

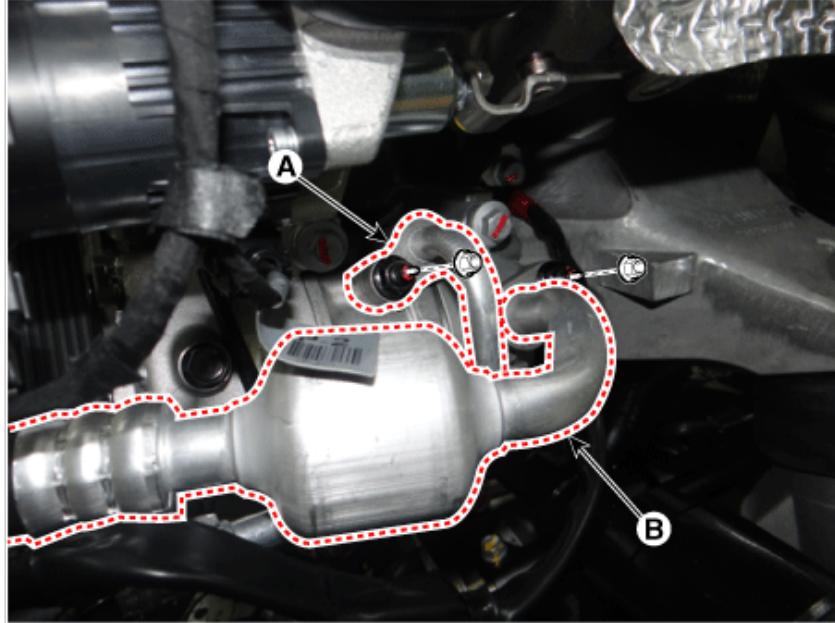


Removal

LAMBDA Engine

1. If the compressor is marginally operable, run the engine at idle speed, and let the air conditioning work for a few minutes, then shut the engine off.
2. Disconnect the negative (-) battery terminal.
3. Recover the refrigerant with a recovery/charging station.
4. Remove the sub frame.
(Refer to Suspension System - "Sub Frame")
5. Loosen the drive belt.
G 2.0 T-GDI-THETA (Refer to Engine Mechanical System - "Drive Belt")
G 3.3 T-GDI-LAMBDA (Refer to Engine Mechanical System - "Drive Belt")
6. Remove the discharge line (A) and suction line (B) from the compressor.

Tightening torque :3.9 - 5.9 N·m (0.4 - 0.6 kgf·m, 2.9 - 4.3 lb·ft)



NOTICE

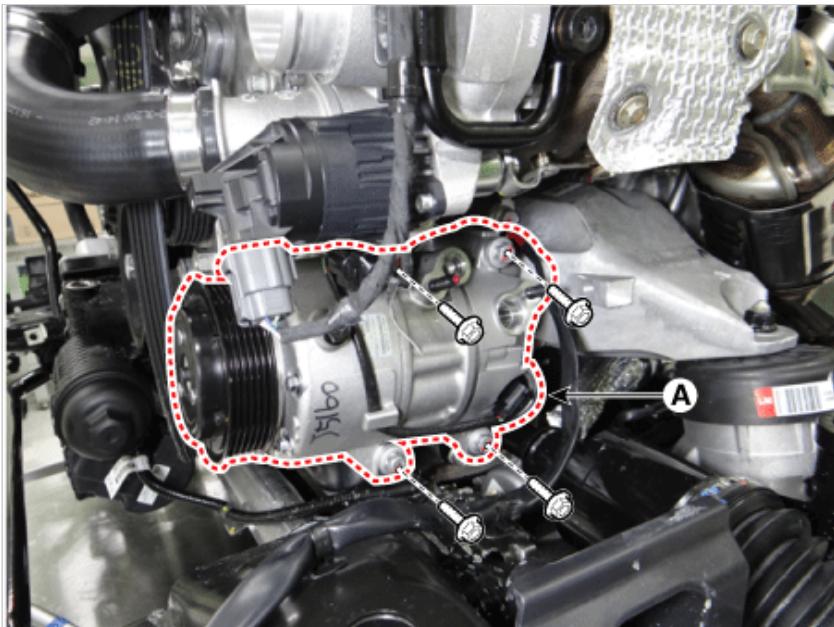
Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.

7. Disconnect the ECV connector (A).



8. Remove the compressor assembly (A) after loosening the bolts.

Tightening torque : 20.00 - 32.95 N·m (2.04 - 3.36 kgf·m, 14.75 - 24.30 lb·ft)

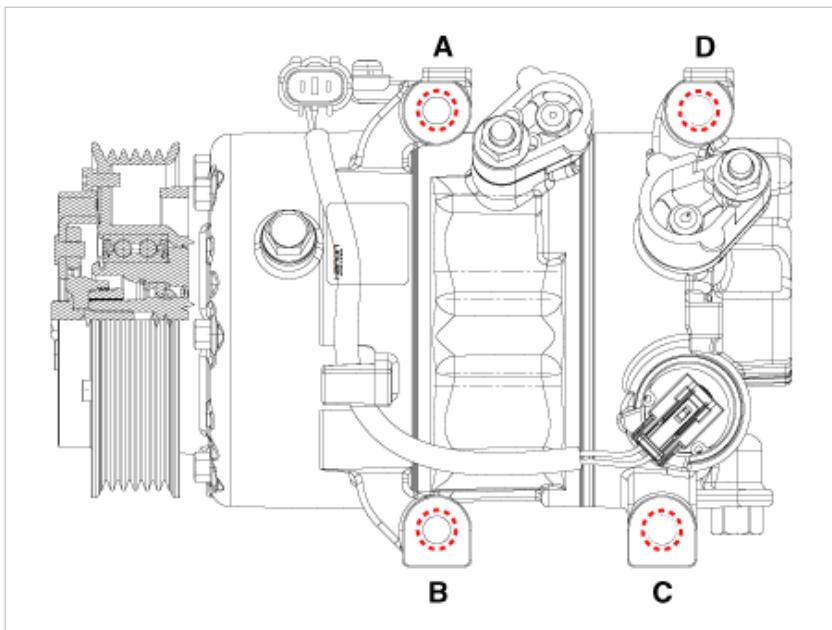


Installation

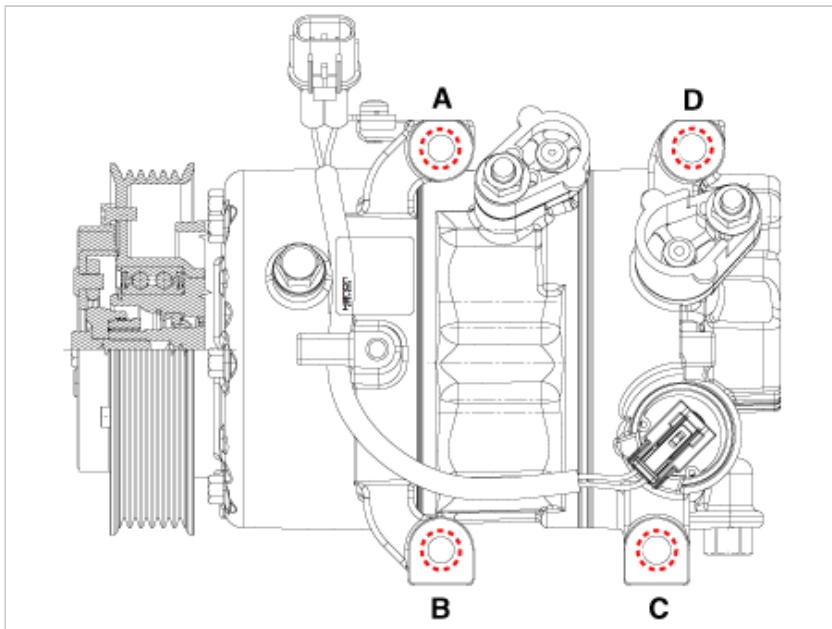
1. Make sure that the compressor (A) mounting bolt of the correct length is screwed in. Tighten the mounting bolts in the specified tightening order.

Tightening torque : 20.00 - 32.95 N·m (2.04 - 3.36 kgf·m, 14.75 - 24.30 lb·ft)

[Lambda Engine]



[THETA Engine]

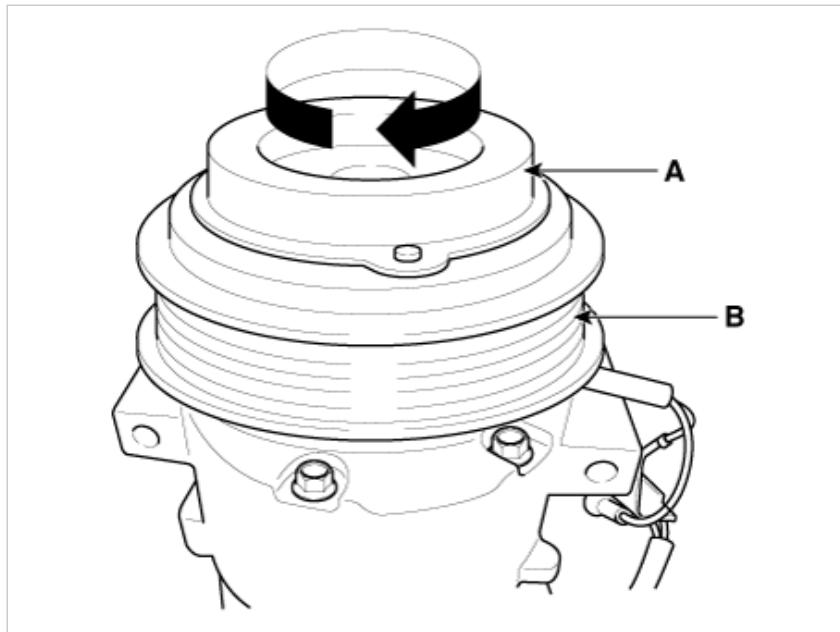


2. Install in the reverse order of removal.

- When installing a new compressor, drain all the refrigerant oil from the removed compressor and measure its volume. Subtract the volume of drained oil from the original capacity to calculate the amount of compressor oil that needs to be drained from the new compressor (through the suction fitting).
- Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the right O-rings for R-134a to avoid leakage.
- To avoid contamination, do not return the oil to the container once dispensed, and never mix it with other refrigerant oils.
- Immediately after using the oil, replace the cap on the container and seal it to avoid moisture absorption.

Inspection

1. Check the plated parts of the limiter & hub assembly (A) for color changes, peeling or other damage. If there is damage, replace the assembly.
2. Check the pulley (B) bearing play and drag by rotating the pulley by hand. Replace the pulley with a new one if it is noisy or has excessive play/drag.



External Control Valve Compressor Inspection (KDS)

Compressor type: Fixed type compressor, External control valve, Internal control valve.

In cases of fixed type and internal control valve, it is possible to inspect compressor's operation with clutch noise.

When it comes to External control valve, however, it cannot be checked in this way because it doesn't have a clutch.

So, ECV should be inspected with KDS as below.

1. Connect KDS to the vehicle and select "Aircon Compressor Test(ECV type)"

[ECV1]

S/W Management

Systems Components Unfold All

- SCC/AEB
- Airbag(Event #1)
- Airbag(Event #2)
- Occupant Detection Sensor
- Air Conditioner
 - System Identification
 - A/C Compressor Test (ECV Type)
- Motor Driven Power Steering
- Tire Pressure Monitoring System(High Type)
- Tire Pressure Monitoring System(Low Type)
- Parking Guide System
- Immobilizer
- Smart Key Unit
- Body Control Module
- Cluster Module
- Seat Belt Reminder/Lightning Module

!

Do not touch any system buttons while performing this function.

2. Make the vehicle ready as the KDS instruction on the monitor. (Turn off A/C "switch" only)

S/W Management**• A/C Compressor Test (ECV Type)**

Purpose	To check the air conditioning system status.
Enable Condition	1. Engine Idle(No load) 2. A/C Switch : OFF 3. Airflow setting : Blower Step 1 4. HVAC Temperature set to low (Coldest) 5. HVAC air circulation set to "Recirculation" 6. HVAC Vent Mode: Panel/Face Level
Concerned Component	A/C Control Module
Concerned DTC	-
Fail Safe	-
Etc	-

OK**Do not touch any system buttons while performing this function.**

3. Check if other DTC codes are found before inspect ECV compressor. If so, solve that problems first. If not, press "OK" button to continue.

Information

Do not continue inspection if these DTC codes are found: B1241, B1242, B1672, B1685, B1686, B1687

S/W Management

■ A/C Compressor Test (ECV Type)

Information

No VIN information.

Please enter the vehicle VIN information when choosing.

To continue, press the **[OK]** button.

OK Cancel

! Do not touch any system buttons while performing this function.

4. Start inspection

S/W Management

■ A/C Compressor Test (ECV Type)

Test PreparationTest ConditionsECV TestTest Completed

● **[Test Preparation]**

The following conditions must be met before beginning ECV Test:

- 1.Engine Status: Idling(No Engine Load)
- 2.A/C Switch : OFF
- 3.HVAC Blower Set to low (1)
- 4.HVAC Temperature set to low (Coldest)
- 5.HVAC air circulation set to "Recirculation"
- 6.HVAC Vent Mode: Panel/Face Level
- 7.Testing Time: 4 Minutes
- 8.During ECV Test, if condenser fan does not operate after one (1) minute, stop ECV Test immediately.
- 9.Do not operate any other functions during the ECV Test
- 10.Press **OK** start the inspection.

OK Cancel

!

Do not touch any system buttons while performing this function.

S/W Management

■ A/C Compressor Test (ECV Type)

Test Preparation **Test Conditions** ECV Test Test Completed

● [Test Conditions]

Fault codes were found.

Due to related fault codes may not be progressing normally.

Press **[OK]** button to continue.

OK **Cancel**

! Do not touch any system buttons while performing this function.

▲ CAUTION

Check if condenser fan is operating when condition is changed to "ECV running"

▲ CAUTION

Relief valve will operate if condenser fandoesn't work due to overpressure in thecompressor. It helps the airconditiong system torelieve by releasing refrigerant and oil (losed ifrelieved).

- ※ Refill refrigerant and oil after operation of relief valve
- ※ Noise occurred when relief valve is in operation

5. Check the result of inspection.

[ECV7]

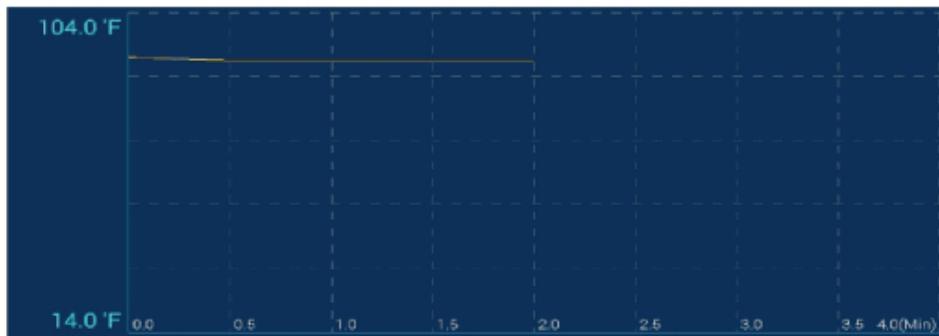
S/W Management**■ A/C Compressor Test (ECV Type)**

Test Preparation

Test Conditions

ECV Test

Test Completed

● [ECV performance TEST]**The value on this graph is updated every 30 seconds.**

	ECV Running	Result
Evaporator Temperature	90.5 °F	
Ambient Air Temperature	64.4 °F	

Cancel**Do not touch any system buttons while performing this function.**

[ECV8]

S/W Management

■ A/C Compressor Test (ECV Type)

Test Preparation Test Conditions ECV Test **Test Completed**

● [ECV performance TEST]

104.0 °F
14.0 °F 0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0(Min)

■ ECV TEST RESULT

	ECV Test Completed	Result
Evaporator Temperature	89.6 °F	Check
Ambient Air Temperature	64.4 °F	

OK Check Cancel

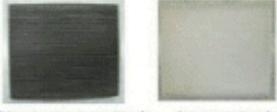
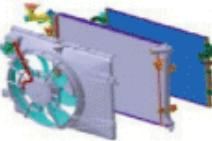
! Do not touch any system buttons while performing this function.

6. If the result shows "Check" , click "Check" and follow the instruction.

S/W Management

■ A/C Compressor Test (ECV Type)

□ The inspection procedure for "Check" result from diagnosis test

- ECV : External Control Valve
- ① ECV connector of compressor inspection
 - ▶ Check list
 - > Check the connectors for looseness and pin status
 - > Measure a resistance of ECV(10~11Ω)
 - ▶ Maintenance method : Replace ECV or Compressor
 
 - ② Refrigerant amount and filter inspection
 - ▶ Check list
 - > Refer to the shop manual (Refrigerant amount)
 - > Check the air conditioner filter
 
 - ▶ Maintenance method :
 - > Check the refrigerant amount and Replace the filter of air conditioner
 - ③ Condenser and cooling fan inspection
 - ▶ Check list
 - > Check the condenser for contamination
 - > Operate the cooling fan
 
 - ▶ Maintenance method :
 - > Remove contamination on condenser and repair the component related cooling fan

Prev

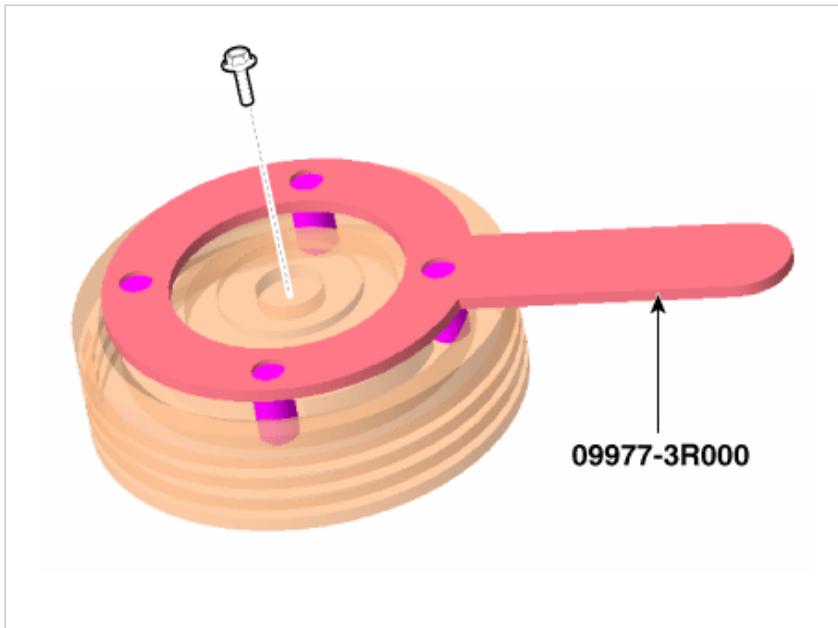


Do not touch any system buttons while performing this function.

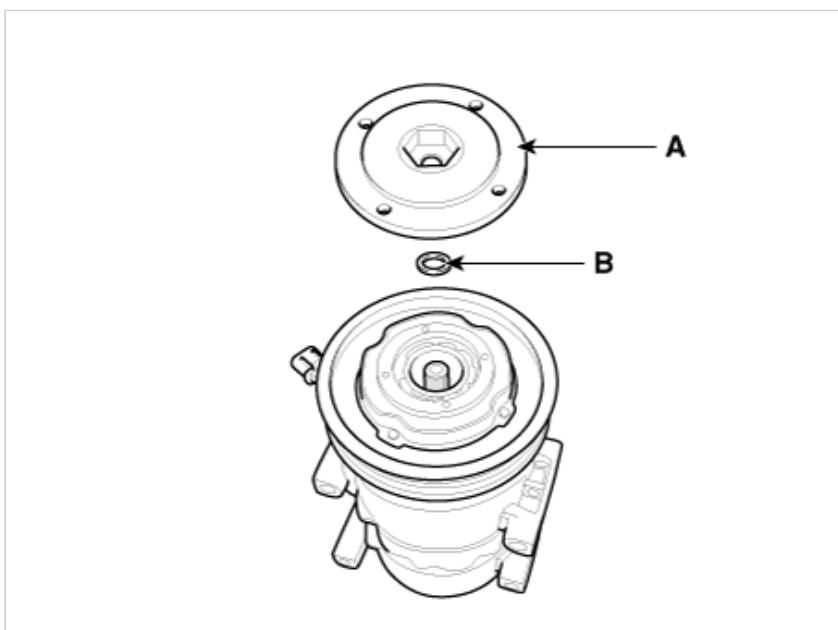
7. Inspect ECV again from the first step.

Disassembly

1. Remove the RH front tire.
(Refer to Suspension System - Wheel")
2. Remove the front wheel guard [RH].
(Refer to Body - "Front Wheel Guard")
3. Loosen the drive belt.
G 2.0 T-GDI-THETA (Refer to Engine Mechanical System - "Drive Belt")
G 3.3 T-GDI-LAMBDA (Refer to Engine Mechanical System - "Drive Belt")
4. Remove the center bolt (A) and the hub bolts (B) while holding the pulley with a disc & hub assembly bolt remover (09977-3R000).
Tightening torque :
15 - 21 N·m (1.5 - 2.1 kgf·m, 11.1 - 15.5 lb·ft)



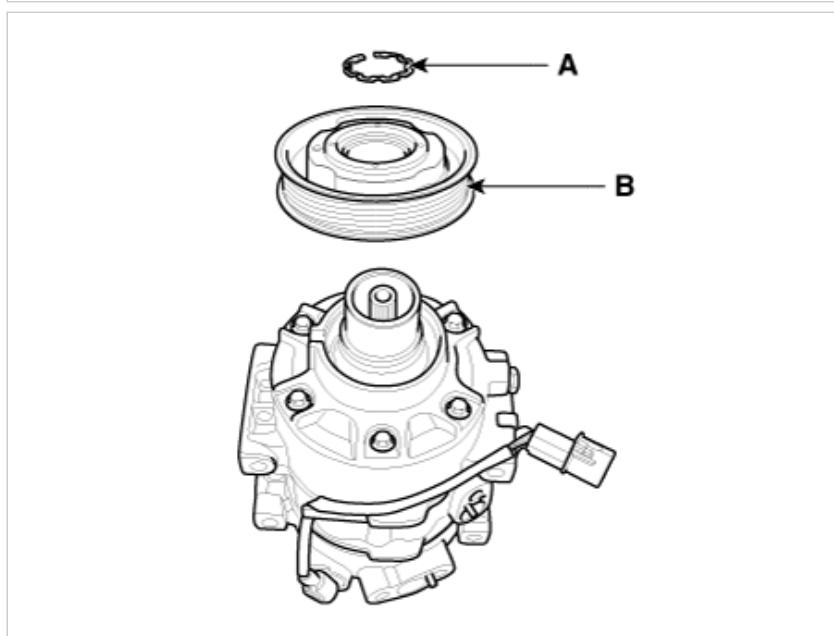
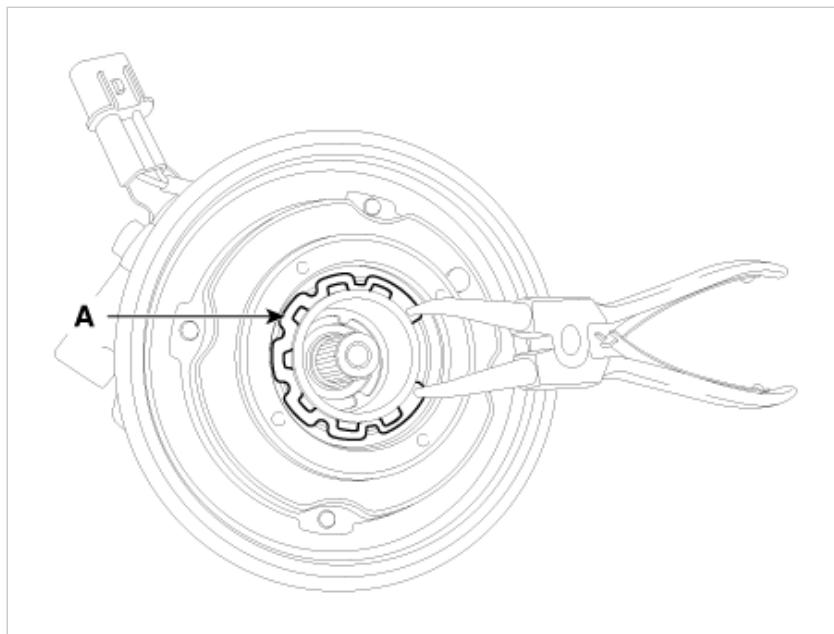
5. Remove the hub assembly (A) and shim (gap washer) (B), taking care not to lose the shim.



6. Remove the pulley (B) after removing the snap ring (A) with snap ring pliers.

NOTICE

- Be careful not to damage the pulley and compressor during disassembly/reassembly.
- Once snap ring is removed, replace it with a new one.



7. Reassembly is the reverse order of disassembly.

NOTICE

- Clean the pulley and compressor sliding surfaces with non-petroleum solvent.
- Install new snap ring, and make sure they are fully seated in the groove.
- Make sure that the pulley turns smoothly after reassembly.