January 24, 2024 Version 2

A/C Compressor Shaft Seal Leak

Supersedes 23-050, dated June 30,2023, to update the information.

AFFECTED VEHICLES

Year	Model	Trim	VIN Range
2019–20	Pilot	Elite, Touring, Black	ALL
2021	Pilot	ALL	ALL
2019–21	Passport	ALL	ALL
2020–21	Ridgeline	ALL	ALL

REVISION SUMMARY

- There are extensive updates and American Honda recommends you review the entire bulletin.
- **TOOLS INFORMATION** had critical information change, as highlighted in yellow.

SYMPTOM

Customer complaint of the A/C not blowing cold air.

POSSIBLE CAUSE

Oil/Refrigerant leak from the A/C compressor shaft seal.

CORRECTIVE ACTION

Do the inspection procedure and, if directed, replace the compressor shaft seal.

PARTS INFORMATION

Part Name	Part Number	Quantity
Seal Set Assembly (Kit Contains: Bolt, Washer Set, Pulley C-Ring, Felt Washer, Shaft Seal, Seal C-Ring, Suction Port Plug, Discharge Port Plug)	38918-64A-318	1
Discharge Hose O-Ring (1/2”)	80872-SN7-003	1
Suction Hose O-Ring (5/8”)	80871-SN7-003	1

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.

REQUIRED MATERIALS

Part Name	Part Number	Quantity
POE Compressor Oil	38899-RLV-A01	1
RB100EV Oil	38899-64A-A02	1

NOTE: POE Compressor Oil will be phased out and unavailable once RB100EV arrives in domestic inventory.

TOOL INFORMATION

Part Name	Part Number	Quantity
A/C Compressor Seal Puller	07AAC-5AAA100	1
A/C Compressor Seal Guide	07AAG-5AAA101	1
A/C Compressor Seal Driver	07AAE-5AAA101	1
7CVC Seal Press	07AAD-5J6A100	1

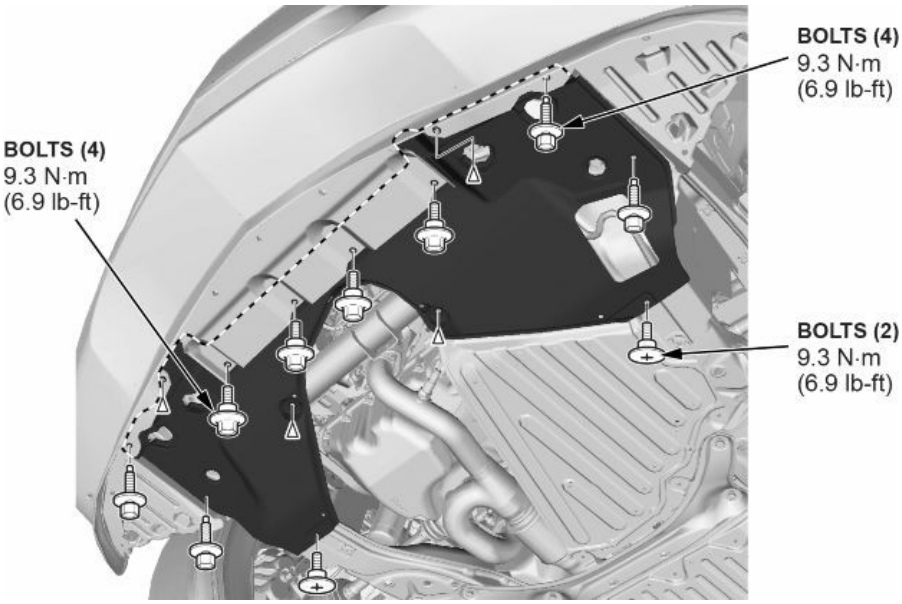
The above tools were auto-shipped to dealers in June 2023. For support or replacements, please contact Special Tools Hotline at **(800) 346-6327**.

WARRANTY CLAIM INFORMATION

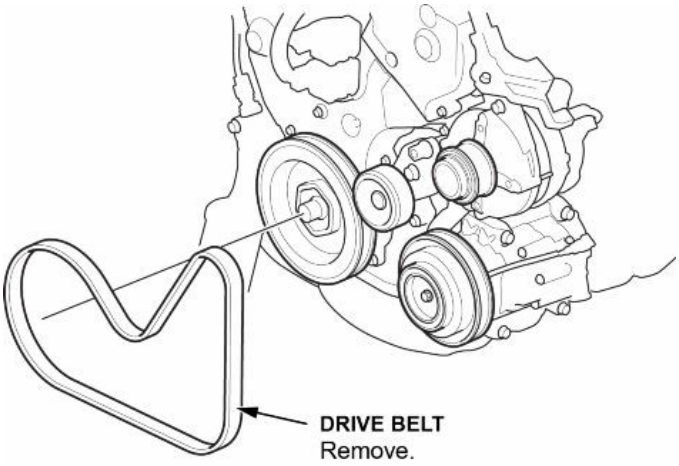
Operation Number	Description	Flat Rate Time	Defect Code	Symptom Code	Template ID	Failed Part Number
614130	Replace the A/C compressor shaft seal (includes inspection).	2.3 hr	07408	03217	A23050A	38810-5J6-A22
620025	Evacuate and recharge	0.7 hr				

INSPECTION PROCEDURE

1. Remove the right-front tire.
2. Remove the engine Undercover.

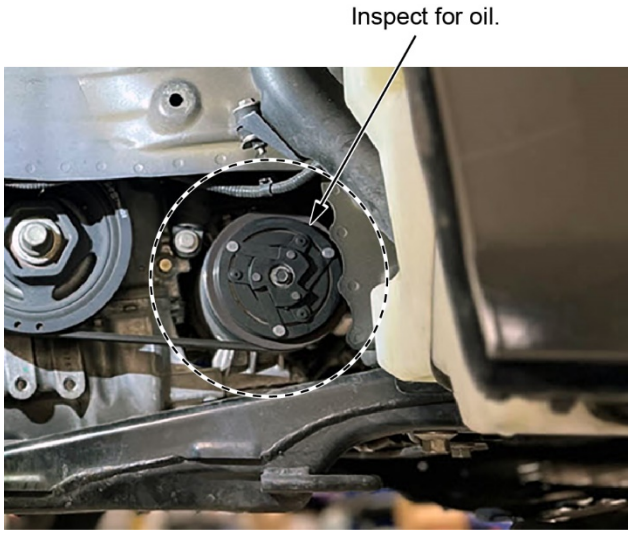


3. Remove the drive belt.



4. Inspect for oil on the armature plate surface of the compressor.

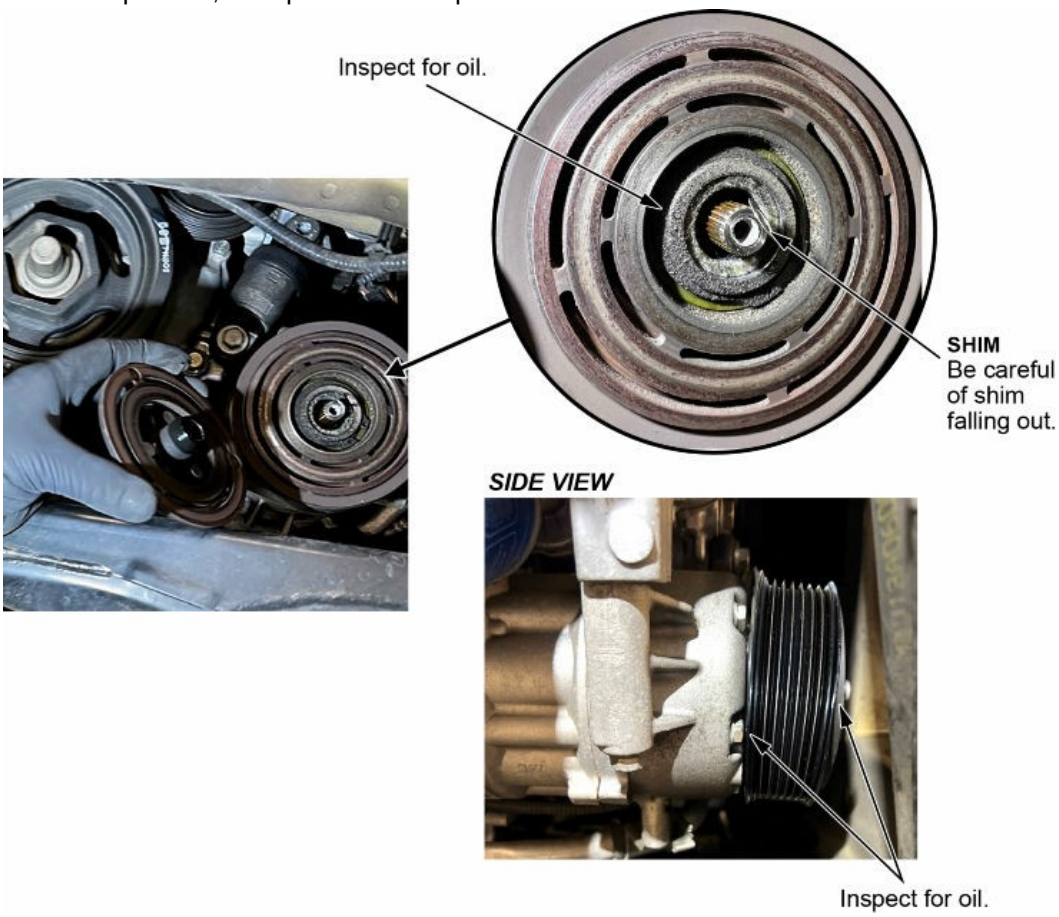
   NOTE: If any oil is stuck to the armature plate surface of the compressor, then proceed to the repair procedure.



5. If no oil is noticed, leave the compressor on the vehicle. Remove the center hub bolt while holding the armature plate with the A/C clutch holder and remove the armature plate from the compressor. Then inspect both for oil.

   NOTE:

   - If oil is present on the hub/armature plate, then proceed to the repair procedure.
   - If no oil is present, then proceed to step 6.

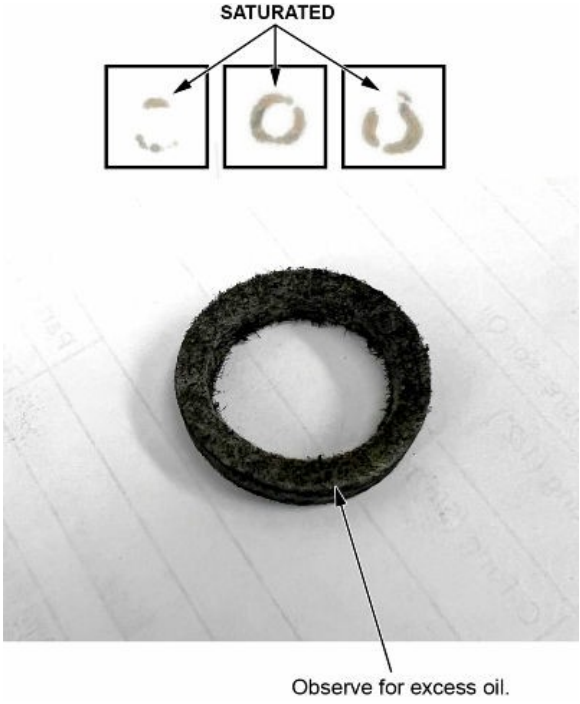


Examples of dry and oily clutch assemblies.

Rotor	Hub	Rotor	Hub
Dry	Dry	Oily	Oily
			
			

6. Remove the felt washer from the compressor and gently place it on a clean sheet of paper.

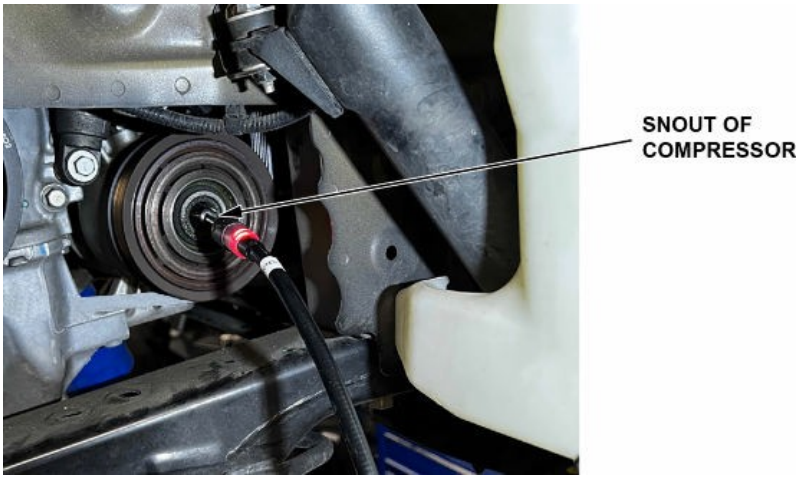
   NOTE: If oil transfers from the felt washer to the paper after **10 seconds**, proceed to the repair procedure. If not, continue to the next step.



7. Using a calibrated leak detector, check for a leak.

   NOTE:

   - Use a leak detector for at least **5 minutes** around the snout of the compressor.
   - An A/C compressor that has not been engaged will yield better results. The longer the A/C compressor has not been run, the better chance you will have at detecting a leak.
   - A higher engine temperature produces more accurate results.
   - If a leak is detected, proceed to the repair procedure.

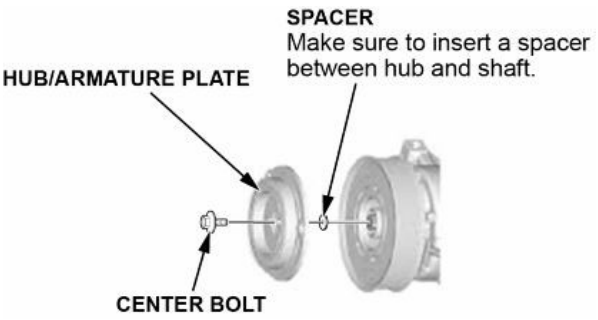


8. If no oil or leak is found, reassemble the hub/armature plate with the original bolt and torque to **(17 N·m or 13 lb-ft).**

   If this is a second time and no leak is found, reassemble the hub/armature plate with a new bolt and torque to **17 N.m (13 lb-ft).**

   NOTE:

   - Verify that the armature plate and pulley rotate smoothly and independently.
   - Measure the clearance between the pulley and armature plate all the way around. If clearance is not within specified limits, remove the armature plate and add/or remove shims as needed.
   - Clearance: **0.30–0.70mm (0.012–0.027in).**
   - Shims are available in three sizes: **0.3mm, 0.4mm, 0.5mm.**



9. Install the drive belt, run the vehicle for **ten minutes** and redo **step 7** again.

   NOTE: If no leak or oil found after completing the second time, then continue with the normal leak check procedure of other A/C components.

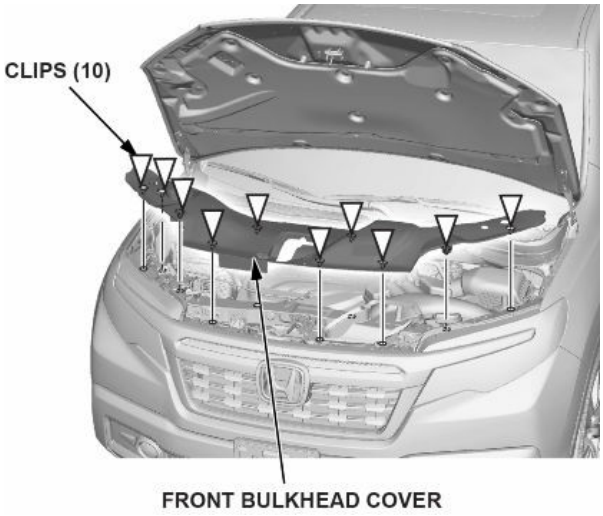
REPAIR PROCEDURE

⚠ CAUTION
Chance for fluids to enter eyes and/or hands which can cause injury. Use safety glasses and rubber gloves.

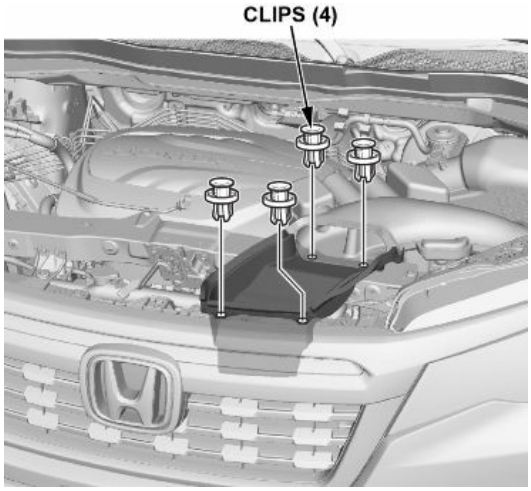
Click here to view a video of the seal repair procedure: ► PLAY VIDEO

1. Connect an A/C recover/recycle/recharge machine to the high-pressure service port and the low-pressure service port following the equipment manufacturer's instructions.

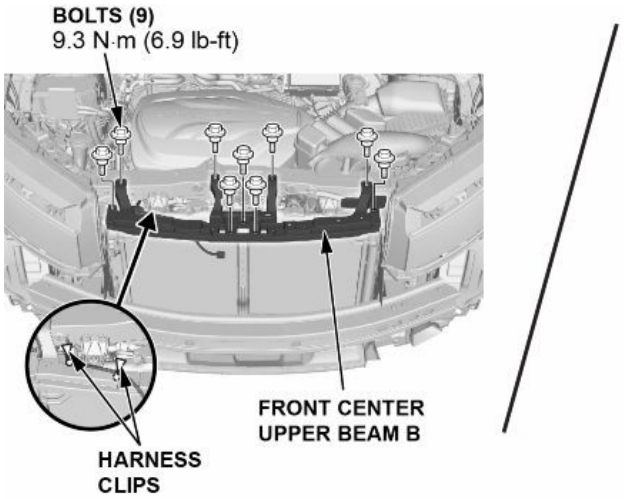
2. Recover the A/C refrigerant.
3. Remove the front bulkhead cover.



4. Remove the intake air guide.

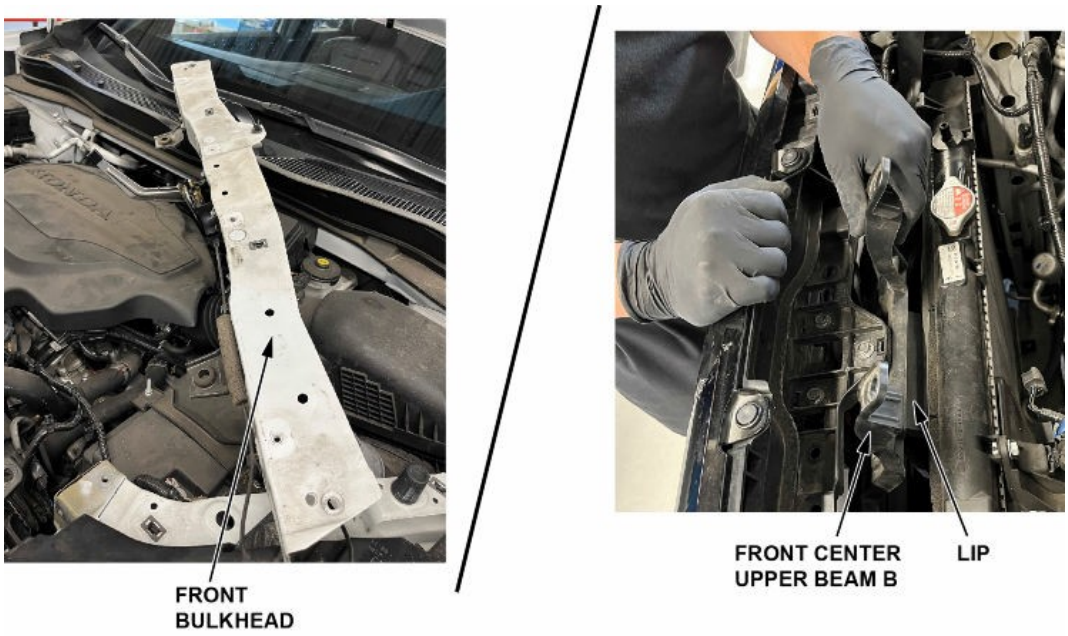


5. Remove the bolts form the front center upper beam B.

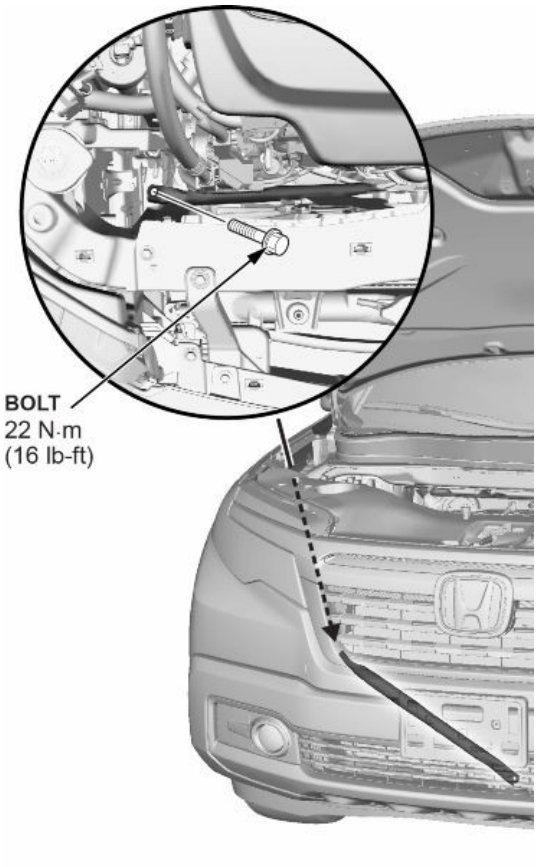


6. Unbolt the front bulkhead and move it aside, then remove the front center upper beam B.

   NOTE: You may need to move the front center upper beam B back and forth to clear the center lip from the radiator to remove it.

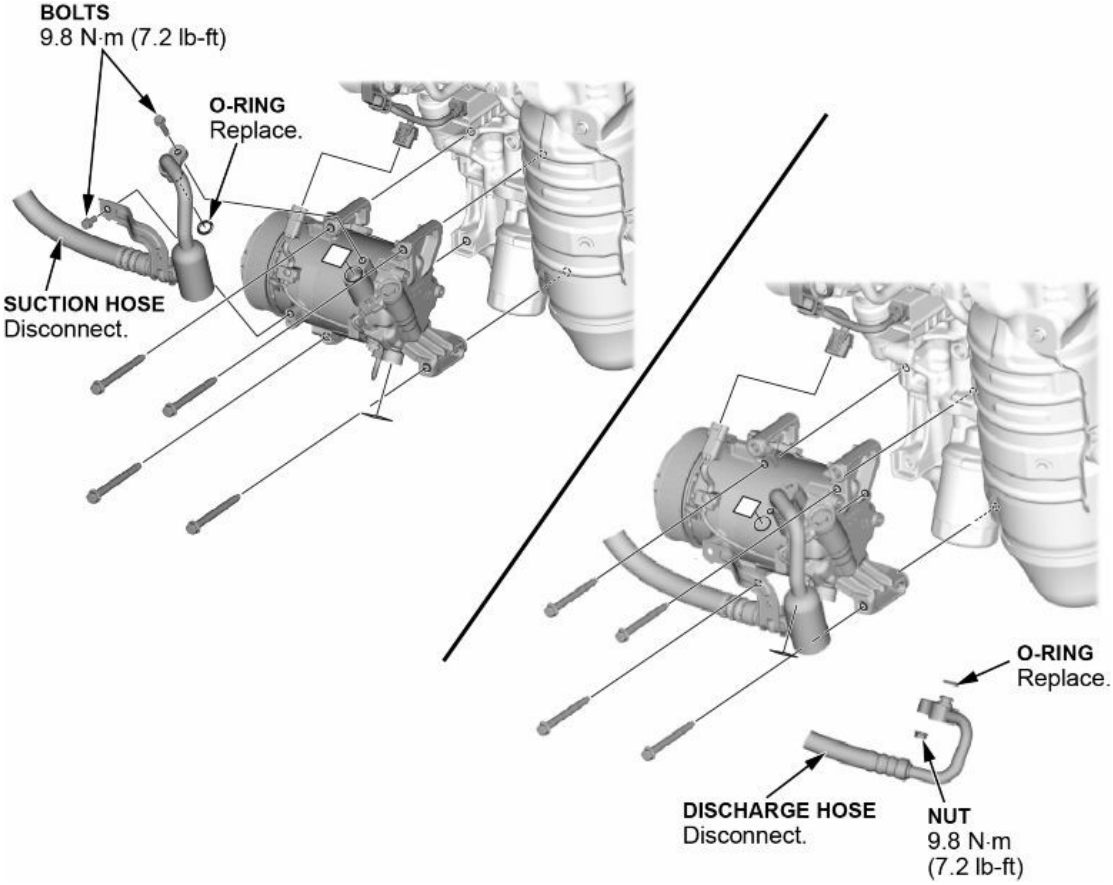


7. Remove A/C fan shroud.
8. Remove the passenger's side front bulkhead brace.



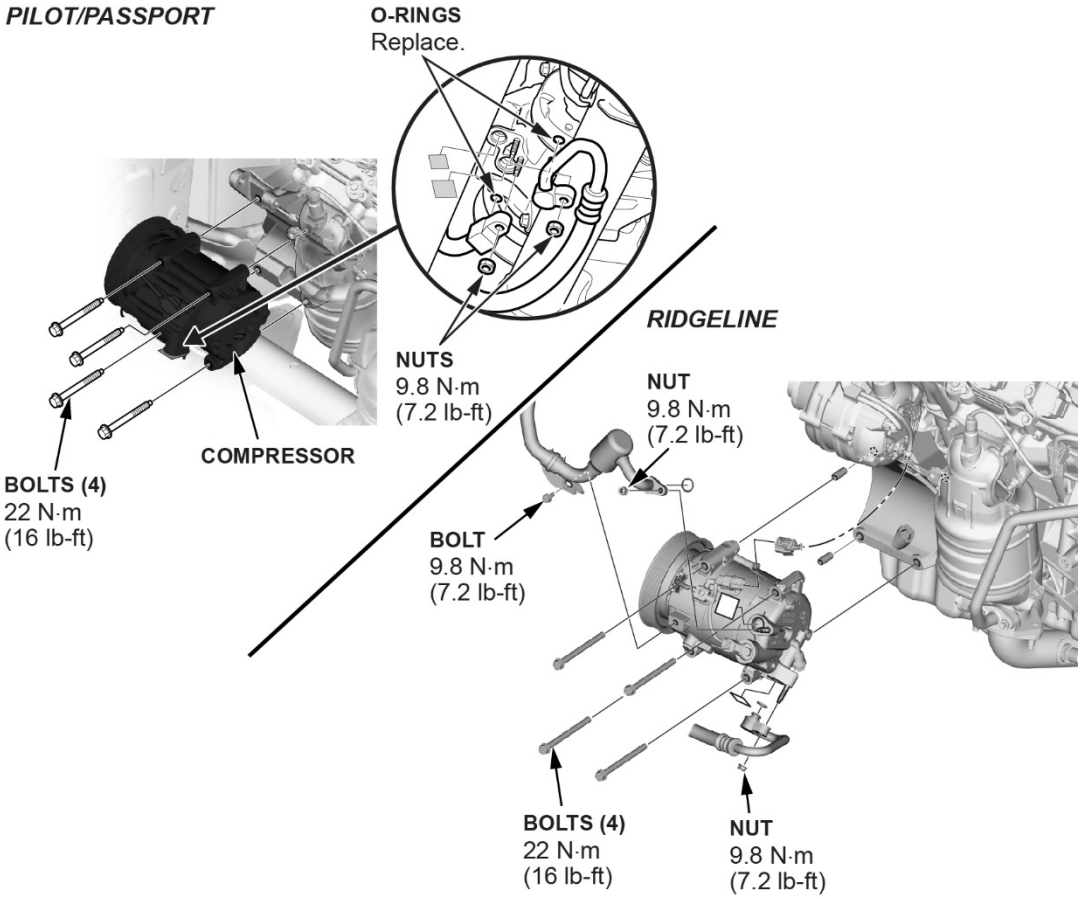
9. Disconnect the discharge and suction hose.

   NOTE: Use the port plugs in the seal assembly kit to immediately seal the ports after disconnection. This avoids moisture and dust contamination from entering the A/C compressor. Installing an A/C compressor into a contaminated system can result in premature A/C compressor failure.



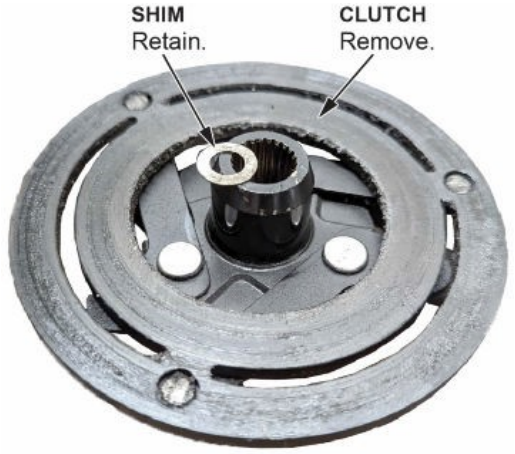
10. Remove the A/C compressor.

    NOTE: Lay a piece of cardboard at the radiator fins to avoid damage when removing the A/C compressor.

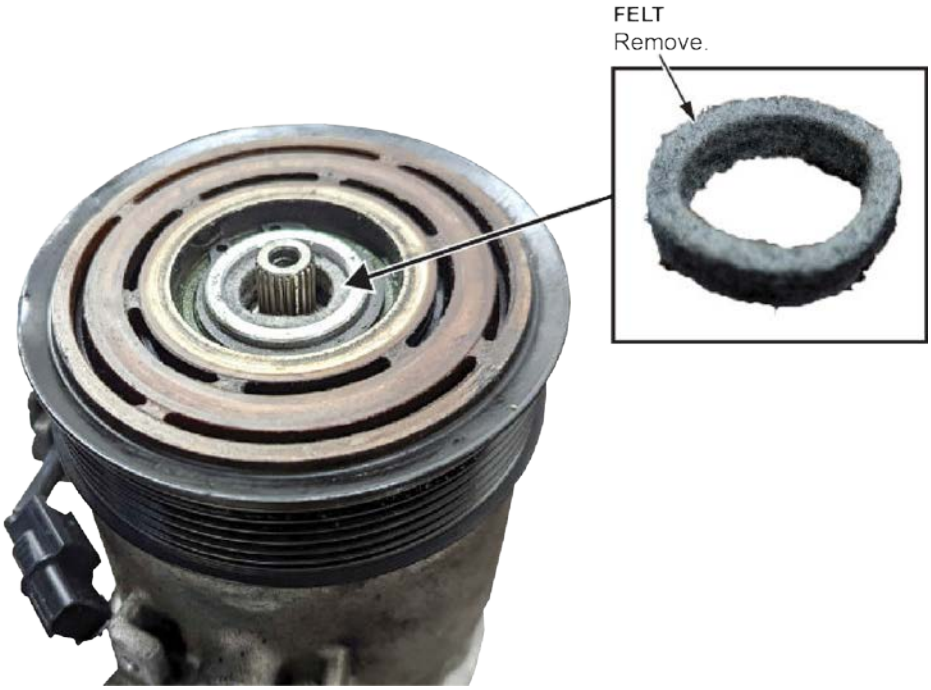


11. If the armature plate has not been removed from the previous step, remove the center hub bolt while holding the armature plate with the A/C clutch holder.

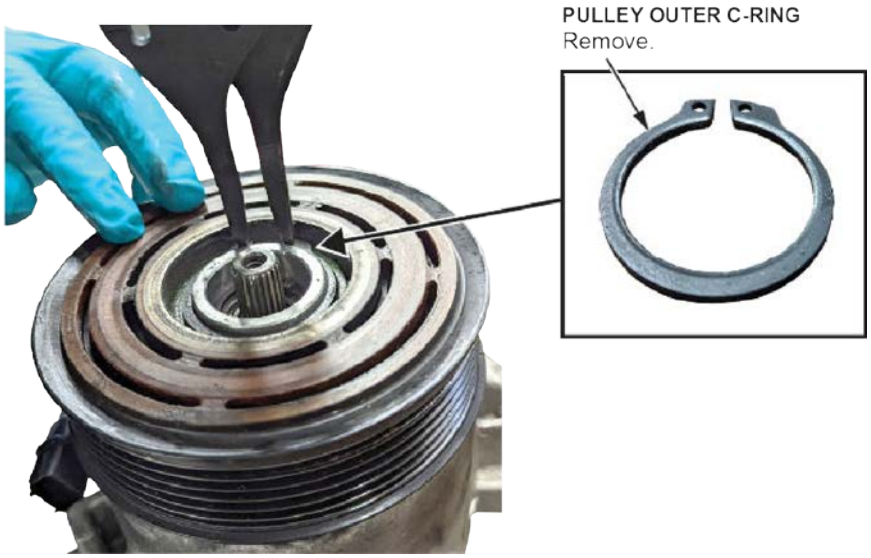
12. If the armature plate has not been removed from a previous step, remove the clutch while being careful not to drop/lose any shims (usually 1–2).



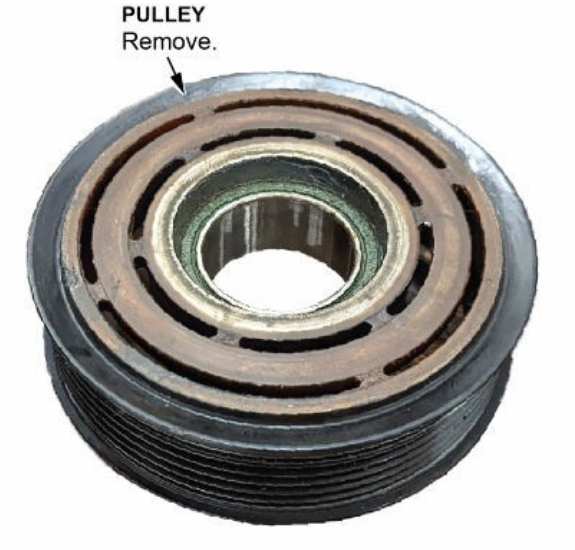
13. If the felt washer has not been removed from a previous step, use a pick to remove the felt washer.



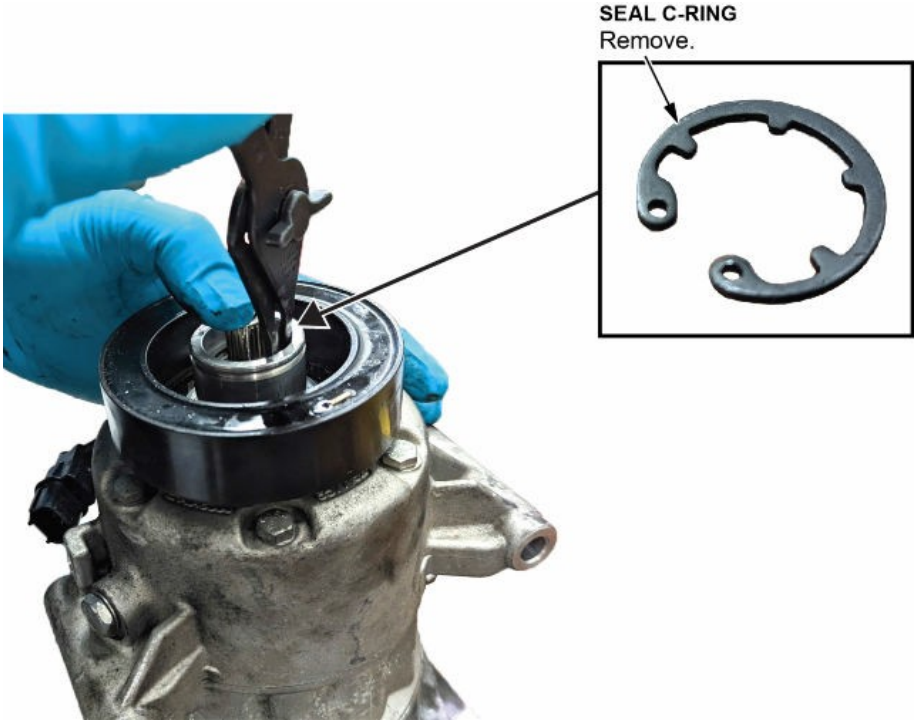
14. Remove the pulley C-ring.



15. Remove the pulley.



16. Remove the seal C-ring.

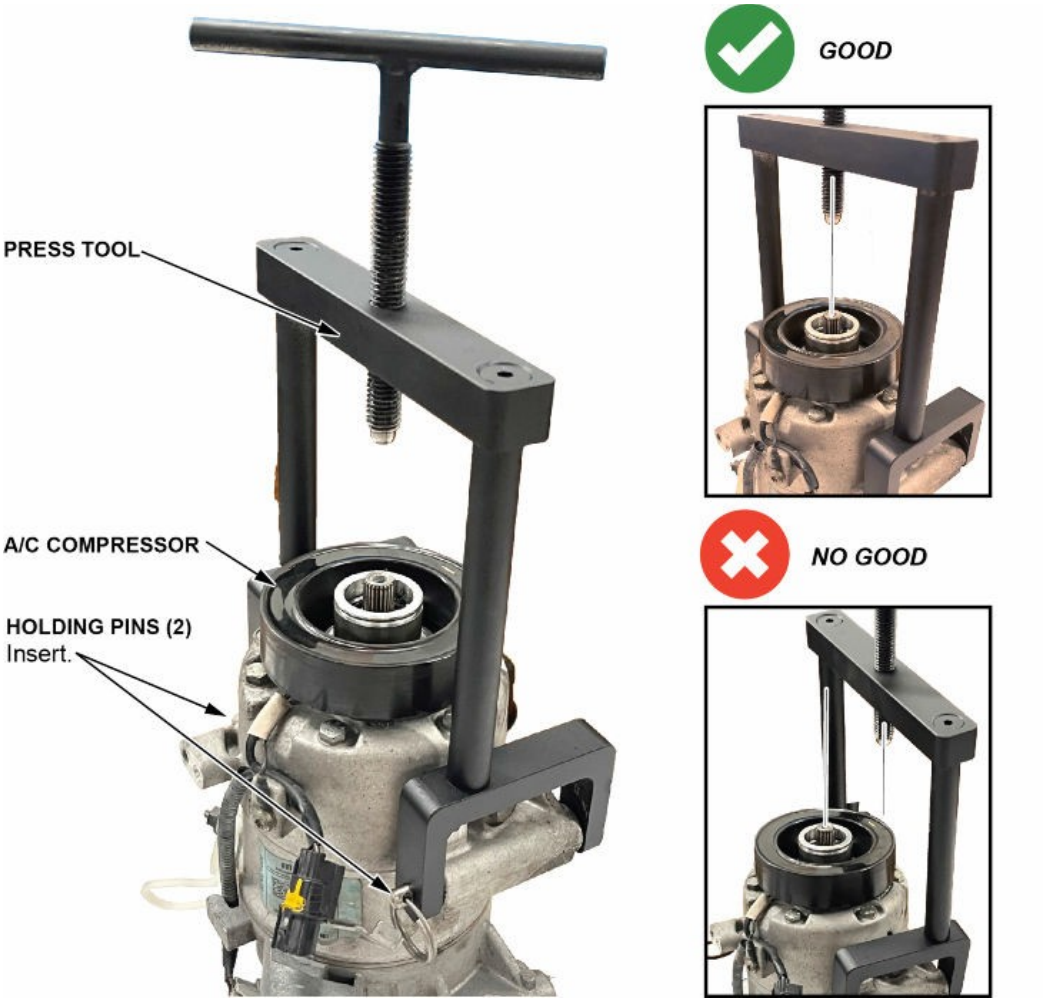


17. Thoroughly clean the bore and shaft with a lint free cloth.

    NOTE: Do not use compressed air. The bore needs to be very clean as to prevent debris from entering the compressor once the seal is removed. Failure to remove all debris will result in future failure.

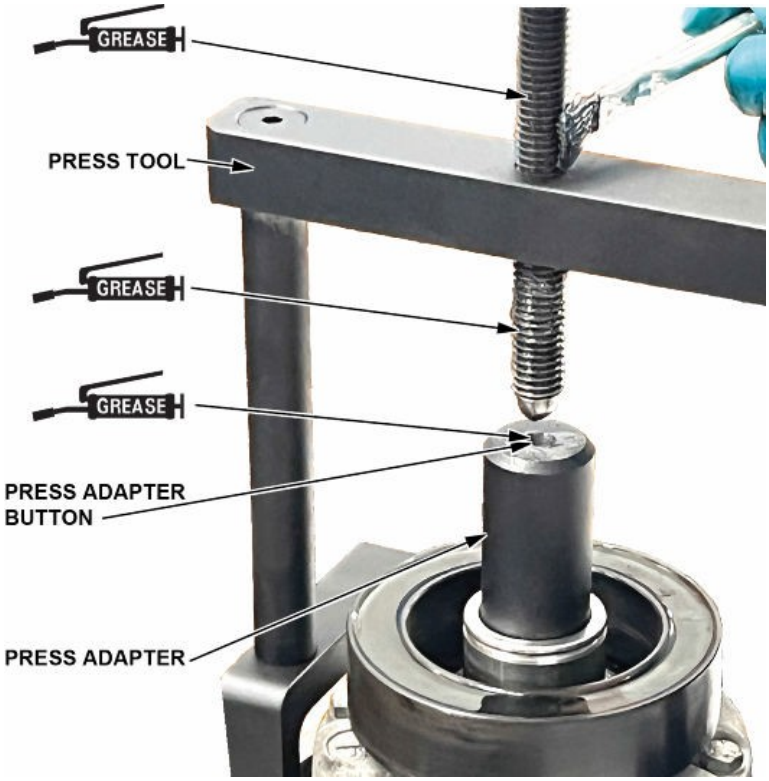
18. Remove the side of bracket.

19. Place the press tool onto the A/C compressor and insert the holding pins (2). Make sure the press tool installs where the press shaft should align with compressor shaft. The press tool will only align correctly in one orientation. The pins must go all the way through.



20. Add the press adapter tool.

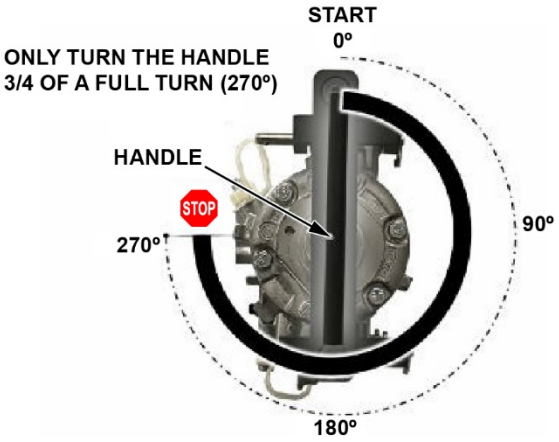
21. Add grease to the press adapter button and press threads.



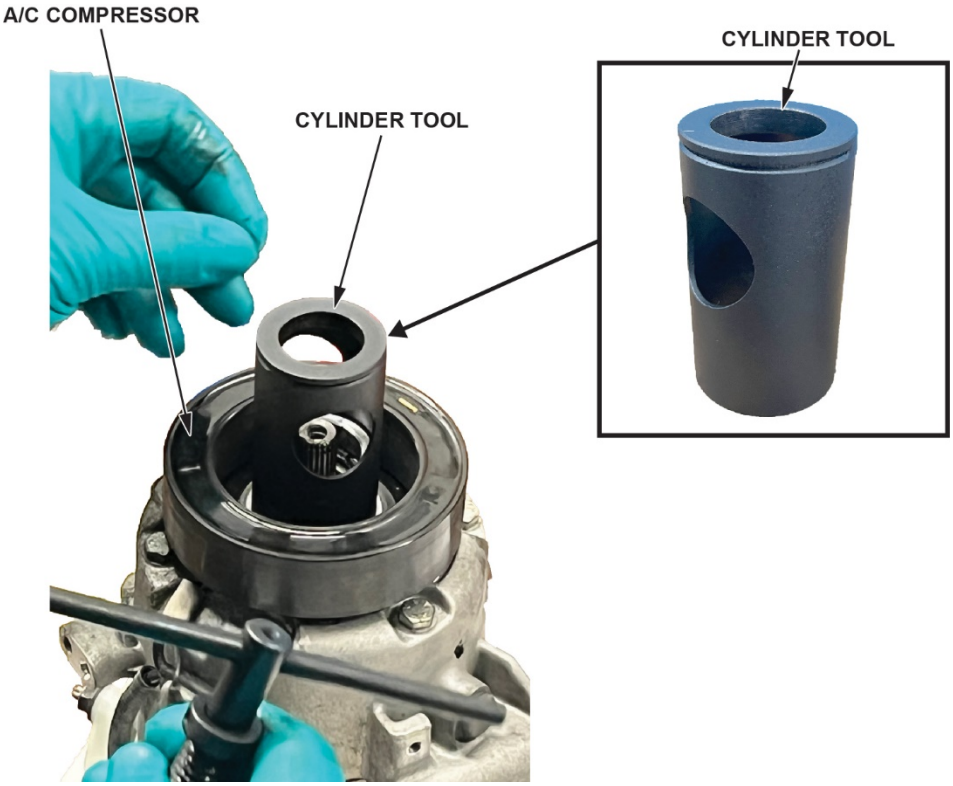
22. Tighten the press until there is no clearance, then **3/4 turn (270°).**

    NOTE:

    - The purpose of this step is to break the compressor shaft seal loose.
    - Turning the handle more than **3/4 turn (270 degrees)** can damage the tool and seal making it difficult to remove the compressor shaft seal.

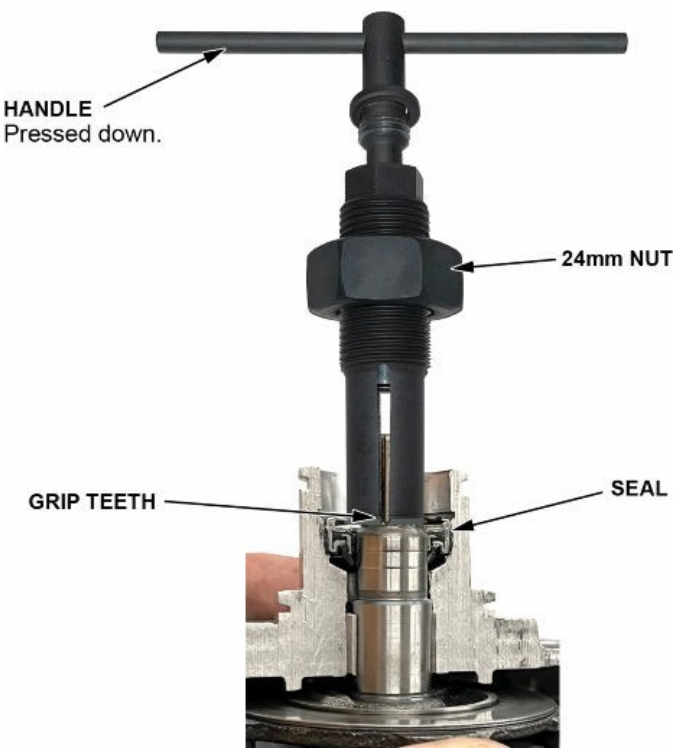


23. Release to remove the adapter and press.
24. Insert the Cylinder tool on to the A/C compressor.



25. Insert the extractor tool, and make sure the **24 mm** nut is positioned towards the top. Look into the cylinder window to align the extractor tool onto the flange and press the handle fully down to grab the seal.

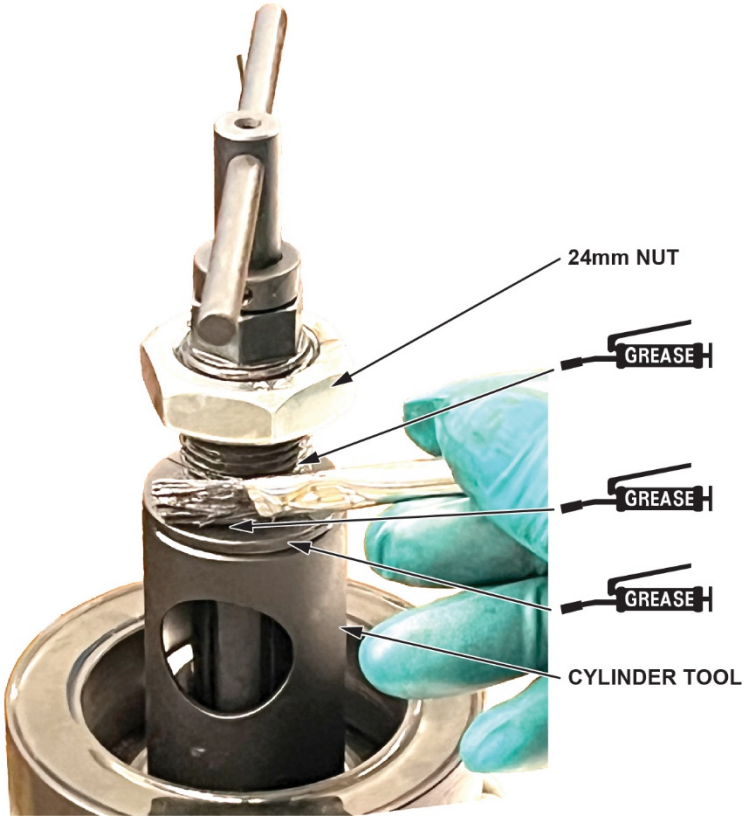
    NOTE: the **24 mm** nut will use a **36 mm** wrench.



26. Stabilize the extractor tool using a **19 mm** wrench on the top. Then, turn the handle clockwise until the resistance is felt. Make sure that the space between the **19 mm** wrench and the bottom portion of the extractor tool is minimal.

    NOTE: To confirm the extractor is engaged, hold the extractor tool and lift the compressor up.

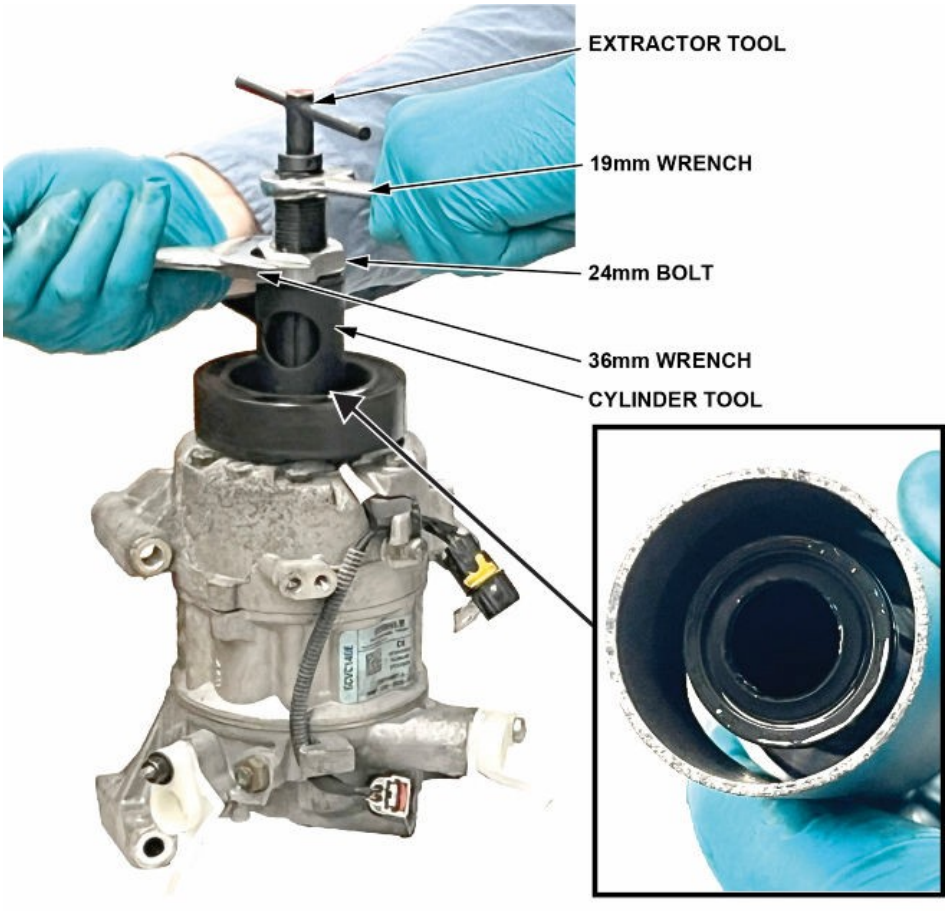
27. Apply grease between the **24 mm** nut and cylinder top.



28. With the **19 mm** wrench in place, lower the **24 mm** nut down until it reaches the cylinder. Slowly and carefully adjust until the extractor tool comes out freely with the seal.

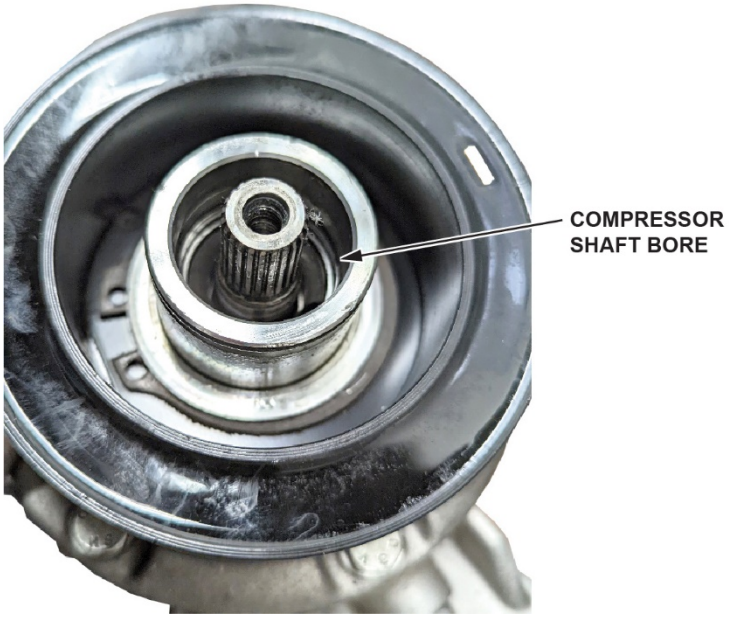
    NOTE:

    - Resistance will be felt while lowering **24 mm** nut and will cease once the seal is extracted.
    - If the seal does not come out on the first step, repeat the process starting at step 13.



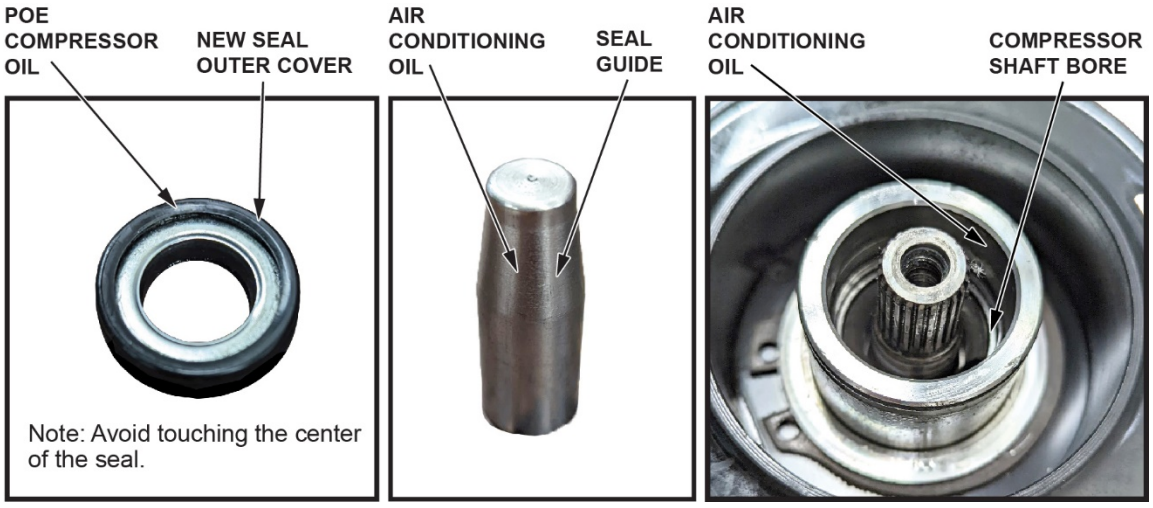
29. Thoroughly clean the bore and shaft with a lint free cloth

    NOTE: Do not use compressed air. The bore needs to be very clean as to prevent debris from entering the compressor once the seal is installed. Failure to remove all debris will result in future failure.

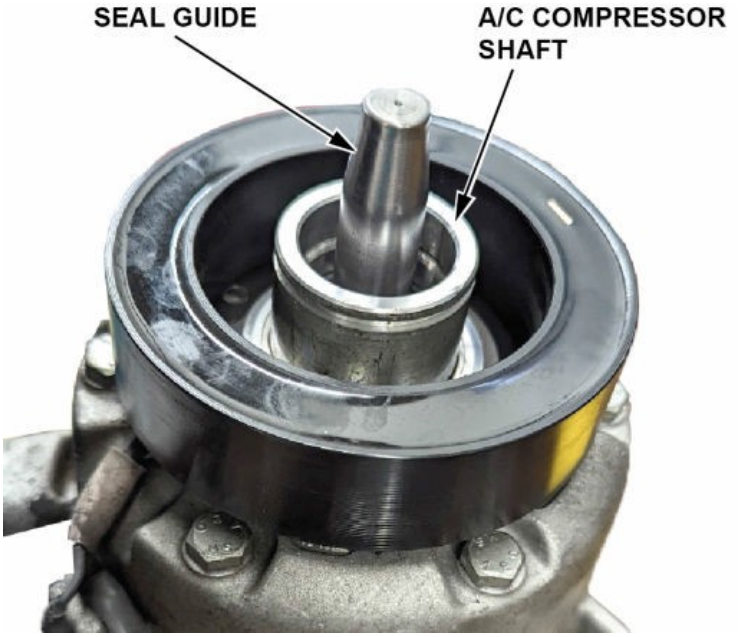


30. Inspect the compressor shaft bore for visible damage; Inspect the seal guide for contamination or damage.
31. Lubricate the new seal outer surface, seal guide, and bore with new POE air conditioning oil.

    NOTE: Avoid touching the center of the seal to prevent cross-contamination of the A/C refrigerant system.



32. Insert the seal guide tool onto A/C compressor shaft.

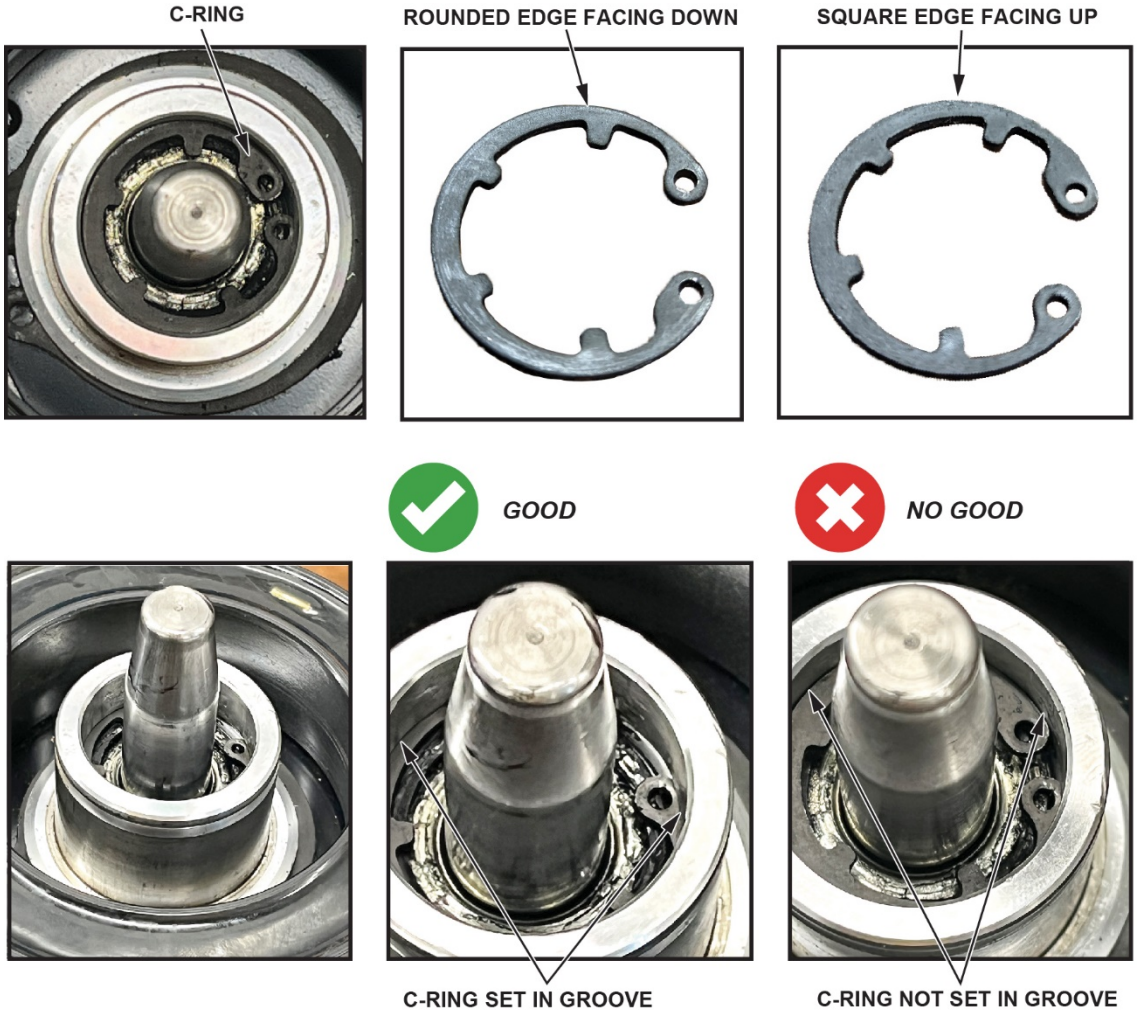


33. Insert the new seal onto the seal guide tool.

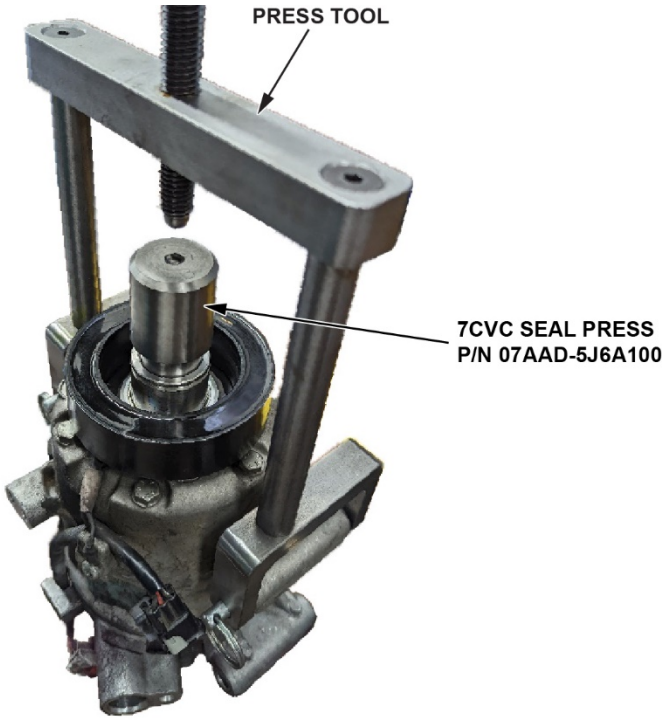
    NOTE: The seal is directional and must be placed with the metal side upward.

34. Insert the press adapter tool over the seal guide. By hand, press down to seat the new seal about **5 mm** below the top edge of the bore and remove the press adapter.

35. Insert the new seal C-ring with the teeth's rounded side pointing down into the bore.

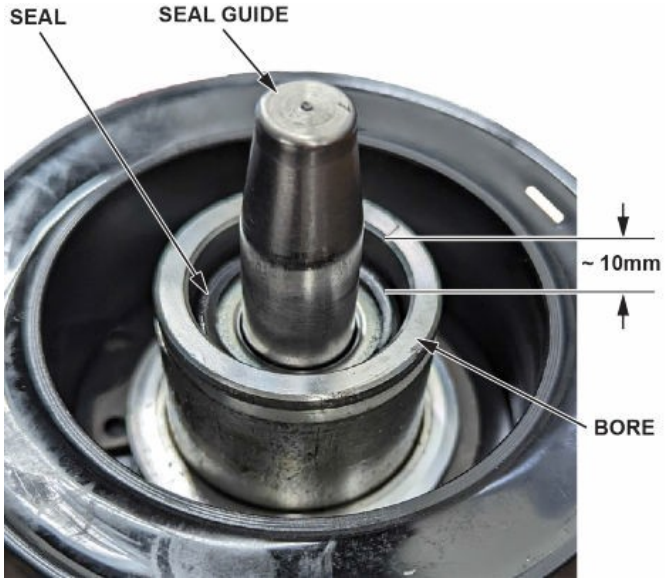


36. Install the press tool.



37. Tighten the press by rotating the handle clockwise until it reaches the adapter tool. Slowly and carefully continue to rotate the handle clockwise until the seal is pressed down roughly **10 mm** below the top edge of the bore.

    NOTE: Tighten the press until the C-clip is installed into the clip groove. There will be a sound or vibration felt when the C-clip is fully set.



38. Remove the press and the adapter tool when complete.
39. Clean the pulley and A/C compressor friction surfaces with Honda Brake Cleaner or equivalent.
40. Install the pulley.
41. Install the pulley outer C-ring.

    NOTE: C-ring for pulley and felt seal must be replaced.

42. Install new felt washer.
43. Measure existing shims with calipers and make sure the thickness is the same.
44. Install the clutch plate and shims.
45. Install the new clutch center flange bolt and tighten to **17 N.m (13 lb-ft)**.
46. Fill compressor with the contents of one can of POE compressor oil.
47. Mount the side brackets.
48. Install the compressor.
49. Connect the suction and discharge hoses.

    NOTE: Make sure to replace O-rings as needed.

50. Install drive belt.
51. Install remaining parts.
52. If the system is OK, recharge A/C system. Fill the A/C system with the correct amount of A/C Refrigerant.
53. Set the A/C system to **MAX COOL**, and run the vehicle for **ten minutes** between **1,500-2,000 RPM.**

    NOTE: Use the calibrated leak detector in the area of the shaft seal.

54. Turn to the off mode, use the calibrated leak detector to check around the clutch and O-ring area, without the engine running.
55. If no leak is detected, install the tire, and undercover.