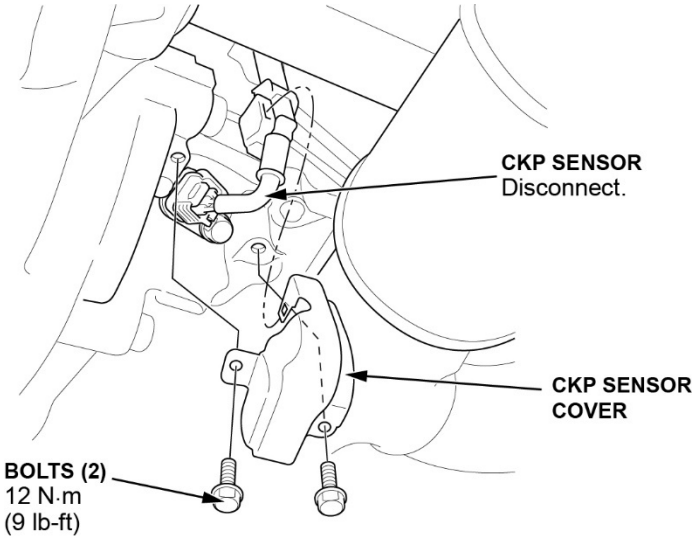


20. Remove the A-pipe.

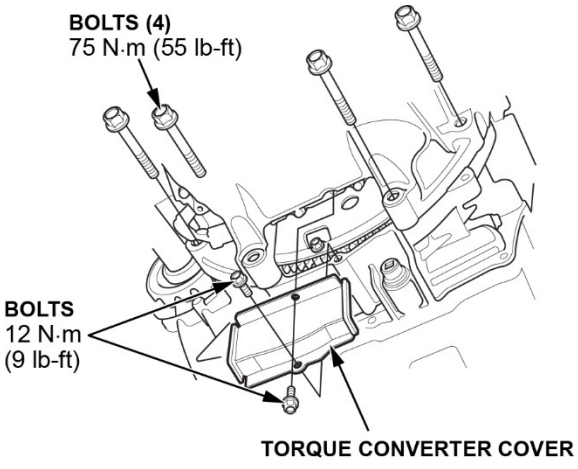
    NOTE: The nuts are a must replace part.



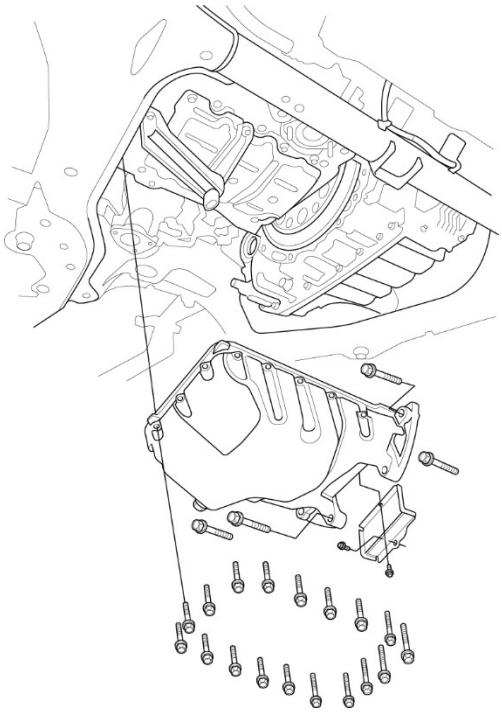
21. Remove the CKP sensor cover and disconnect the CKP sensor.



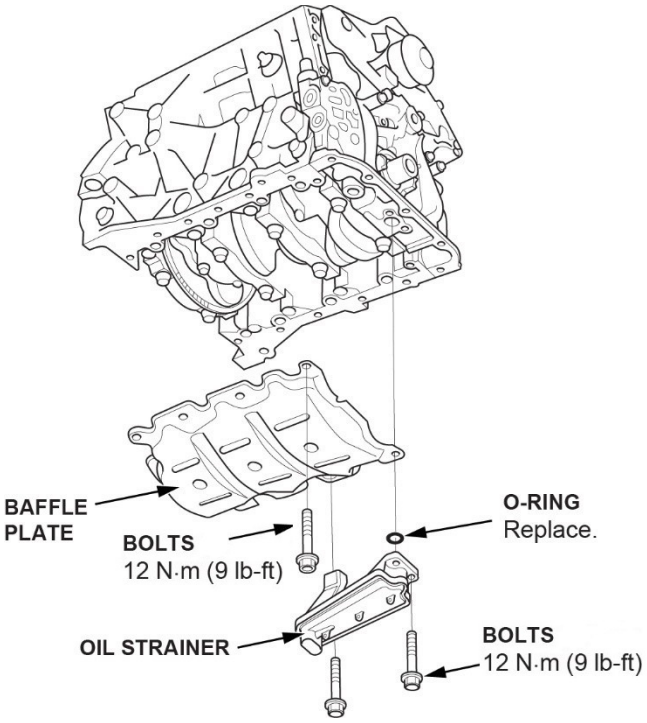
22. Remove the torque converter access cover and the 4 lower transmission bolts.



23. Remove the engine oil pan.



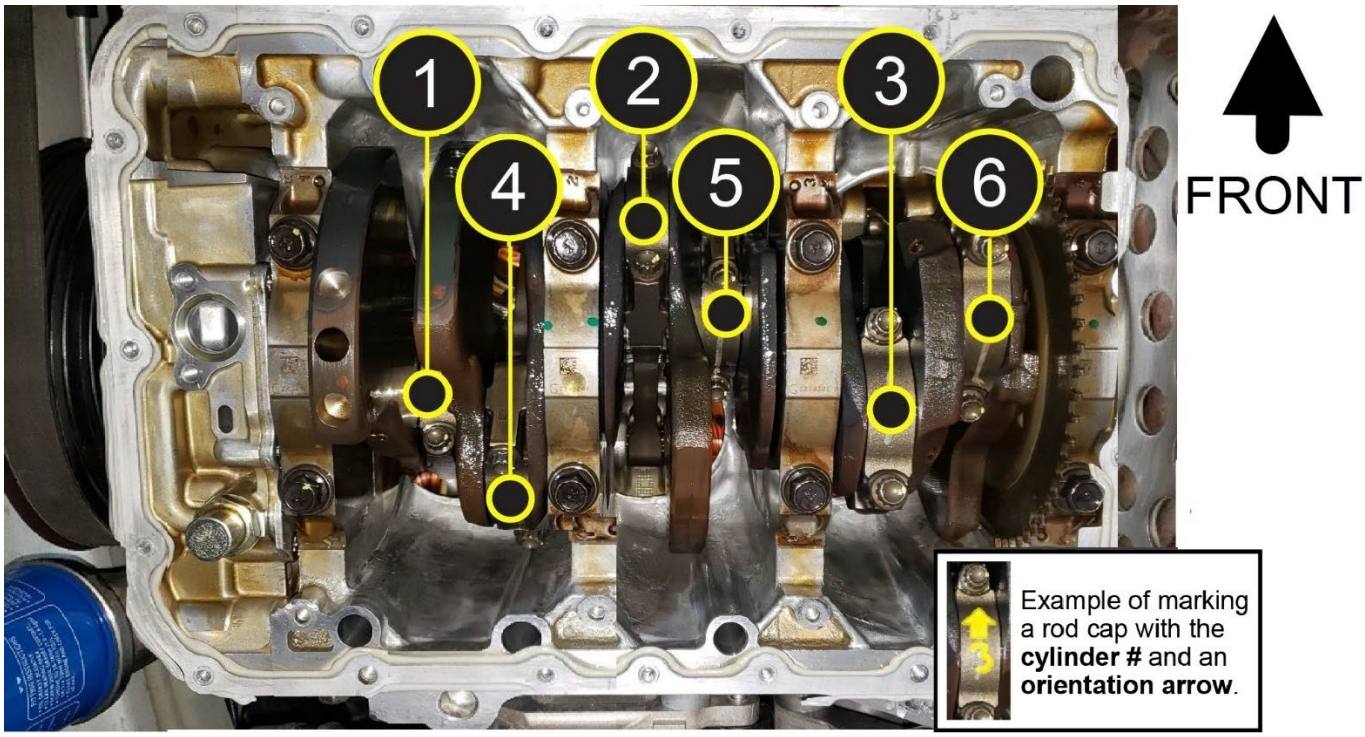
24. Remove the oil strainer and baffle plate.



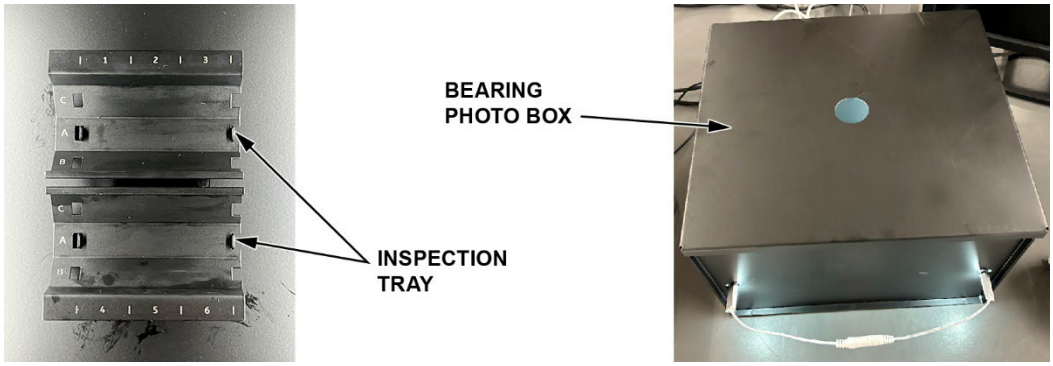
25. Clean and label each connecting rod cap with a paint marker (or otherwise suitable marking instrument) prior to removal. Make sure each rod cap has both the **cylinder #** and an **orientation arrow** pointing to the front of the vehicle**.**

NOTE:

- Do not confuse the existing marking on the side of the connect rod and rod cap with the cylinder number. These are manufacturing marks referring to the size of the rod.
- Installing a rod cap incorrectly will result in engine knock and/or engine failure.



26. Make sure the bearing photo box (**Tool Number: 07AAK-5J2A200**) and inspection trays are available for use.



27. Make sure that **cylinder 1** is at TDC, **(position #1)**.

28. Remove the **connecting rod bearing caps with the lower bearings** from **cylinders 1,3,5, and 6**.

Step/Crankshaft Position	Cylinder 1 Rod Bearing Cap and Lower Bearing	Cylinder 3 Rod Bearing Cap and Lower Bearing	Cylinder 5 Rod Bearing Cap and Lower Bearing	Cylinder 6 Rod Bearing Cap and Lower Bearing
#1/At TDC	**Remove**	**Remove**	**Remove**	**Remove**

Click here to view a video: ► PLAY VIDEO

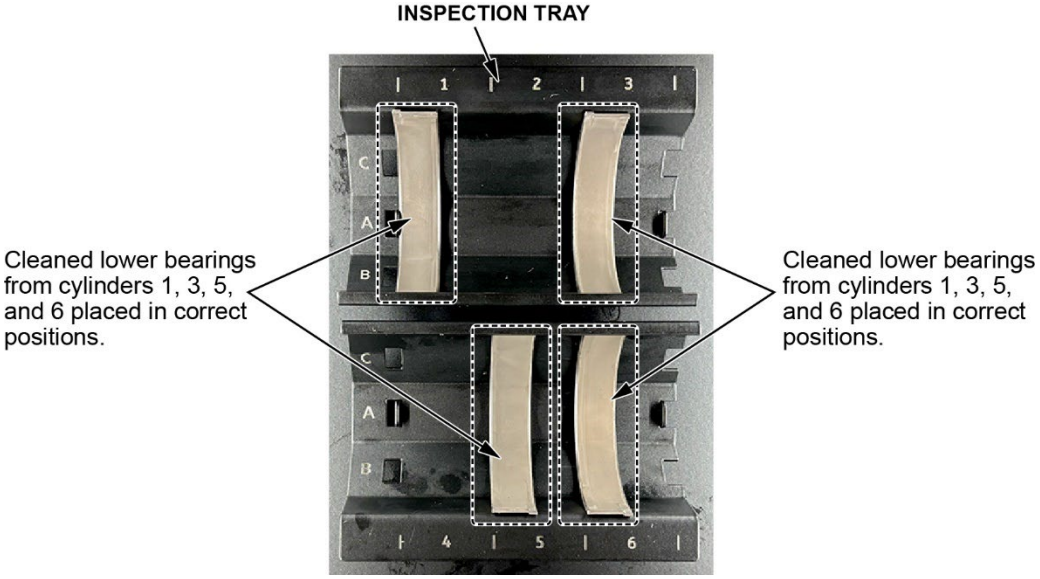
NOTE:

- Follow the removal of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.
- This step involves manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel after removal. There should be no oil should be present. **Do not use solvents**.

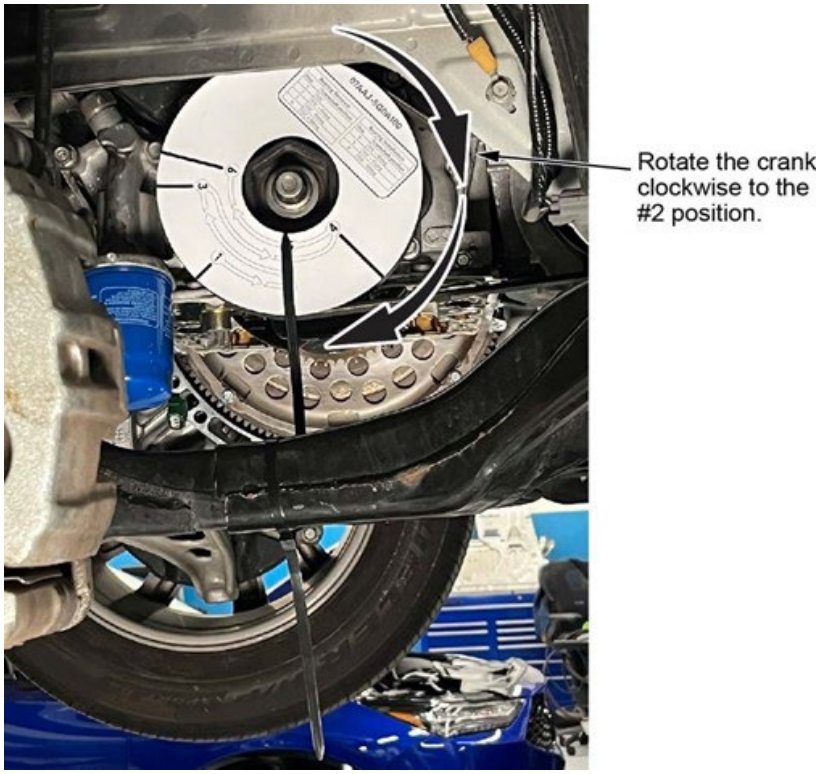
29. Place the removed lower bearings from **cylinders 1,3,5, and 6** into the inspection tray.

    NOTE:

    - Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
    - **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



30. Rotate the crankshaft clockwise to the **#2 position** (TDC +45°).



31. Remove the **rod bearing cap** and **lower bearing** from **cylinder 2**.

Step/Crankshaft Position	Cylinder 2 Rod Bearing Cap and Lower Bearing
#2/TDC +45°	**Remove**

NOTE:

- Follow the removal of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.
- This step involves manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.

32. Place the removed lower bearing from **cylinder 2** into the inspection tray.

NOTE:

- Follow the removal of the connecting rod bearings precisely to prevent damage to the crank journal and connecting rods.
- Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
- **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.

33. Remove the **upper connecting rod bearing** from **cylinder 2.**

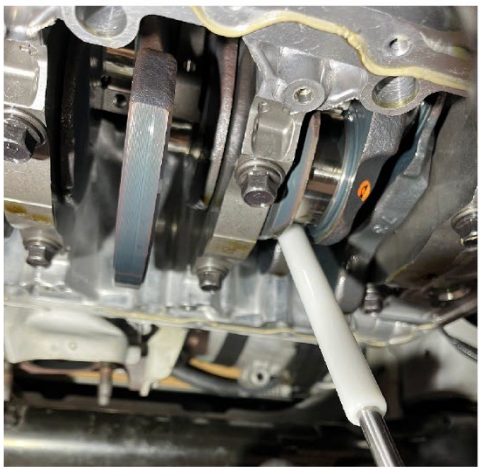
Click here to view a video: ▶ PLAY VIDEO

NOTE:

- Follow the removal of the connecting rod bearings precisely to prevent damage to the crank journal and connecting rods.
- This step involves manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel after removal. No oil should be present. **Do not use any solvents.**
- Use the rod holder tool as needed, hand tighten only!

Step/Crankshaft Position	Cylinder 2 Upper Bearing
#2/TDC +45°	Remove

EXAMPLE OF USING THE M8 ROD HOLDER:

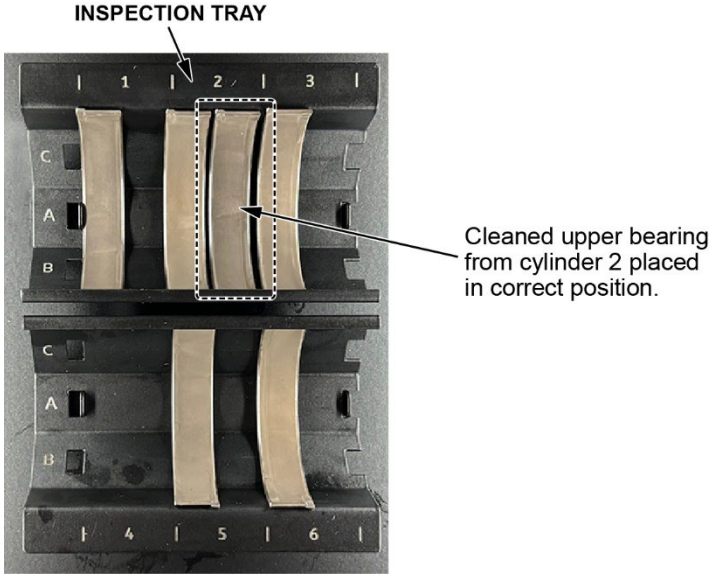


1. Thread the rod holder into the connecting rod bolt hole.
2. Carefully push the connecting rod up until the connecting rod clears the crankshaft journal.
3. Swing the connecting rod to the side, then pull down just enough to gain access to the upper bearing.
4. Remove the upper bearing by sliding it to the side until it releases from the connecting rod.
5. Using the rod holder, carefully push the connecting rod back up until it clears the crankshaft journal.
6. Remove the rod holder.
7. Thoroughly clean the bearings with a clean shop towel to remove all oil residue. **Do not use any solvents**.

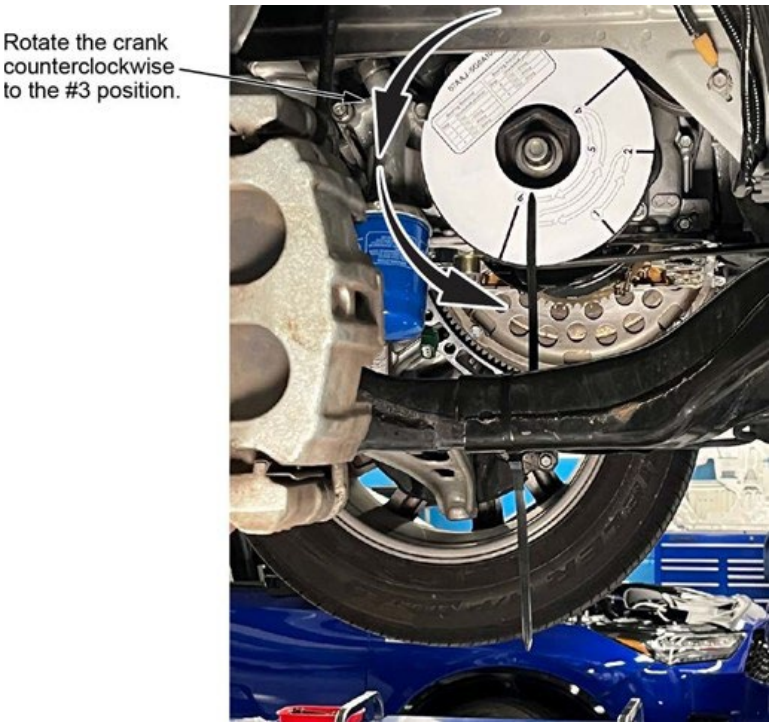
34. Place the removed **upper bearing** from **cylinder 2** into the inspection tray.

    NOTE:

    - Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
    - **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



35. Rotate the crankshaft counterclockwise to the **#3 position** (TDC -45°).



36. Remove the **rod bearing cap and lower bearing** from **cylinder 4**.

    NOTE:

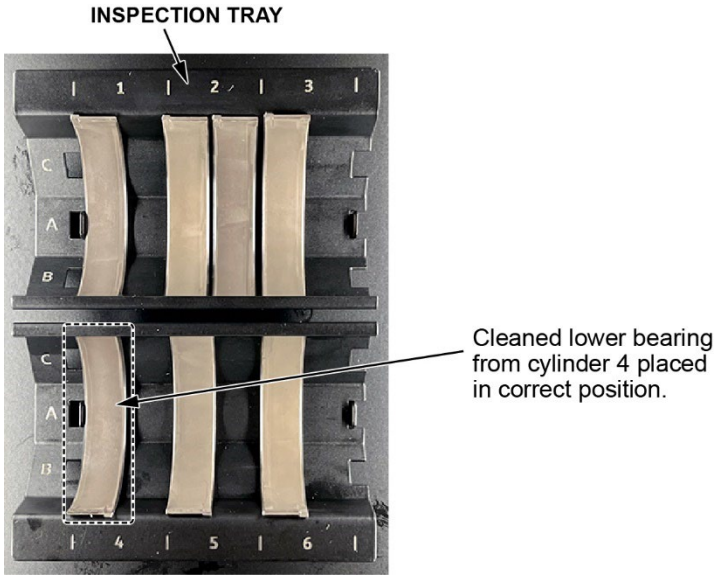
    - Follow the removal of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.
    - This step involves manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
    - Thoroughly clean the bearing with a clean shop towel after removal. No oil should be present. **Do not use any solvents.**

Step/Crankshaft Position	Cylinder 4 Rod Bearing Cap and Lower Bearing
#3/TDC -45°	Remove

37. Place the removed **lower bearing** from **cylinder 4** into the inspection tray.

    NOTE:

    - Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
    - **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



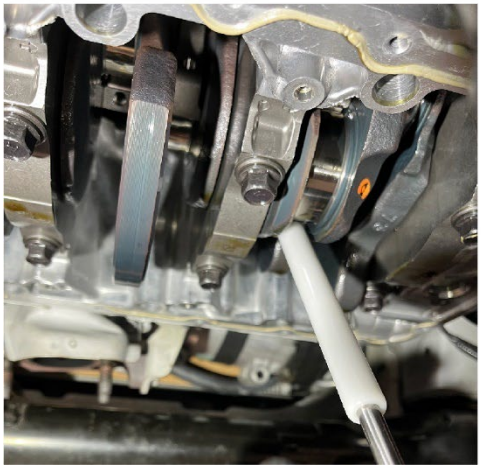
38. Remove the **cylinder 3 and cylinder 4 upper connecting rod bearings**.

NOTE:

- Follow the removal of the connecting rod bearings precisely to prevent damage to the crank journal and connecting rods.
- The next steps involve manually moving the piston/rod assemblies while disconnecting from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel after removal. No oil should be present. **Do not use any solvents**.
- Use the M8 as needed, hand tighten only!

Step/Crankshaft Position	Cylinder 3 Upper Bearing	Cylinder 4 Upper Bearing
#3/TDC -45°	Remove	Remove

EXAMPLE OF USING THE M8 ROD HOLDER:



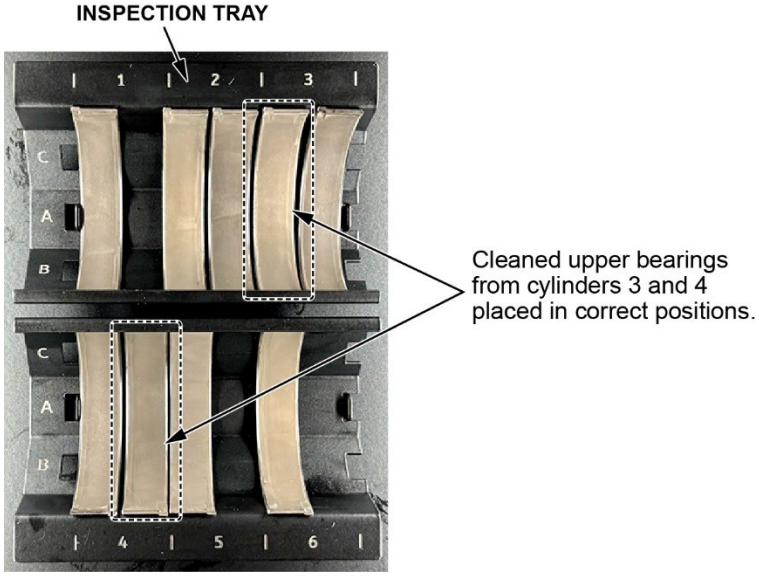
1. Thread the rod holder into the connecting rod bolt hole.
2. Carefully push the connecting rod up until the connecting rod clears the crankshaft journal.
3. Swing the connecting rod to the side, then pull down just enough to gain access to the upper bearing.
4. Remove the upper bearing by sliding it to the side until it releases from the connecting rod.
5. Using the rod holder, carefully push the **cylinder 3** connecting rod back up until it clears the crankshaft journal.

   NOTE: Leave **cylinder 4** connecting rod in the lower position, **do not** push back up.
6. Remove the rod holder.
7. Thoroughly clean the bearings with a clean shop towel to remove all oil residue. **Do not use any solvents**.

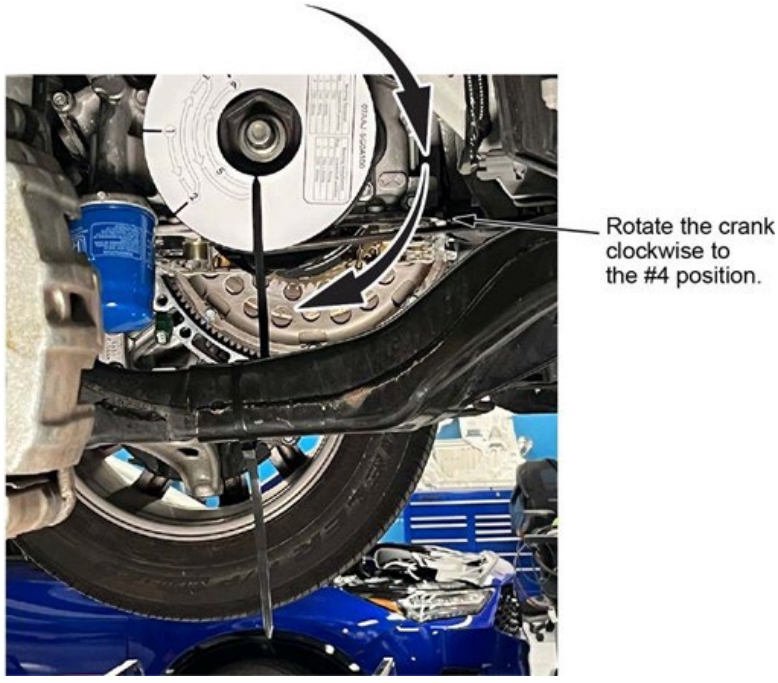
39. Place the removed **upper bearings** from **cylinder 3 and 4** into the inspection tray.

    NOTE:

    - Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
    - **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



40. Rotate the crankshaft clockwise to the **#4 position** (TDC +90°).



41. Remove the **upper bearings from cylinders 1, 5, and 6**.

NOTE:

- Follow the removal of the connecting rod bearings precisely to prevent damage to the crank journal and connecting rods.
- The next steps involve manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel after removal. No oil should be present. **Do not use any solvents**.
- Use the M8 as needed, hand tighten only!

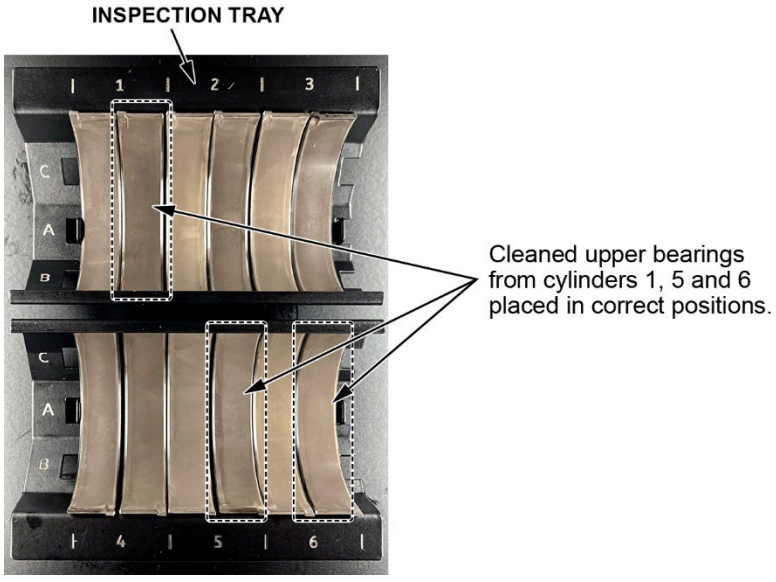
Step/Crankshaft Position	Cylinder 1 Upper Bearing	Cylinder 5 Upper Bearing	Cylinder 6 Upper Bearing
#4/TDC +90°	Remove	Remove	Remove

1. Thread the Rod holder into the connecting rod bolt hole.
2. Carefully push the connecting rod up until the connecting rod clears the crankshaft journal.
3. Swing the connecting rod to the side, then pull down just enough to gain access to the upper bearing.
4. Remove the upper bearing by sliding it to the side until it releases from the connecting rod.
5. Using the Rod holder, carefully push the connecting rod back up until it clears the crankshaft journal.
6. Remove the Rod holder.
7. Thoroughly clean the bearings with a clean shop towel to remove all oil residue. **Do not use any solvents**.

42. Place the removed **upper bearings** from **cylinders 1, 5, and 6** into the inspection tray.

NOTE:

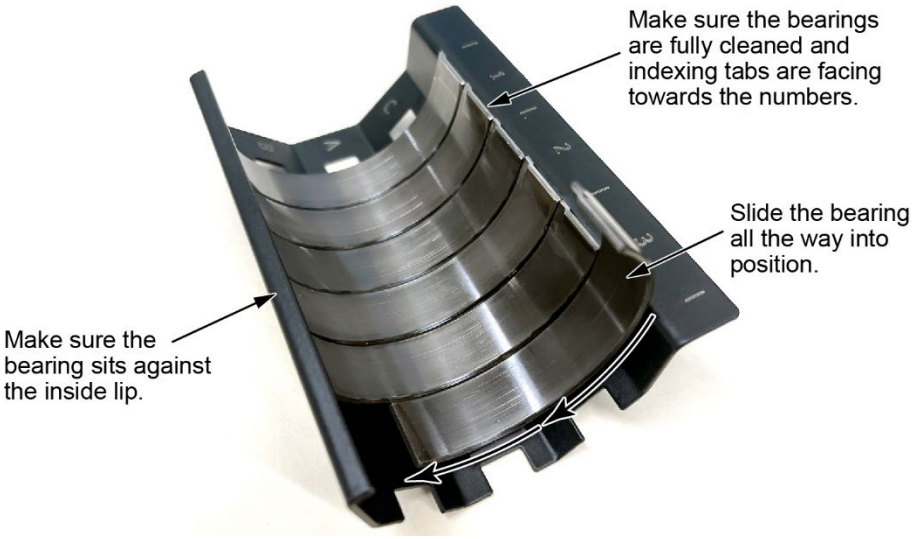
- Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
- **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



43. Make sure the bearings are fully seated and level with the edge of the inspection tray.

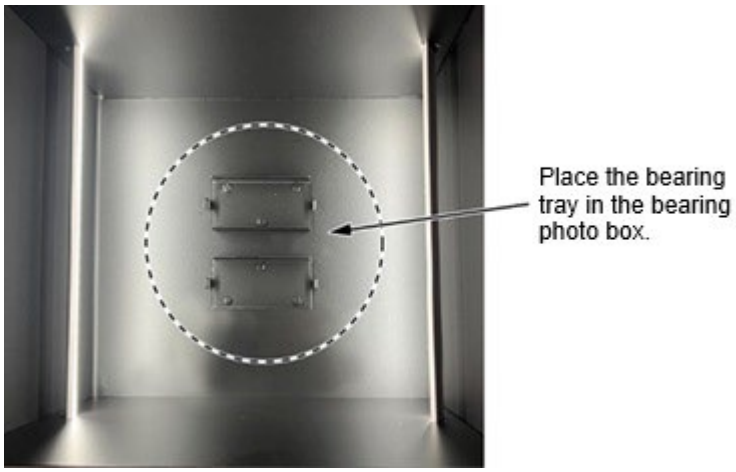
    NOTE:

    - The bearing's indexing tab should be lined up at the numbers of the tray.
    - The flat edge of the bearing should be inside of the lip on the inspection tray.
    - All bearings should be fully seated in the inspection tray.



44. Remove the bearing photo box cover and place the bearing inspection trays in the bearing photo box.

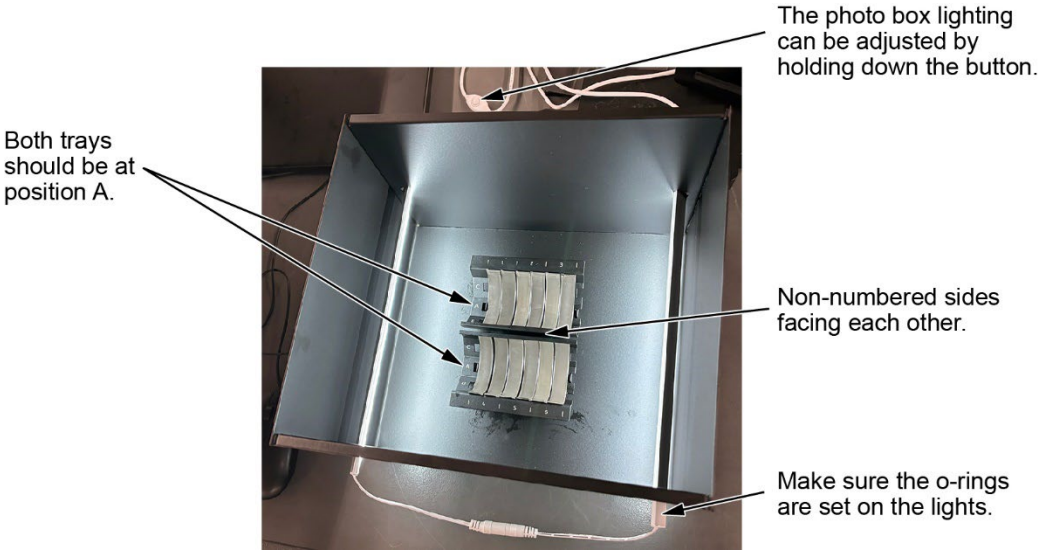
    NOTE: When taking photos make sure there are no objects in the bearing photo box, only the bearing tray with bearings.



45. Confirm the following on the bearing inspection box:

- Lights at the brightest setting.

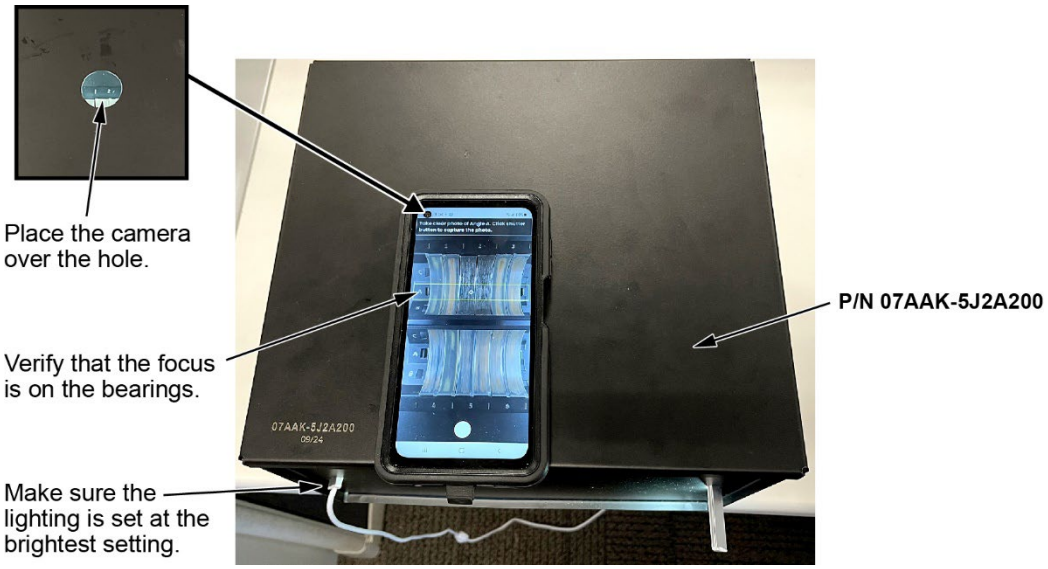
  NOTE: The light brightness can be adjusted by holding down the button.
- Both bearing trays are in position A with non-numbered sides facing each other.
- The O-rings are set on the lights to prevent an outside light source.



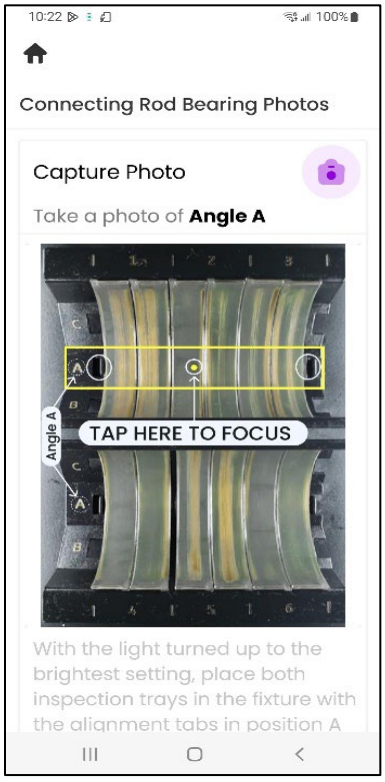
46. Using the BEARING INSPECTION application tool, follow the instructions to take bearing photos in positions A, B, and C. Follow the prompts when submitting the photos.

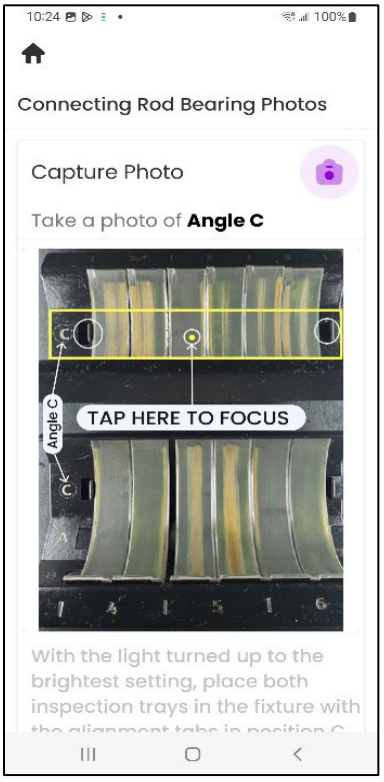
NOTE:

- For BEARING INSPECTION application instruction, refer to this Job Aid: (Click HERE)
- Technicians are now required to center-punch all 12 bearings to prevent reuse of the bearings. **DO NOT** center punch the bearing until instructed by the application tool. Submitting any photos with center-punches for Photos A, B and C **WILL BE REJECTED**.
- Use the camera tap focus for a clear image.
- Any unclear images will not be accepted.
- Follow the BEARING INSPECTION application prompts after photo submission.

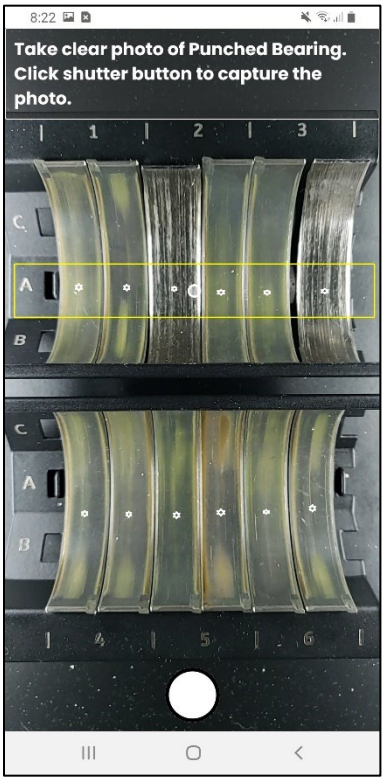


When taking the photos:





Centered punch bearings:



47. When the Bearing Inspection Team completes the review and assigns a repair method, the following will occur:

1. The Bearing Inspection Recall Status screen will update with the specified repair.
2. If optional mobile numbers are included in the technician's contact information, a text message will be issued to advise the inspection is complete and refers the technician to the Bearing Inspection Repair Direction Sheet that was issued to the email addresses on file.
3. An email, that provides a link to the Bearing Inspection Repair Direction Sheet, is issued to all addresses on file.

The Repair Direction Sheet provides the Inspection and Repair Warranty Codes required to file the warranty claims. If Bearing Only or Crankshaft replacement is required, the Repair Direction Sheet provides the bearing sizes and graphics identifying the location in which they should be installed.

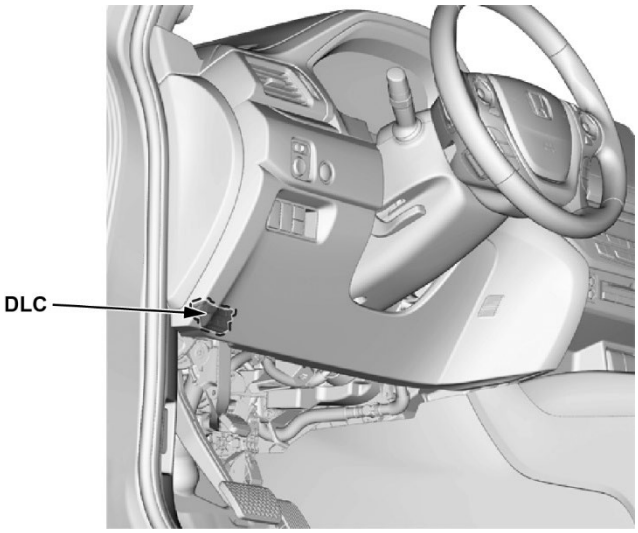
INSPECTION B

NOTE: DO NOT contact Tech Line for any inquiries about this safety recall. If instructed by the application tool, call the Bearing Inspection Inquiry Team at (800) 824-6632 (Select Option #9).

1. Turn the steering wheel all the way to the right.
2. Relieve the fuel pressure.

With the i-HDS:

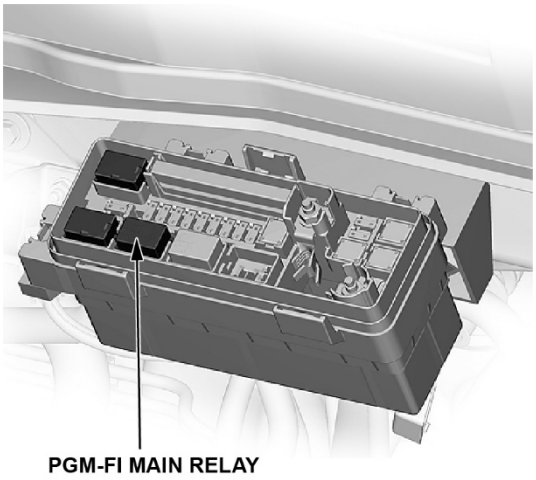
- Connect an interface device to the data link connector (DLC) located under the driver's side of the dashboard and launch i-HDS.



- From the **INSPECTION MENU,** select **FUEL PUMP** OFF.
- Start the engine and idle until it stalls.
- Turn the vehicle to the OFF (LOCK) mode.

Without i-HDS:

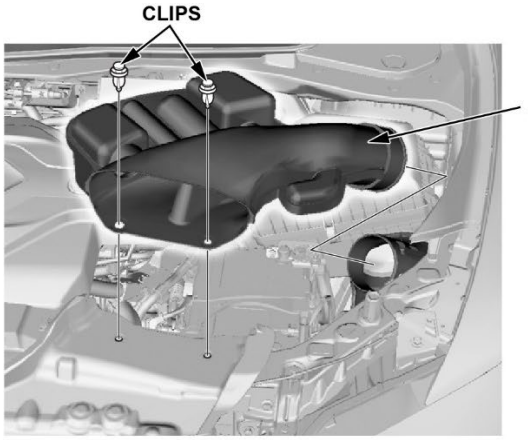
- Remove the PGM-FI main relay 2 from the auxiliary under-hood fuse/relay box.

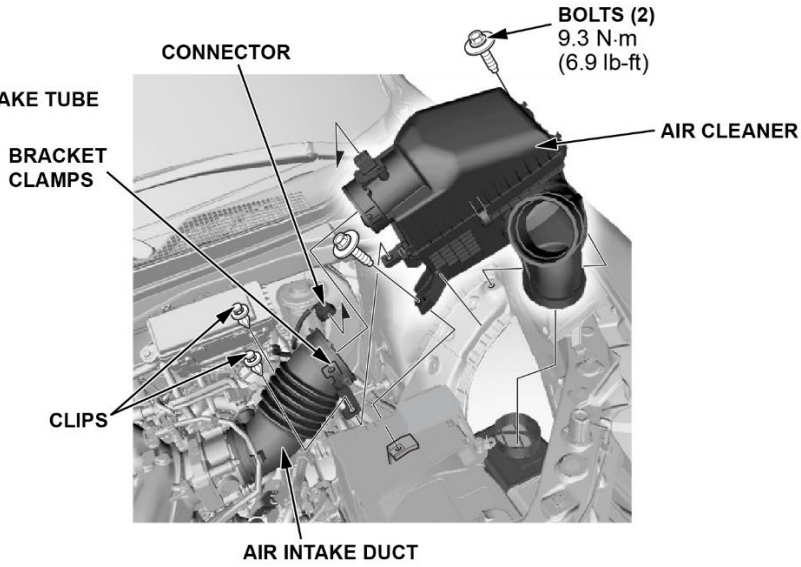


- Start the engine and idle until it stalls.

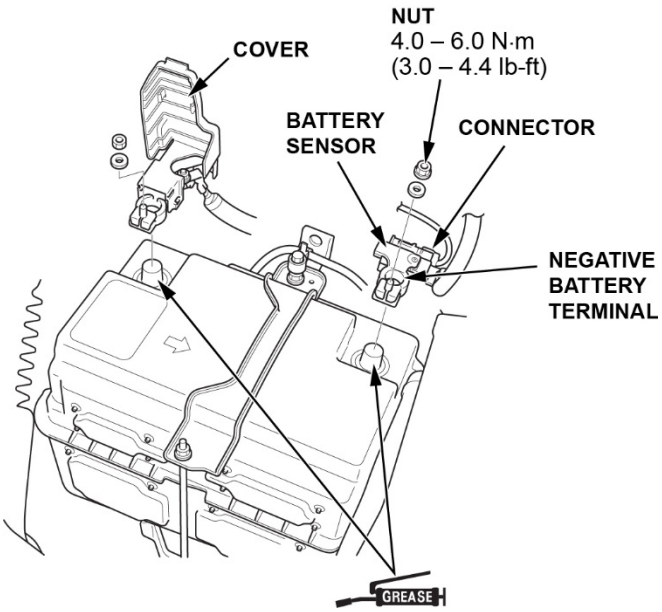
  NOTE: If any DTC's are stored, clear and ignore.
- Turn the vehicle to the OFF (LOCK) mode.
- Install the PGM-FI main relay 2.

3. Remove the air intake tube and air cleaner.

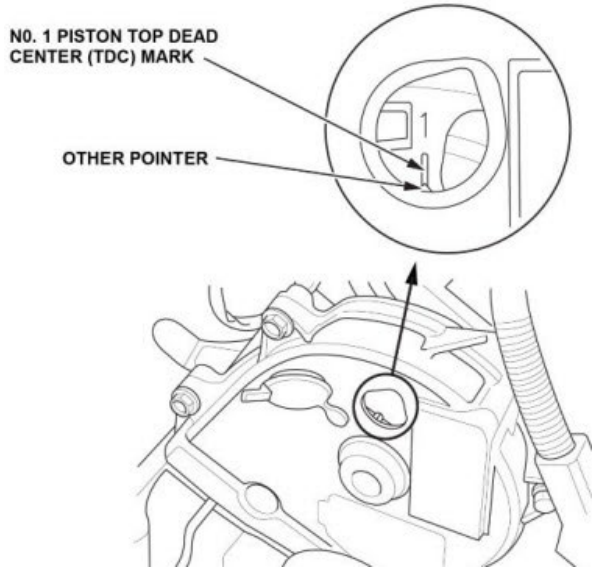




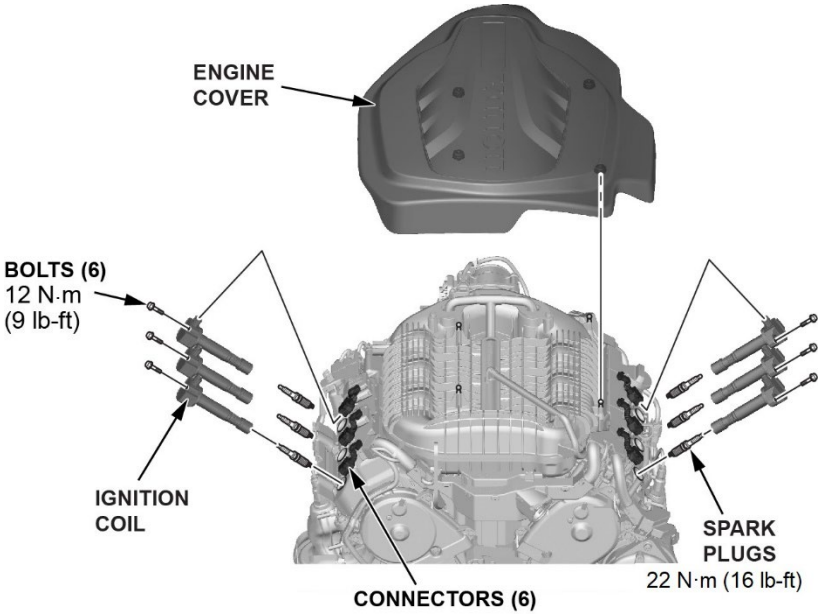
4. Disconnect the negative battery cable from the battery.



5. Remove the engine oil dipstick.
6. Set the engine to TDC.

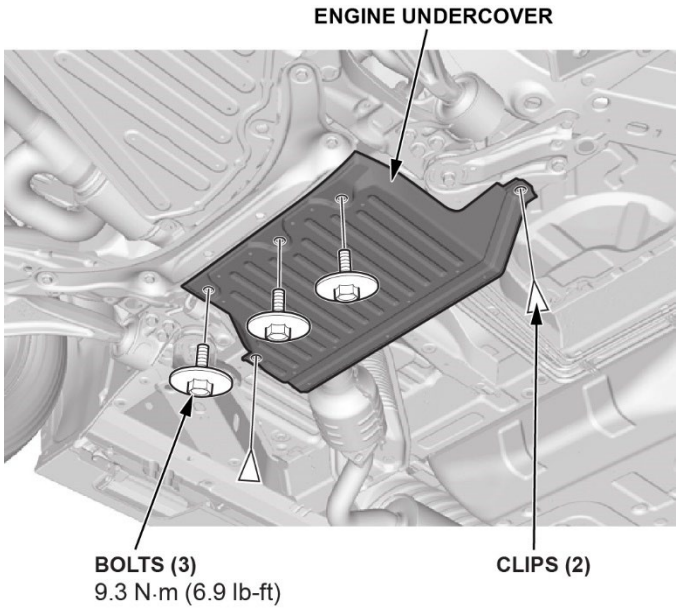


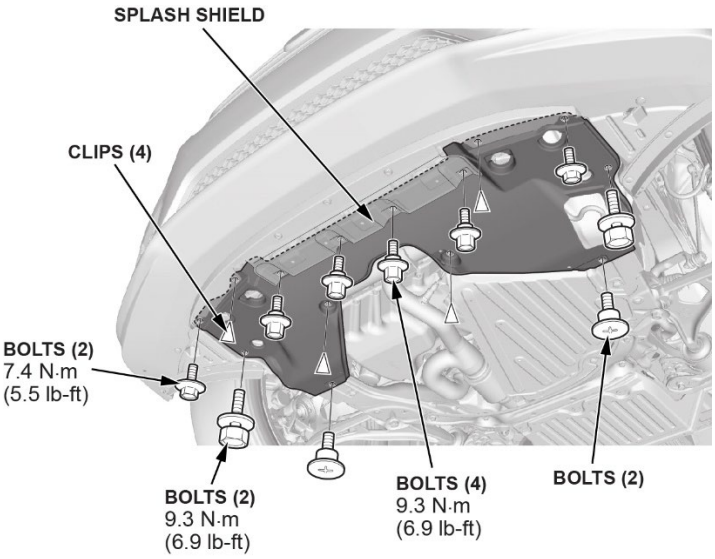
7. Remove the ignition coils and spark plugs.



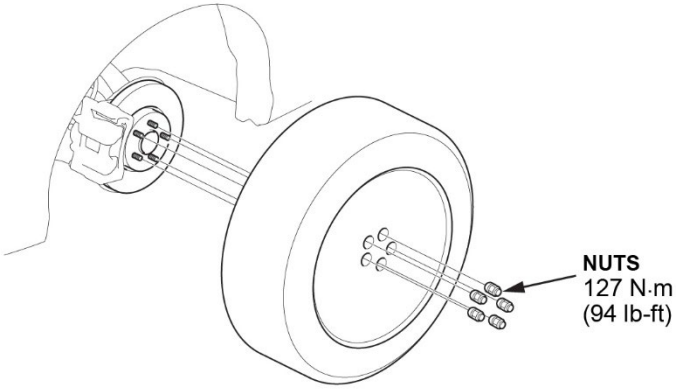
8. Lift the vehicle.

9. Remove the engine undercover and the lower splash shield.

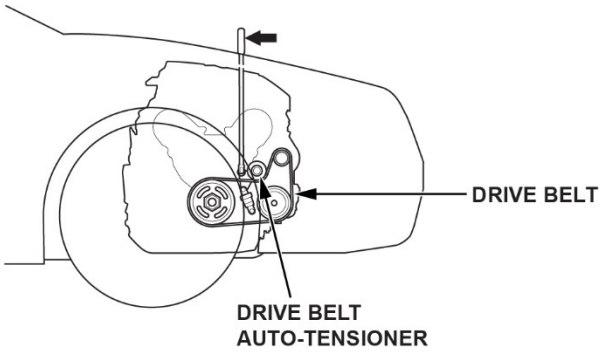




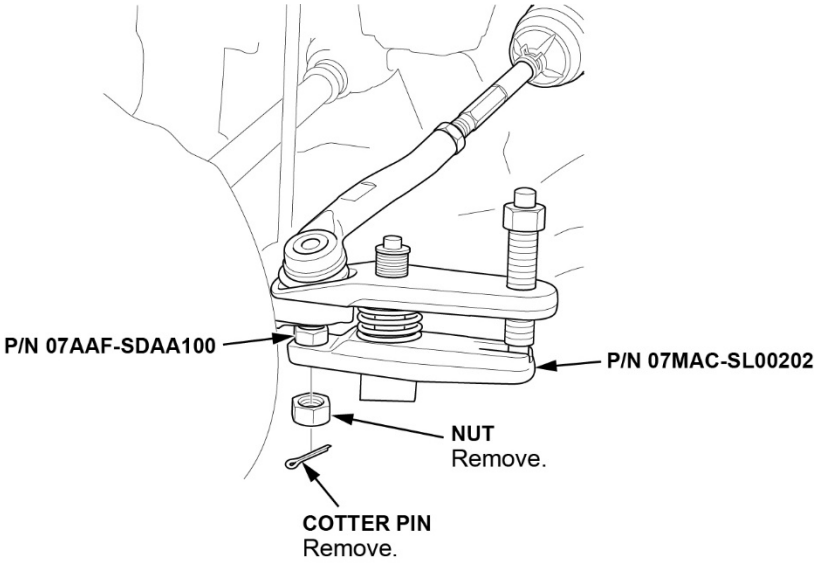
10. Remove the passenger side front wheel **127 N·m (94 lb-ft)**.



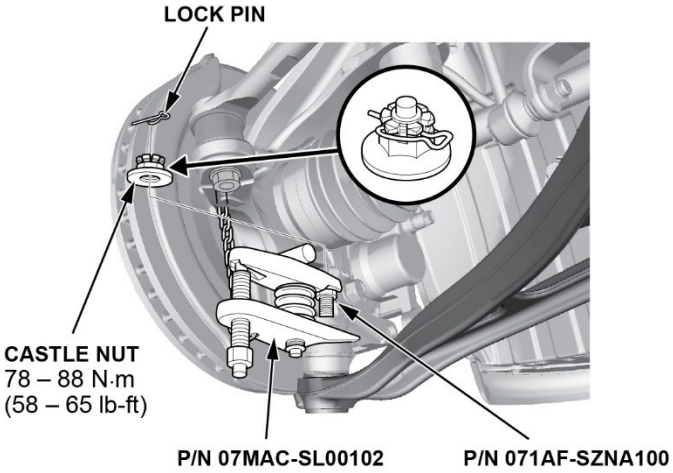
11. Remove drive belt.



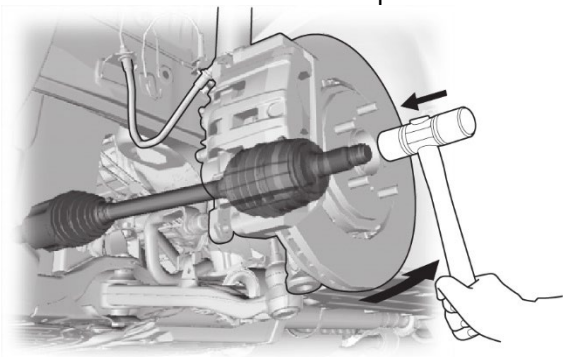
12. Separate the tie rod ball joint on the passenger side front wheel.



13. Separate the lower knuckle ball joint.

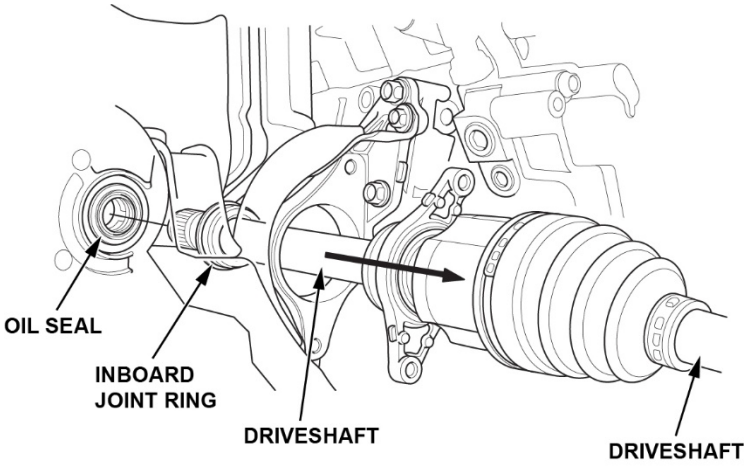


14. **6AT ONLY:** Remove the passenger side driveshaft.
    1. Remove the front spindle nut.
    2. Pull the knuckle outward and separate the outboard joint from the front hub using a soft face hammer.

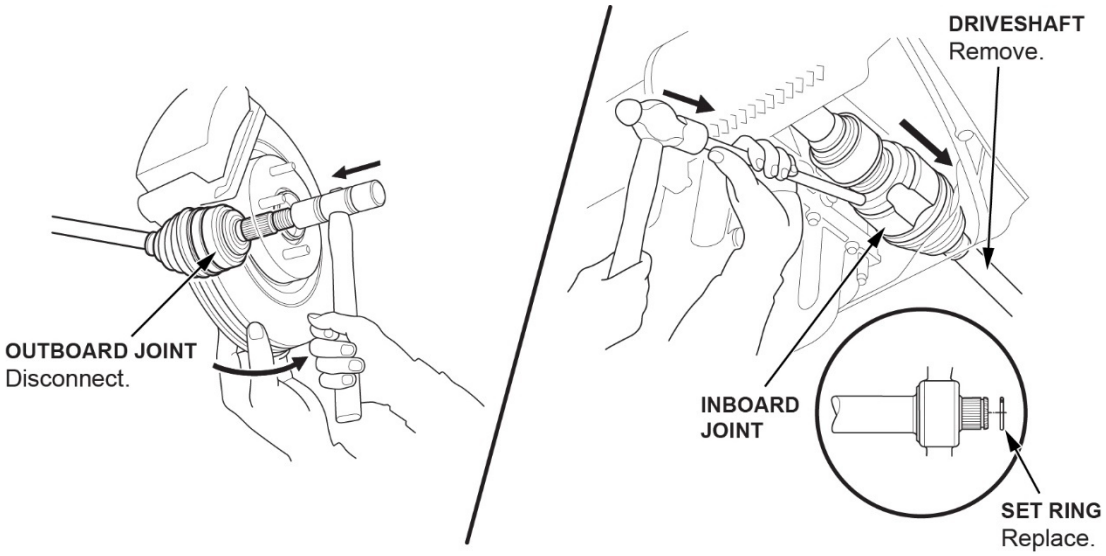


5. Remove the driveshaft as an assembly.

   NOTE:
   - Do not pull on the driveshaft, or the inboard joint may come apart.
   - Pull the inboard joint straight out to avoid damaging the oil seal.
   - Be careful not to damage the inboard joint ring.

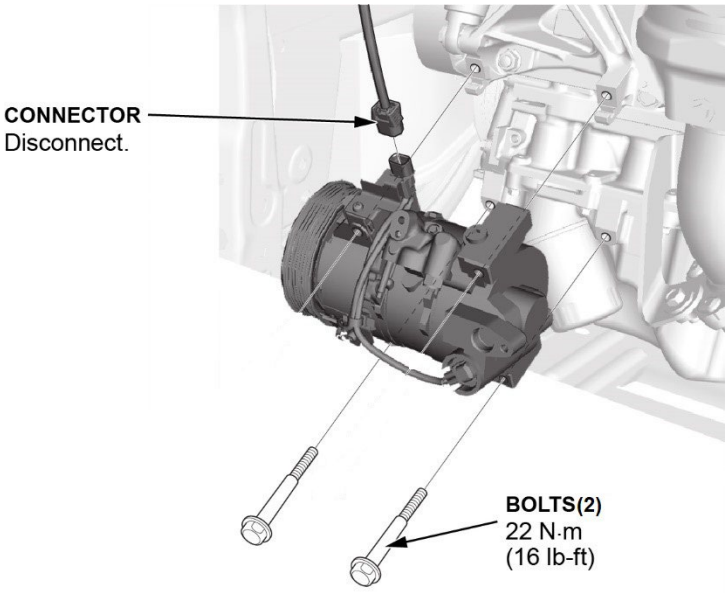


15. **9AT ONLY:** Remove the passenger side driveshaft.
    1. Remove the front spindle nut.
    2. Pull the knuckle outward and separate the outboard joint from the front hub using a soft face hammer.
    3. Drive the inboard joint off of the intermediate shaft using a drift punch and a hammer.

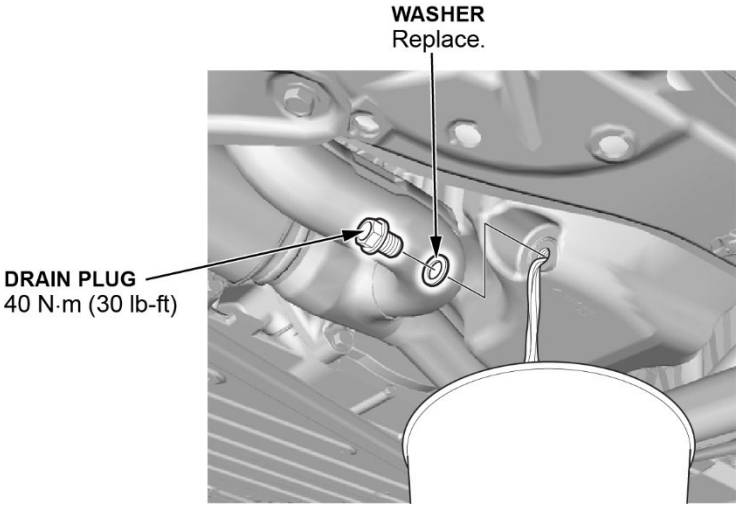


    3. Remove the driveshaft as an assembly.
    4. Remove and replace the set ring.

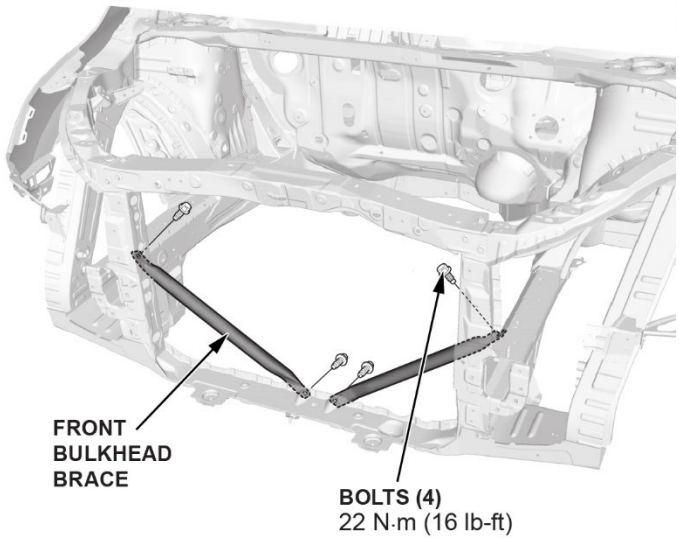
16. Loosen the 2 lower bolts of the compressor.



17. Drain the engine oil, **40 N·m (30 lb-ft)**.

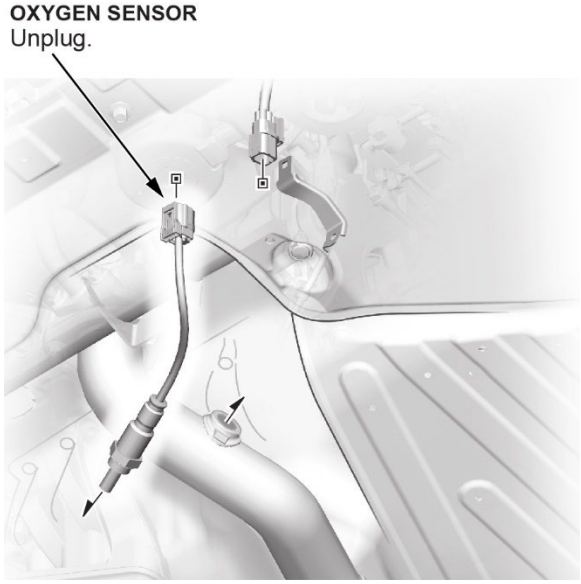


18. Remove the right side bulkhead brace.



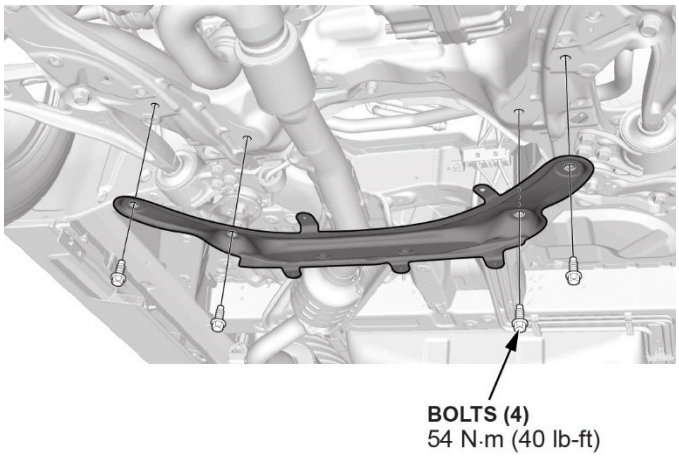
19. Unplug bank 2 oxygen sensor.

    NOTE: Exhaust may be HOT.



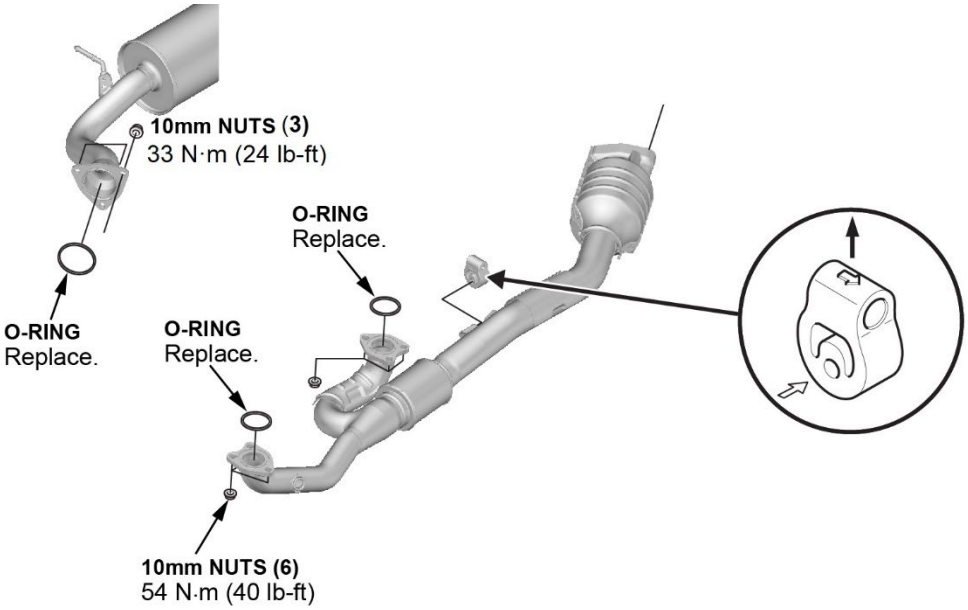
20. Remove the sub frame stiffener plate.

    NOTE: The bolts are a must replace part.

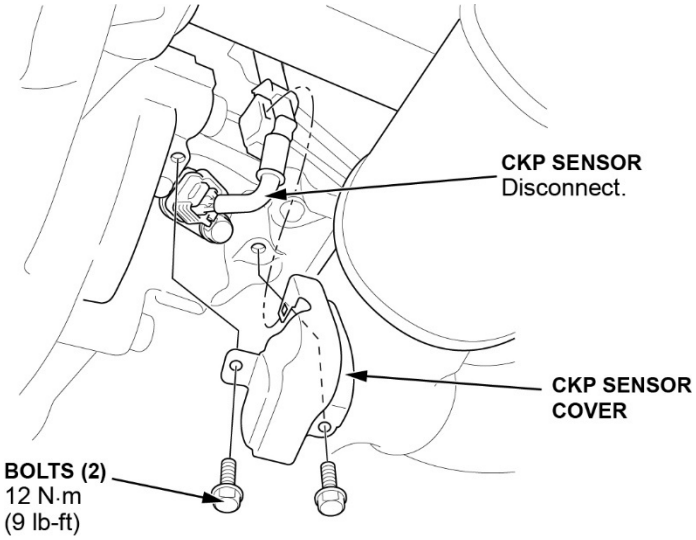


21. Remove the A-pipe.

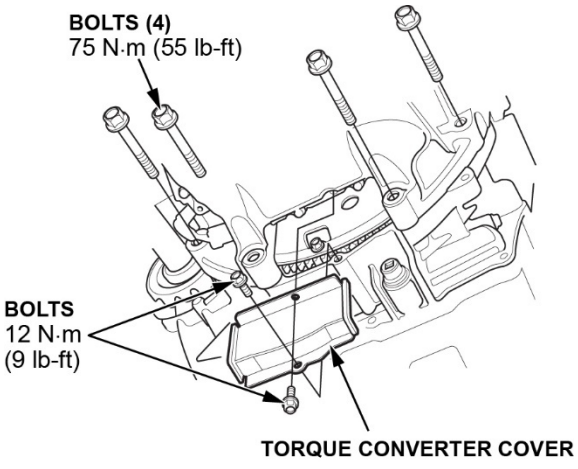
    NOTE: The nuts are a must replace part.



22. Remove the CKP sensor cover and disconnect the CKP sensor.

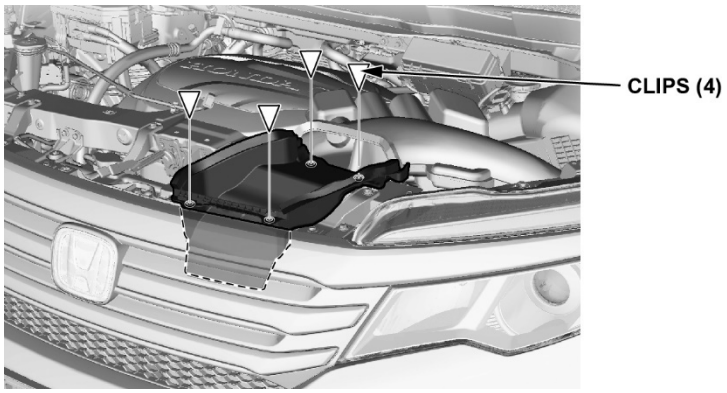


23. Remove the torque converter access cover and the 4 lower transmission bolts.

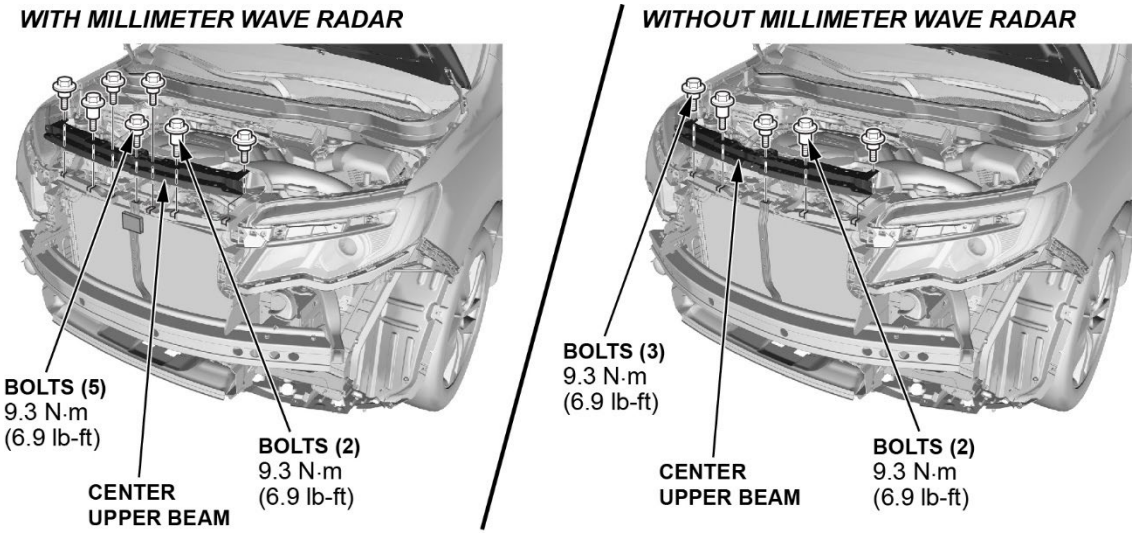


24. Lower the vehicle.

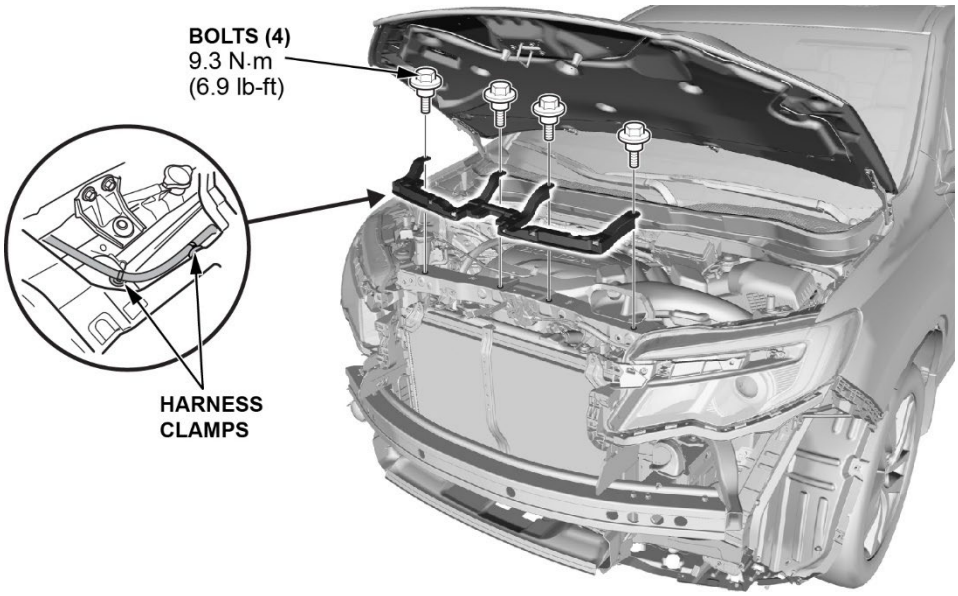
25. Remove the air intake guide.



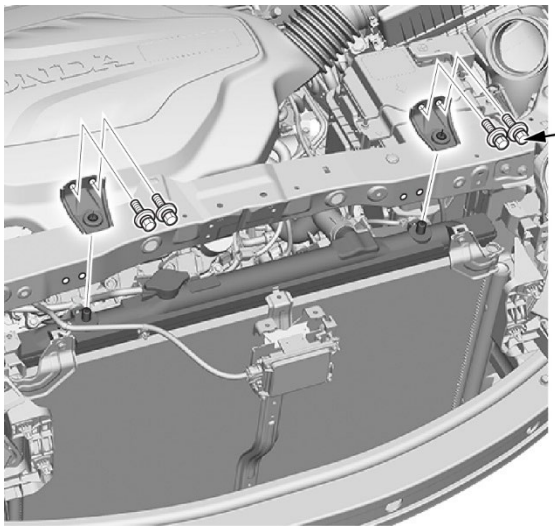
26. Remove the front center upper beam A.



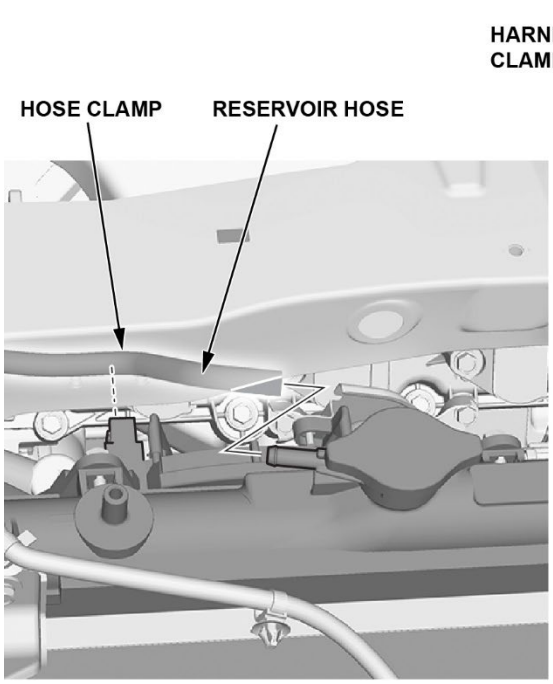
27. Remove the front center upper beam B.

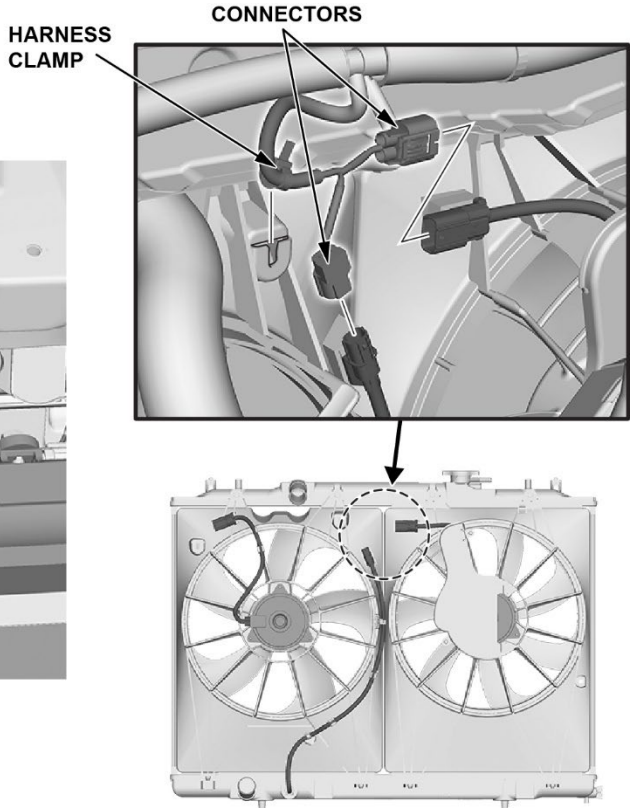


28. Remove the radiator upper mount bracket.

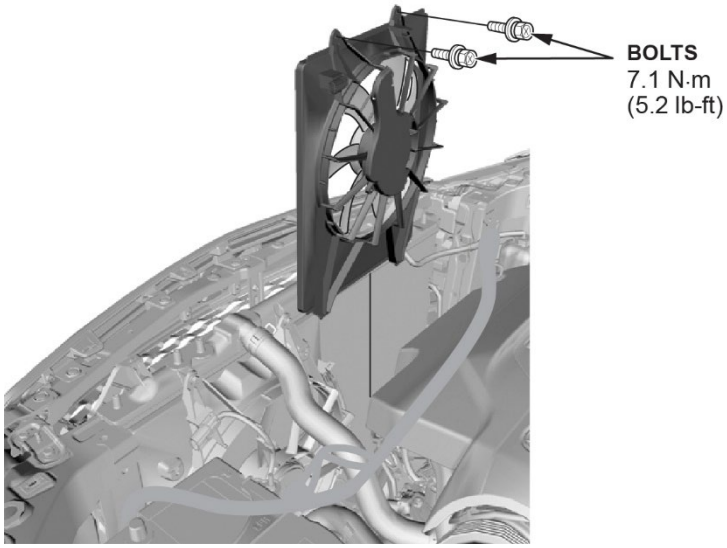


29. Disconnect the reservoir hose and connectors.

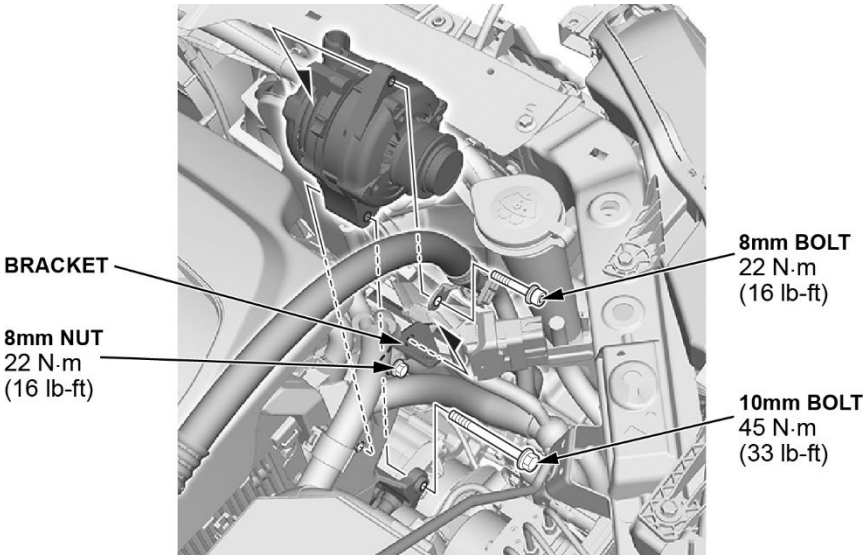




30. Remove the A/C condenser fan shroud assembly.



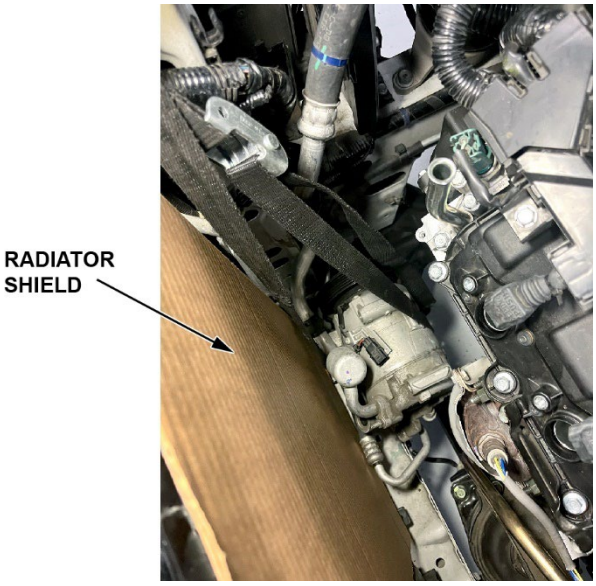
31. Remove the alternator.



32. Install the radiator shield to protect the radiator.

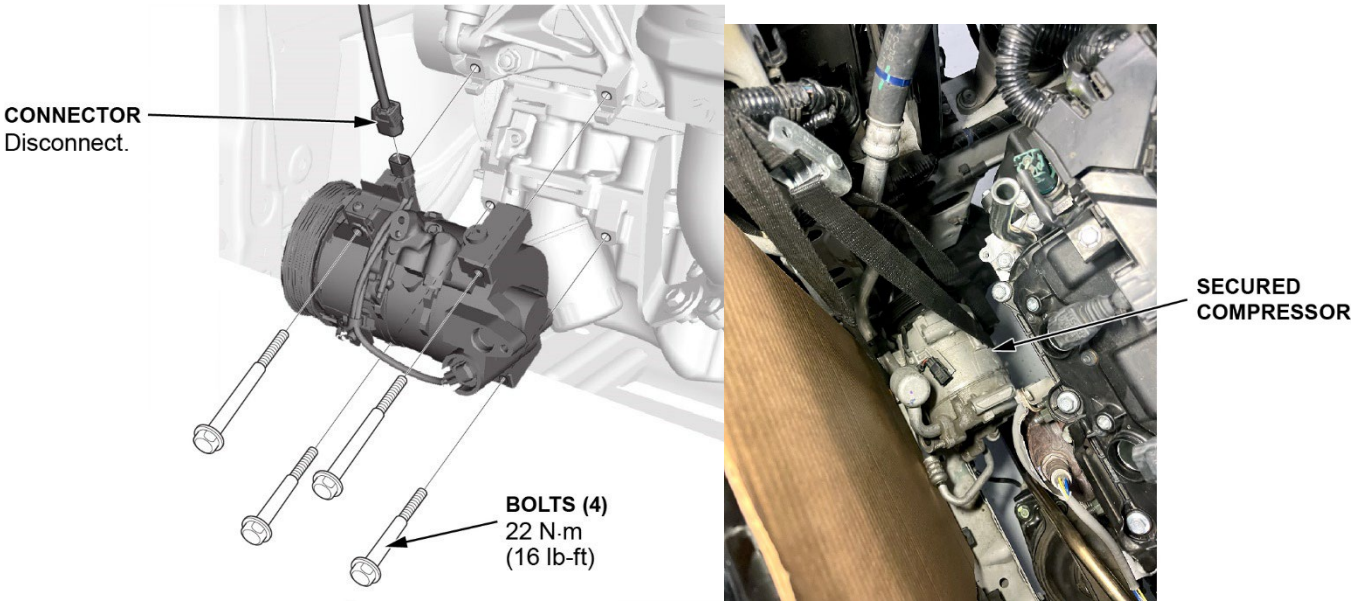
    NOTE:

    - A suitable radiator shield could be as simple as a clean piece of cardboard.
    - Make sure the shield covers the entire radiator.

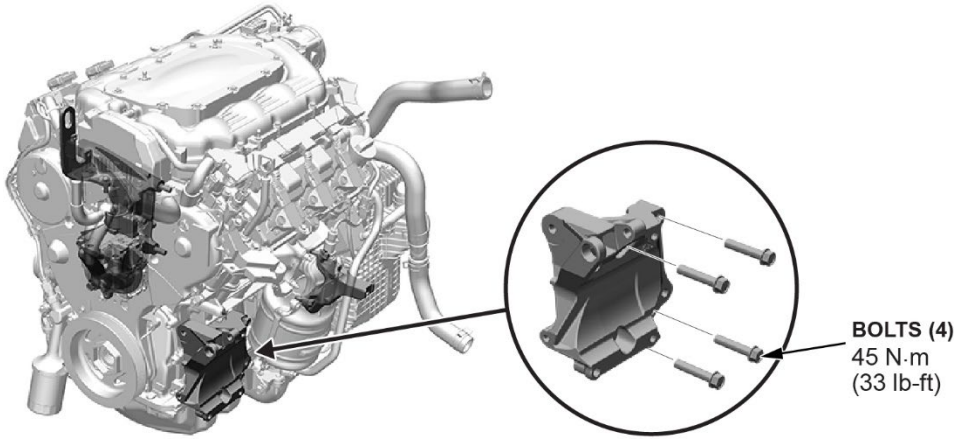


33. Remove the upper A/C compressor mounting bolts and move the A/C compressor forward to rest on the bulkhead frame by the radiator and secure with a strap.

    NOTE: Do not disconnect the A/C hoses.



34. Remove the compressor bracket.



35. Lift the vehicle.

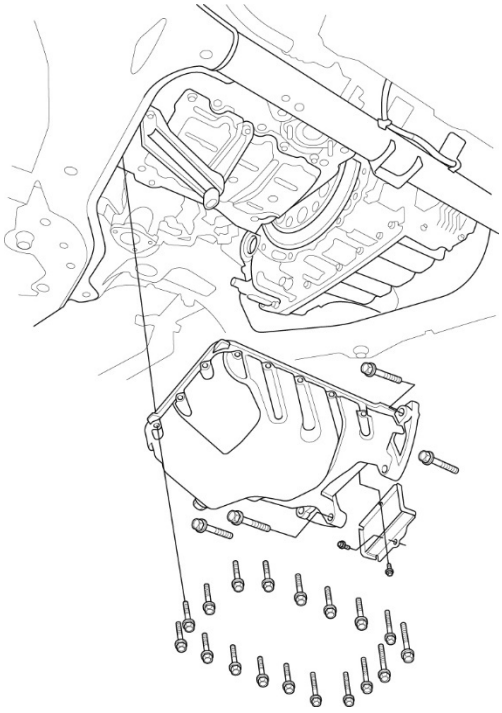
36. Remove the engine oil pan.

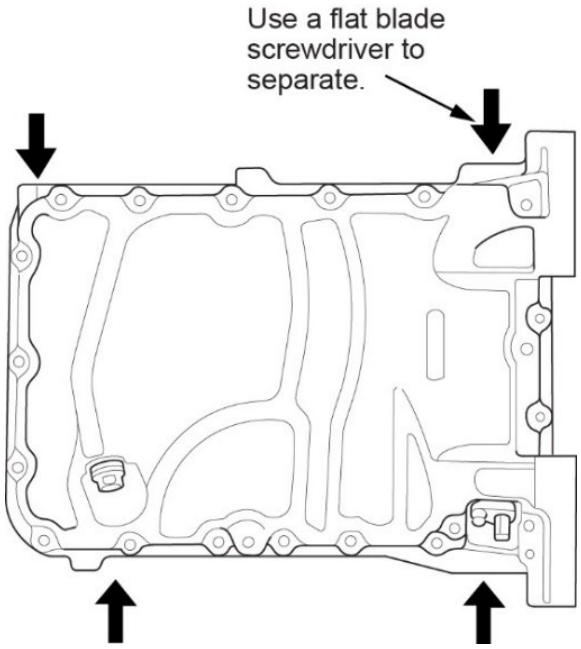
⚠ CAUTION

Hot engine oil may continue to drip from the engine which can cause burns or eye damage. Wear proper protective equipment and eyewear to avoid injury.

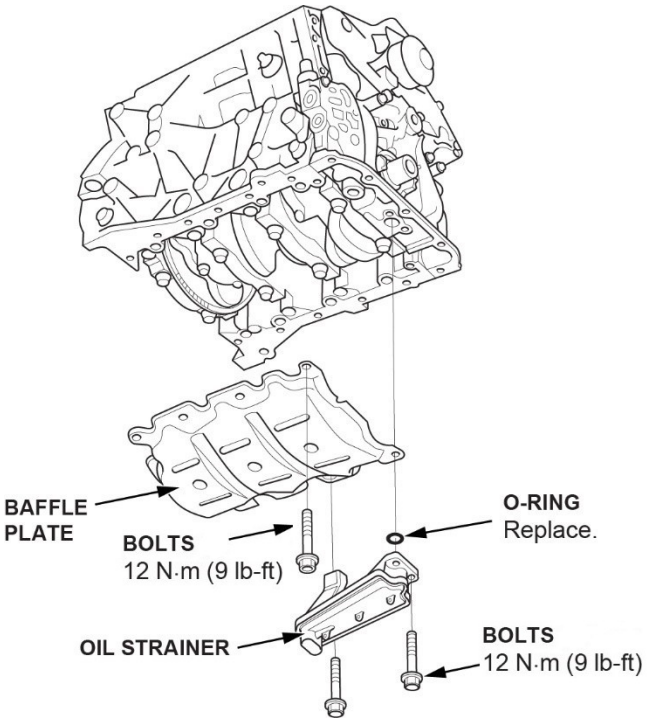
NOTE:

- Remove the bolts securing the oil pan.
- Use a flat blade screwdriver to separate the oil pan from the engine block.

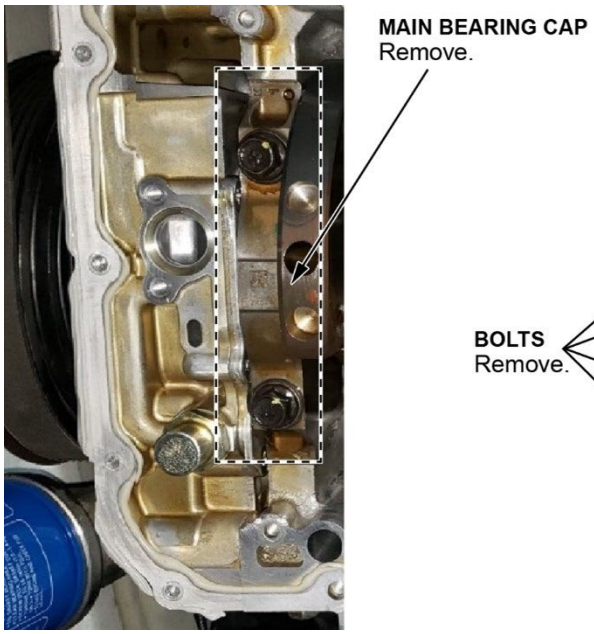


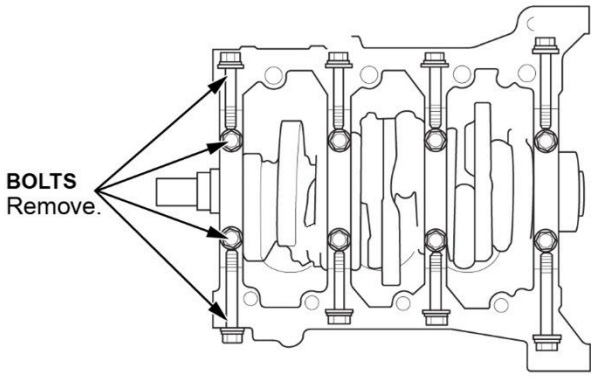


37. Remove the oil strainer and baffle plate.



38. Remove the #1 main bearing cap by removing both the side and lower bolts.





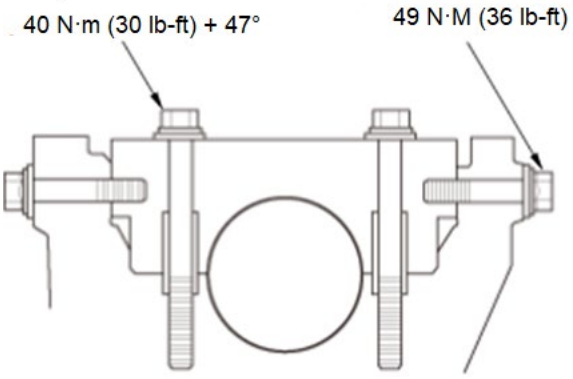
39. After removing the #1 main bearing cap, refer to the BEARING INSPECTION application tool to collect the journal codes.

40. Install the #1 main bearing cap.

    NOTE:

    - Apply new engine oil to the bolt threads and flanges.
    - **Do not** rotate the crankshaft during inspection.

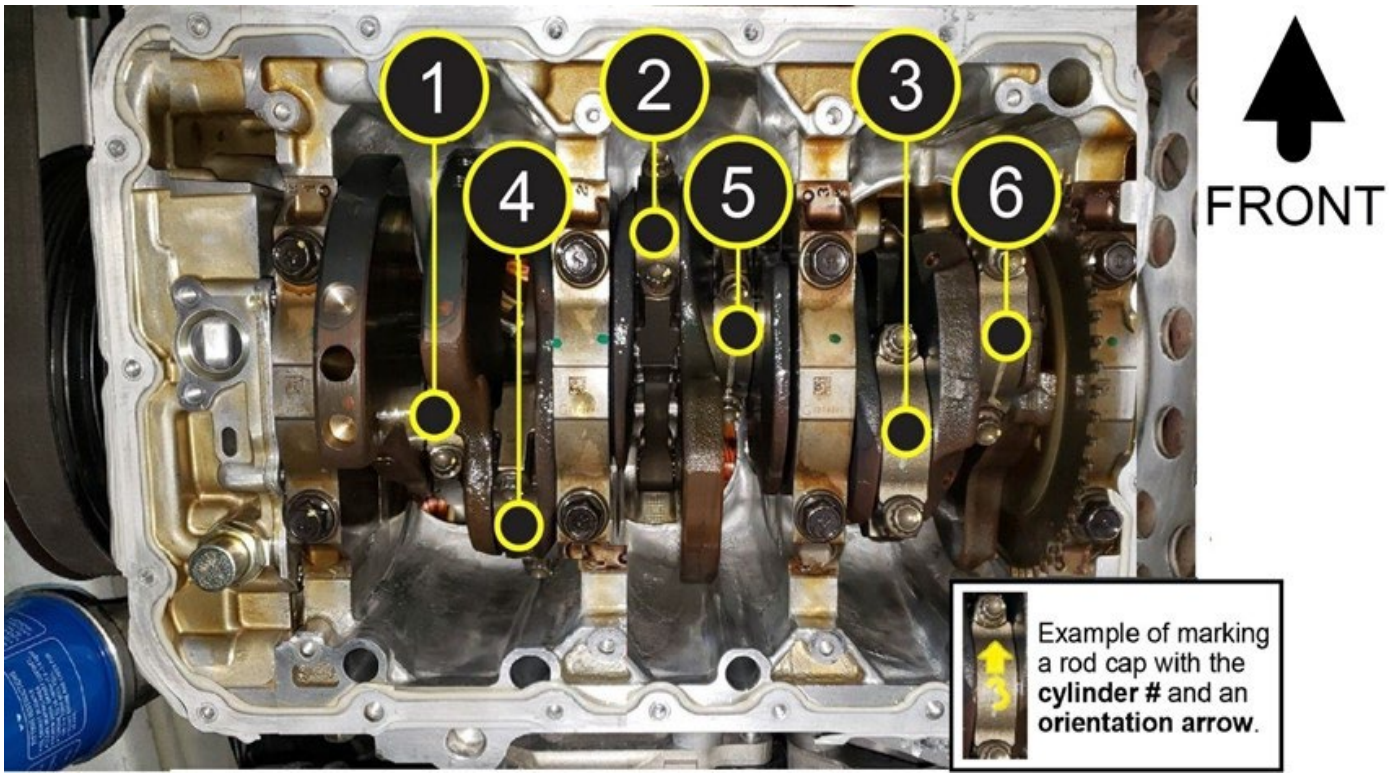
    1. Torque the 2 vertical bolts to **40 N·m (30 lb-ft).**
    2. Torque the 2 horizontal bolts to **49 N·m (36 lb-ft).**
    3. Torque the 2 vertical bolts again an additional **47°.**



41. Clean and label each connecting rod cap with a paint marker (or otherwise suitable marking instrument) prior to removal. Make sure each rod cap has both the **cylinder #** and an **orientation arrow** towards front, in example: **3↑.**

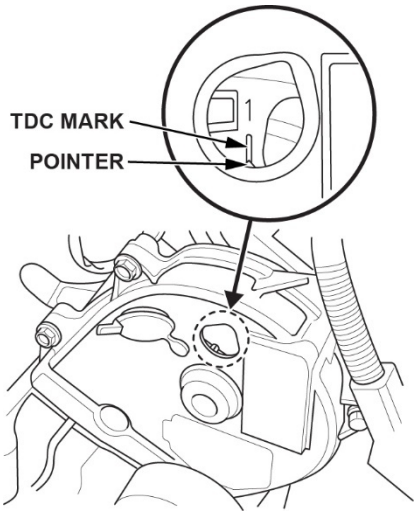
    NOTE:

    - Do not confuse the existing marking on the side of the connect rod and rod cap with the cylinder number. Those are manufacturing marks referring to the size of the rod.
    - Installing a rod cap incorrectly will result in engine knock and/or engine failure.



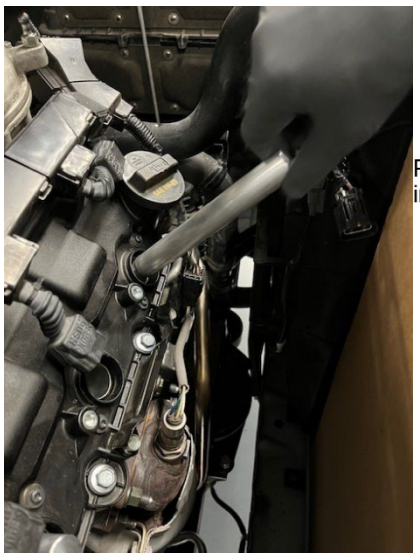
42. Log into the BEARING INSPECTION tool and follow the screen prompts.
43. Rotate the engine to take pictures of all the connecting rod numbers.
    1. Rotate crank 240° clockwise pictures of **connecting rods 1, 4, 5 and 6**. Enter the values and pictures into the BEARING INSPECTION application as directed.
    2. Rotate the crankshaft approximately 120° clockwise until the **cylinder 3** rod is visible. Enter the value and take a picture as directed by the BEARING INSPECTION application.
    3. Rotate the crankshaft approximately 120° clockwise until the **cylinder 2** rod is visible. Enter the value and take a picture as directed by the BEARING INSPECTION application.
    4. Rotate the crankshaft approximately 240° clockwise until **cylinder 1** is back at **TDC.**

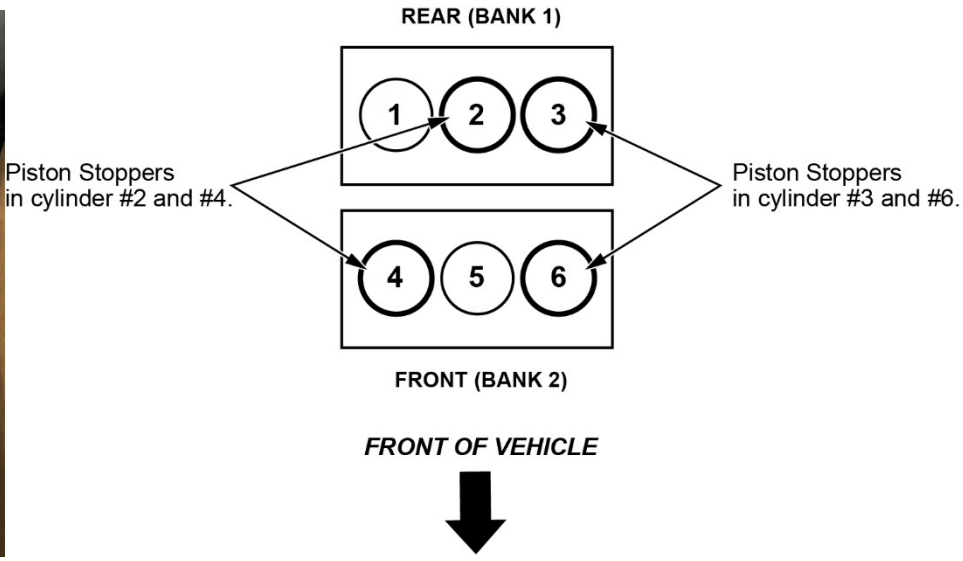
44. Make sure **cylinder 1** to top dead center (TDC). Align the pointer on the front upper cover with the No. 1 Piston TDC mark on the front camshaft.

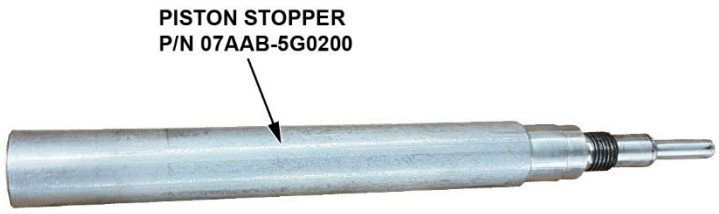


45. Install piston stoppers to **cylinders 2,3,4, and 6**.

    NOTE: Make sure the stopper is clean, and hand tighten only!







46. With the crankshaft at TDC, mark the crankshaft pulley with a vertical line at the 6 o'clock position.

CRANKSHAFT PULLEY
Mark with a vertical line
from the 6 o'clock position.

47. Attach the crank angle gauge the crankshaft pulley with **position #1** correctly aligned at the 6 o'clock position.

Click here to view a video: ► PLAY VIDEO

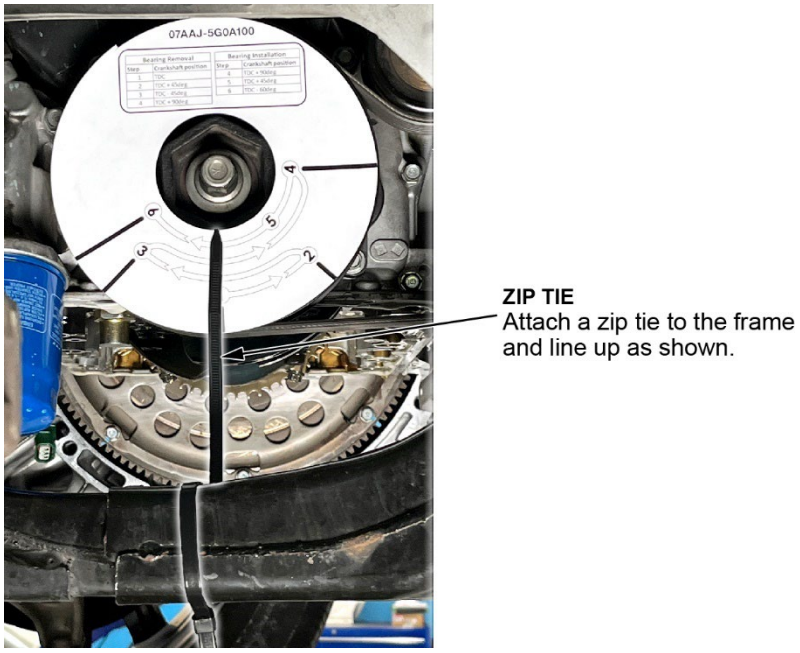
NOTE: The gauge has a magnetic reverse side that will hold onto the crankshaft pulley.

CRANK ANGLE GAUGE
P/N 07AAJ-5G0A100

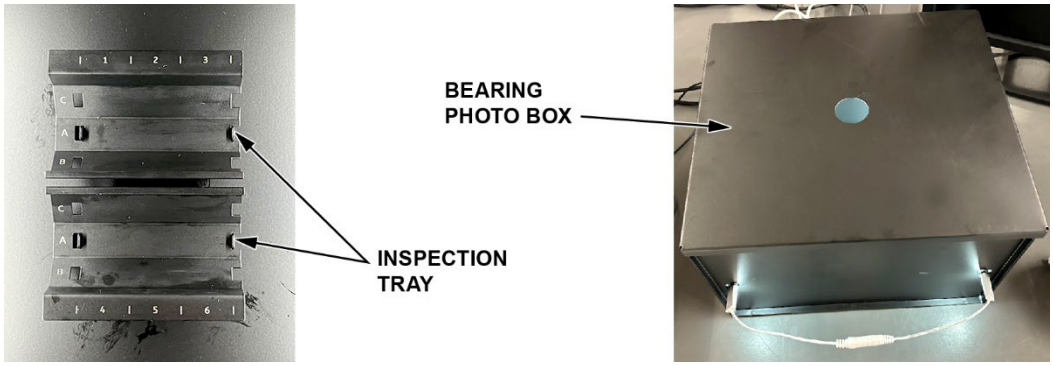
48. Attach a large, commercially available zip tie to the subframe below the crankshaft pulley. The zip tie will be a **reference indicator** for a correct crank angle gauge position.

    NOTE:

    - Make sure it is pointing up at the 6 o'clock position on the pulley.
    - The zip tie should extend roughly **8" to 12"** over the subframe.



49. Make sure the bearing photo box (**Tool Number 07AAK-5J2A200**) and inspection trays are available for use.



50. Make sure that **cylinder 1** is at TDC, **(position #1)**.

51. With **cylinder 1** at TDC (position #1), remove the **connecting rod bearing caps with the lower bearings** from **cylinders 1,3,5, and 6**.

Click here to view a video: ► PLAY VIDEO

NOTE:

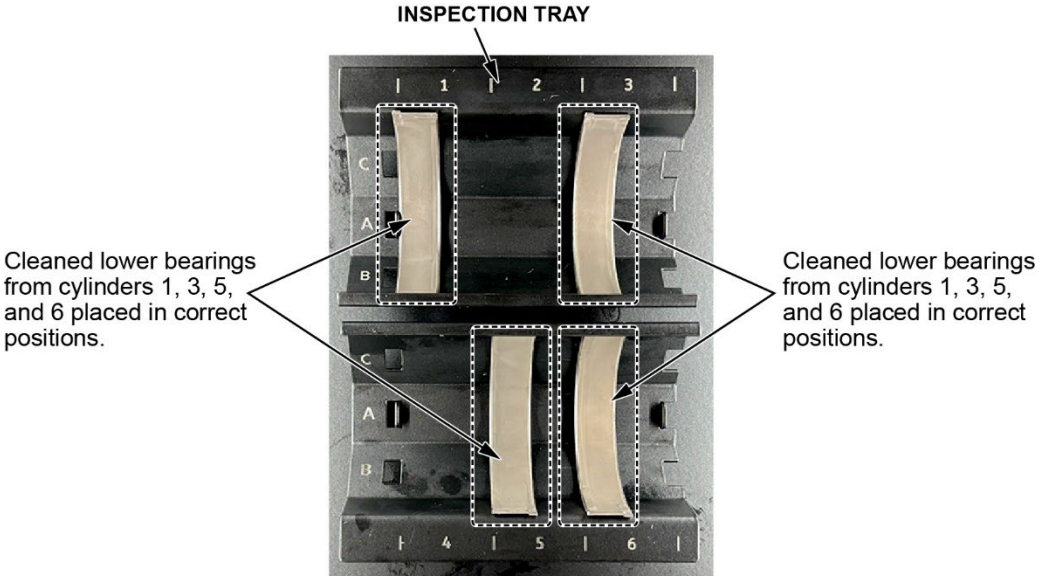
- Follow the removal of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.
- This step involves manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel after removal. No oil should be present. **Do not use any solvents**.

Step/Crankshaft Position	Cylinder 1 Rod Bearing Cap and Lower Bearing	Cylinder 3 Rod Bearing Cap and Lower Bearing	Cylinder 5 Rod Bearing Cap and Lower Bearing	Cylinder 6 Rod Bearing Cap and Lower Bearing
#1/At TDC	Remove	Remove	Remove	Remove

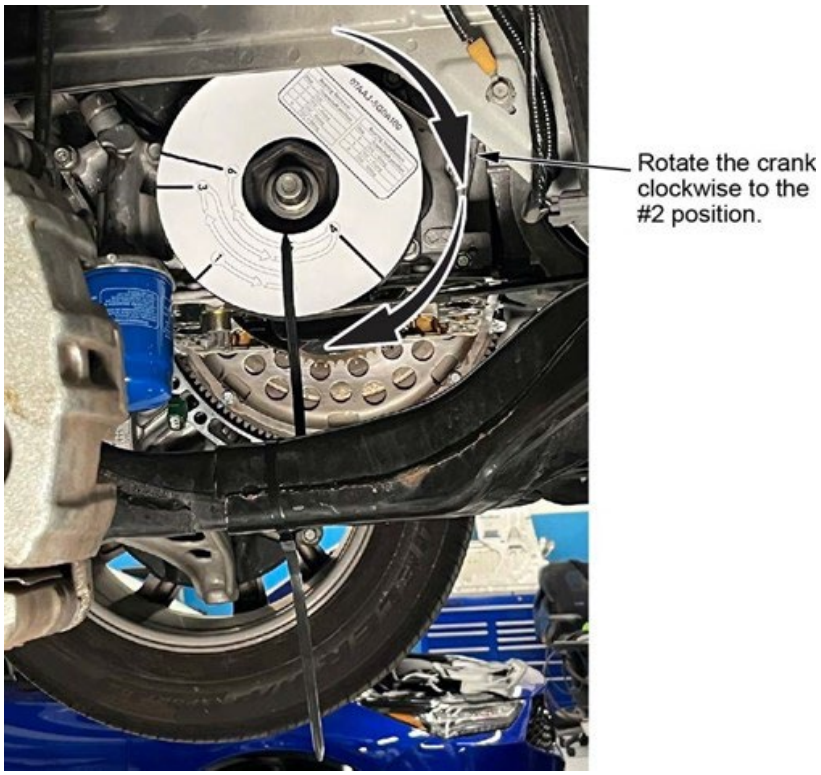
52. Place the removed lower bearings from **cylinders 1,3,5, and 6** into the inspection tray.

    NOTE:

    - Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
    - **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



53. Rotate the crankshaft clockwise to the **#2 position** (TDC +45°).



54. Remove the **rod bearing cap** and **lower bearing** from **cylinder 2**.

    NOTE:

    - Follow the removal of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.
    - This step involves manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
    - Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.

Step/Crankshaft Position	Cylinder 2 Rod Bearing Cap and Lower Bearing
#2/TDC +45°	**Remove**

55. Place the removed lower bearings from **cylinder 2** into the inspection tray.

    NOTE:

    - Follow the removal of the connecting rod bearings precisely to prevent damage to the crank journal and connecting rods.
    - Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
    - **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.

56. Remove the **upper connecting rod bearing** from **cylinder 2.**

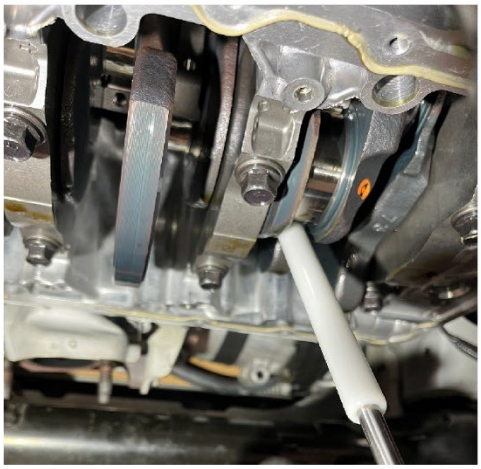
Click here to view a video: ▶ PLAY VIDEO

NOTE:

- Follow the removal of the connecting rod bearings precisely to prevent damage to the crank journal and connecting rods.
- This step involves manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel after removal. No oil should be present. **Do not use any solvents.**
- Use the rod holder tool as needed, hand tighten only!

Step/Crankshaft Position	Cylinder 2 Upper Bearing
#2/TDC +45°	Remove

EXAMPLE OF USING THE M8 ROD HOLDER:

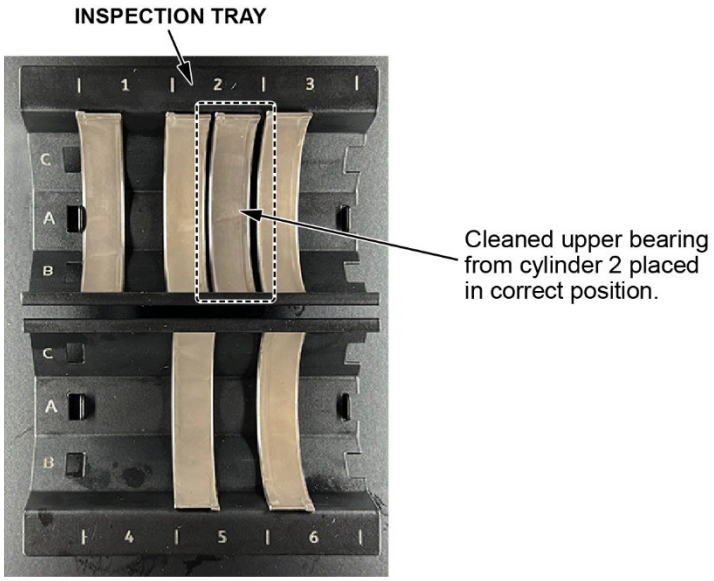


1. Thread the rod holder into the connecting rod bolt hole.
2. Carefully push the connecting rod up until the connecting rod clears the crankshaft journal.
3. Swing the connecting rod to the side, then pull down just enough to gain access to the upper bearing.
4. Remove the upper bearing by sliding it to the side until it releases from the connecting rod.
5. Using the rod holder, carefully push the connecting rod back up until it clears the crankshaft journal.
6. Remove the rod holder.
7. Thoroughly clean the bearings with a clean shop towel to remove all oil residue. Do not use any solvents.

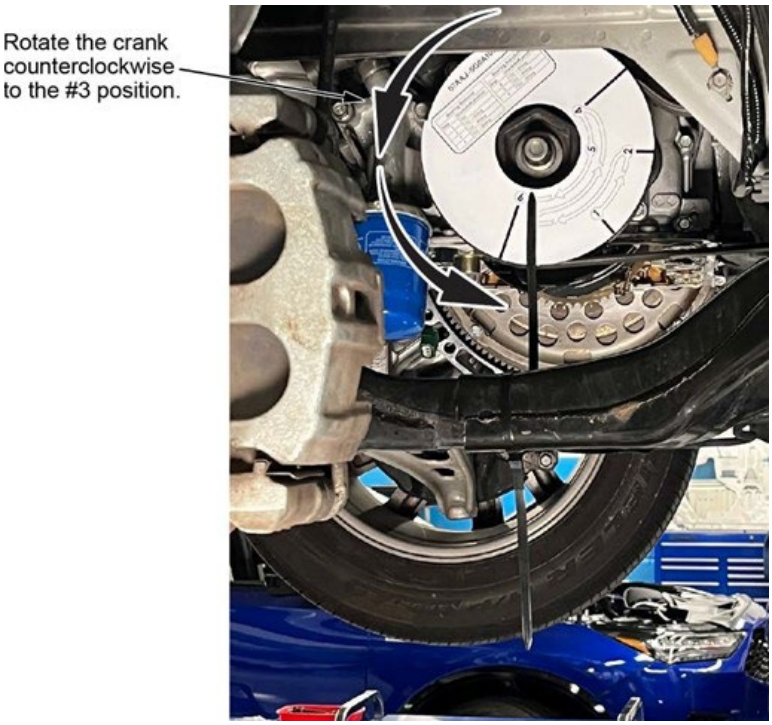
57. Place the removed **upper bearing** from **cylinder 2** into the inspection tray.

    NOTE:

    - Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
    - **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



58. Rotate the crankshaft counterclockwise to the **#3 position** (TDC -45°).



59. Remove the **rod bearing cap and lower bearing** from **cylinder 4**.

NOTE:

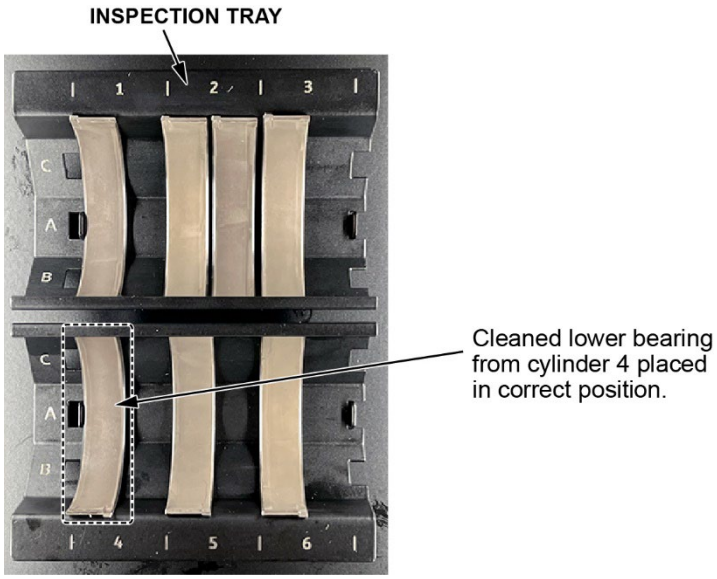
- Follow the removal of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.
- This step involves manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel after removal. No oil should be present. **Do not use any solvents.**

Step/Crankshaft Position	Cylinder 4 Rod Bearing Cap and Lower Bearing
#3/TDC -45°	Remove

60. Place the removed **lower bearing** from **cylinder 4** into the inspection tray.

NOTE:

- Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
- **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



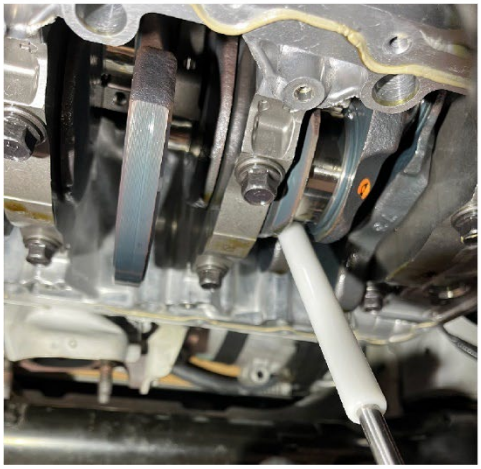
61. Remove the **cylinder 3 and cylinder 4 upper connecting rod bearings**.

NOTE:

- Follow the removal of the connecting rod bearings precisely to prevent damage to the crank journal and connecting rods.
- The next steps involve manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel after removal. No oil should be present. **Do not use any solvents**.
- Use the M8 as needed, hand tighten only!

Step/Crankshaft Position	Cylinder 3 Upper Bearing	Cylinder 4 Upper Bearing
#3/TDC -45°	Remove	Remove

EXAMPLE OF USING THE M8 ROD HOLDER:

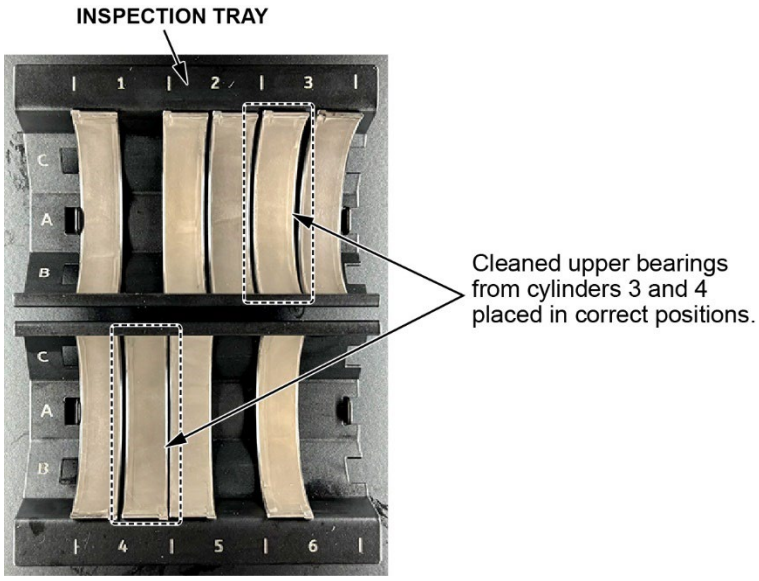


1. Thread the rod holder into the connecting rod bolt hole.
2. Carefully push the connecting rod up until the connecting rod clears the crankshaft journal.
3. Swing the connecting rod to the side, then pull down just enough to gain access to the upper bearing.
4. Remove the upper bearing by sliding it to the side until it releases from the connecting rod.
5. Using the rod holder, carefully push the **cylinder 3** connecting rod back up until it clears the crankshaft journal. NOTE: Leave **cylinder 4** connecting rod in the lower position, **do not** push back up.
6. Remove the rod holder.
7. Thoroughly clean the bearings with a clean shop towel to remove all oil residue. **Do not use any solvents**.

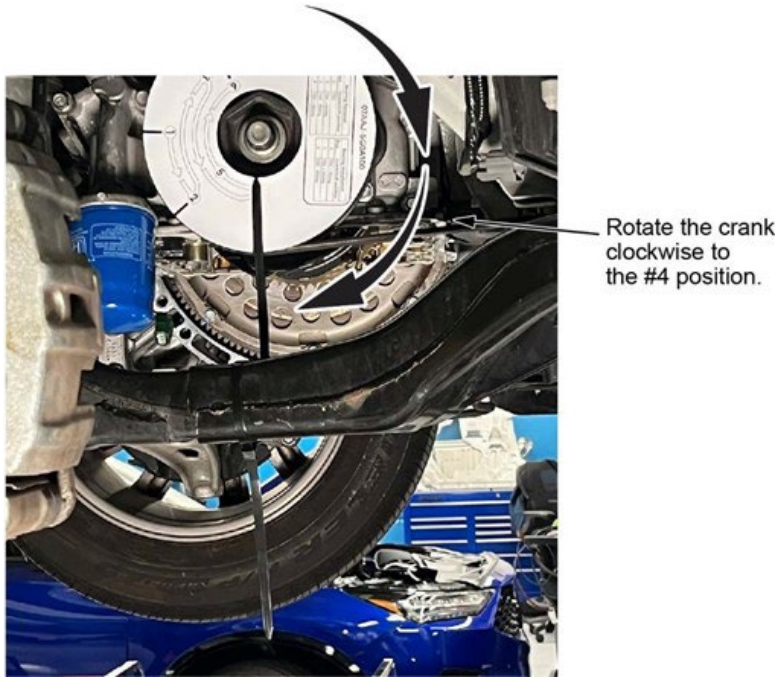
62. Place the removed **upper bearings** from **cylinder 3 and 4** into the inspection tray.

    NOTE:

    - Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
    - **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



63. Rotate the crankshaft clockwise to the **#4 position** (TDC +90°).



64. Remove the upper bearing from **cylinders 1, 5, and 6**.

NOTE:

- Follow the removal of the connecting rod bearings precisely to prevent damage to the crank journal and connecting rods.
- The next steps involve manually moving the piston/rod assemblies while disconnected from the crankshaft. Moving the piston/rod assembly too far in either direction can damage the piston and/or oil jet.
- Thoroughly clean the bearing with a clean shop towel after removal. No oil should be present. **Do not use any solvents**.
- Use the M8 as needed, hand tighten only!

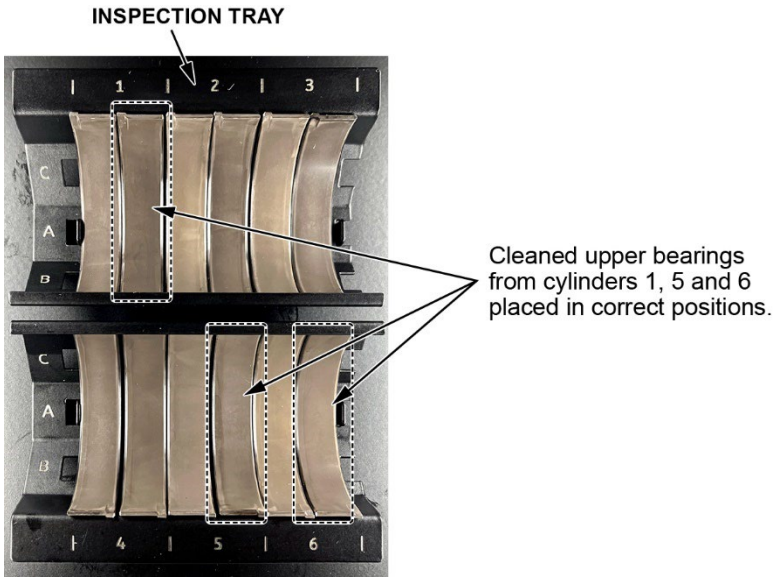
Step/Crankshaft Position	Cylinder 1 Upper Bearing	Cylinder 5 Upper Bearing	Cylinder 6 Upper Bearing
#4/TDC +90°	Remove	Remove	Remove

1. Thread the rod holder into the connecting rod bolt hole.
2. Carefully push the connecting rod up until the connecting rod clears the crankshaft journal.
3. Swing the connecting rod to the side, then pull down just enough to gain access to the upper bearing.
4. Remove the upper bearing by sliding it to the side until it releases from the connecting rod.
5. Using the rod holder, carefully push the cylinder connecting rod back up until it clears the crankshaft journal.
6. Remove the rod holder.
7. Thoroughly clean the bearings with a clean shop towel to remove all oil residue. Do not use any solvents.

65. Place the removed **upper bearings** from **cylinders 1, 5, and 6** into the inspection tray.

NOTE:

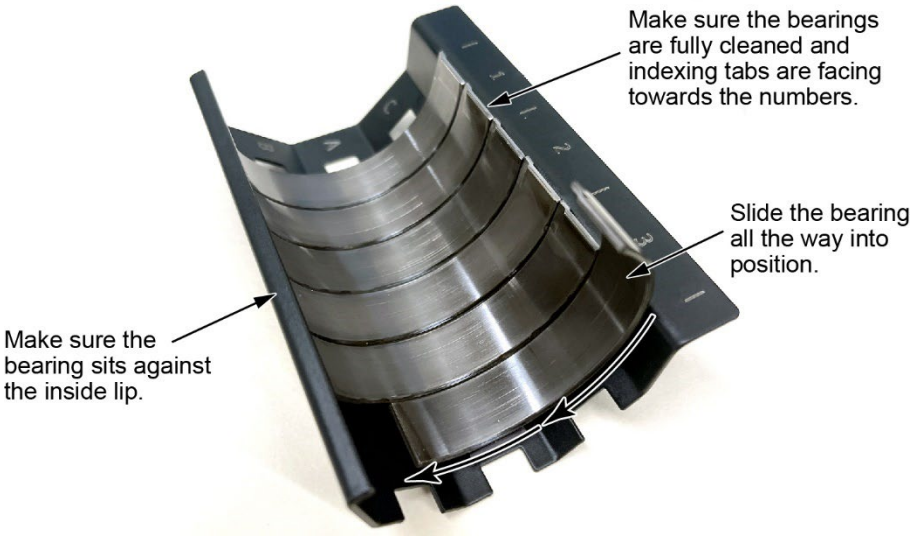
- Thoroughly clean the bearing with a clean shop towel prior to placing in the inspection tray. No oil should be present. **Do not use any solvents**.
- **Place** the removed bearings into the inspection tray at the correct position. For example, the **cylinder 1 bearings** should be in the **#1 slot** in the **tray**. **Upper and lower bearing** arrangement in the tray **does not matter**.



66. Make sure the bearings are fully seated and level with the edge of the inspection tray.

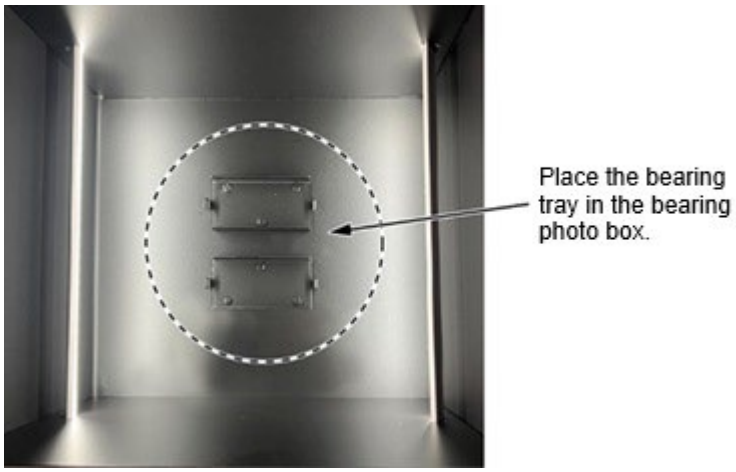
    NOTE:

    - The bearing's indexing tab should be lined up at the numbers of the tray.
    - The flat edge of the bearing should be inside of the lip on the inspection tray.
    - All bearings should be fully seated in the inspection tray.



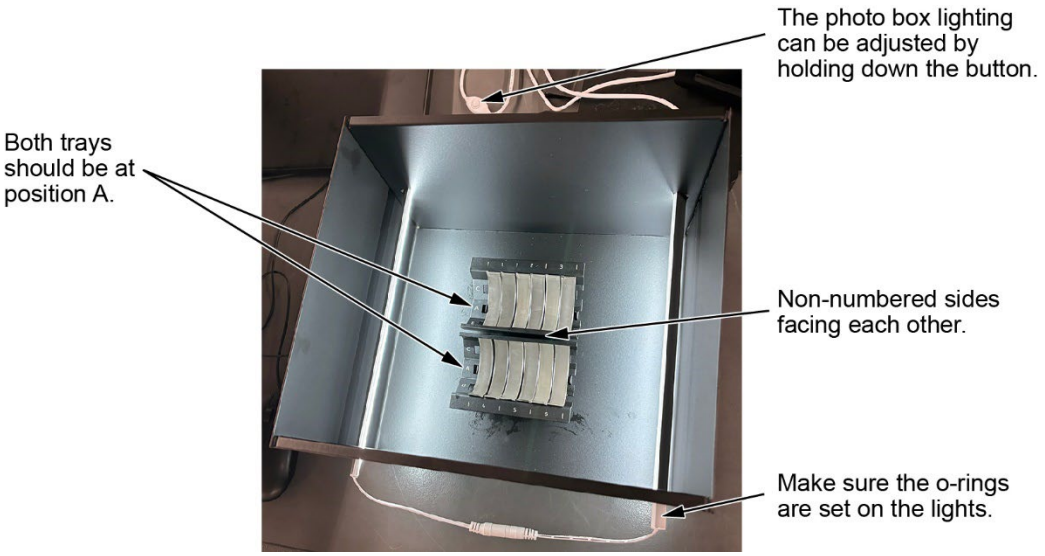
67. Remove the bearing photo box cover and place the inspection trays in the bearing photo box.

    NOTE: When taking photos make sure there are no objects in the bearing photo box, only the bearing tray with bearings.



68. Confirm the following on the bearing inspection box:
    1. Lights at the brightest setting.

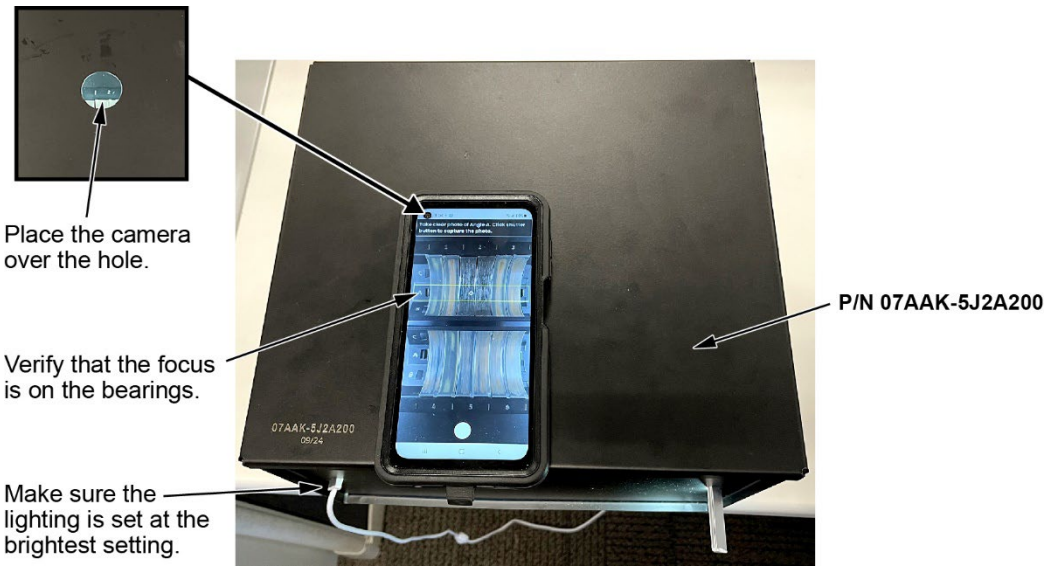
       NOTE: The light brightness can be adjusted by holding the button.
    2. Both bearing organizers are in position A with non-numbered sides facing each other.
    3. The O-rings are set on the lights to prevent an outside light source.



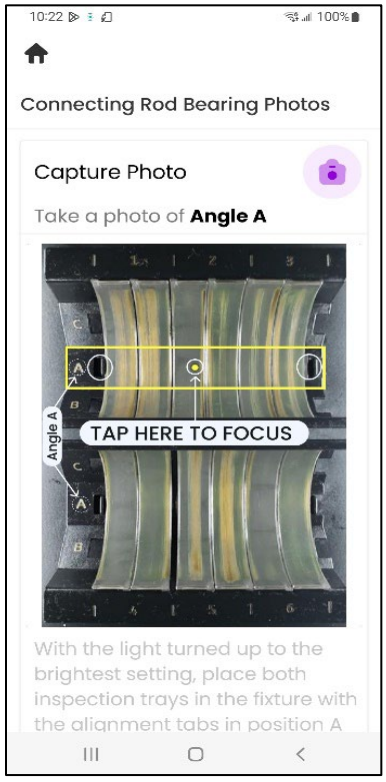
69. Using the BEARING INSPECTION application, follow the instructions to take bearing photos in positions A, B, and C. Follow the prompts when submitting the photos.

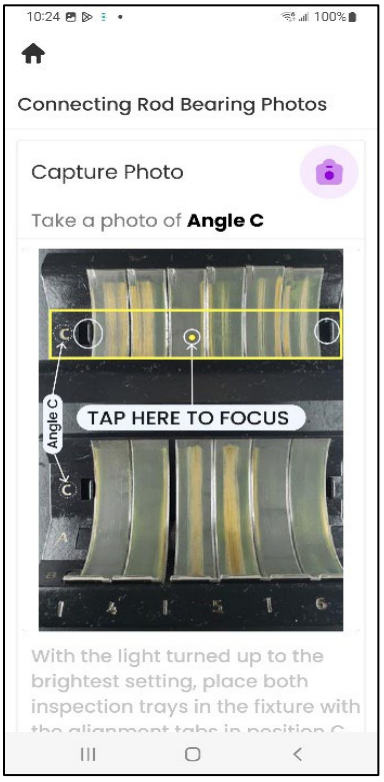
    NOTE:

    - For BEARING INSPECTION application instruction, refer to this Job Aid: (Click HERE)
    - Technicians are now required to center-punch all 12 bearings as instructed on step 73 to prevent reuse of the bearings. **DO NOT** center punch the bearing until instructed by application tool. Submitting any photos with center-punches for Photos A, B and C **WILL BE REJECTED**.
    - Use the camera tap focus for a clear image.
    - Any unclear images will not be accepted.
    - Follow the BEARING INSPECTION application prompts after photo submission.

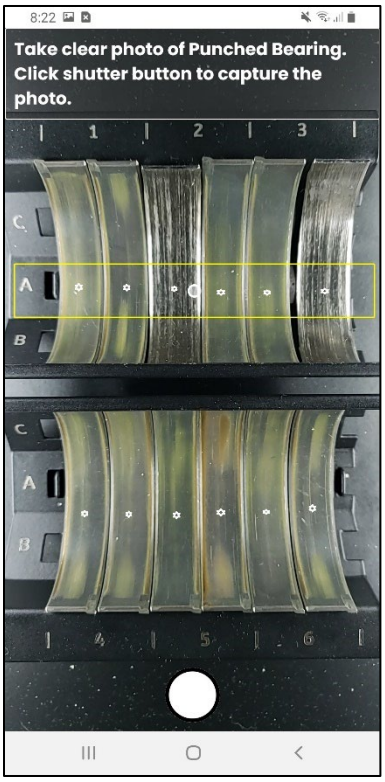


When taking the photos:





Centered punch bearings:



70. When the Bearing Inspection Team completes the review and assigns a repair method, the following will occur:

1. The Bearing Inspection Recall Status screen will update with the specified repair.
2. If optional mobile numbers are included in the technicians contact information, a text message will be issued to advise the inspection is complete and refers the technician to the Bearing Inspection Repair Direction Sheet that was issued to the email addresses on file.
3. An email, that provides a link to the Bearing Inspection Repair Direction Sheet, is issued to all addresses on file.

The Repair Direction Sheet provides the Inspection and Repair Warranty Codes required to file the warranty claims. If Bearing Only or Crankshaft replacement is required, the Repair Direction Sheet provides the bearing sizes and graphics identifying the location in which they should be installed.

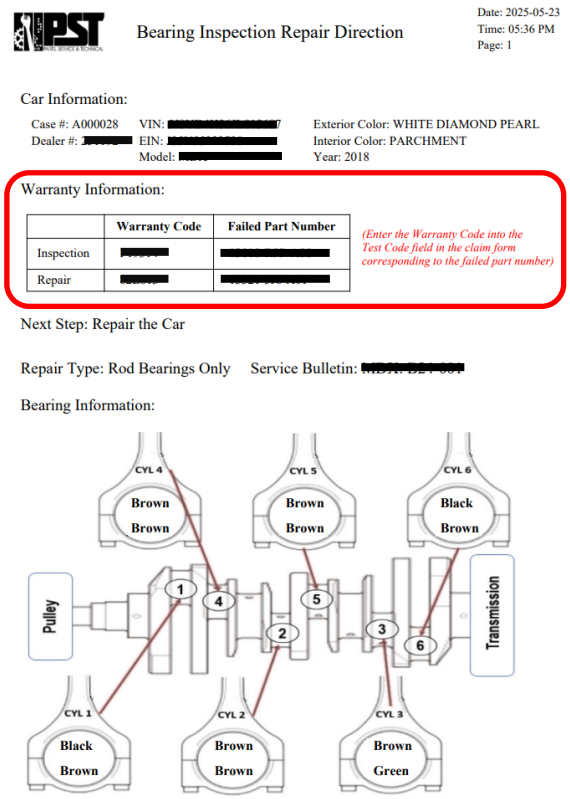
REPAIR #1 INSTALL RECOMMENDED BEARINGS

NOTE: DO NOT contact Tech Line for any inquiries about this safety recall. If instructed by the application tool, call the Bearing Inspection Inquiry Team at (800) 824-6632 (Select Option #9).

1. Follow the **Repair Type** instructions on the emailed Repair Direction sheet. Make sure the VIN matches the vehicle.

   NOTE:

   - Follow the **Repair Type** instructions exactly as recommended.
   - Use the **Warranty Inspection and Repair Codes** for the warranty claim.



PST Bearing Inspection Repair Direction

Date: 2025-05-23
Time: 05:36 PM
Page: 1

Car Information:

Case #: A000028 VIN: [redacted]
Dealer #: [redacted] EIN: [redacted]
Model: [redacted]
Exterior Color: WHITE DIAMOND PEARL
Interior Color: PARCHMENT
Year: 2018

Warranty Information:

	Warranty Code	Failed Part Number
Inspection	[redacted]	[redacted]
Repair	[redacted]	[redacted]

(Enter the Warranty Code into the Test Code field in the claim form corresponding to the failed part number)

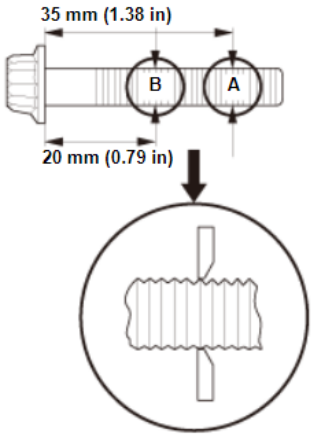
Next Step: Repair the Car

Repair Type: Rod Bearings Only Service Bulletin: [redacted]

Bearing Information:

2. Inspect the connecting rod bolts.
   - Measure the diameter of each connecting rod bolt at point A and point B.
   - After calculating the difference in diameter between point A and point B.

     Difference in Diameter Specification: 0–0.1 mm (0–0.004 in.)
   - If the difference in diameter is out tolerance, replace the connecting rod bolt.

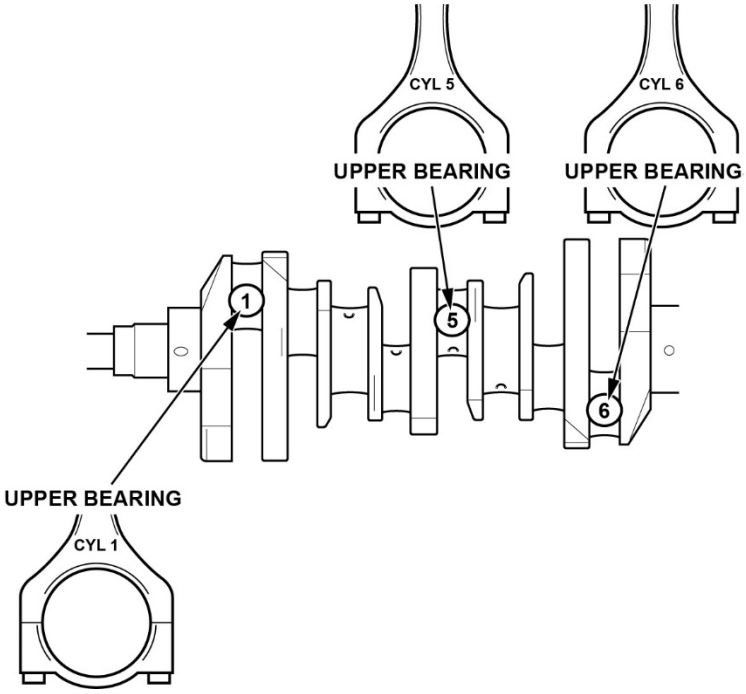


3. Apply a light coating of oil to all connecting rod journals prior to installing the remainder of the steps.
4. While the crankshaft is still at crank angle gauge **position #4** (TDC +90°), install the **upper bearing** to the connecting rod for **cylinders 1, 5, and 6**.

   NOTE:

   - Make sure the bearing indexing tabs are properly oriented during installation.
   - Follow the installation of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.

Step/Crankshaft Position	Cylinder 1 Upper Bearing	Cylinder 5 Upper Bearing	Cylinder 6 Upper Bearing
#4/TDC +90°	**Install**	**Install**	**Install**

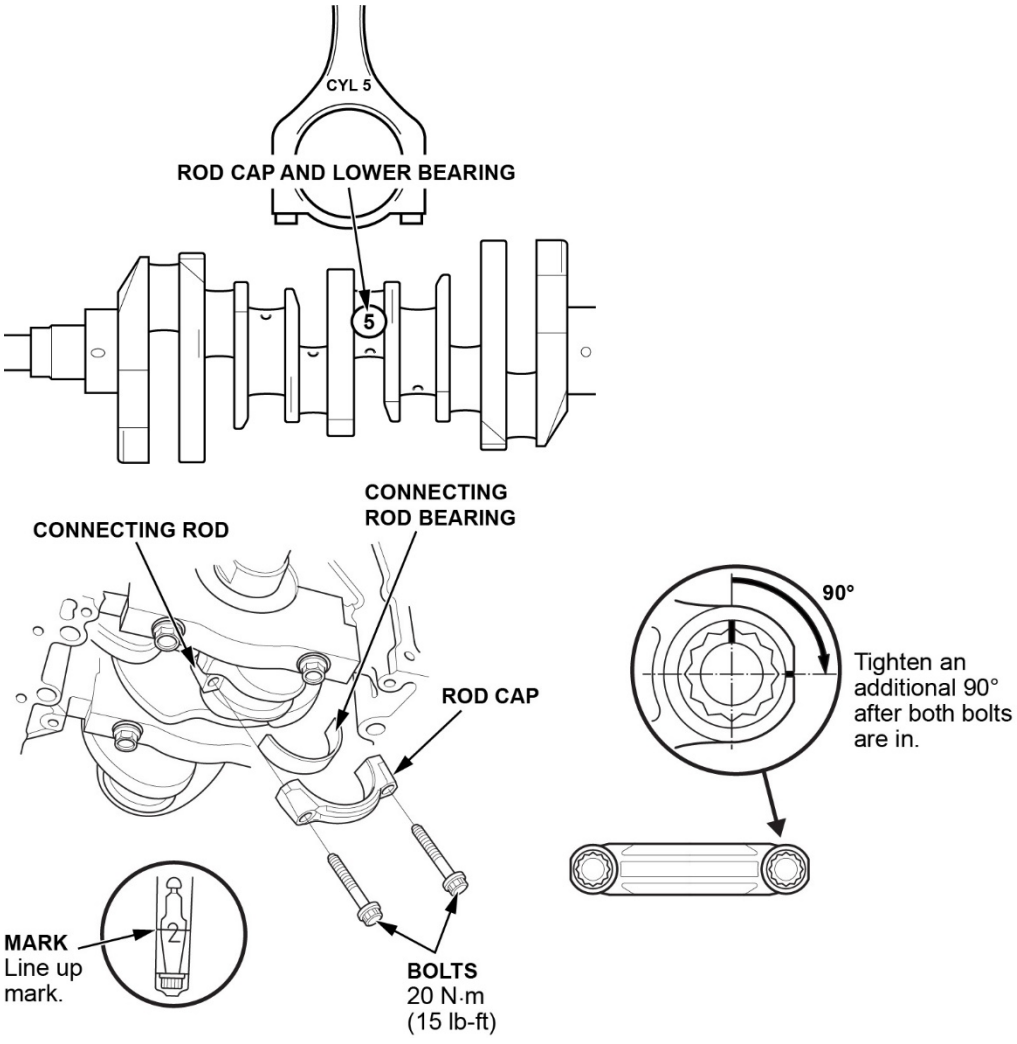


5. Install the connecting rod cap and lower bearing to the connecting rod for cylinder 5.

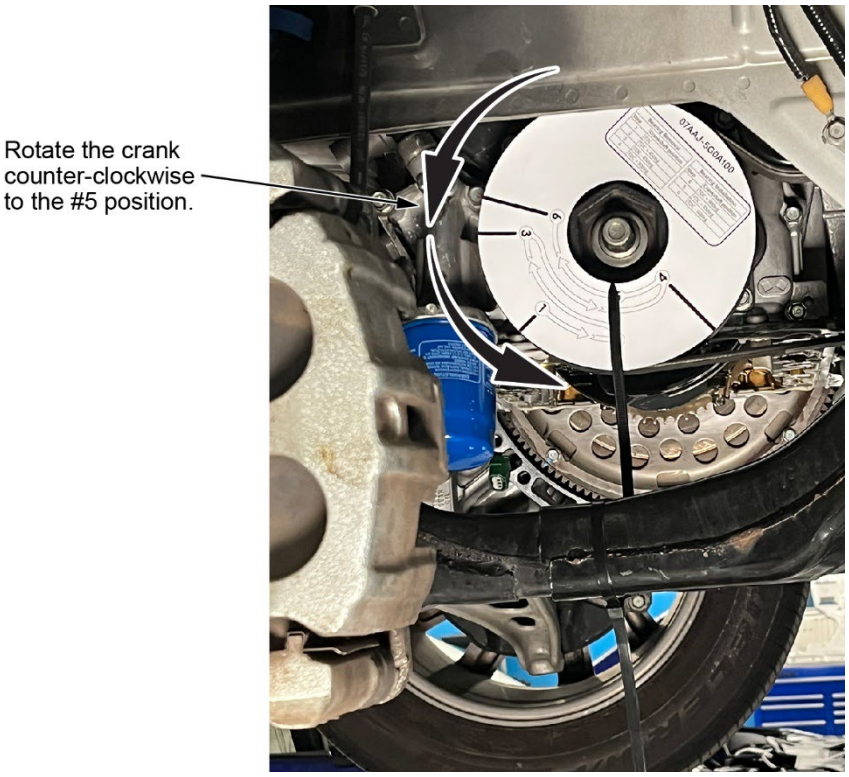
   NOTE:

   - Make sure the bearing indexing tabs are properly oriented during installation.
   - Apply new engine oil to the bolt threads and bolt flanges.
   - If you tightened the connecting rod bolt beyond the specified angle, remove and inspect the connecting rod bolt. **Do not loosen** it back to the specified angle.
   - Use a commercially available torque angle meter.
   - Use the M8 Rod Holder tool as needed.
   - Follow the installation of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.

Step/Crankshaft Position	Cylinder 5 Rod Cap and Lower Bearing
#4/TDC +90°	Install



6. Rotate the crankshaft counterclockwise to crank angle gauge **position #5** (TDC +45°).

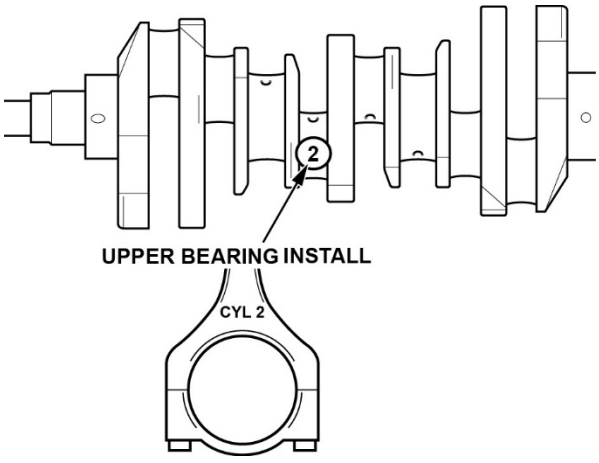


7. Install the **upper bearing** to the connecting rod **for cylinder 2**.

   NOTE:

   - Make sure the bearing indexing tabs are properly oriented during installation.
   - Follow the installation of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.

Step/Crankshaft Position	Cylinder 2 Upper Bearing
#5/TDC +45°	Install

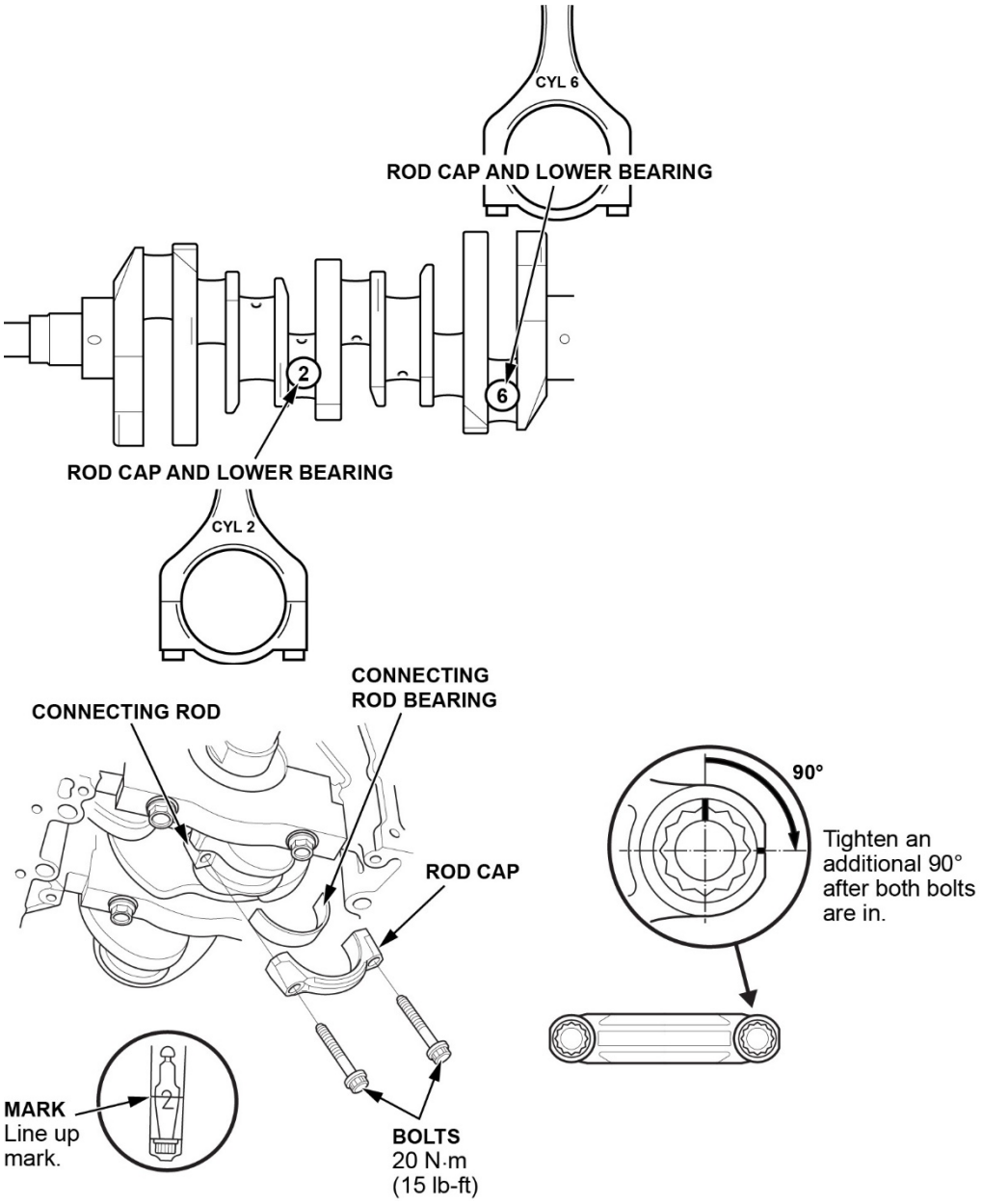


8. Without rotating the crank, install the **rod cap and lower bearing** to the connecting rod **for cylinders 2 and 6**.

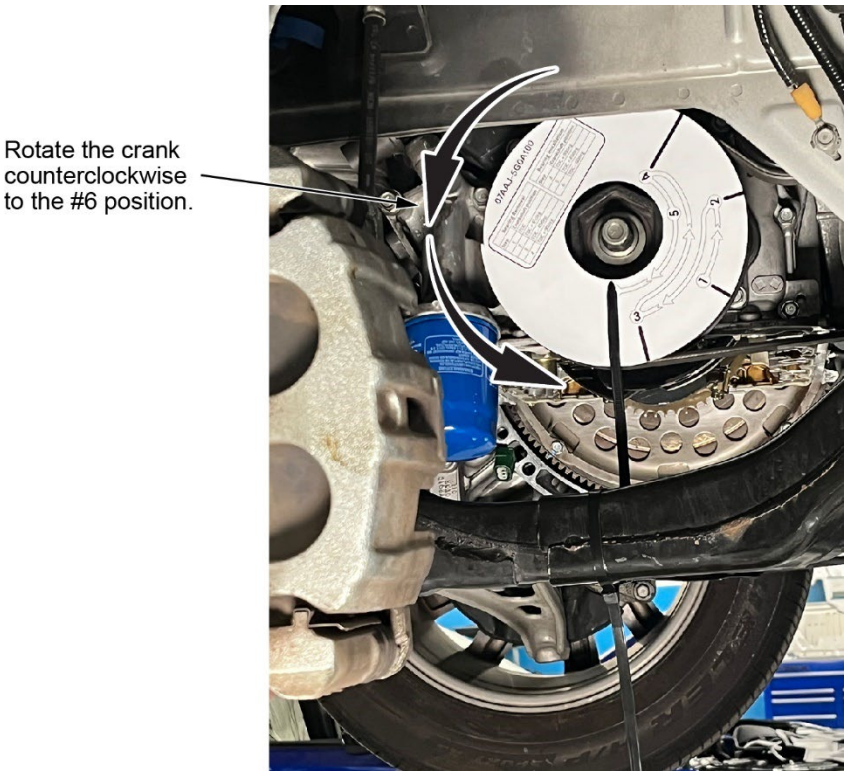
   NOTE:

   - Make sure the bearing indexing tabs are properly oriented during installation.
   - Apply new engine oil to the bolt threads and bolt flanges.
   - If you tightened the connecting rod bolt beyond the specified angle, remove and inspect the connecting rod bolt. **Do not loosen** it back to the specified angle.
   - Use a commercially available torque angle meter.
   - Use the M8 Rod Holder tool as needed.
   - Follow the installation of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.

Step/Crankshaft Position	Cylinder 2 Rod Cap and Lower Bearing	Cylinder 6 Rod Cap and Lower Bearing
#5/TDC +45°	Install	Install



9. Rotate the crankshaft counterclockwise to crank angle gauge **position #6** (TDC -60°).

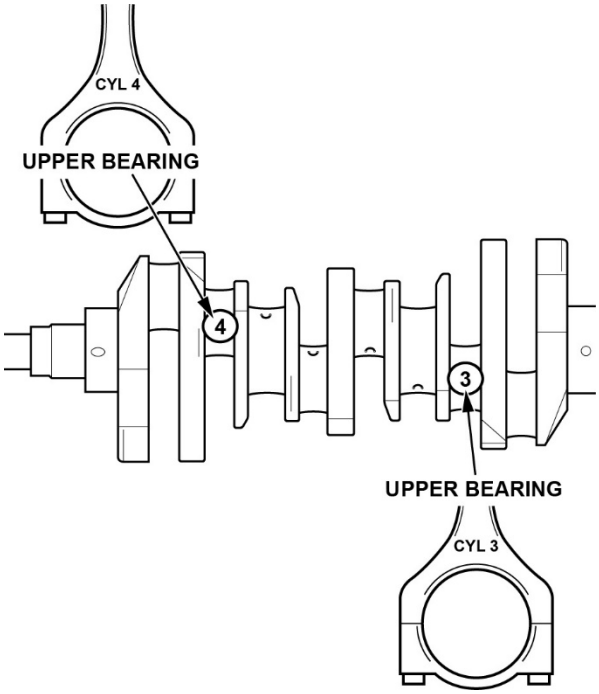


10. Install the **upper bearing** to the connecting rod for **cylinders 3 and 4**.

    NOTE:

    - Make sure the bearing indexing tabs are properly oriented during installation.
    - Follow the installation of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.

Step/Crankshaft Position	Cylinder 3 Upper Bearing	Cylinder 4 Upper Bearing
#6/TDC -60°	Install	Install

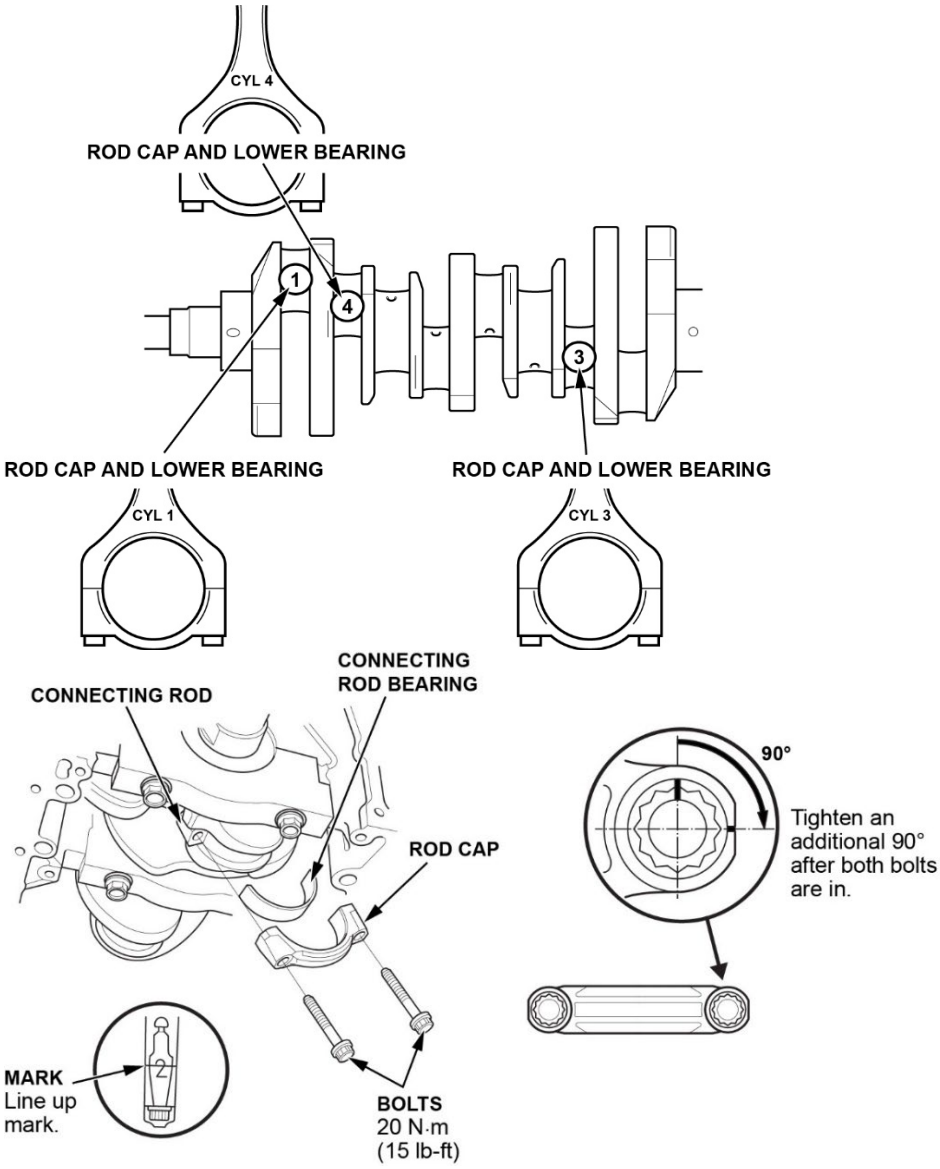


11. Without rotating the crank, install the rod caps and lower bearings to the connecting rod for cylinder 1. Then, install the rod cap and lower bearing to the connecting rod for cylinders 3 and 4.

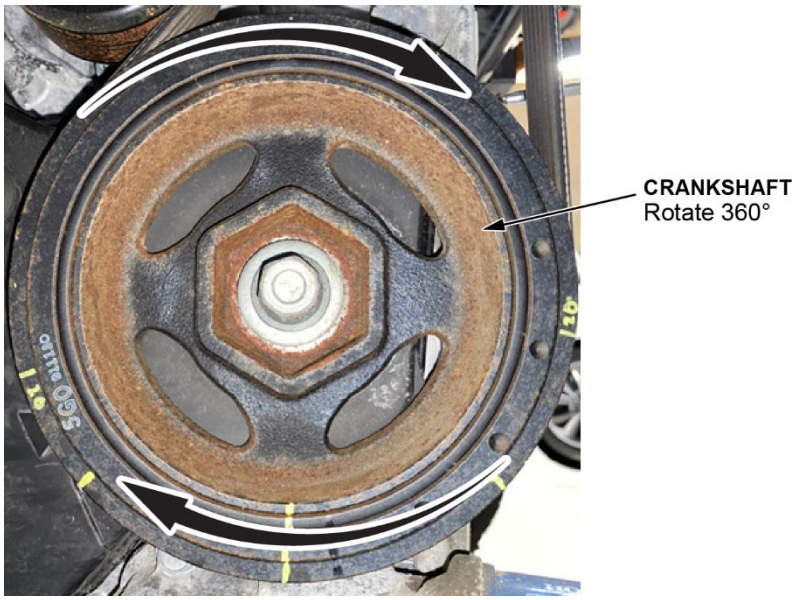
    NOTE:

    - Make sure the bearing indexing tabs are properly oriented during installation.
    - Apply new engine oil to the bolt threads and bolt flanges.
    - If you tightened the connecting rod bolt beyond the specified angle, remove and inspect the connecting rod bolt. **Do not loosen** it back to the specified angle.
    - Use a commercially available torque angle meter.
    - Use the M8 Rod Holder tool as needed.
    - Follow the installation of the connecting rod steps precisely to prevent damage to the crank journal and connecting rods.

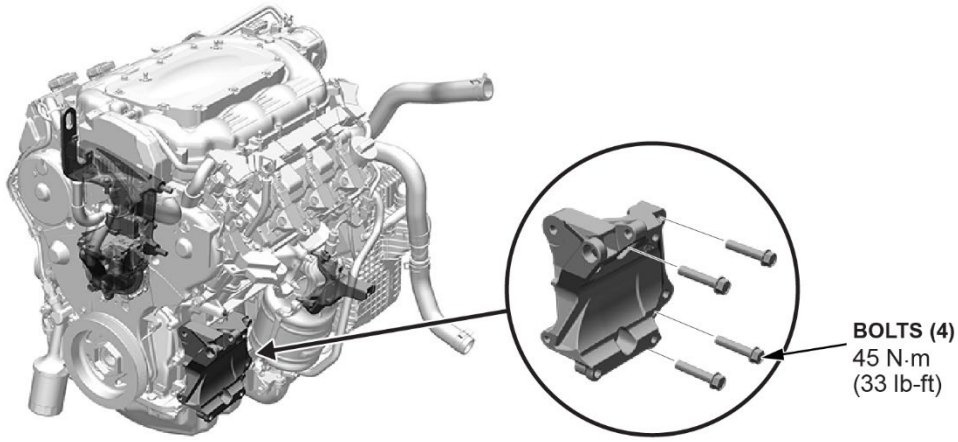
Step/Crankshaft Position	Cylinder 1 Rod Cap and Lower Bearing	Cylinder 3 Rod Cap and Lower Bearing	Cylinder 4 Rod Cap and Lower Bearing
#6/TDC -60°	Install	Install	Install



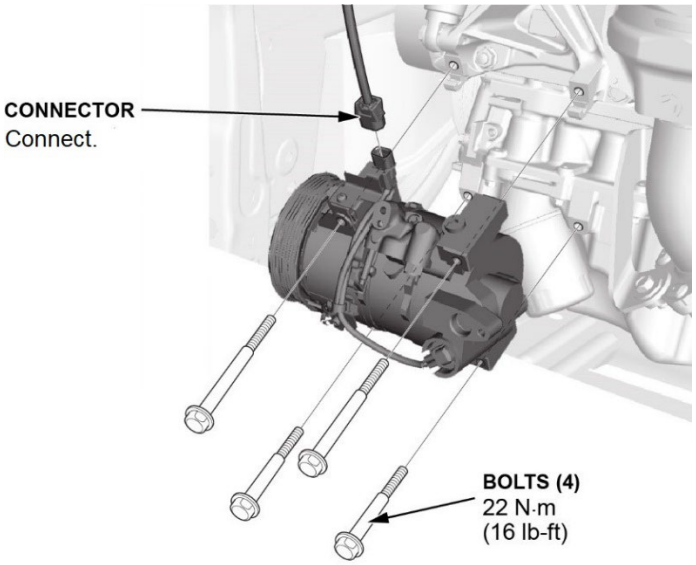
12. Remove the crank angle gauge and zip tie.
13. Lower the vehicle and remove the piston stoppers.
14. Rotate the crankshaft **360°** to check for binding of the connecting rod bearings.



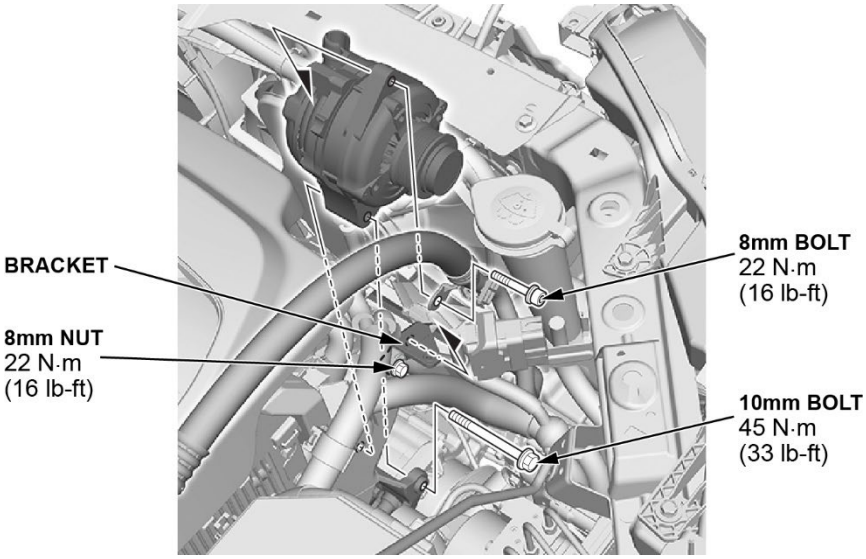
15. **INSPECTION B ONLY:** Install the A/C compressor bracket.



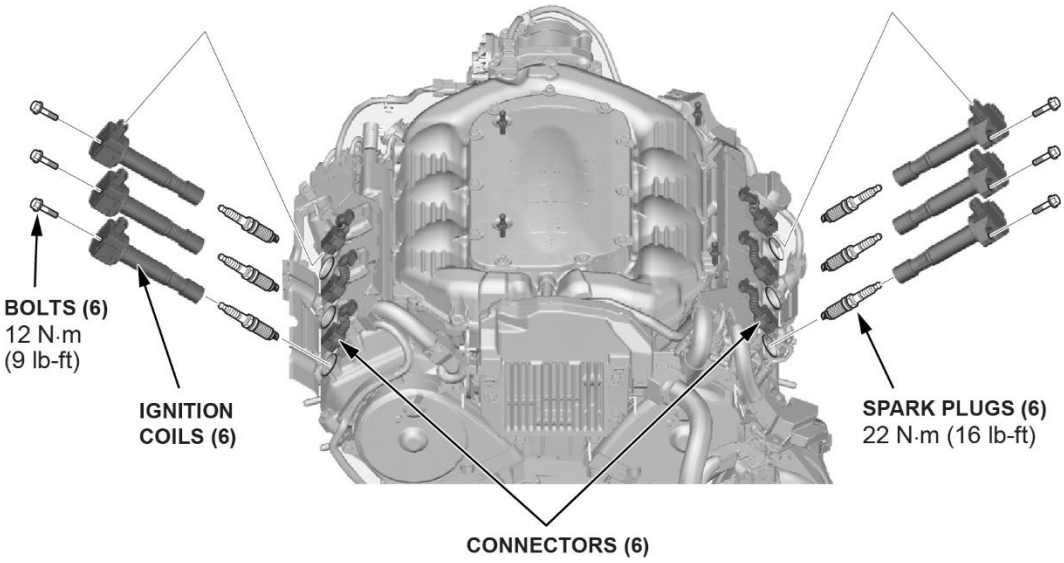
16. **INSPECTION B ONLY:** Install the compressor.



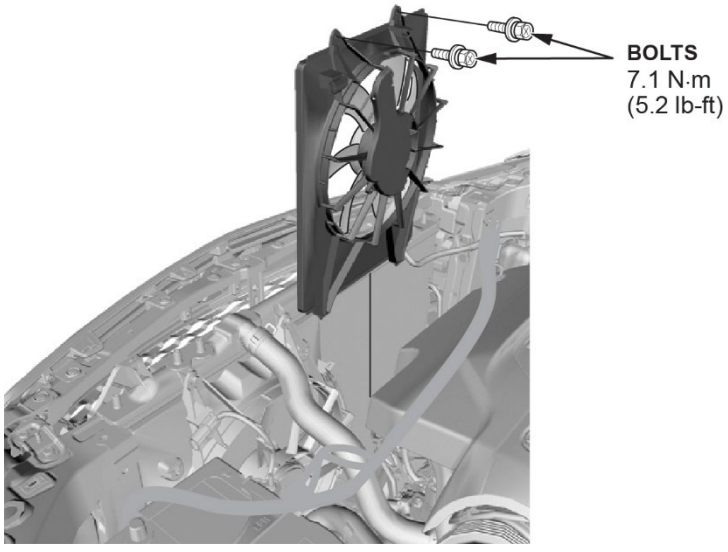
17. **INSPECTION B ONLY:** Install the alternator.



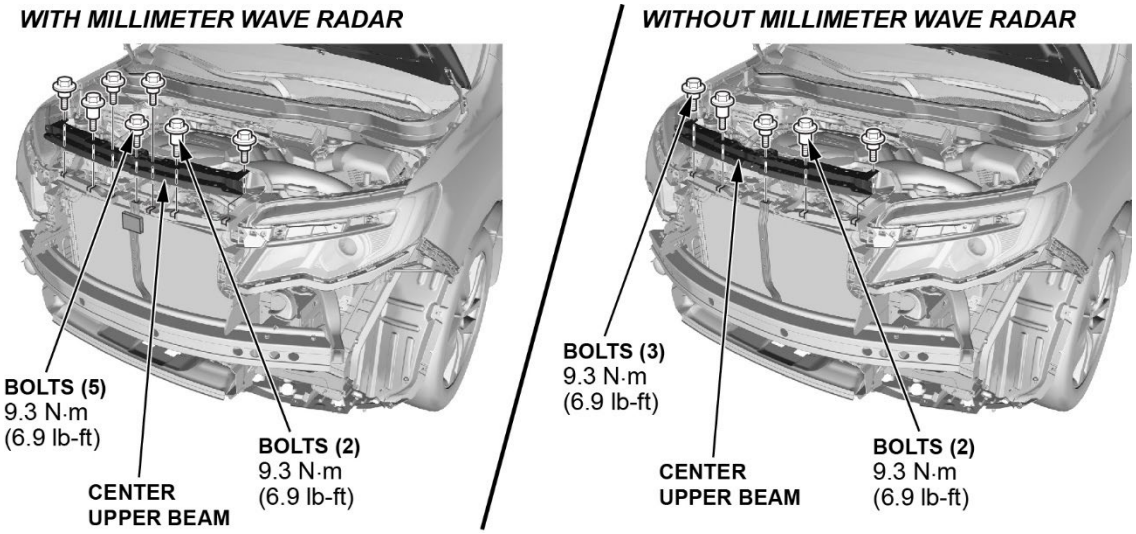
18. Install the coil connectors, ignition coils, and spark plugs.



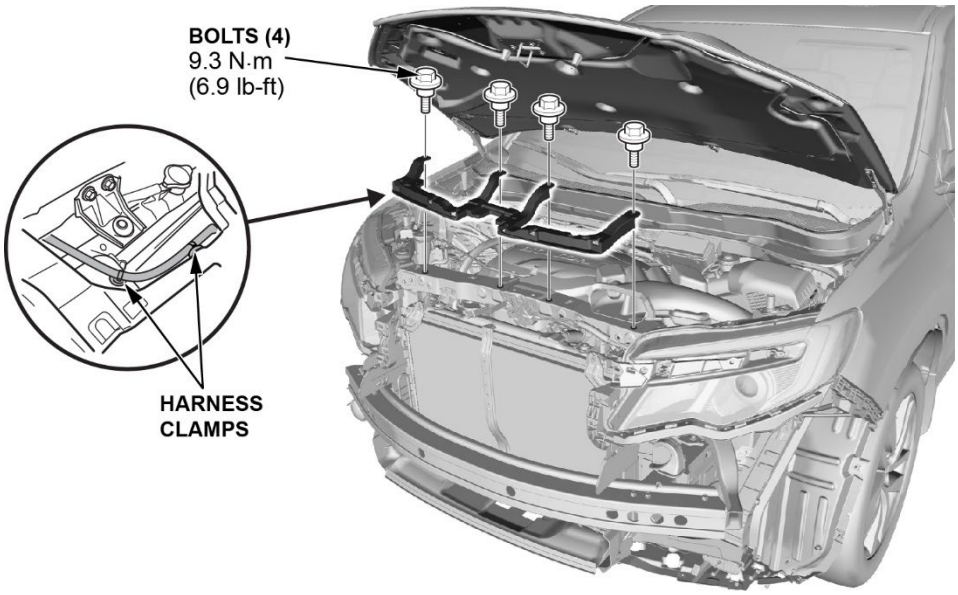
19. **INSPECTION B ONLY:** Install the passenger side condenser fan connectors.



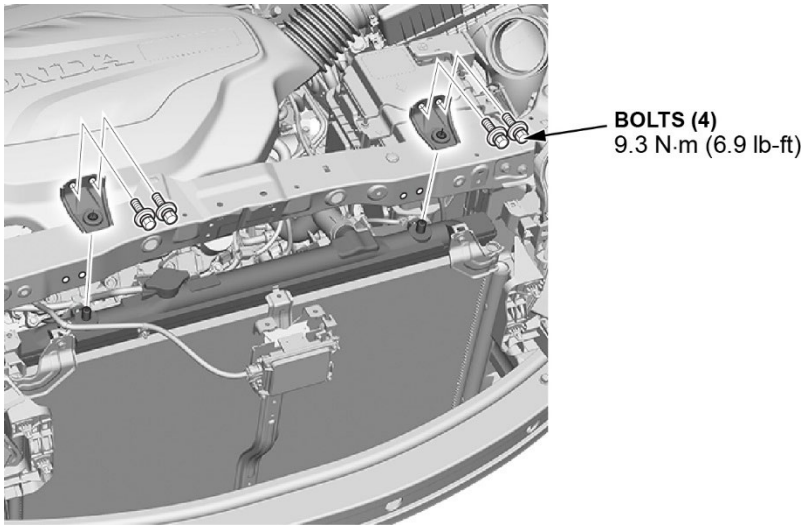
20. **INSPECTION B ONLY:** Install the front center upper beam A.



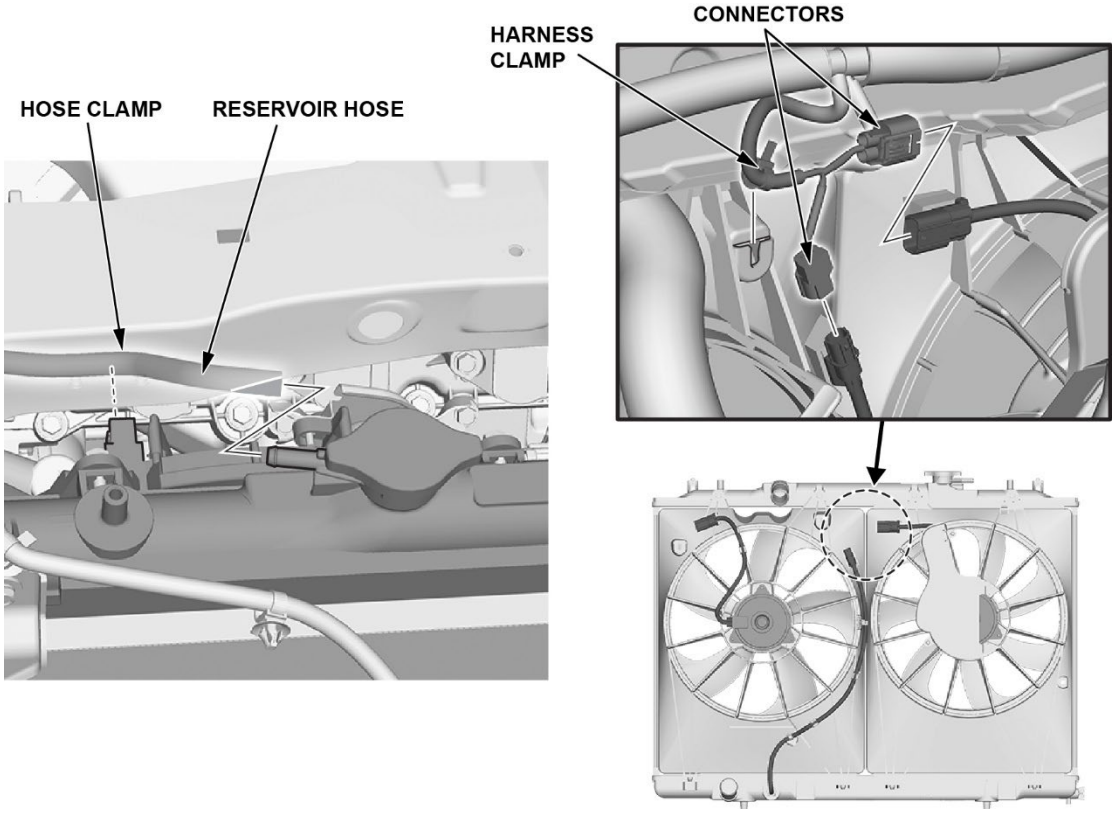
21. **INSPECTION B ONLY:** Install the front center upper beam B.



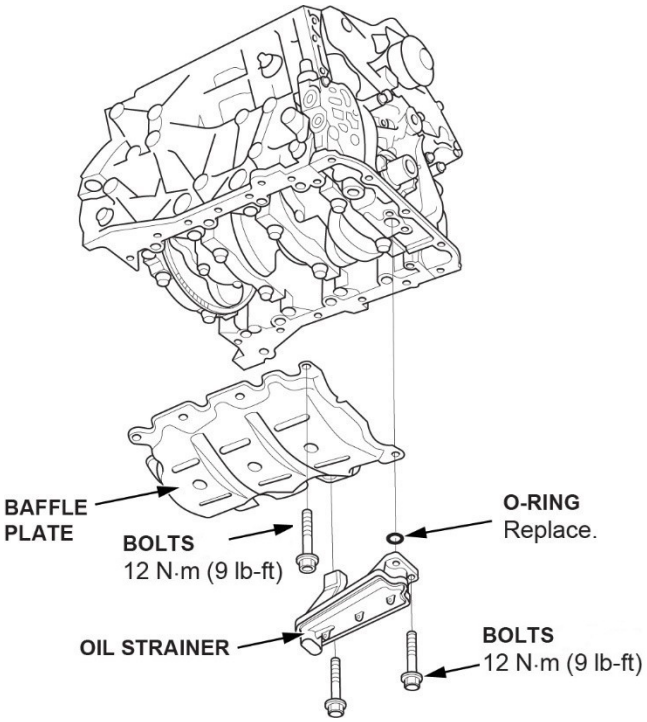
22. **INSPECTION B ONLY:** Install the radiator upper mount bracket.



23. **INSPECTION B ONLY:** Connect the reservoir hose and connectors.



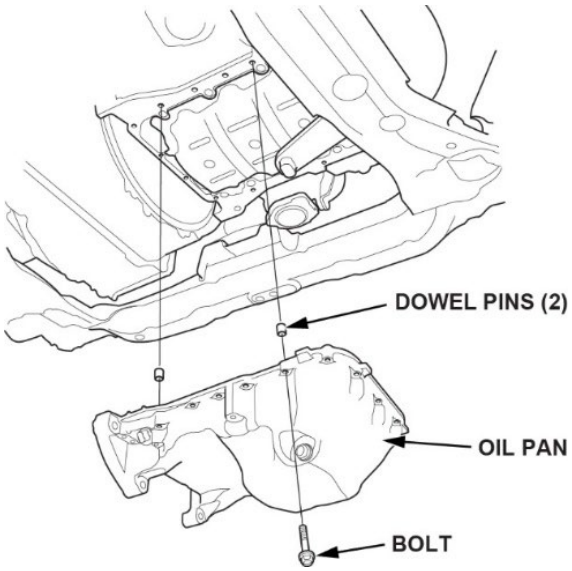
24. Raise the vehicle.
25. Install the oil strainer and baffle plate.

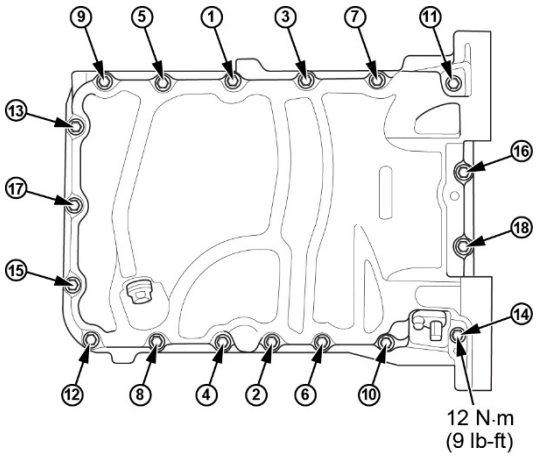


26. Install the engine oil pan.

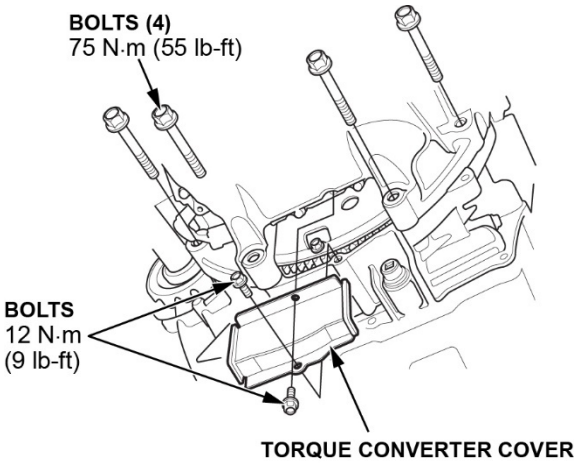
    NOTE:

    - **Apply** a liquid sealing gasket (Hondabond HT Silicone Gasket, P/N 08718-0004) to the oil pan mating surface of the engine block and inside edge of the threaded bolt holes.
    - Torque the bolts to **12 N·m (9 ft-lb).**
    - **Wait** at least **30 minutes** before filling the engine with oil**.**
    - **Do not** run the engine for at least **3 hours** after installing the oil pan.
    - **Follow** the bolt installation sequence.

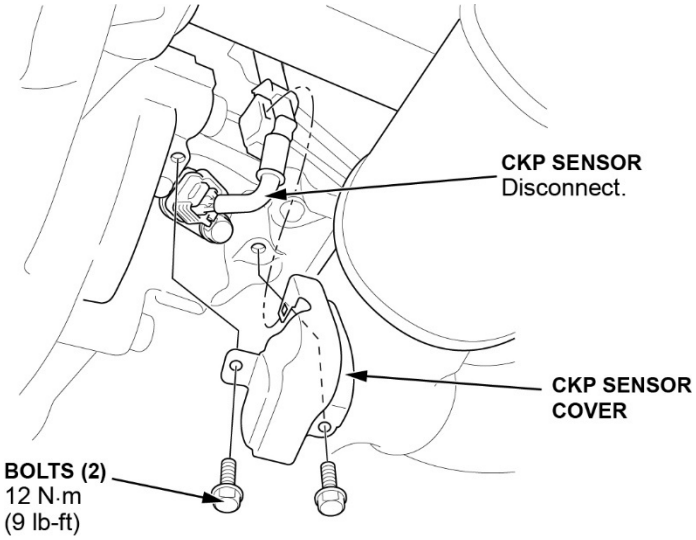




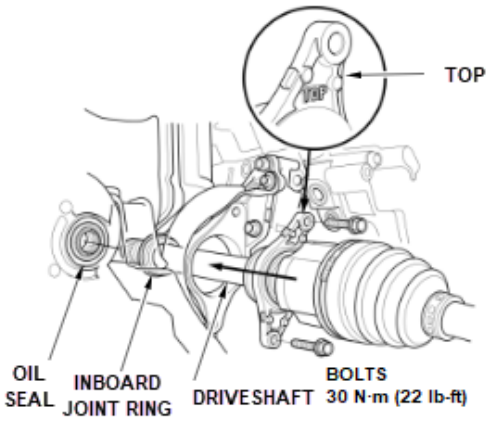
27. Install the 4 lower transmission bolts and the torque converter cover.



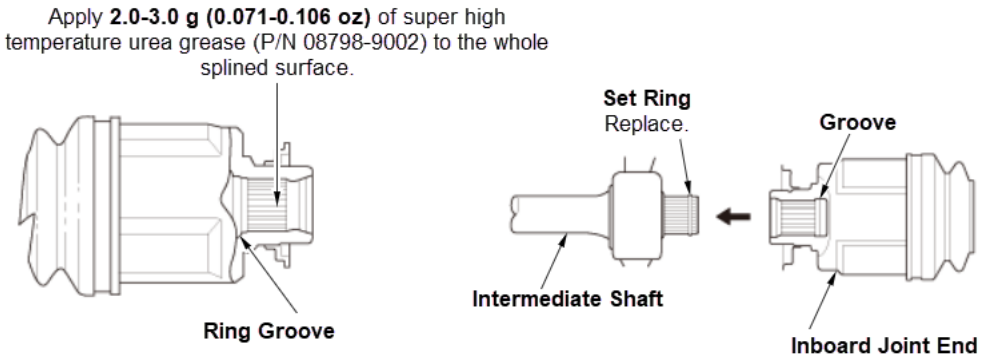
28. Install the CKP sensor cover and disconnect the CKP sensor.



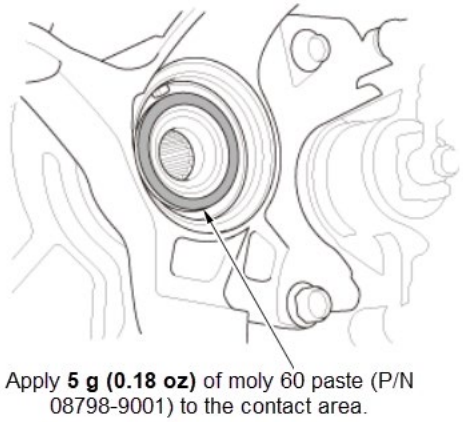
29. **6AT INSPECTION B ONLY:** Insert the driveshaft into the differential correctly, install the bracket bolts.

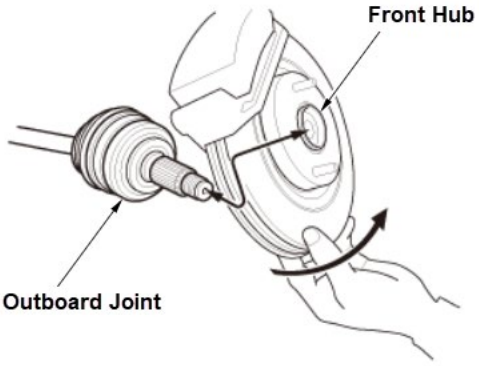


30. **9AT INSPECTION B ONLY:** Install the passenger side driveshaft.
    1. Apply **2.0–3.0 g** of molybdenum grease to the whole splines surface of the right driveshaft.
    2. After applying grease, remove the grease from the splined grooves at intervals of 2-3 splines and from the set ring groove so that air can bleed from the intermediate shaft.
    3. Install a new set ring.
    4. Insert the inboard joint end of the driveshaft onto the intermediate shaft until the set ring locks in the groove.



31. Apply about 3.0 g of molybdenum grease to the contact area of the outboard joint and the front wheel bearing.
32. Install the outboard joint into the front hub on the knuckle.

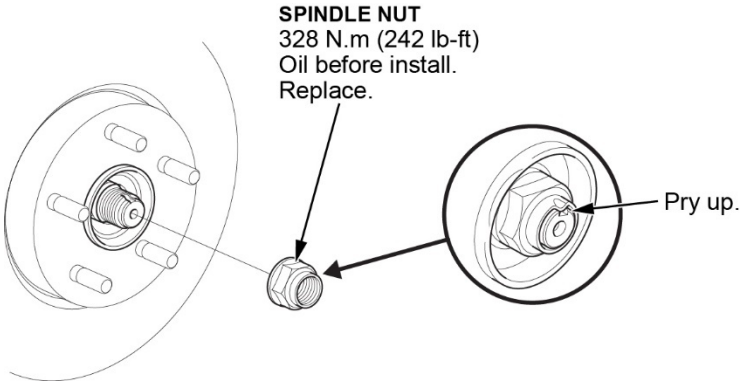




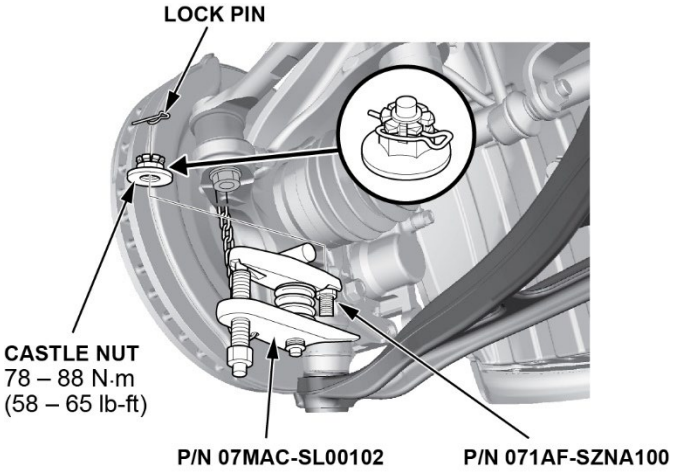
33. Install the new spindle nut.

    NOTE:

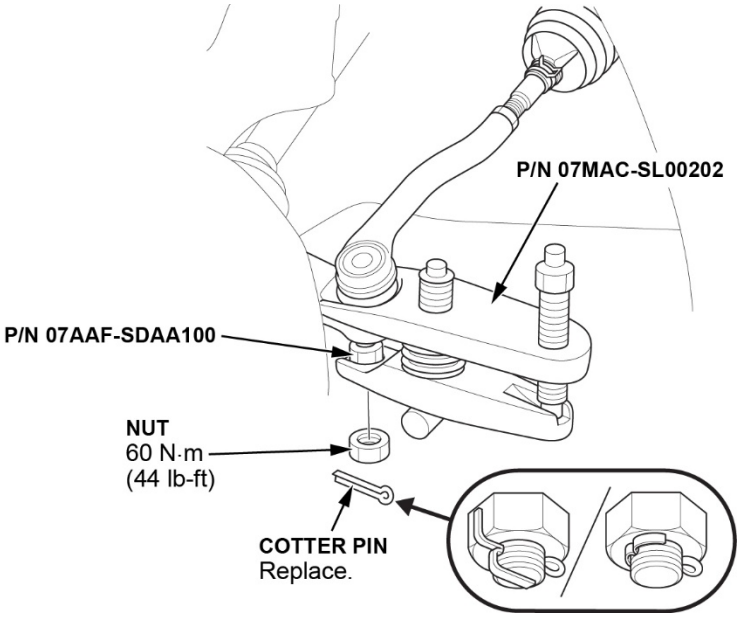
    - Apply a small amount of engine oil to the seating surface of the new spindle nut.
    - Use a drift to stake the spindle nut shoulder against the driveshaft.
    - Be careful not to make a crack on the spindle nut when staking.



34. Connect the passenger's side lower knuckle ball joint.

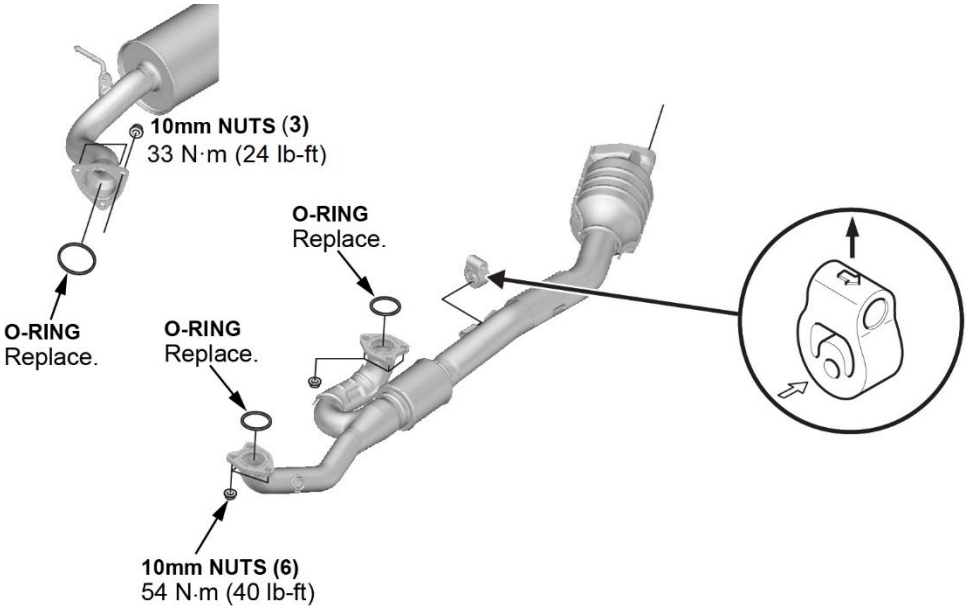


35. Connect the tie-rod end ball joint.



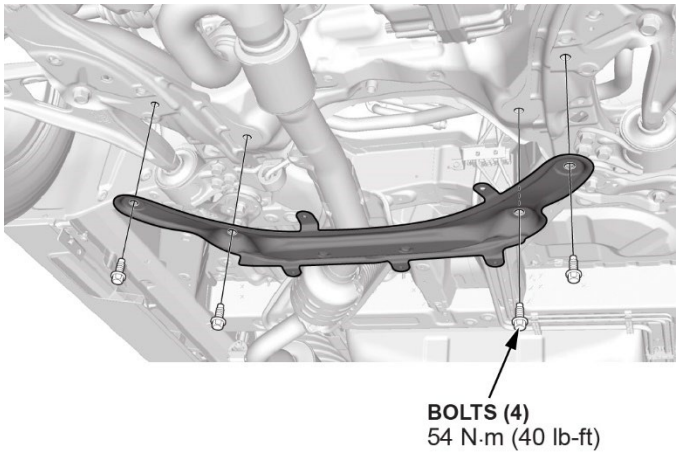
36. Install the A-pipe.

    NOTE: The nuts are a must replace part.

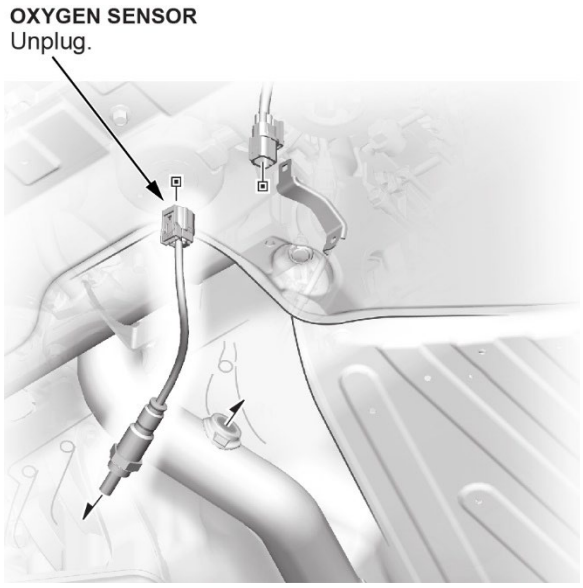


37. Install the sub frame stiffener plate.

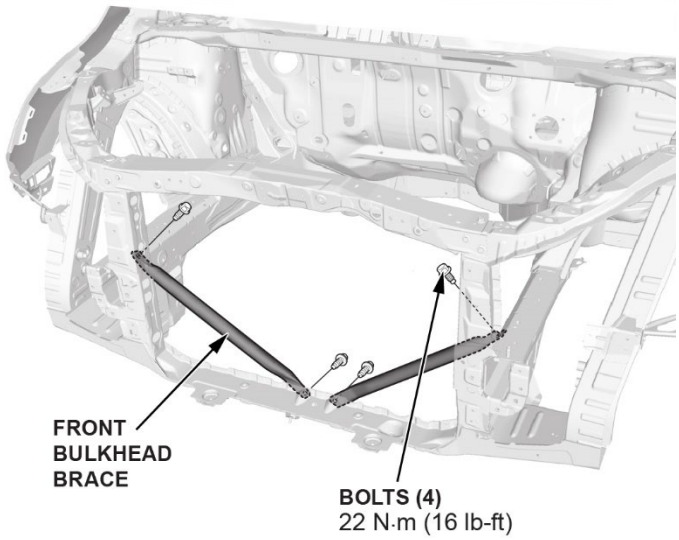
    NOTE: The bolts are a must replace part.



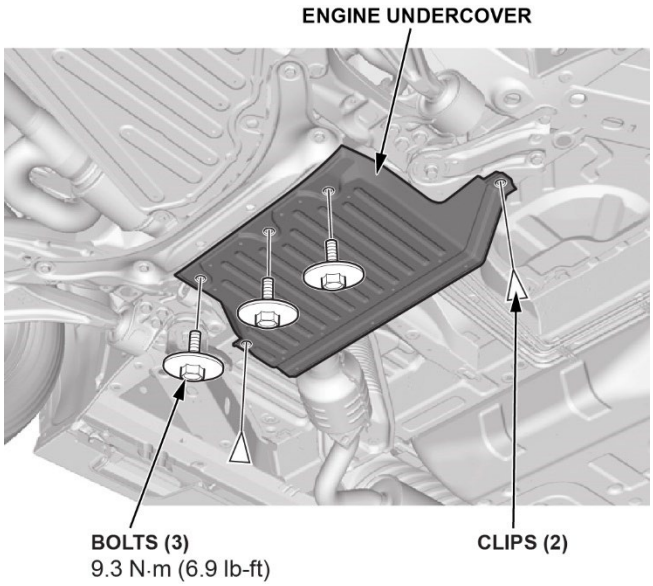
38. Plug in the bank 2 oxygen sensor.

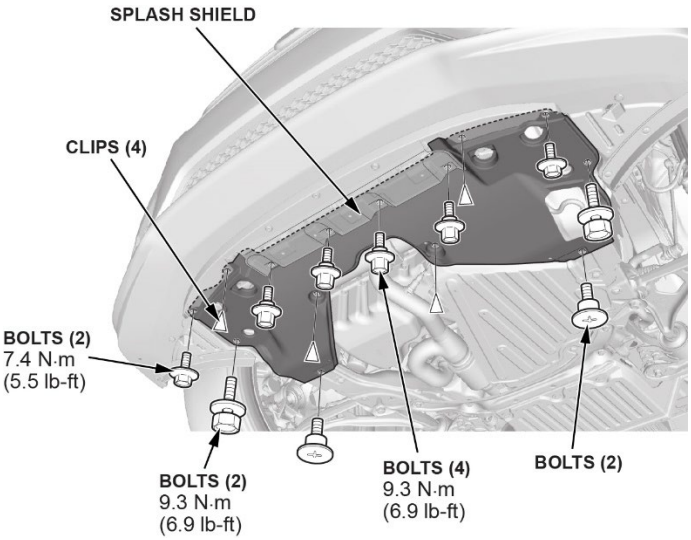


39. Install the bulkhead brace.

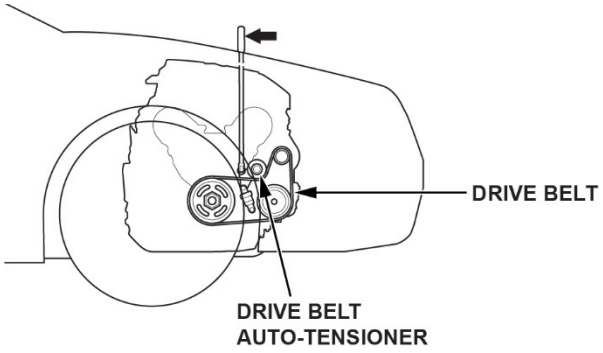


40. Install the engine undercover and the lower splash shield.





41. Replace the washer and install the oil drain bolt, **40 N·m (30 lb-ft).**
42. Install the passenger side front wheel, **127 N·m (94 lb-ft).**
43. Lower the vehicle.
44. **INSPECTION B ONLY:** Install the drive belt.



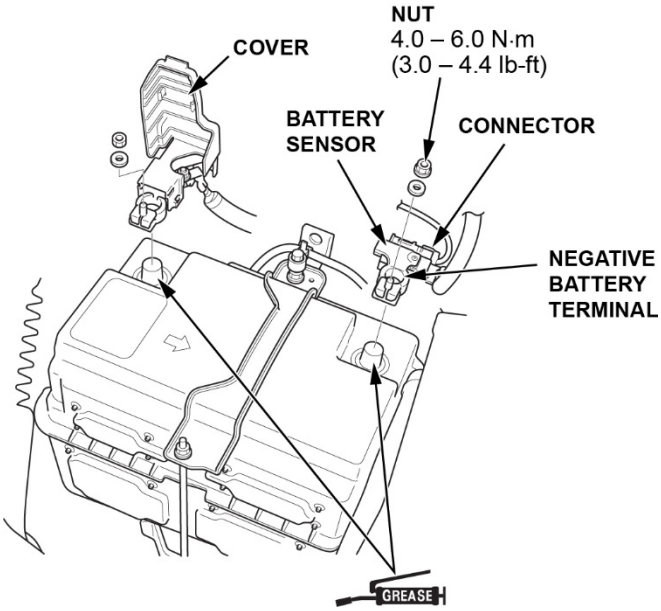
45. Install the oil dipstick and fill the engine oil.

    Fill: 5.1 L (5.4 US qt.)

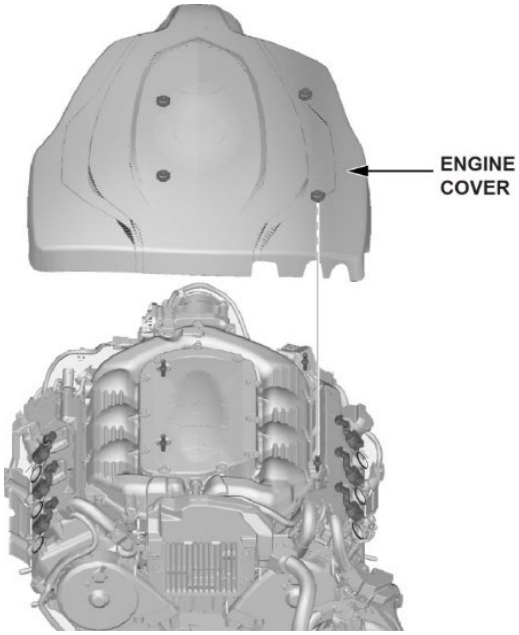
46. Connect the 12-volt battery.

NOTE:

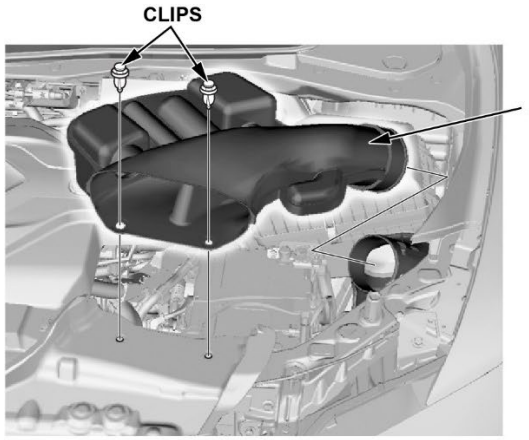
- Battery terminal installation on this vehicle is critical. Failure to follow the terminal installation or inspection procedures could cause electrical problems, stalling, and/or DTCs to set. Do not over torque the terminals, and do not use an impact gun.
- Battery terminal installation must be level or below the post.

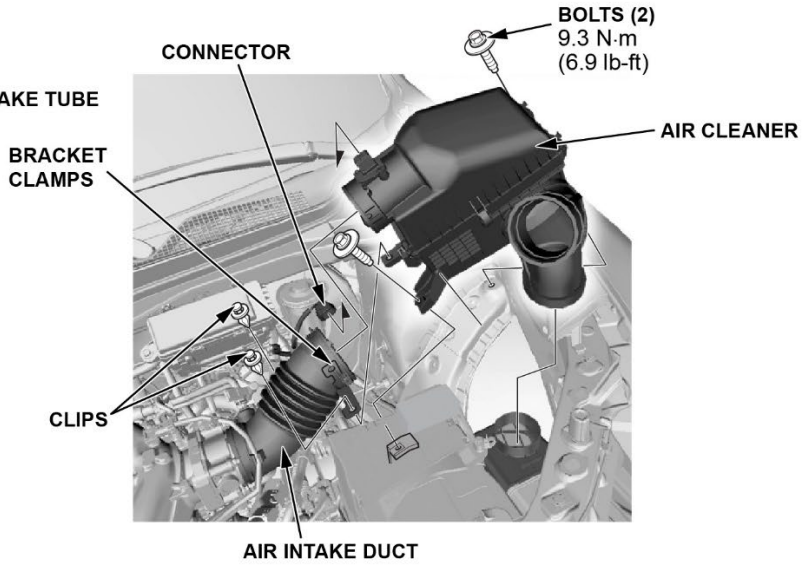


47. Install the engine cover.

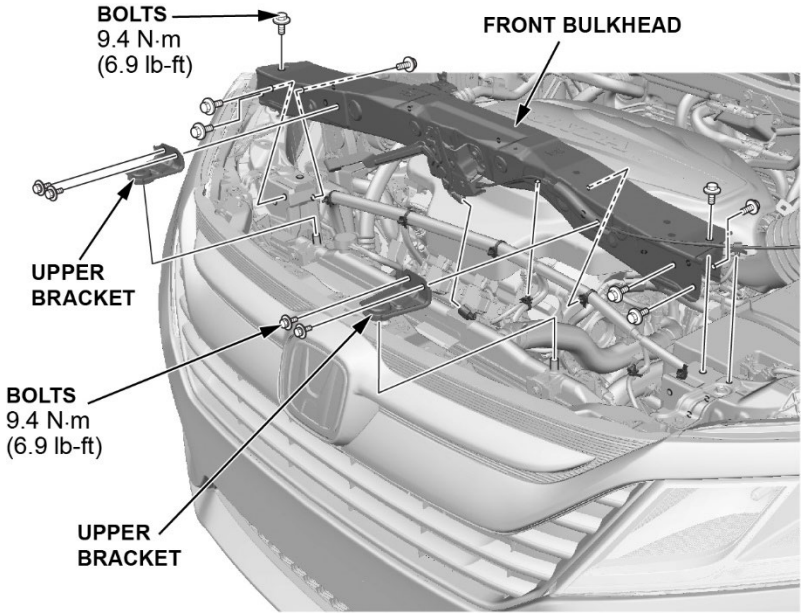


48. Install the air intake tube and air cleaner.

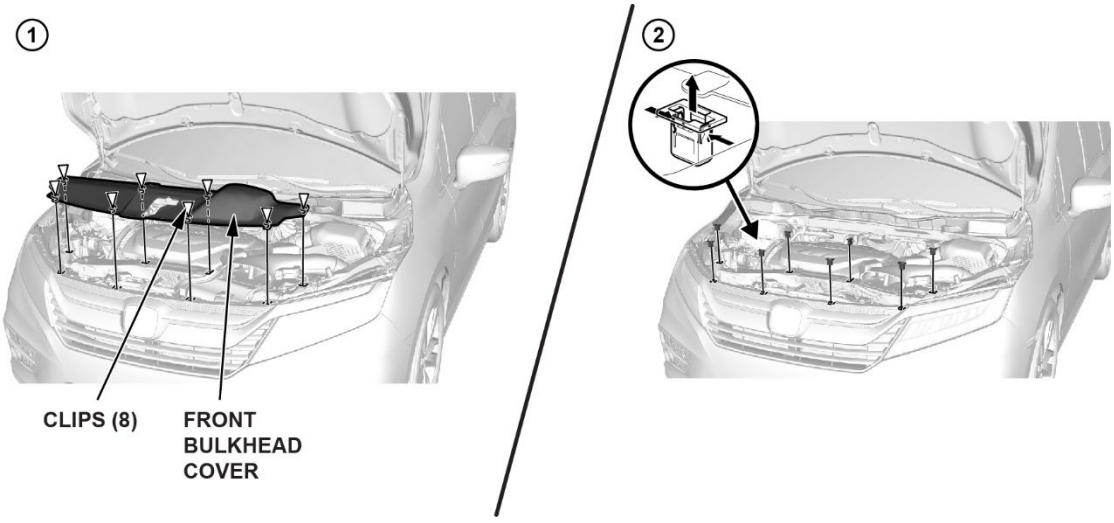




49. Install the front bulkhead and upper bracket.



50. Install the front bulkhead cover.



51. Make sure the vehicle has sat for at least **3 hours** from the time the oil pan was reinstalled.

    NOTE: This is to make sure the bonding on the oil pan has completely cured.

52. Connect to the i-HDS.

53. Do a PCM reset.

    - Select the PGM-FI system with i-HDS.
    - Reset the PCM with the i-HDS while the engine is stopped.
    - Turn the vehicle to the OFF (LOCK) mode.
    - Turn the vehicle to the ON mode and wait 30 seconds.
    - Turn the vehicle to the OFF (LOCK) mode and disconnect the i-HDS from the DLC.

54. Do the CKP Pattern clear and learn.
    - Select CRANK PATTERN in the ADJUSTMENT MENU with the i-HDS.
    - Select CRANK PATTERN CLEAR, and clear the CKP pattern.
    - Select CRANK PATTERN LEARNING, and follow the screen prompts.
    - Turn the vehicle to the OFF (LOCK) mode.
    - Jump the SCS line with the i-HDS.
    - Wait 60 seconds and exit the SCS mode with the i-HDS.
55. Do the idle speed inspection.

    NOTE: If the idle speed is not within specification, do the *PCM Idle Learn Procedure* in the service manual.
    - Start the engine and place the vehicle in PARK or NEUTRAL.
    - Hold the engine speed **without load at 3,000 rpm** until the radiator fan comes on, then let it idle.
    - Check the idle speed under no load conditions: headlights, blower fan, radiator fan, audio system, and A/C off.

      Idle Speed at No Load Should Be:
    - **Engine: 680 ± 50 rpm in PARK or NEUTRAL**
    - Let the engine idle for 1 minute with a high electrical load (A/C on, temperature set to max cool, blower fan on high, headlights on high beam).

      Idle Speed at High Load Should Be:

      Engine: 680 ± 50 rpm in PARK or NEUTRAL
56. Do the VSA sensor neutral position memorization procedure.

    NOTE: Do not press the brake pedal during this procedure.
    - Park the vehicle on a flat and level surface.
    - Make sure the steering wheel is straight ahead.
    - Select VSA ADJUSTMENT in the i-HDS.
    - Select ALL SENSORS, and follow the screen prompts.
57. Do the Steering Angle Sensor Neutral Position.
    - Select EPS ADJUSTMENT on the i-HDS.
    - Select EPS STEERING ANGLE SENSOR VALUE CLEAR, and follow the screen prompts.
58. If Equipped: Do the Millimeter Wave Radar Aiming.

    NOTE: Link to Millimeter Wave Radar Aiming (Click HERE)
59. Exit the i-HDS, REPAIR #1 is complete.

REPAIR #2 AND #3 REPLACE THE SHORT BLOCK

NOTE:

- **Log into the application tool prior to starting this portion and input any necessary photo(s) for the new parts.**
  For BEARING INSPECTION application instruction, refer to this Job Aid: (Click HERE)
- **The Bearing Inspection Inquiry Team will email unique warranty codes to file a claim.**

1. Disconnect steering column at steering joint.

   NOTE: *Steering Joint Disconnection and Removal* (Click HERE)
2. Remove the piston stoppers, if still installed.
3. Remove the battery.

   NOTE: *12 Volt Battery Removal, Installation, and Test* (Click HERE)
4. Remove the intake tubing and filter box.

   NOTE: *Air Cleaner Removal and Installation* (Click HERE)
5. Disconnect the battery cable around the under-hood fuse box and at the positive terminal.

   NOTE: *Under-hood Fuse/Relay Box Removal and Installation* (Click Here)
6. **6AT Only:** Remove the shift cables at the transmission.

   NOTE: *Transmission Range Switch Removal and Installation* (Click HERE)
7. Disconnect the brake booster vacuum hose and EVAP hose.

   NOTE: *Engine Removal and Installation* (Click HERE)
8. Disconnect the PCM and engine connector.

   NOTE: *PCM Removal and Installation* (Click HERE)
9. Lift the vehicle.
10. Remove the front wheels, **127 N·m (94 lb-ft)**.
11. **AWD Only:** Unbolt prop shaft from transfer case.

    NOTE: *Propeller Shaft Removal and Installation* (Click HERE)
12. Move the driver fender liner as needed.
13. Drain the coolant.

    NOTE: *Coolant Replacement* (Click HERE)
14. **9AT Only**: Separate the passenger side drive shaft inner joint from the intermediate shaft, if not already removed during Inspection B.

    NOTE: *Front Driveshaft Removal and Installation* (Click HERE)
15. Remove the transmission ground cable.

    NOTE: *Automatic Transmission Removal and Installation* (Click HERE)
16. Disconnect the front active mount connector.

    NOTE: *Front Engine Mount Removal and Installation* (Click HERE)
17. Disconnect the rear active connector.

    NOTE: *Rear Engine Mount Removal and Installation* (Click HERE)

18. Remove the torque converter bolts.

    NOTE:

    - *6AT Automatic Transmission Removal and Installation* (Click HERE)
    - *9AT Automatic Transmission Removal and Installation* (Click HERE)

19. Remove the upper nuts to the sway bar links.

    NOTE: *Front Damper/Spring Removal and Installation* (Click HERE)

20. Loosen the 2 lower condenser bolts.

    NOTE: *A/C Condenser Removal and Installation* (Click HERE)

21. Lower the vehicle.
22. Remove the front, center upper beam A.

    NOTE: *Front Bumper Center Upper Beam Removal and Installation* (Click HERE)

23. Disconnect the radiator hoses and heater hoses **from the engine side**.

    NOTE: *Water Passage Removal and Installation* (Click HERE)

24. Disconnect the ATF warmer lower hose, only on the engine side.

    NOTE: *Automatic Transmission Removal and Installation* (Click HERE)

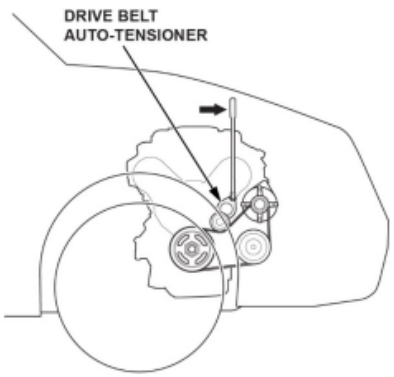
25. Only remove the right-side core support brace, if not already removed during Inspection B.

    NOTE: *Front Bulkhead Brace Removal and Installation* (Click HERE)

26. Remove the radiator, with fans and hoses attached.

    NOTE: *Radiator and A/C Condenser Fan, Motor, and Shroud Removal and Installation* (Click HERE)

27. **If not already removed during Inspection B,** remove the accessory drive belt.



28. Remove the alternator, if not already removed during Inspection B.

    NOTE: *Alternator Removal and Installation* (Click HERE)

29. Unbolt the A/C compressor, then move it forward to sit in the core support.

    NOTE:

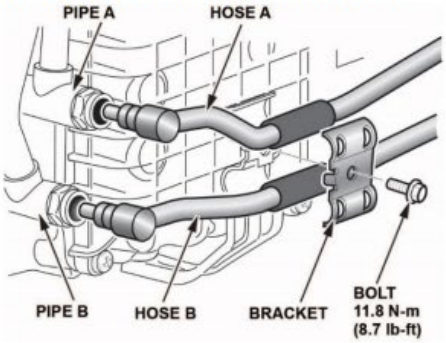
    - Do not disconnect the sealed system lines.
    - *A/C Compressor Removal and Installation* (Click HERE)

30. Disconnect the heater core hoses on the engine side.

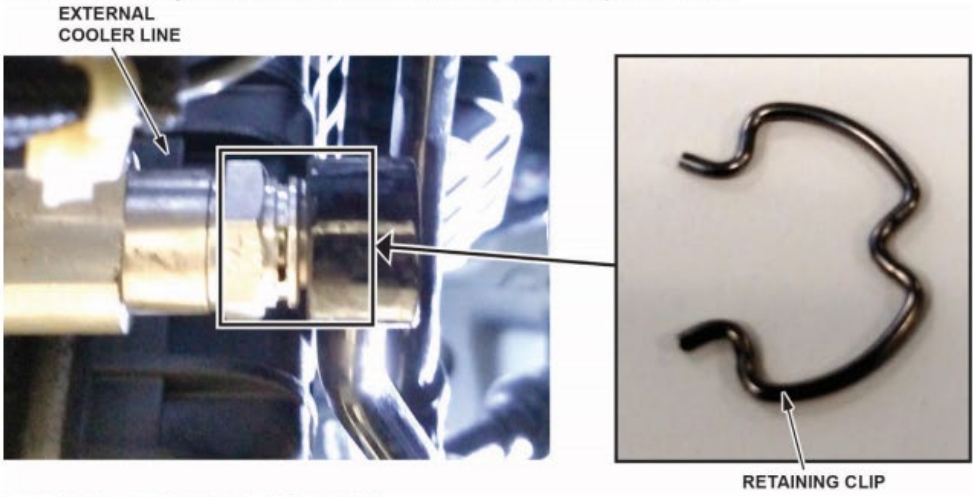
    NOTE: *Engine Removal and Installation* (Click HERE)

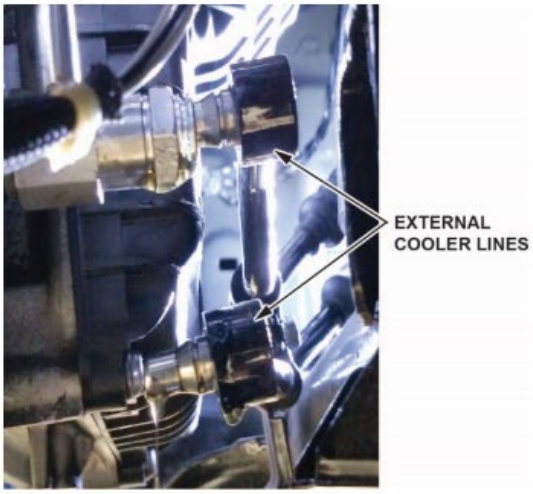
31. **9AT Only**: Disconnect the ATF cooler hoses, if equipped.

- Remove the bolt and bracket as shown.



- Push the retaining clip out, and detach the external accessory cooler lines.





32. Unbolt the engine side bracket.

    NOTE: *Side Engine Mount Removal and Installation* (Click HERE)

33. Disconnect the fuel line at the high-pressure fuel pump.

    NOTE: *Fuel Line/Quick-Connect Fitting Removal and Installation* (Click HERE)

34. Raise the vehicle to waist height.

35. Remove the pinch bolt for knuckle and strut.

    NOTE: *Front Damper/Spring Removal and Installation* (Click HERE)

36. Unbolt the brake caliper at the bracket and hang on the spring with S hook.

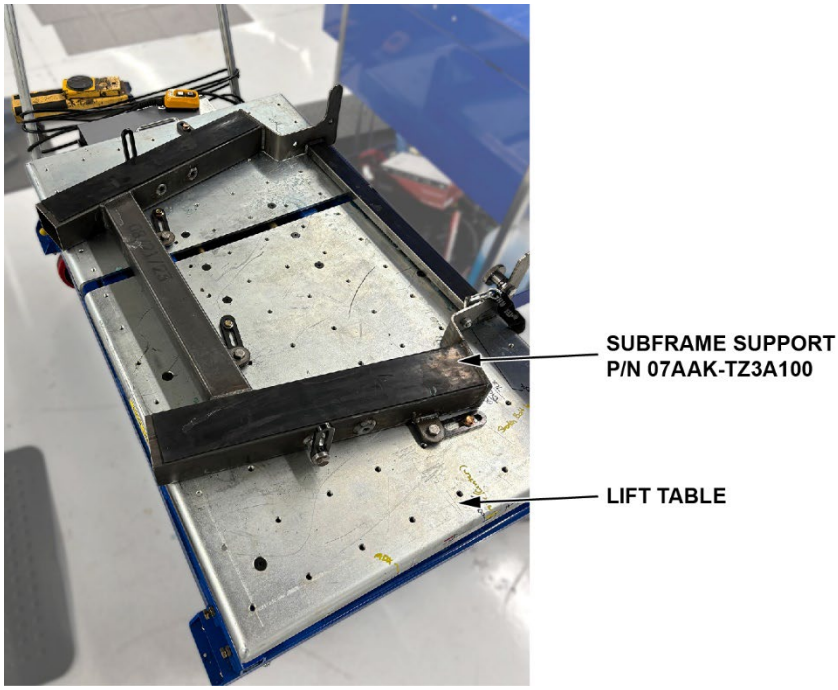
    NOTE:

    - Do not remove the banjo bolt.
    - *Front Brake Caliper Removal and Installation* (Click HERE)

37. Remove the wheel speed sensor from the knuckle.

    NOTE: *Wheel Speed Sensor Removal and Installation* (Click HERE)

38. Set the lift table under the subframe with the subframe attachment.



39. Raise the lift table until it contacts with the subframe.
40. Unbolt the subframe.
41. Lower the lift table with the subframe, engine, and transmission assemblies as one.
42. Remove the rear (Bank 1) catalytic converter.

    NOTE: *Warm Up TWC Removal and Installation* (Click HERE)

43. Remove the passenger axle nut, if not already removed during Inspection B.

    NOTE: *Front Driveshaft Removal and Installation* (Click HERE)

44. **9AT Only:** Remove the passenger side drive shaft and intermediate shaft heat shield.

    NOTE: *Front Driveshaft Removal and Installation* (Click HERE)

45. **9AT Only:** Insert the transmission axle cap.

46. **6AT Only:** remove the drive shaft with the intermediate shaft, with support base.

    NOTE: *Front Driveshaft Removal and Installation* (Click HERE)

47. Unbolt the EGR pipe from the coolant cross over pipe.

    NOTE: *EGR Pipe Removal and Installation* (Click HERE)

48. Remove the front bank catalytic converter, with the EGR pipe attached.

    NOTE: *Warm Up TWC Removal and Installation* (Click HERE)

49. Remove the ICM from the original engine.

    NOTE: *Injector Control Module Remove and Installation* (Click HERE)

50. Remove the intake manifold and intake manifold base.

    NOTE: *Intake Manifold Removal and Installation* (Click HERE)

51. Disconnect the oxygen sensors, coils, ECT sensor, TDC sensor.

    NOTE: *Engine Removal and Installation* (Click HERE)

52. Separate the engine harness from the engine and flip over to transmission.

53. Cover the intake ports.

54. Remove the fuel joint pipe and high-pressure fuel pump.

    NOTE: *High Pressure Fuel Pump Removal and Installation* (Click HERE)

55. Disconnect the fuel pressure sensor, injector clips, and the injectors.

    NOTE: *Injector Removal and Installation* (Click HERE)

56. Remove the fuel line with the injectors attached.

    NOTE: *Injector Removal and Installation* (Click HERE)

57. Remove the starter.

    NOTE:

    - **6AT** (Click HERE)
    - **9AT** (Click HERE)

58. Remove the water passage (including EGR valve) and coolant connecting pipe.

    NOTE: *Water Passage Removal and Installation* (Click HERE)

59. Remove the injector C/U bracket.

    NOTE: *Injector Control Module Removal and Installation* (Click HERE)

60. Remove the injector sub harness with knock sensors.

    NOTE: *Cylinder Head Removal and Installation* (Click HERE)

61. Remove the valve covers.

    NOTE: *Cylinder Head Removal and Installation* (Click HERE)

62. Remove the crank pulley.

    NOTE: *Crankshaft Pulley Removal and Installation* (Click HERE)

63. Remove the timing belt covers.

    NOTE: *Timing Belt Removal and Installation* (Click HERE)

64. Remove the lower half of side engine mount bracket of the old engine. Transfer the foam insulator from original bracket to new, if applicable.

    NOTE: *Timing Belt Removal and Installation* (Click HERE)

65. Remove the idler pulley and timing belt.

    NOTE: *Timing Belt Removal and Installation* (Click HERE)

66. Remove the crank gear and key.

    NOTE: *Timing Belt Drive Pulley Removal and Installation* (Click HERE)

67. Remove the auto tensioner and then compress the tensioner to install the locking pin.

    NOTE: *Timing Belt Auto-Tensioner Removal and Installation* (Click HERE)

68. Remove the timing belt adjuster and collar.

    NOTE: *Timing Belt Adjuster Removal and Installation* (Click HERE)

69. Remove the cam gear and cam gear plates.

    NOTE: *Camshaft Pulley Removal and Installation* (Click HERE)

70. Remove the head bolts and measure for stretch, **if not installing new cylinder heads**.

    NOTE: *Cylinder Head Removal and Installation* (Click HERE)

71. Lift the heads off the original block, **if not installing new cylinder heads**.

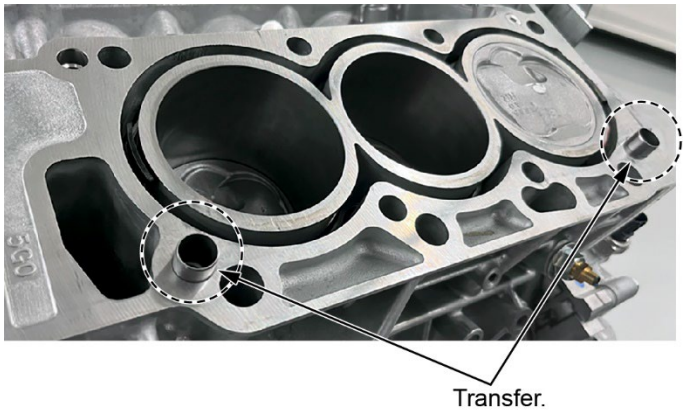
    NOTE: *Cylinder Head Removal and Installation* (Click HERE)

72. Mount the new block onto the engine stand.

73. Remove the side mount lower half.

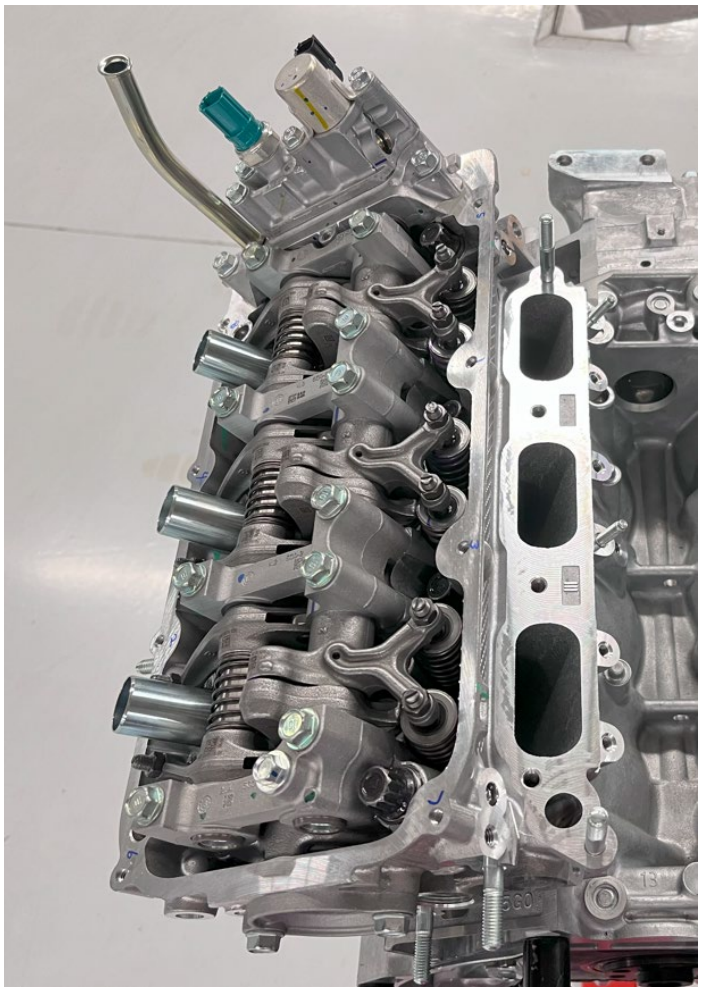
74. Transfer the cylinder head dowel pins to the new engine.

    NOTE: *Cylinder Head Removal and Installation* (Click HERE)



75. Lay in the new head gasket.

76. Set the cylinder heads on top of new head gaskets. Use new cylinder heads **if instructed** by Bearing Inspection Inquiry Judgement.



77. Coat the head bolts with new engine oil.

    NOTE: *Cylinder Head Removal and Installation* (Click HERE)

78. Torque the head bolts to specification and in sequence.

    NOTE: *Cylinder Head Removal and Installation* (Click HERE)

79. Install the cam gear plates and cam gears to a new cylinder head (if instructed to replace cylinder heads).

    NOTE: *Camshaft Pulley Removal and Installation* (Click HERE)

80. Install the auto tensioner.

    NOTE: *Timing Belt Auto-Tensioner Removal and Installation* (Click HERE)

81. Install the crank gear and key.

    NOTE: *Timing Belt Drive Pulley Removal and Installation* (Click HERE)

82. Install the adjuster pulley, the idler pulley and timing belt.

    NOTE:

    - Make sure the timing is set correctly.
    - *Timing Belt Inspection* (Click HERE)

83. Install the side engine mount bracket.

    NOTE: *Side Engine Mount Removal and Installation* (Click HERE)

84. Install the timing belt covers.

    NOTE: *Timing Belt Removal and Installation* (Click HERE)

85. Install the timing belt plate and crank pulley, then set the valve clearance.

    NOTE: *Valve Clearance Adjustment* (Click HERE)

86. Replace the valve cover gasket and spark plug tube seals of the original valve covers, as needed.

    NOTE: *Cylinder Head Cover Removal and Installation* (Click HERE)

87. Install the valve covers, spark plugs, and coils.

    NOTE: *Cylinder Head Cover Removal and Installation* (Click HERE)

88. Transfer the A/C compressor bracket to the new block.
89. Install the knock sensors and lay the sub-harness.

    NOTE: *Knock Sensor 1 (Bank 1) and Knock Sensor 2(Bank 2) Removal and Installation* (Click HERE)

90. Secure the sub-harness and ICM bracket.

    NOTE: *Injector Control Module Removal and Installation* (Click HERE)

91. Install the coolant connecting pipe with new O-rings.

    NOTE: *Water Passage Removal and Installation* (Click HERE)

92. Install the coolant passage with new gaskets.

    NOTE: *Water Passage Removal and Installation* (Click HERE)

93. Install the valley seal.
94. **If installing new cylinder heads:** Remove the injectors form the rail and replace the injector O-rings and clips.

    NOTE: *Injector Removal and Installation* (Click HERE)

95. **If installing new cylinder heads:** Install the injectors and fuel rail.

    NOTE: *Injector Removal and Installation* (Click HERE)

96. Install the high pressure fuel pump, joint pipe, and high pressure fuel pump cover.

    NOTE: *High Pressure Fuel Pump Removal and Installation* (Click HERE)

97. Install the engine support bracket to the original engine.

98. Remove the rear engine mount stopper; loosen the upper bolt plus the 4 bolts on the engine mount bracket.

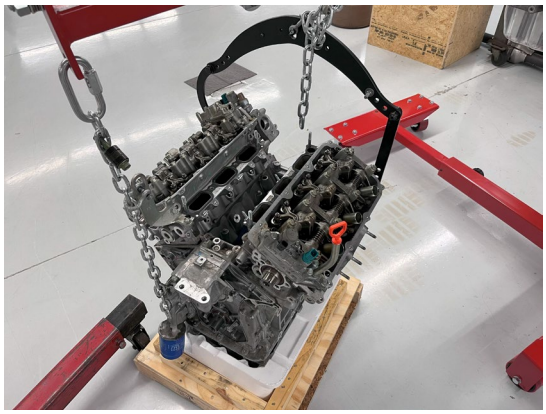
    NOTE: *Engine Mount Tightening Procedure* (Click HERE)

99. Install the engine support bracket to the original engine.
100. Lift and hang the engine to unburden the load on the engine mount and bracket. Unbolt the front engine mount and bracket.
101. Lift the engine and slowly separate from the transmission.

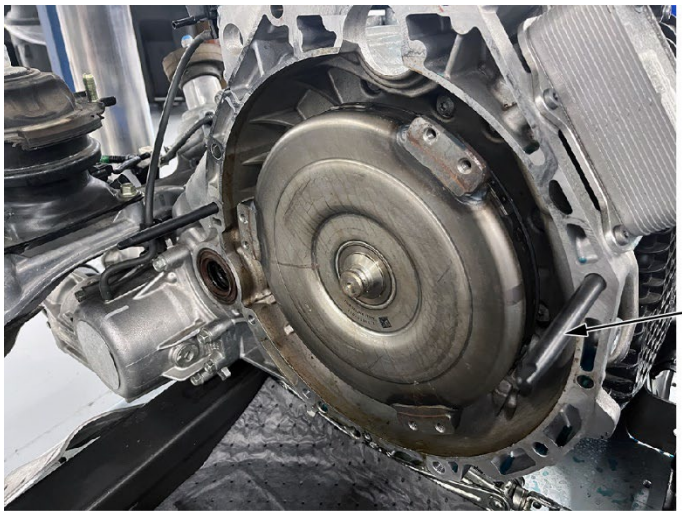
NOTE:

- Watch the torque converter as engine is separating.
- Place the original engine in an out-of-the way and safe place.

102. Transfer the drive plate from the original engine.
103. Install the engine hanger to the new engine.



104. Install the transmission alignment pins to opposite ends of the transmission.



105. Connect the new engine to the transmission with the alignment pins.
106. Install the front engine mount and bracket as well as the rear.

NOTE: *Engine Mount Tightening Procedure* (Click HERE)

107. Install the starter.
108. Reconnect the transmission warmer hoses.
109. Install the bracket on the transmission for harness.
110. Lay the engine harness over the engine and connect all connectors.
111. Install the harness brackets to Bank 1 and Bank 2.
112. Install the Bank 2 warm up catalyst with EGR pipe.

113. **6A/T Only:** Install the drive shaft support axle.
114. **9A/T Only:** Install the intermediate shaft with heat shield and axle.
115. Install the Bank 1 catalyst.
116. Install the front and rear engine mount stoppers.
117. Install the intake manifold base with a new gasket.
118. Replace the EGR pipe gasket on the intake manifold.
119. Install the ICM.
120. Install the intake manifold.
121. Install all remaining parts (with the subframe) in reverse order**.**
122. Add engine oil, **6.1L (6.4 Qt.)**.
123. Add engine coolant:

    6A/T: 8.8L (2.32 gal.)

    9A/T: 8.8L (2.32 gal.)
124. Do a PCM Reset.
125. Do the CKP Pattern clear and learn.
126. Do the idle speed inspection.
127. Do the VSA sensor neutral position memorization procedure.
128. Do the Steering Angle Neutral Position.

TIPS AND TRICKS

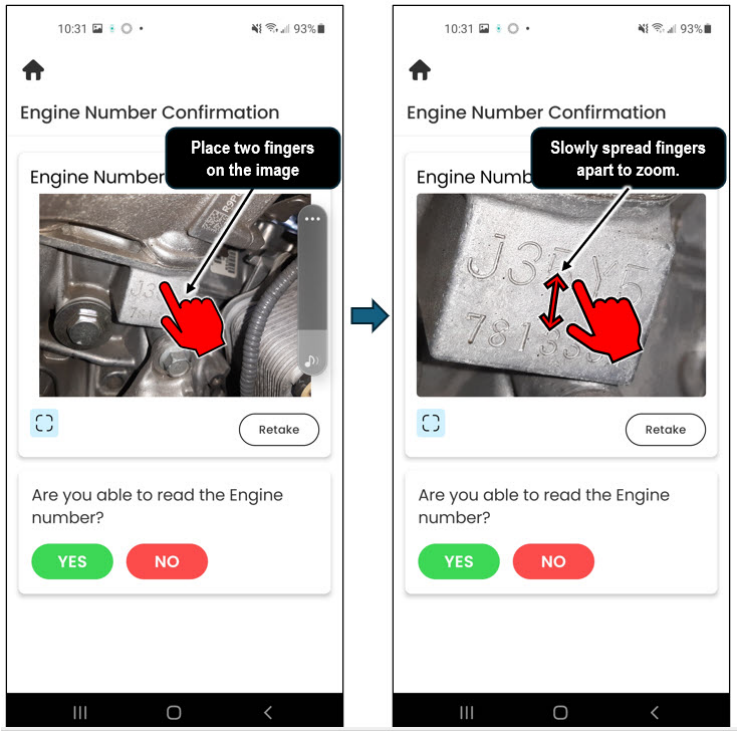
Here are a few tips and trick to help complete the inspection and repair.

Engine Serial Number is NOT legible.

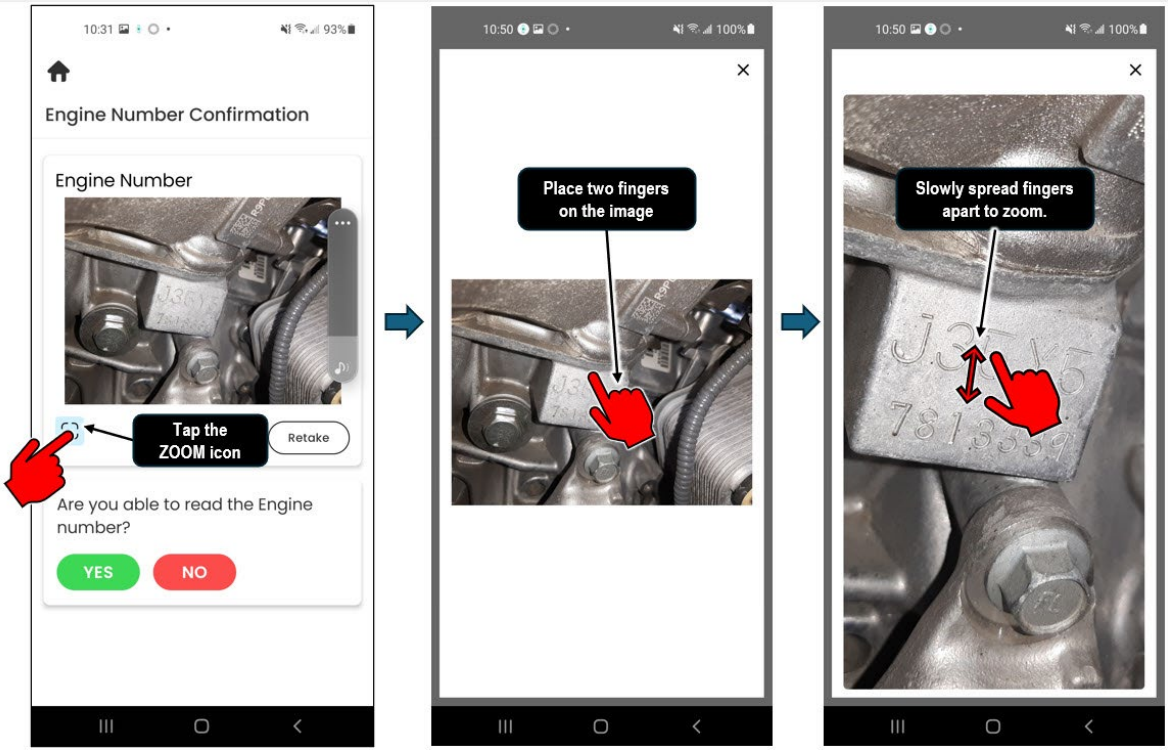
The first step of every inspection is taking a photo of the Engine Serial Number. After capturing the photo, a thumbnail is displayed, and the application asks if you can read the Engine Number.

Before answering the question, confirm the image is in focus. Here are two methods:

A. Use the **pinch-to-zoom** feature on the thumbnail image. Place two fingers on the image and slowly spread them apart to zoom in.



B. Click on the **zoom** icon ⛶ to view the image full screen. The **pinch-to-zoom** feature can also be used on the full screen view.



The Bearing Inspection Team Agents are required to confirm the engine serial number using the photo uploaded for review. If **NO** is selected in response to *"Are you able to read the engine number?,"* the application displays an example of an engine serial number before and after cleaning and refers you to *Tips and Tricks* for cleaning the Engine Number.

Cleaning techniques to make the engine serial number easy to read:

Wire Brush and Scotch Brite

Sprayed with WD40

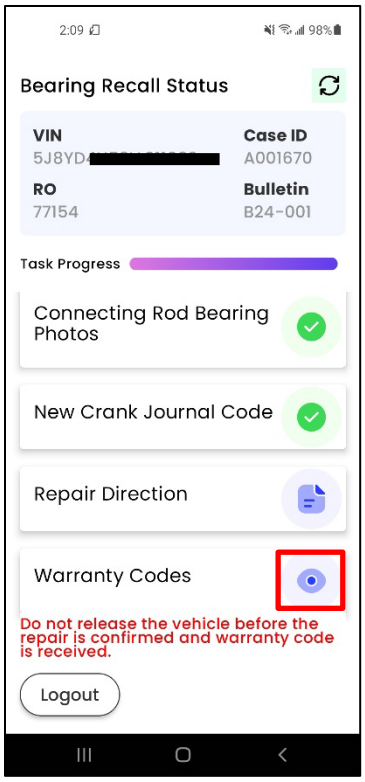
Red Battery Terminal Protector

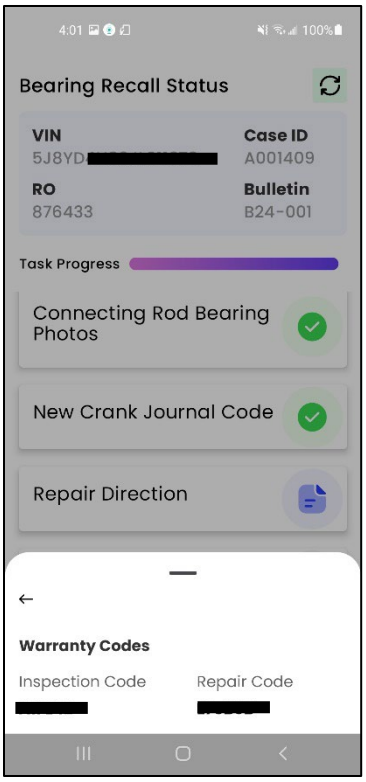
Used/Dirty Engine Oil

Submitting a Warranty Claim

Warranty Codes (Inspection and Repair) are issued as soon as the repair direction for **Bearings Only** is approved.

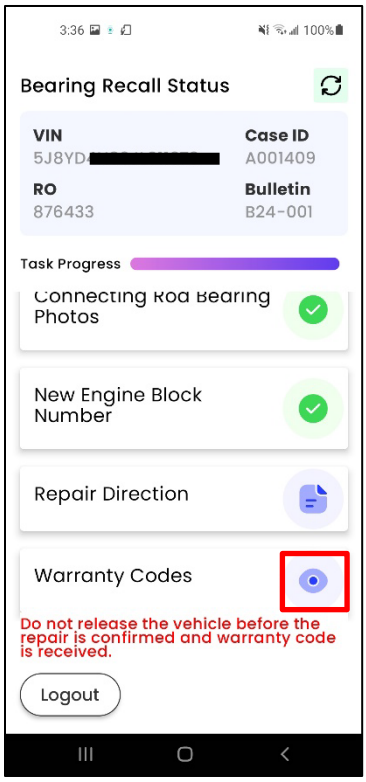
Select **Warranty Codes,** use the Inspection Code and Repair Code to file a warranty claim.

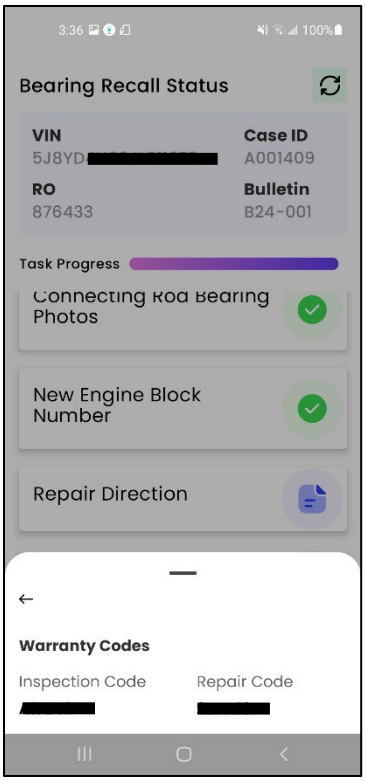




For Crankshaft and Engine Block replacements, the Warranty Repair Code **is not** issued until the Technician uploads the New Crankshaft Journal Codes (Crankshaft Repairs) or New Engine Block Serial Number (Engine Block Repairs).

Select **Warranty Codes,** use the Inspection Code and Repair Code to file a warranty claim.

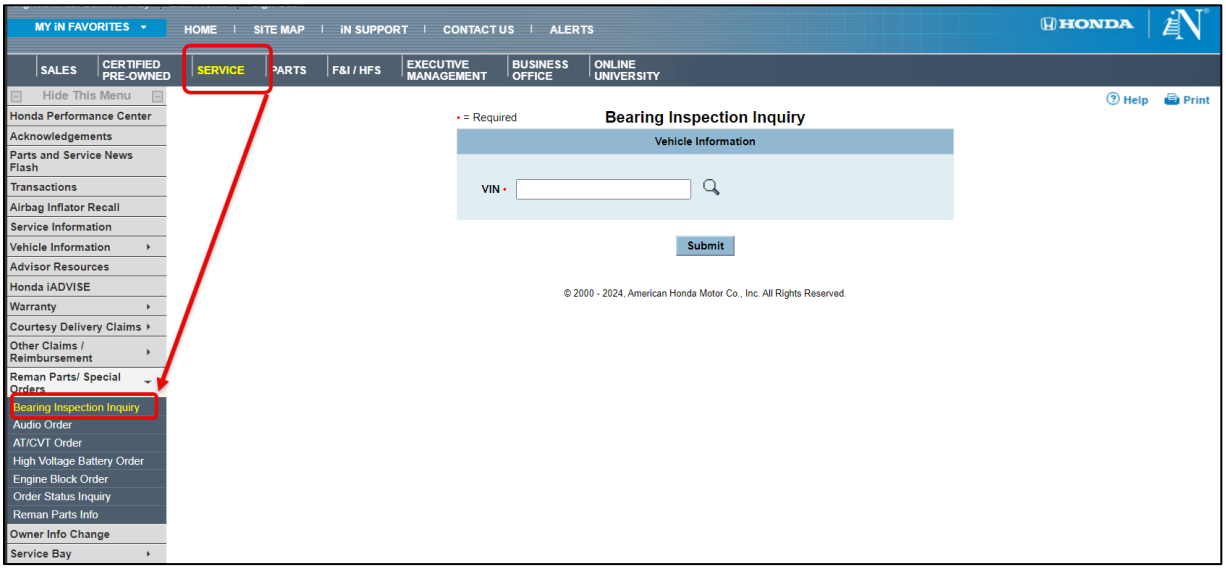




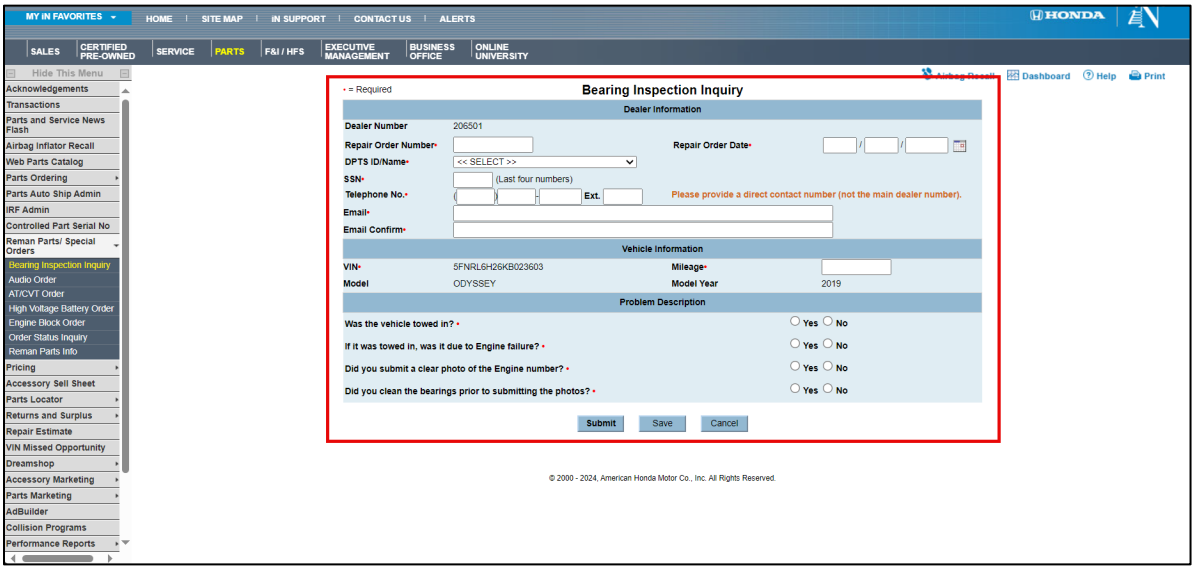
Creating a Bearing Inspection Inquiry.

If instructed by the application tool, create a Bearing Inspection Inquiry.

1. Log into iN.
2. Select SERVICE > REMAN PARTS / SPECIAL ORDERS > BEARING INSPECTION INQUIRY.
3. Select the BEARING INSPECTION INQUIRY.
4. Input the correct **VIN**.



5. Input all vehicle information (including the correct VIN) to create a case.



6. A 7-digit case reference number will be generated.
7. Call the Bearing Inspection Inquiry Team at (800) 824-6632. Press 9 to be routed to the correct department (do not contact TECH LINE for this). Give the answering agent the 7-digit reference number for repair direction.

   NOTE:

   - MAKING THE INCORRECT SELECTION WILL RESULT IN INCREASED WAIT TIMES.
   - **DO NOT contact Tech Line for any inquiries about this safety recall. If instructed by the application tool, call the Bearing Inspection Inquiry Team at (800) 824-6632 (Select Option #9).**

8. The BEARING INSPECTION application will give the **Repair Direction**. You will receive instructions via email on the repair method that includes the unique warranty code and the bearing sizes with their specific locations, if applicable. Parts will be AUTO shipped to your dealership. Make sure to advise the parts department with a copy of the RO.