

2005 Ford Focus ZX4 S

2005 HVAC Air Conditioning - Focus

2005 HVAC**Air Conditioning - Focus****SPECIFICATIONS****GENERAL SPECIFICATIONS****GENERAL SPECIFICATIONS**

| Item | Specification |
|--|-------------------------------|
| Lubricant | |
| PAG Refrigerant Compressor Oil (R-134a Systems) F7AZ-19589-DA (Motorcraft YN-12-C) | WSH-M1C231-B |
| Capacity | 200 ml (7 oz.) |
| Magnetic Clutch | |
| Air gap between pulley and clutch plate | 0.35-0.75 mm (0.014-0.030 in) |
| Evaporator Core Orifice | |
| Color | Orange |
| Diameter | 1.45 mm (0.057 in) |

TORQUE SPECIFICATIONS**TORQUE SPECIFICATIONS**

| Description | Nm | lb-ft | lb-in |
|---------------------------------------|----|-------|-------|
| A/C compressor mounting bolts | 25 | 18 | - |
| A/C compressor manifold bolt | 21 | 15 | - |
| A/C clutch disc and hub bolt | 13 | 10 | - |
| Air conditioning (peanut) fitting nut | 8 | - | 71 |
| Suction accumulator bracket nut | 7 | - | 62 |
| Suction accumulator bracket bolts | 7 | - | 62 |
| Lower radiator support bolts | 24 | 18 | - |
| High pressure switch | 10 | - | 89 |

DESCRIPTION AND OPERATION

AIR CONDITIONING

The A/C refrigerant system is a clutch cycling orifice tube-type. The system components are:

- A/C compressor (19703).
- A/C clutch assembly.
- A/C condenser core (19712).
- A/C evaporator core (part of 19850 assembly).
- Suction accumulator (19C836).
- Connecting refrigerant lines.

The refrigerant system operation is controlled by the:

- A/C evaporator core orifice (19D990).
- A/C cycling switch (19E561).
- A/C compressor pressure relief valve (19D644).
- Dual function pressure switch (19D594).

The refrigerant system incorporates an A/C compressor controlled by an A/C cycling switch.

The A/C cycling switch senses A/C evaporator core pressure to control A/C compressor operation.

An A/C compressor pressure relief valve is installed in the A/C manifold and tube (19D734) to protect the refrigerant system against excessively high refrigerant pressures.

An A/C evaporator core orifice is installed in the condenser-to-evaporator tube (19835) to meter the liquid refrigerant into the A/C evaporator core.

A/C Compressor and Clutch Assembly

NOTE: Internal A/C compressor components are not repaired separately. The Visteon FS-10 A/C compressor is repaired only as an assembly. The A/C clutch disc and hub, A/C clutch pulley, A/C clutch field coil and the shaft seal are repairable.

NOTE: Installation of a new suction accumulator is not required when repairing the air conditioning system except when there is physical evidence of system contamination from a failed A/C compressor or damage to the suction accumulator.

The Visteon FS-10 A/C compressor (19703) has the following characteristics:

- A ten-cylinder swashplate design utilizing the tangential design mount.
- A one-piece lip-type seal (installed from the front of the A/C compressor) is used to seal it at the shaft opening in the assembly.
- Five double-acting pistons operate within the cylinder assembly. The pistons are actuated by a swashplate that changes the rotating action of the shaft to a reciprocating force.
- Reed-type discharge valves are located between the cylinder assembly and the head at each end of the A/C compressor.
- The A/C compressor uses PAG oil or equivalent. This oil contains special additives required for the A/C compressor.
- The A/C compressor oil from vehicles equipped with a Visteon FS-10 A/C compressor may have a dark color while maintaining a normal oil viscosity. This is normal for this A/C compressor because carbon from the piston rings will discolor the oil.

The magnetic A/C clutch has the following characteristics:

- The A/C clutch drives the compressor shaft.
- When battery positive voltage (B+) is applied to the A/C clutch field coil, the clutch plate and hub assembly is drawn toward the A/C clutch pulley.
- The magnetic force locks the clutch plate and hub assembly and the A/C clutch pulley together as one unit, causing the compressor shaft to rotate.
- When B+ is removed from the A/C clutch field coil, springs in the clutch plate and hub assembly move the clutch plate away from the A/C clutch pulley.

A/C Compressor Pressure Relief Valve

An A/C compressor pressure relief valve is incorporated in the compressor A/C manifold and tube to:

- Relieve unusually high refrigerant system discharge pressure buildups.
- Prevent damage to the A/C compressor and other system components.
- Avoid total refrigerant loss by closing after the excessive pressure has been relieved.

A/C Condenser Core

NOTE: **Installation of a new suction accumulator is not required when repairing the air conditioning system except when there is physical evidence of system contamination from a failed A/C compressor or damage to the suction accumulator.**

The A/C condenser core has the following characteristics:

- It is an aluminum fin and tube designed heat exchanger located in front of the vehicle radiator (8005).
- It cools compressed refrigerant gas by allowing air to pass over fins and tubes to extract heat and by condensing gas to liquid refrigerant as it is cooled.

A/C Evaporator Core

NOTE: The evaporator core is not separately serviceable, it is serviced only with the evaporator core housing assembly.

NOTE: Installation of a new suction accumulator is not required when repairing the air conditioning system except when there is physical evidence of system contamination from a failed A/C compressor or damage to the suction accumulator.

The A/C evaporator core is an aluminum plate/fin-type.

- A mixture of refrigerant and oil enters the bottom of the A/C evaporator core through the A/C evaporator core inlet tube and then moves out of the A/C evaporator core through the A/C evaporator core outlet tube.
- The evaporator core is located in front of the instrument panel in the heater core and evaporator core housing.

A/C Evaporator Core Orifice

The A/C evaporator core orifice has the following characteristics:

- It is located in the rear condenser-to-evaporator tube and can be removed through an access fitting.
- It has filter screens located on the inlet and outlet ends of the tube body.
- The inlet filter screen acts as a strainer for the liquid refrigerant flowing through the A/C evaporator core orifice.
- O-ring seals on the A/C evaporator core orifice prevent the high-pressure liquid refrigerant from bypassing the A/C evaporator core orifice.
- Adjustment or repair cannot be made to the A/C evaporator core orifice assembly. It must be serviced as a unit.

Suction Accumulator

NOTE: Installation of a new suction accumulator is not required when repairing the air conditioning system except when there is physical evidence of system contamination from a failed A/C compressor or damage to the suction accumulator.

The suction accumulator is mounted behind the RH corner of the front bumper cover, in front of the RH front wheel well. The inlet tube of the suction accumulator is attached to the evaporator outlet line. The outlet tube attaches to the A/C manifold and tube.

After entering the inlet of the suction accumulator, heavier oil-laden refrigerant contacts an internally mounted dome (which serves as an umbrella) and drips down onto the bottom of the canister.

- A small diameter oil bleed hole, in the bottom of the vapor return tube, allows the accumulated heavier liquid refrigerant and oil mixture to reenter the compressor suction line at a controlled rate.
- As the heavier mixture passes through the small diameter liquid bleed hole, it has a second chance to vaporize and recirculate through the A/C compressor without causing compressor damage due to slugging.
- A fine mesh screened filter fits tightly around the bottom of the vapor return tube to filter out refrigerant system contaminant particles.
- A desiccant bag is mounted inside the canister to absorb any moisture which may be in the refrigerant system.

A/C Cycling Switch

The A/C cycling switch is mounted on a Schrader-type valve fitting on the evaporator outlet line.

- A valve depressor, located inside the threaded end of the A/C cycling switch, presses in on the Schrader valve stem.
- This allows the suction pressure inside the evaporator outlet line to control the operation of the A/C cycling switch.
- The electrical switch contacts open when the suction pressure drops. The contacts close when the suction pressure rises.
- The A/C cycling switch will control the A/C evaporator core pressure at a point where the plate/fin surface temperature will be maintained slightly above freezing.
- This prevents icing of the A/C evaporator core and blockage of air flow.
- It is not necessary to discharge the refrigerant system to remove the A/C cycling switch.

Dual Function Pressure Switch

The dual function pressure switch is used to interrupt A/C compressor operation in the event of high system discharge pressures.

- The dual function pressure switch is mounted on a Schrader-type valve fitting on the condenser-to-evaporator tube.

- A valve depressor, located inside the threaded end of the dual function pressure switch, presses on the Schrader valve stem.
- This allows the dual function pressure switch to monitor the compressor discharge pressure.
- It is not necessary to recover the refrigerant to remove the dual function pressure switch.
- The dual function pressure switch has two sets of contacts. One electrical contact is normally closed.
- When the compressor discharge pressure rises, the switch contacts open, interrupting the 12 volt A/C request (ACCS) signal to the PCM and disengaging the A/C compressor. When the pressure drops, the contacts close, completing the 12 volt A/C request (ACCS) signal to the PCM and enabling the A/C compressor.

The switch contains a second set of electrical contacts used for high-speed fan control.

- When the compressor discharge pressure rises, the contacts close and send a 12 volt signal (ACPSW) to the PCM requesting high speed cooling fan operation. When the pressure drops, the contacts open and the 12 volt signal is interrupted.

The spring lock coupling is a refrigerant line coupling held together by a garter spring inside a circular cage.

- When the coupling is connected together, the flared end of the female fitting slips behind the garter spring inside the cage of the male fitting.
- The garter spring and cage then prevent the flared end of the female fitting from pulling out of the cage.
- Three O-ring seals are used to seal between the two halves of the coupling.
- Use only the O-ring seals listed in the Ford Master Parts Catalog for the spring lock coupling.
- A plastic indicator ring is used on the spring lock couplings of the A/C evaporator core to indicate, during vehicle assembly, that the coupling is connected. Once the coupling is connected, the indicator ring is no longer necessary but will remain captive by the coupling near the cage opening.
- The indicator ring may also be used during service operations to indicate connection of the coupling.
- An A/C tube lock coupling clip (19E746) may be used to secure the coupling.

Peanut Fitting

When disconnecting or connecting peanut fittings, observe the following.

- The male and female blocks of the peanut fitting are retained with a nut.

- Support the female fitting with a wrench to prevent twisting of the tubes.
- An O-ring seal is installed around the tube on the male block.
- When correctly assembled, the male and female fittings should be flush.
- Use only the O-ring seal listed in the Ford Master Parts Catalog.

Tube-O Fitting

When disconnecting or connecting tube-O fittings, observe the following.

- The male and female portions of the fitting are retained with a nut.
- Support the female fitting with a wrench to prevent twisting of the tubes when disconnecting.
- An O-ring seal is installed around the tube on the male side of the fitting.
- Use only the O-ring seal listed in the Ford Master Parts Catalog.

Service Gauge Port Valves

The fitting is an integral part of the refrigeration line or component.

- Special couplings are required for both the high side and low side service gauge ports.
- The Schrader-type valve core can be serviced if the seal leaks.
- Always install the A/C charging valve cap (19D702) on the service gauge port valves after repairing the refrigerant system.

DIAGNOSIS AND TESTING**AIR CONDITIONING**

Refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .

REMOVAL AND INSTALLATION**AIR CONDITIONING (A/C) COMPRESSOR****Material****MATERIAL SPECIFICATIONS**

| Item | Specification |
|--|---------------|
| PAG Refrigerant Compressor Oil for R134a Systems F7AZ-19589-DA | WSH-M1C231-B |
| Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA | ESH-M2C31-A2 |

Removal and Installation

CAUTION: If installing a new air conditioning compressor due to an internal failure of the old unit, you must carry out the following procedures to remove contamination from the air conditioning system.

- If A/C flushing equipment is available, carry out flushing of the air conditioning system prior to installing a new air conditioning compressor. For additional information, refer to CLIMATE CONTROL SYSTEM-GENERAL INFORMATION .
- If A/C flushing equipment is not available, carry out filtering of the air conditioning system after a new air conditioning compressor has been installed. For additional information, refer to CLIMATE CONTROL SYSTEM-GENERAL INFORMATION .
- Install a new evaporator core orifice, as directed by the A/C flushing or filtering procedure.
- Install a new suction accumulator as directed by the A/C flushing or filtering procedure.

CAUTION: Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA (Motorcraft YN-9-A) should be used to lubricate R-134a refrigerant system O-ring seals only and should not be added to the R-134a refrigerant system as an A/C compressor lubricant. PAG Refrigerant Compressor Oil F7AZ-19589-DA (Motorcraft YN-12-C) or equivalent meeting Ford specification WSH-M1C231-B only should be used as an A/C compressor lubricant.

NOTE: Installation of a new suction accumulator is not required when repairing the air conditioning system except when there is physical evidence of contamination from a failed A/C compressor or damage to the suction accumulator.

1. Position the vehicle on a hoist with the gear selector in NEUTRAL. For additional information, refer to JACKING AND LIFTING .
2. If flushing of the air conditioning system has not been carried out, recover the refrigerant. For additional information, refer to CLIMATE CONTROL SYSTEM-GENERAL INFORMATION .
3. Remove the cooling fan motor and shroud. For additional information, refer to ENGINE COOLING .
4. Remove the bolts and the drive belt cover.

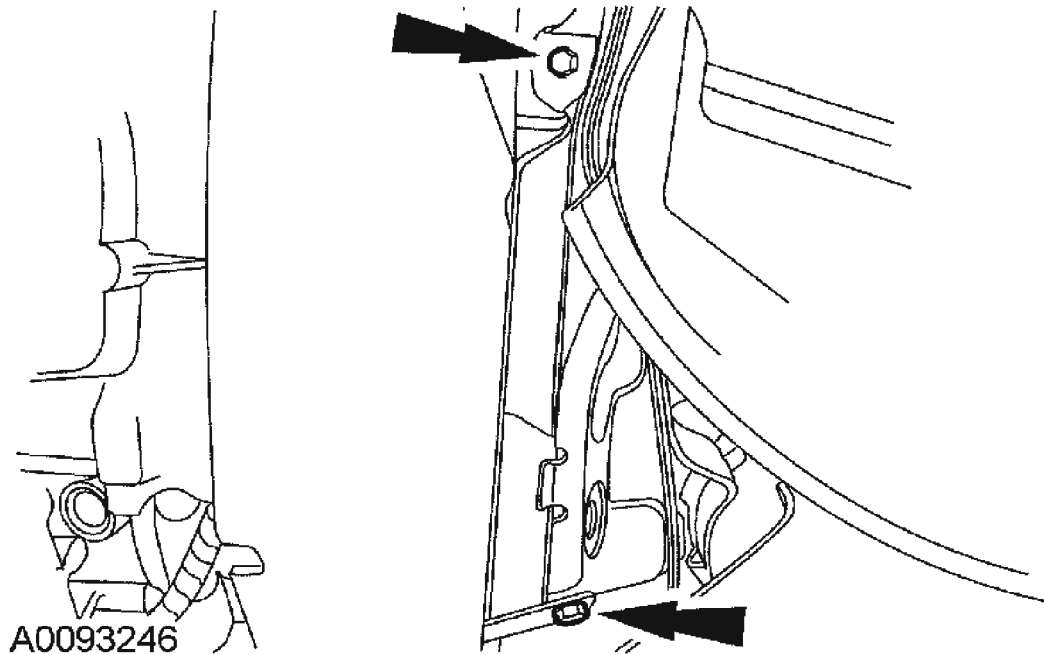
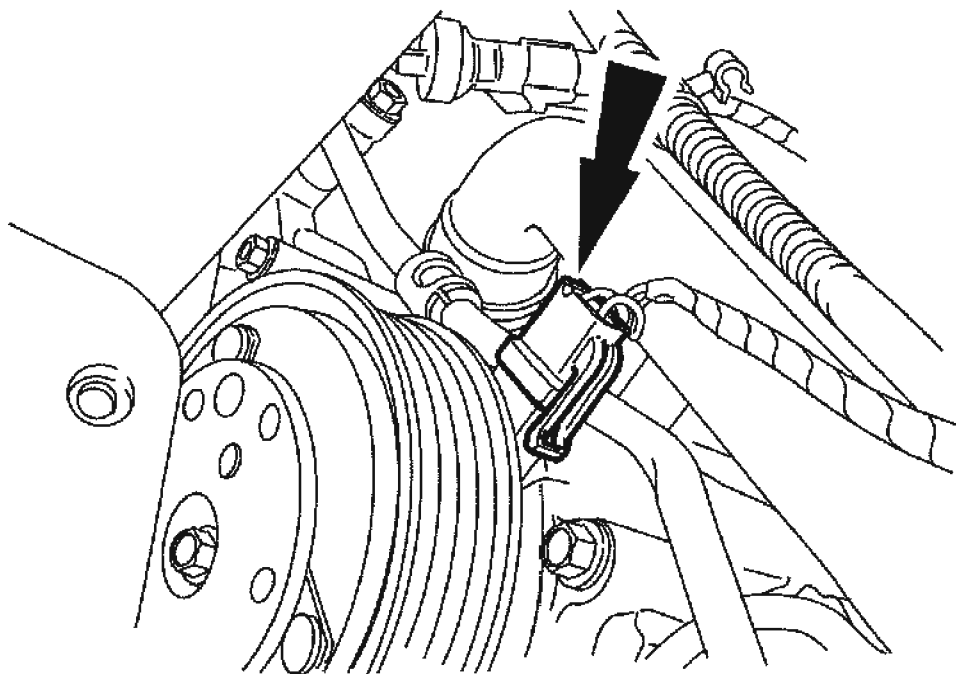


Fig. 1: Removing Bolts And Drive Belt Cover
Courtesy of FORD MOTOR CO.

5. Remove the drive belt from the A/C compressor pulley.
6. Disconnect the field coil electrical connector.



A0069010

Fig. 2: Disconnecting Field Coil Electrical Connector
Courtesy of FORD MOTOR CO.

7. Remove the bolts and position aside the power steering line.

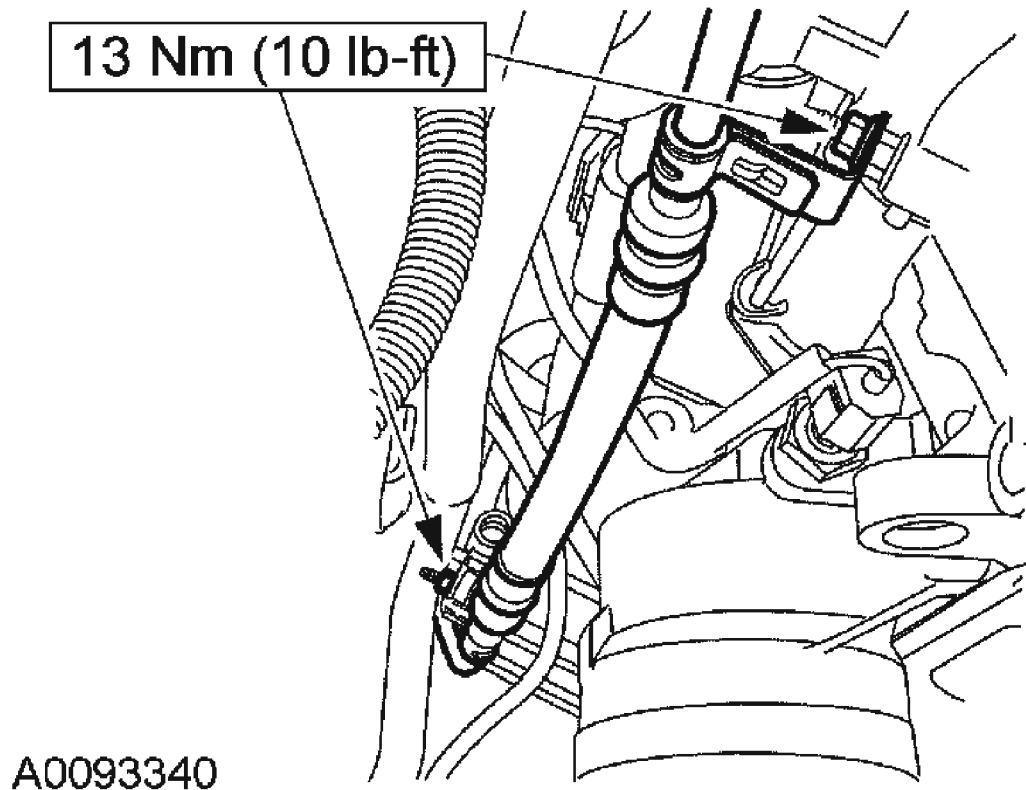


Fig. 3: Removing Bolts And Position Aside Power Steering Line
Courtesy of FORD MOTOR CO.

8. Remove the three compressor bolts and lower the A/C compressor.

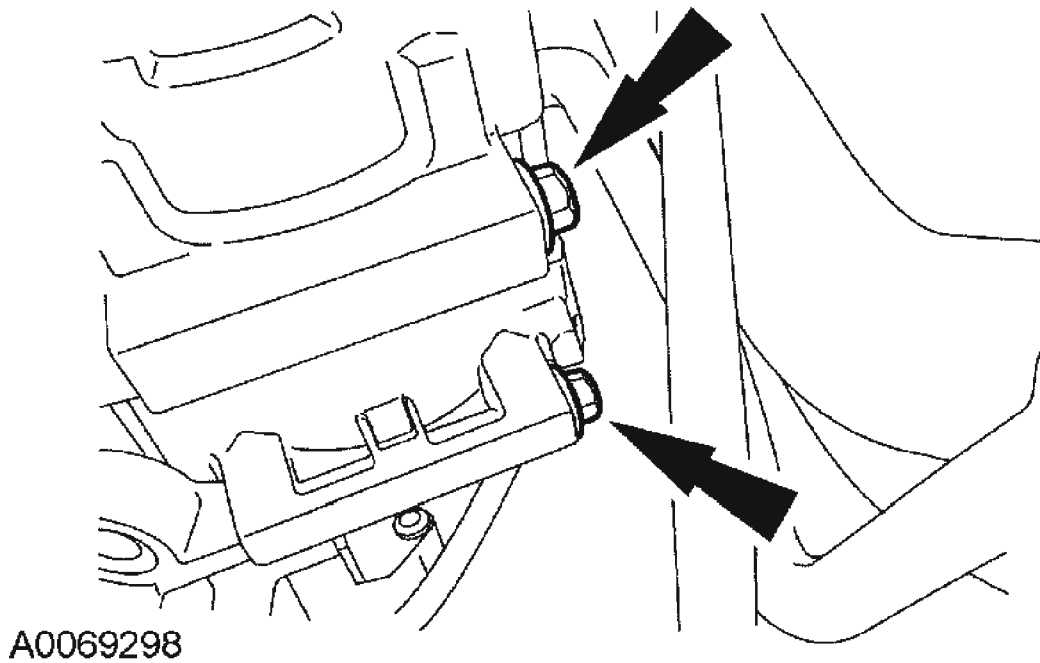


Fig. 4: Removing Compressor Bolts And Lowering A/C Compressor
Courtesy of FORD MOTOR CO.

9. Loosen the compressor manifold bolt and remove the A/C compressor.
 - Discard the O-ring seals.

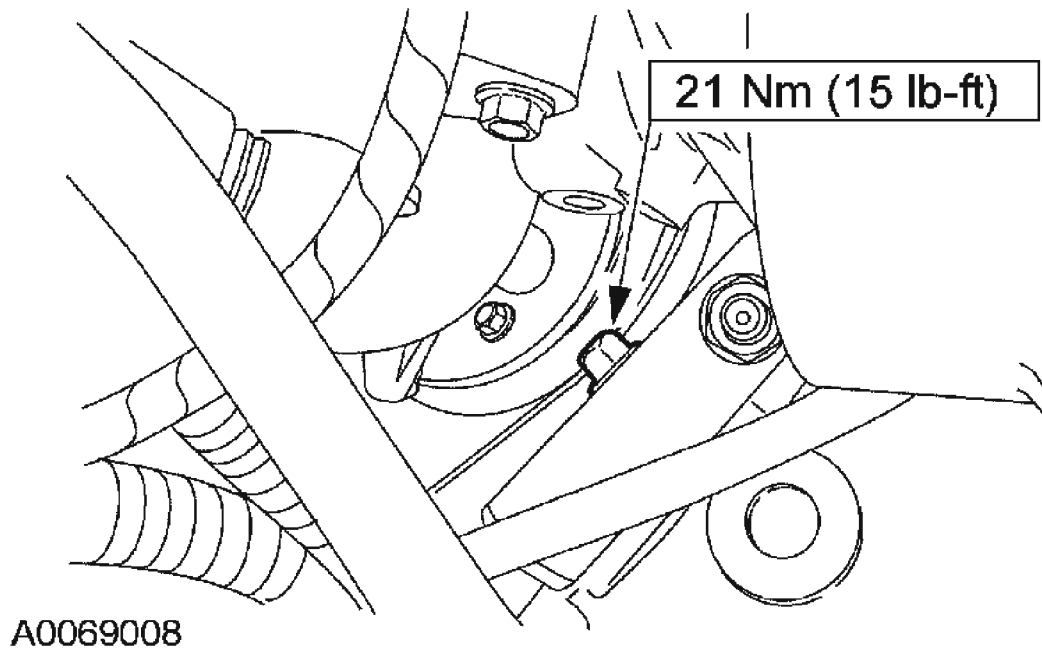


Fig. 5: Loosening Compressor Manifold Bolt And Removing A/C Compressor
Courtesy of FORD MOTOR CO.

10. To install, reverse the removal procedure.
 - If a new A/C compressor is to be installed, the clutch and clutch field coil must be transferred from the old unit to the new unit. For additional information, refer to **CLUTCH AND CLUTCH FIELD COIL**.
 - Install new O-ring seals lubricated in clean mineral oil.
 - If filtering of the refrigerant system is not to be carried out, lubricate the refrigerant system with the correct amount of clean PAG oil. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION**.
11. If filtering of the refrigerant system is not to be carried out, evacuate, leak test and charge the refrigerant system. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION**.

AIR CONDITIONING (A/C) COMPRESSOR SHAFT SEAL

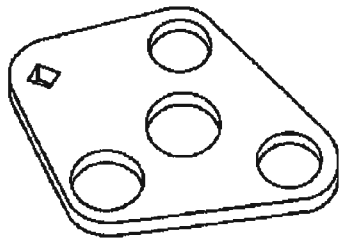
Special Tool(s)

AIR CONDITIONING (A/C) COMPRESSOR SHAFT SEAL SPECIAL TOOLS

| | |
|--|--|
| | Holding Fixture, Compressor Clutch 412-103 (T94L-19703-AH) |
|--|--|

2005 Ford Focus ZX4 S

2005 HVAC Air Conditioning - Focus

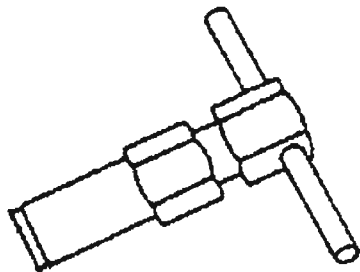


ST2584-A



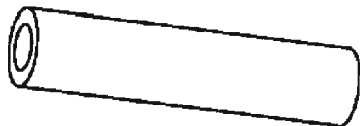
ST1230-A

Protector, A/C Compressor Shaft Oil Seal
412-094 (T94P-19623-F)



ST1229-A

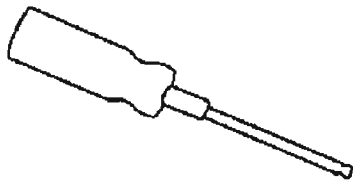
Remover, A/C Compressor Shaft Oil Seal
412-059 (T89P-19623-BH)



ST1228-A

Installer, A/C Compressor Shaft Oil Seal
412-058 (T89P-19623-AH)

Remover, A/C Compressor Snap Ring
412-063 (T89P-19623-DH)

**ST1231-A****ST1219-A**

Remover, O-Ring Seal 100-010 (T71P-19703-C)

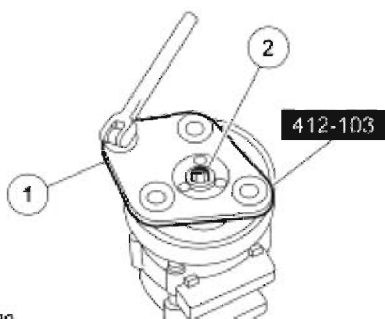
Material

MATERIAL SPECIFICATION

| Item | Specification |
|---|---------------|
| PAG Refrigerant Compressor Oil (R-134a Systems) YN-12-D | WSH-M1C231-B |

Removal

1. Remove the A/C compressor. For additional information, **AIR CONDITIONING (A/C) COMPRESSOR**.
2. Remove the A/C clutch disc and hub retaining bolt.
 1. Hold the A/C clutch disc and hub with the special tool.
 2. Remove the bolt.

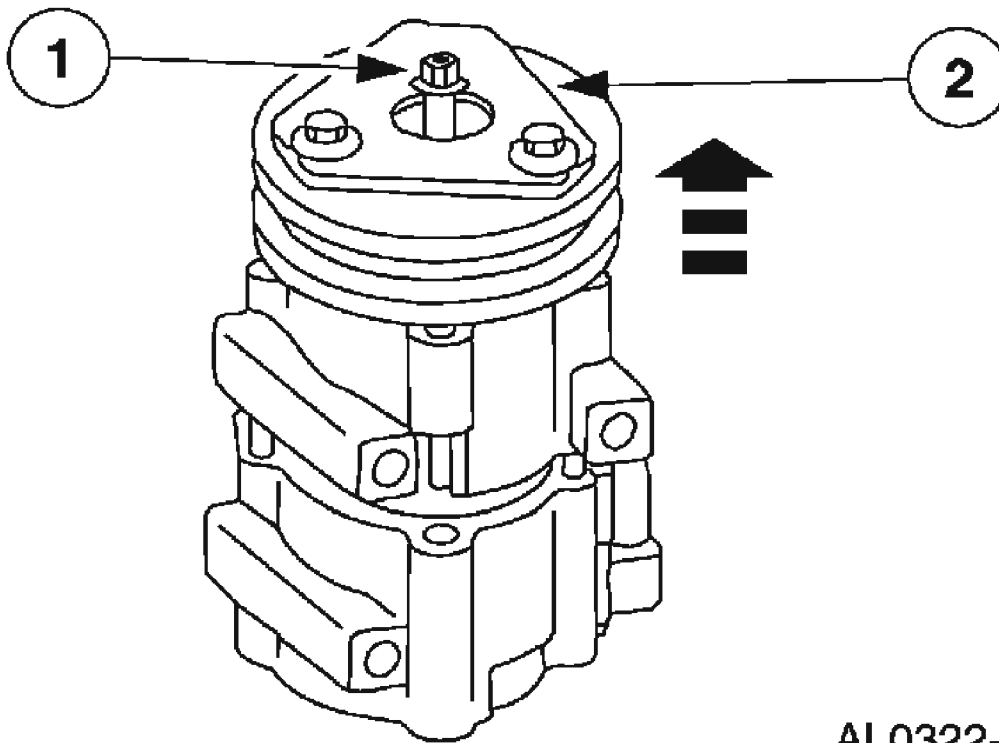


A0087380

Fig. 6: Using Special Tool To Hold A/C Disc And Hub Assembly

Courtesy of FORD MOTOR CO.

3. Remove the A/C clutch and the A/C clutch disc and hub spacer.
 1. Thread an 8 x 1.25 mm bolt into the A/C clutch disc and hub to force it from the compressor shaft.
 2. Lift the A/C clutch disc and hub and the A/C clutch disc and hub spacer from the compressor shaft.



AL0322-A

Fig. 7: Removing A/C Clutch And A/C Clutch Disc And Hub Spacer
Courtesy of FORD MOTOR CO.

4. Remove the shaft seal felt from the nose of the A/C compressor with the special tool.

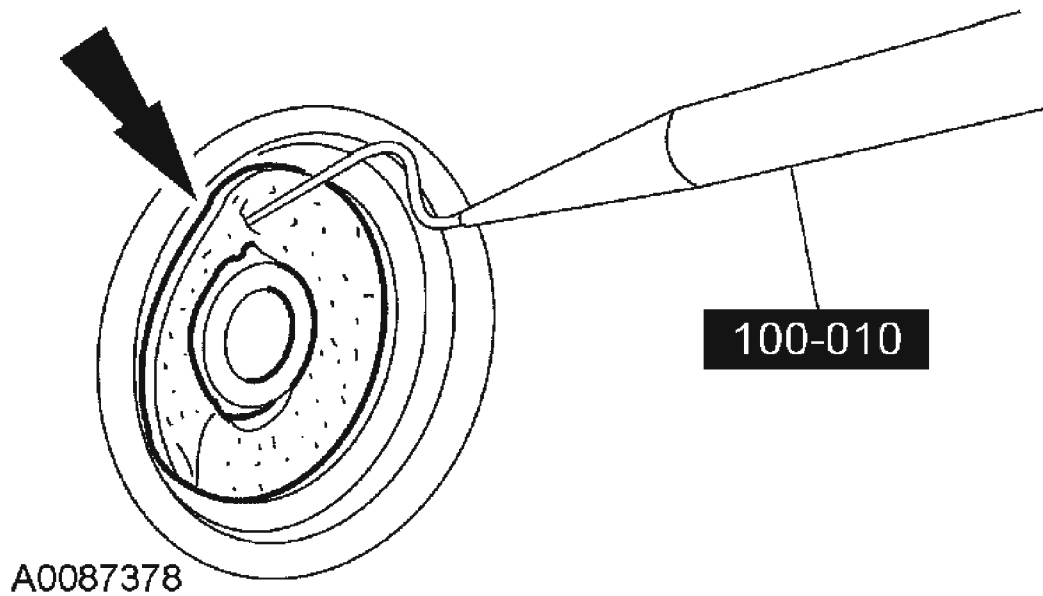
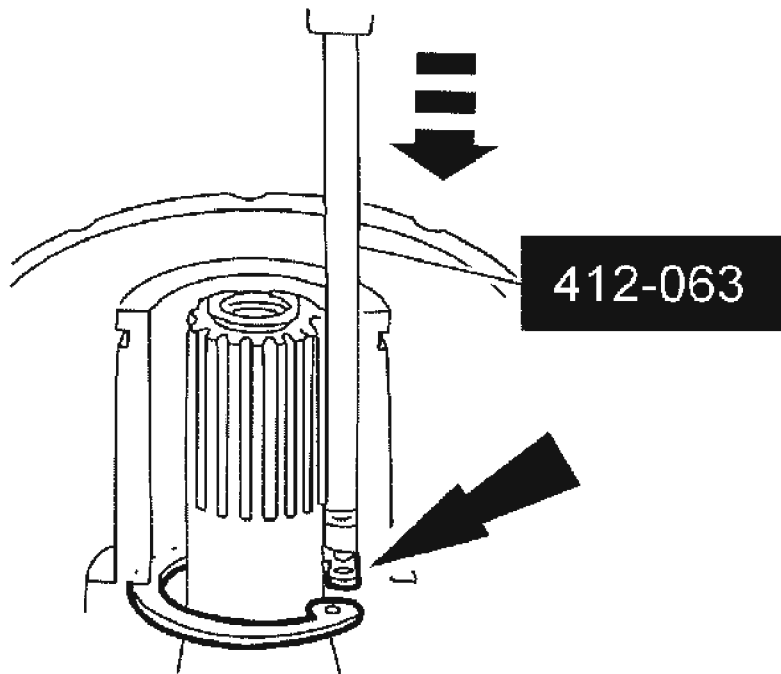


Fig. 8: Removing Shaft Seal Felt From Nose Of A/C Compressor With Special Tool

Courtesy of FORD MOTOR CO.

5. Clean the compressor nose area.
6. Insert the tip of the special tool into one of the snap ring eyes.



A0087373

Fig. 9: Inserting Tip Of Special Tool Into One Of The Snap Ring Eyes
Courtesy of FORD MOTOR CO.

7. Rotate the special tool to position the tool tip and the snap ring eye closest to the A/C compressor shaft.

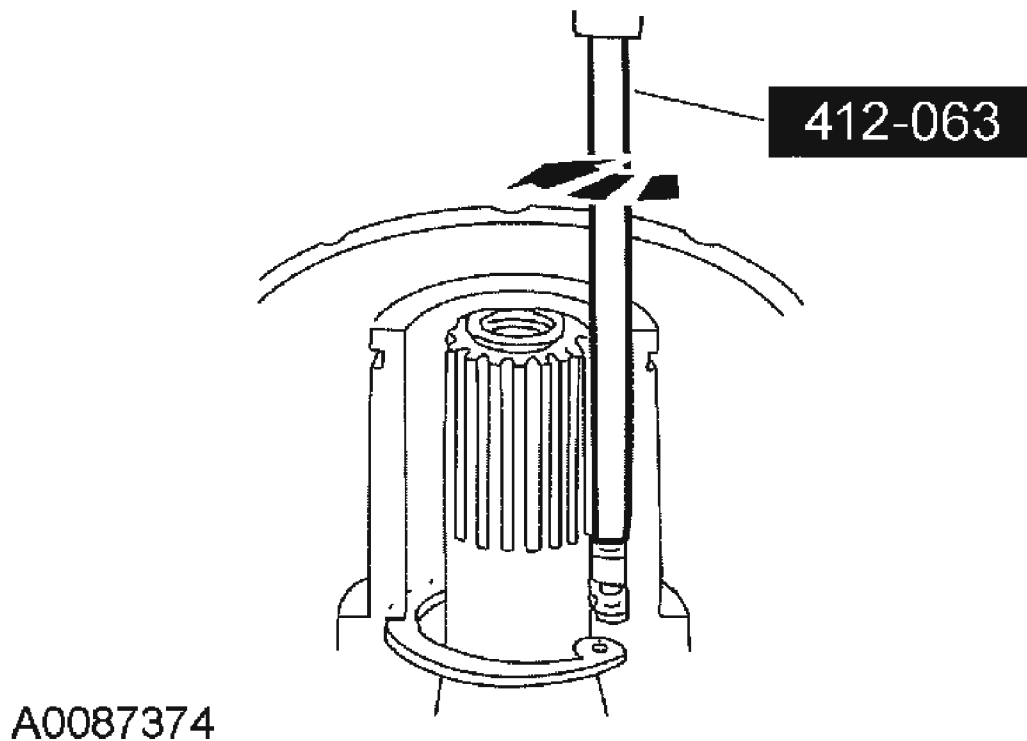
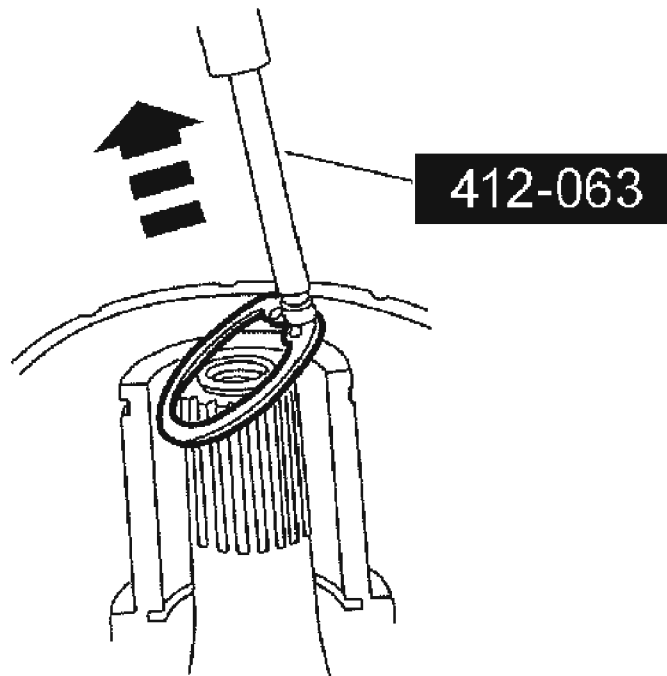


Fig. 10: Rotating Special Tool To Position Tool Tip And Snap Ring Eye Closest To A/C Compressor Shaft
Courtesy of FORD MOTOR CO.

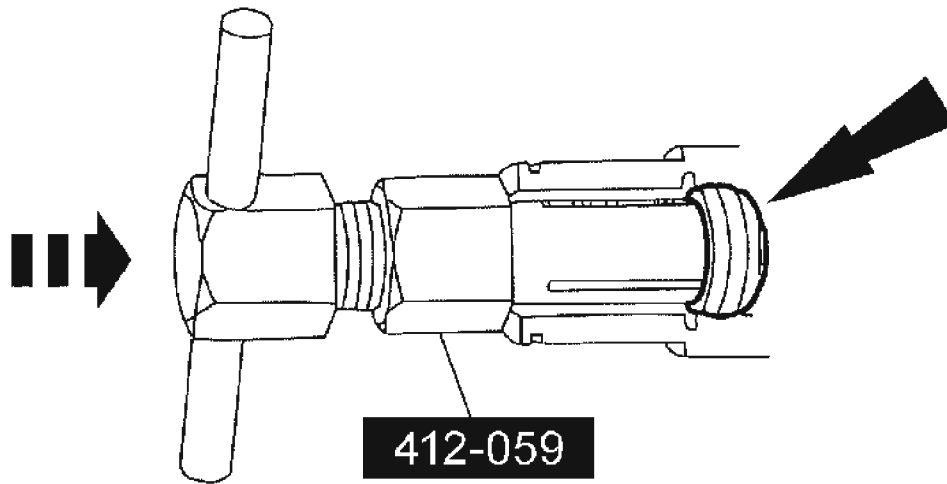
8. Pull the special tool up quickly while keeping the tool shaft against the side of the nose opening and remove the snap ring.



A0087372

Fig. 11: Pulling Special Tool Up Quickly While Keeping Tool Shaft Against Side Of Nose Opening And Removing Snap Ring
Courtesy of FORD MOTOR CO.

9. Engage the special tool into the inside diameter of the shaft seal.



A0087379

Fig. 12: Engaging Special Tool Into Inside Diameter Of Shaft Seal
Courtesy of FORD MOTOR CO.

10. Turn the tool handle clockwise to expand the tool tip inside of the shaft seal.

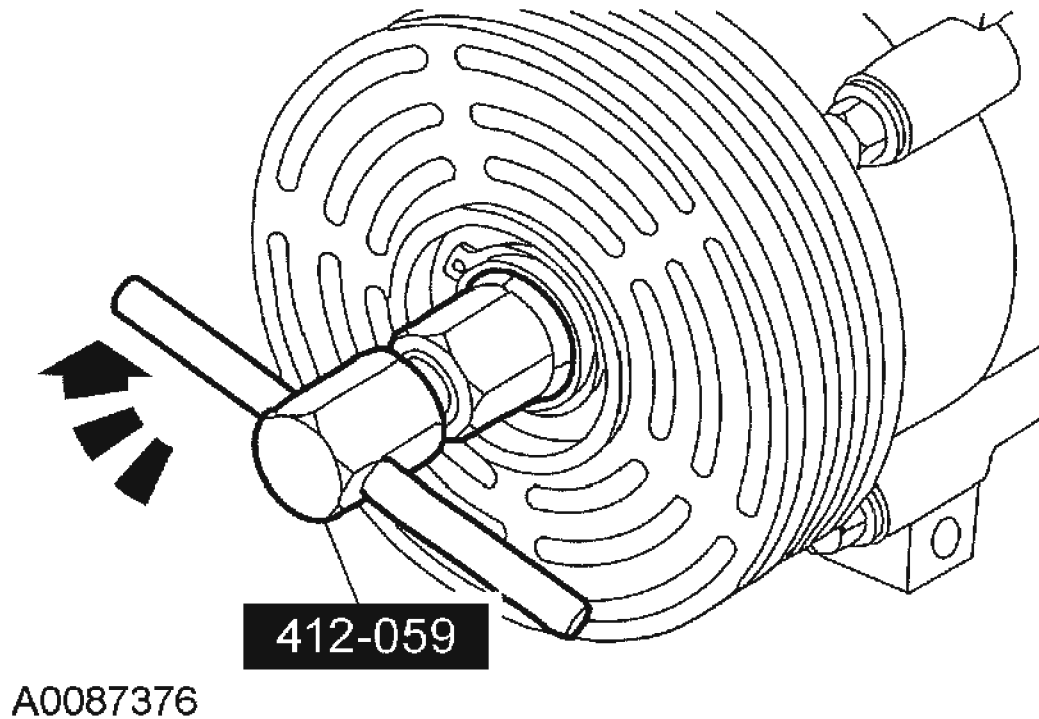


Fig. 13: Turning Tool Handle Clockwise To Expand Tool Tip Inside Of Shaft Seal
Courtesy of FORD MOTOR CO.

11. Pull the seal from the A/C compressor.



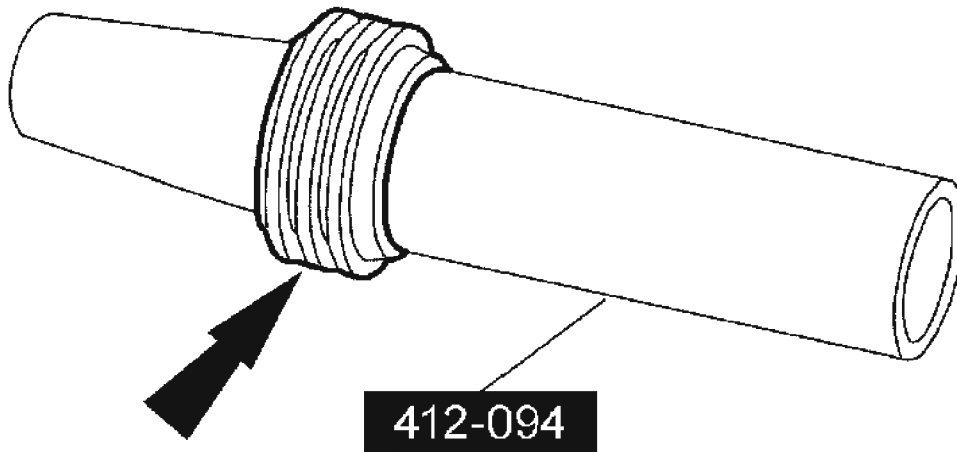
A0087377

Fig. 14: Pulling Seal From A/C Compressor
Courtesy of FORD MOTOR CO.

Installation

CAUTION: To prevent refrigerant system contamination, do not allow dirt or other foreign materials to enter the A/C compressor.

1. Clean the A/C compressor nose area.
2. Place the shaft seal on the special tool. Lubricate the shaft seal and the special tool with mineral oil or equivalent.



A0087383

Fig. 15: Placing Shaft Seal On Special Tool
Courtesy of FORD MOTOR CO.

3. Position the shaft seal and the special tool over the A/C compressor shaft.

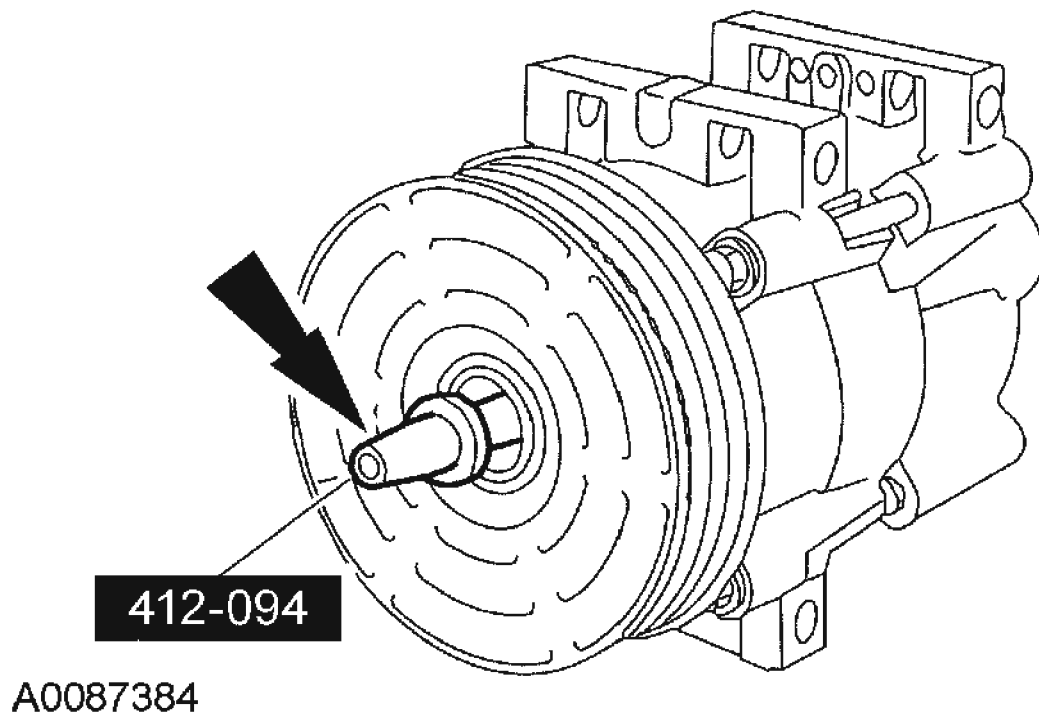


Fig. 16: Positioning Shaft Seal And Special Tool Over A/C Compressor Shaft
Courtesy of FORD MOTOR CO.

4. Push the shaft seal onto the A/C compressor shaft with the special tool until seated.

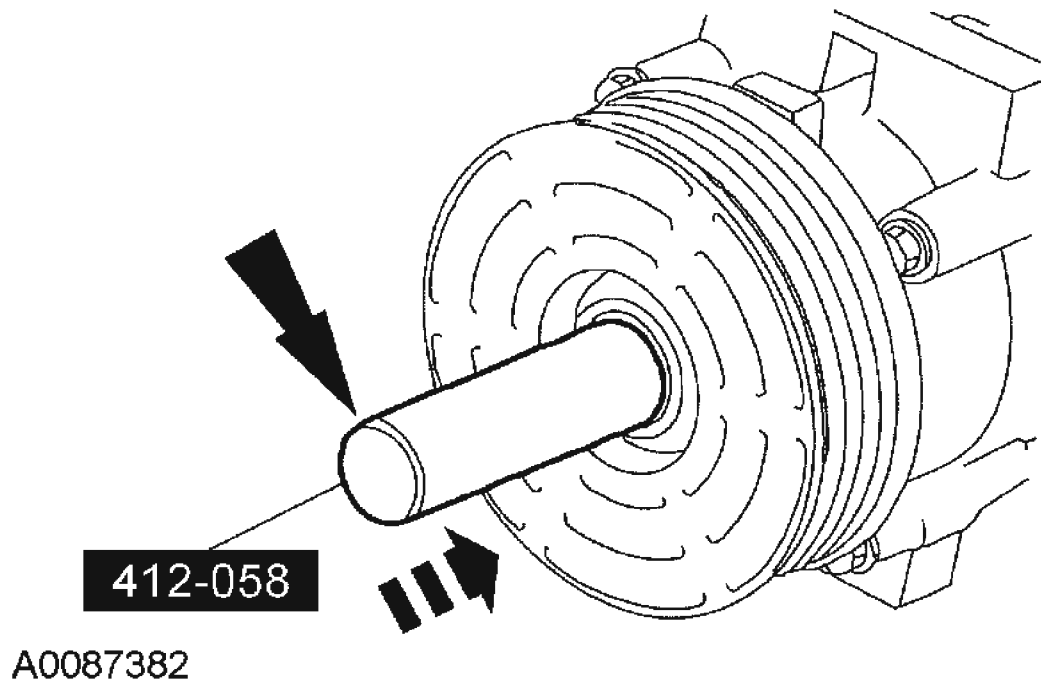
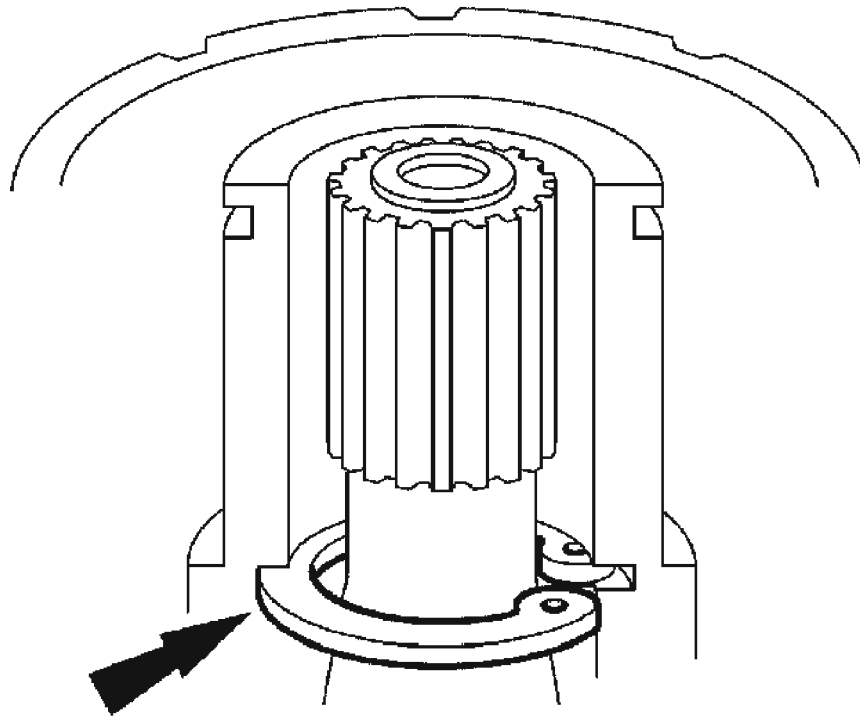


Fig. 17: Pushing Shaft Seal Onto A/C Compressor Shaft With Special Tool Until Seated

Courtesy of FORD MOTOR CO.

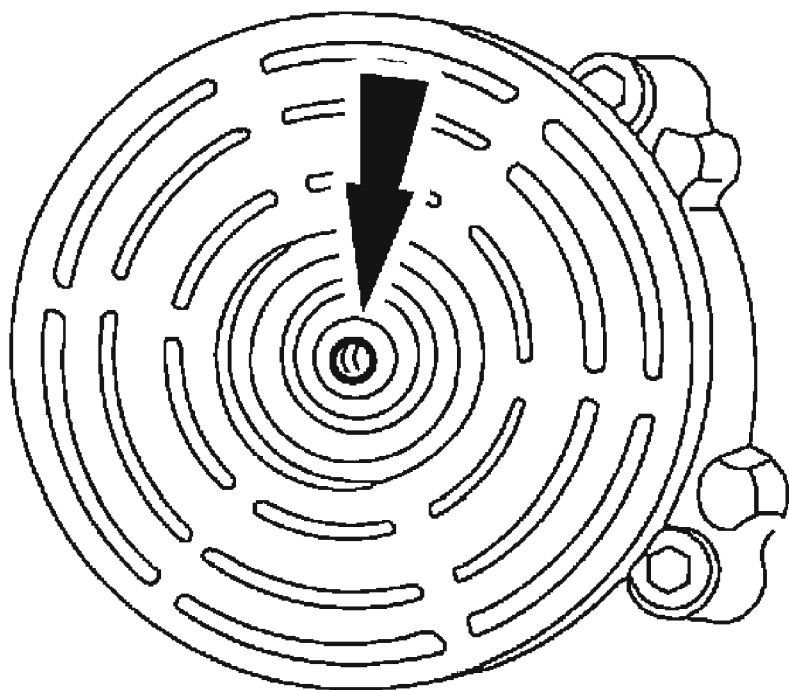
5. Install the shaft seal snap ring.



L10169-A

Fig. 18: Locating Shaft Seal Snap Ring
Courtesy of FORD MOTOR CO.

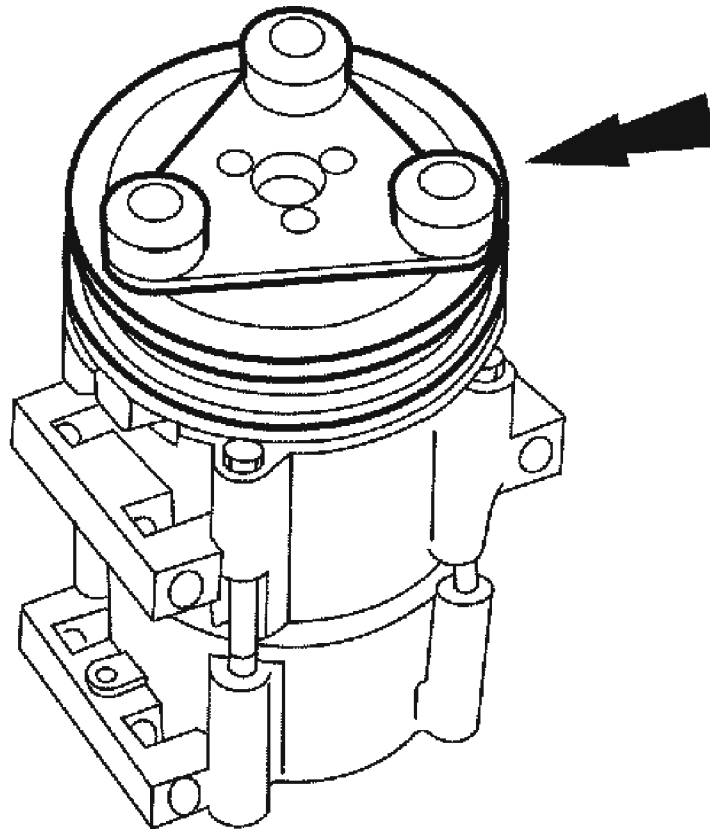
6. Install the shaft seal felt.



AL0338-A

Fig. 19: Installing Shaft Seal Felt
Courtesy of FORD MOTOR CO.

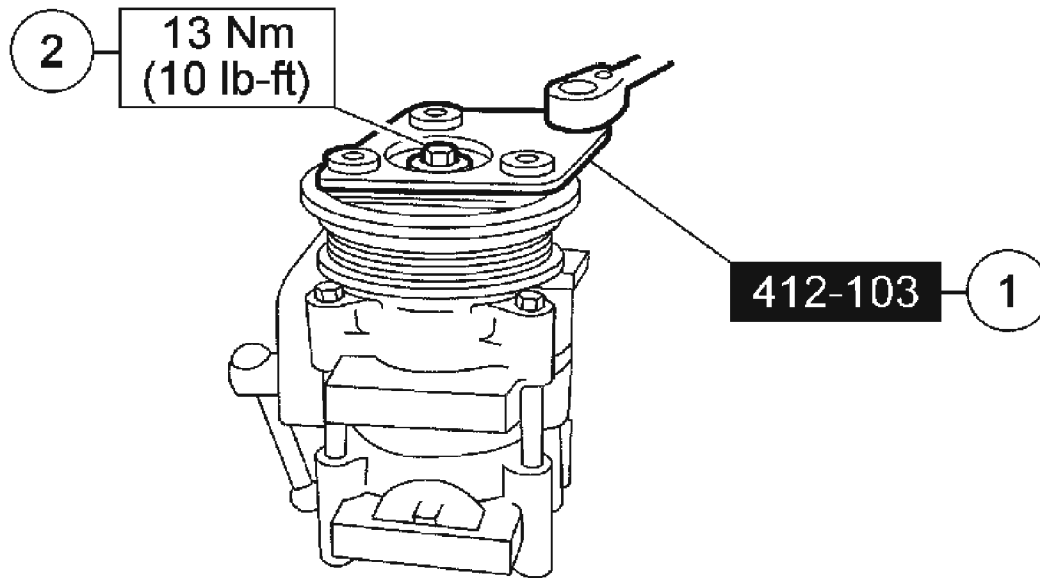
7. Install the A/C clutch disc and hub.



L10159-A

Fig. 20: Locating A/C Clutch Disc & Hub
Courtesy of FORD MOTOR CO.

8. Install the bolt.
 1. Hold the A/C clutch disc and hub with the special tool.
 2. Tighten the bolt.



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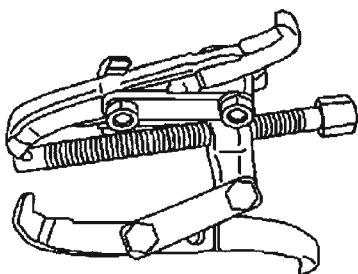
Fig. 21: Installing Bolt
 Courtesy of FORD MOTOR CO.

9. Measure and adjust the clutch air gap by removing or adding A/C clutch disc and hub spacers. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .
10. Install the A/C compressor. For additional information, **AIR CONDITIONING (A/C) COMPRESSOR**.

CLUTCH AND CLUTCH FIELD COIL

Special Tool(s)

CLUTCH AND CLUTCH FIELD COIL SPECIAL TOOLS

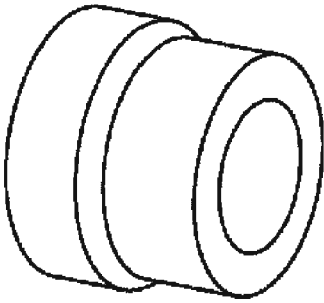


ST2382-A

Remover, Compressor Pulley 412-001
 (T71P-19703-B)

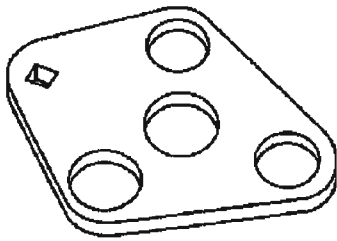
2005 Ford Focus ZX4 S

2005 HVAC Air Conditioning - Focus



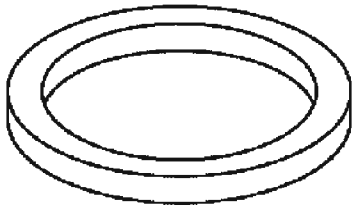
ST1232-A

Installer, A/C Compressor Coil 412-065 (T89P-19623-EH)



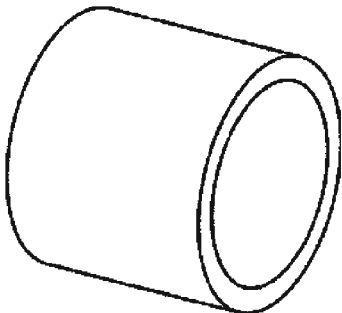
ST2584-A

Holding Fixture, Compressor Clutch 412-103 (T95L-19703-AH)



ST1234-A

Installer, A/C Compressor Field Coil 412-078 (T91L-19623-CH)



ST1233-A

Remover, A/C Compressor Field Coil 412-067 (T89P-19623-FH)

1. Remove the A/C compressor (19703). For additional information, **AIR CONDITIONING (A/C) COMPRESSOR**.
2. Remove the A/C clutch disc and hub retaining bolt.
 1. Hold the A/C clutch disc and hub with the special tool.
 2. Remove the bolt.

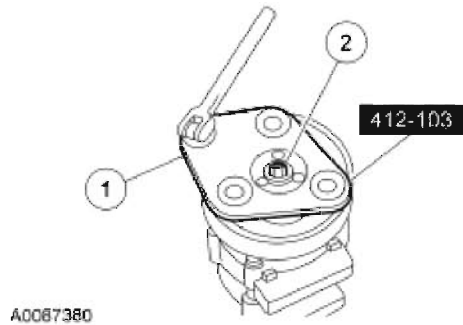
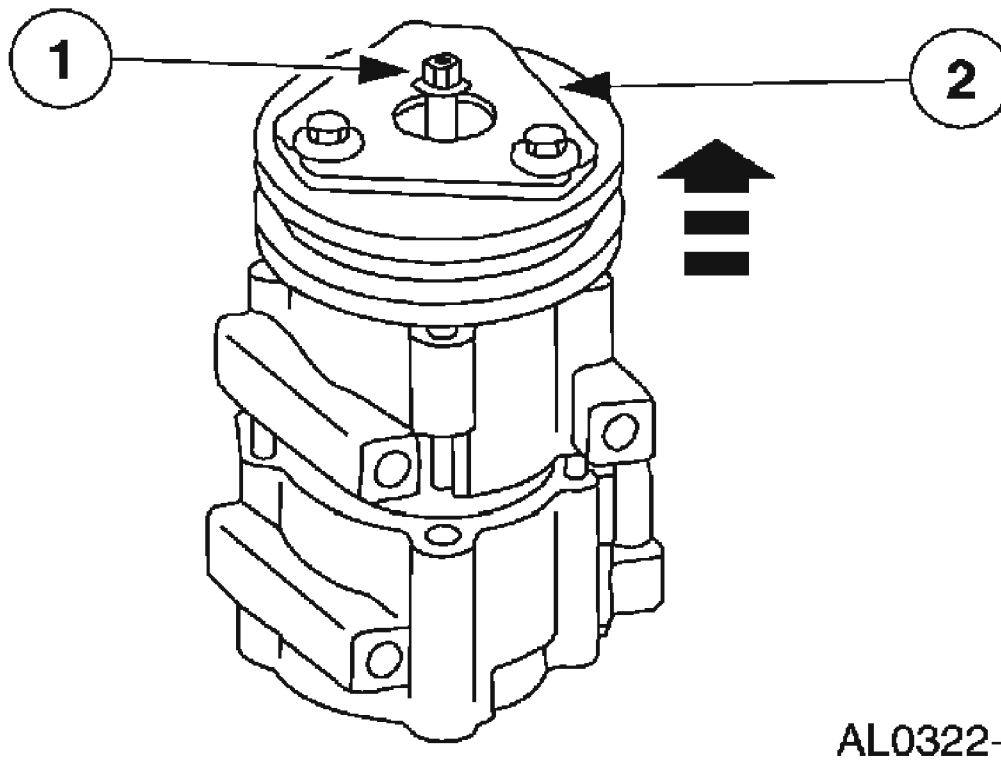


Fig. 22: Using Special Tool To Hold A/C Disc And Hub Assembly
Courtesy of FORD MOTOR CO.

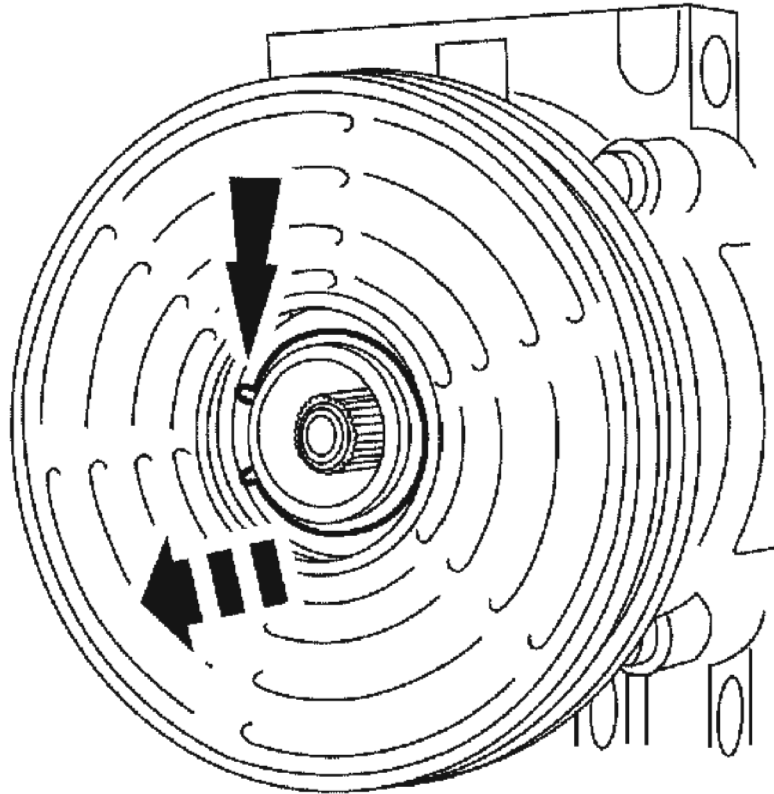
3. Remove the A/C clutch disc and hub.
 1. Thread an 8 x 1.25 mm bolt into the A/C clutch disc and hub spacer to force it from the compressor shaft.
 2. Lift the A/C clutch disc and hub and the A/C clutch disc and hub spacer from the compressor shaft.



AL0322-A

Fig. 23: Removing A/C Clutch Disc And Hub
Courtesy of FORD MOTOR CO.

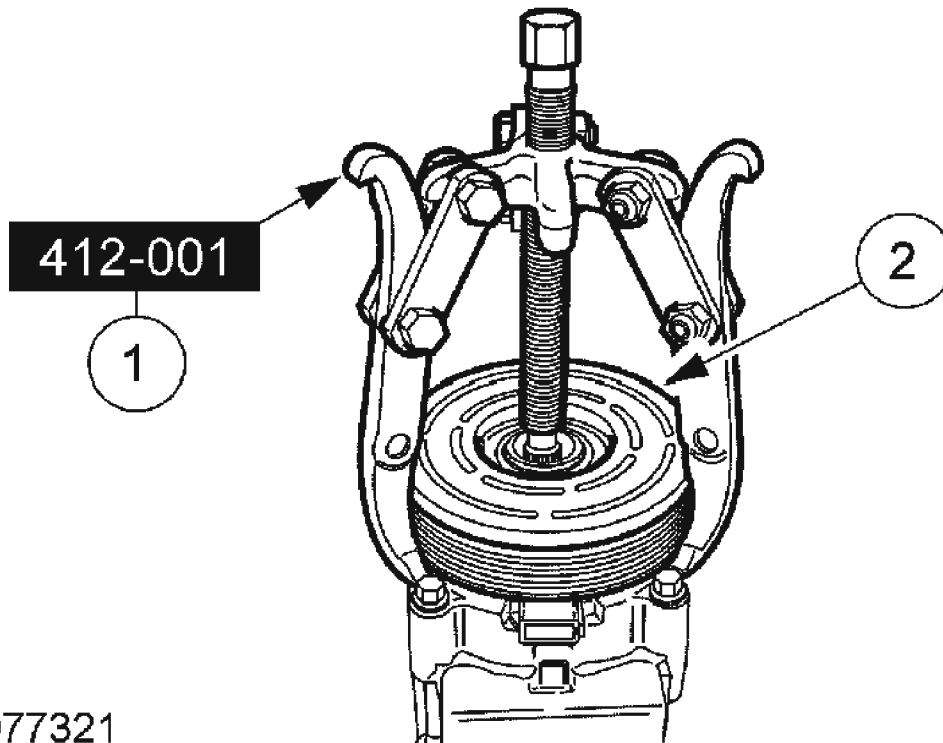
4. Remove the pulley snap ring.



L10153-A

Fig. 24: Removing Pulley Snap Ring
Courtesy of FORD MOTOR CO.

5. Remove the A/C clutch pulley.
 1. Install the special tool.
 2. Remove the A/C clutch pulley.



A0077321

Fig. 25: Removing A/C Clutch Pulley
Courtesy of FORD MOTOR CO.

CAUTION: Do not use air tools. The A/C clutch field coil can be easily damaged.

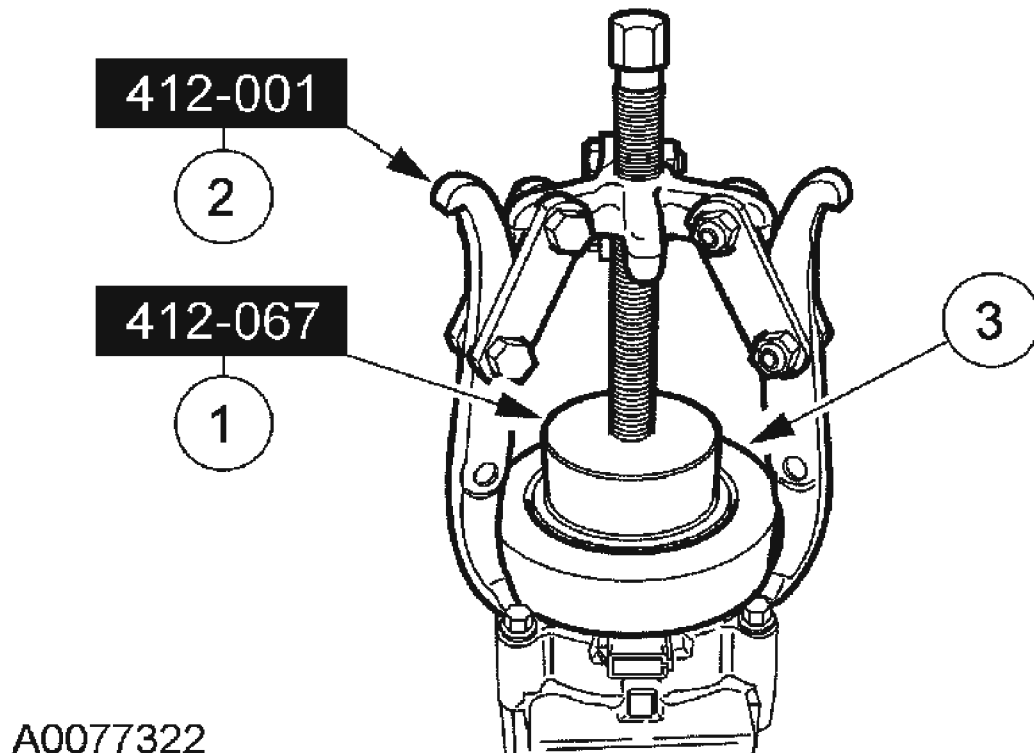


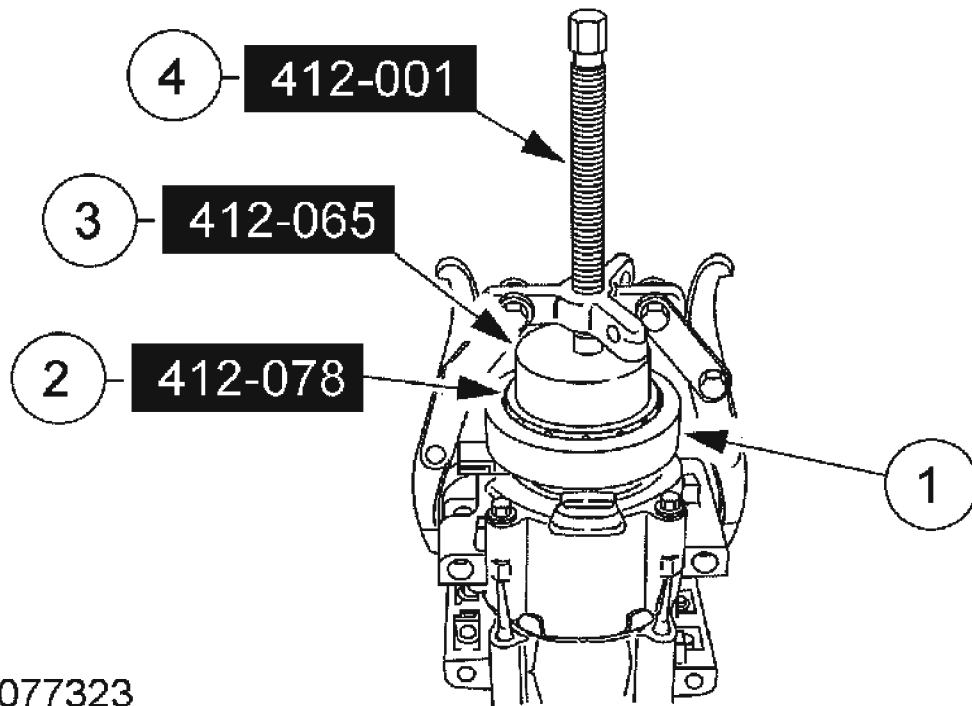
Fig. 26: Removing A/C Clutch Field Coil
Courtesy of FORD MOTOR CO.

6. Remove the A/C clutch field coil.
 1. Install the special tool on the nose opening of the A/C compressor.
 2. Install the special tool.
 3. Remove the A/C clutch field coil.

Installation

1. If transferring the A/C clutch components to a new A/C compressor, inspect the A/C clutch disc and hub, A/C clutch pulley and A/C clutch field coil to verify that they are suitable for reuse. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION**.
2. Clean the A/C clutch field coil and the pulley bearing mounting surfaces.

CAUTION: Do not use air tools. The A/C clutch field coil can be easily damaged.

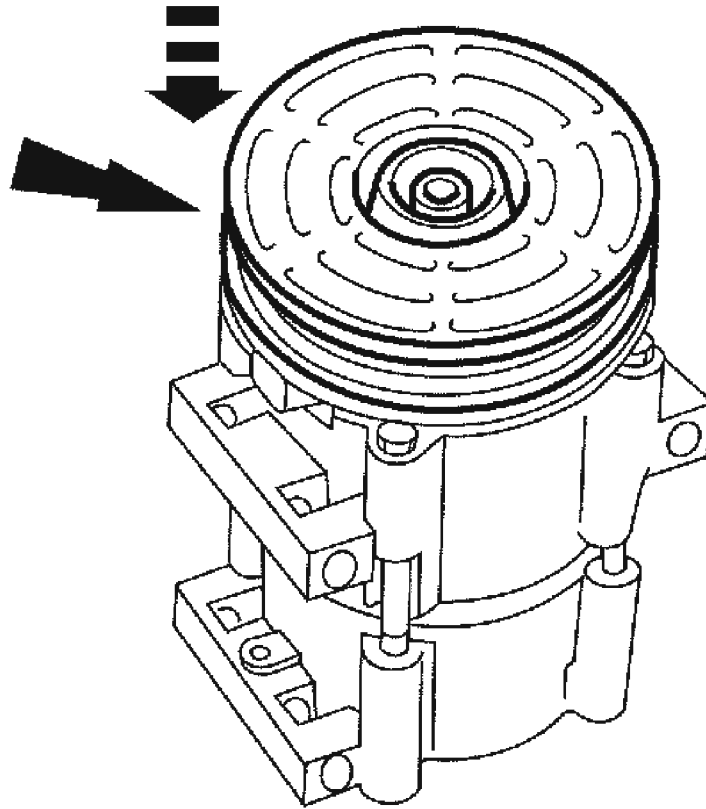


A0077323

Fig. 27: Installing A/C Clutch Field Coil Using Special Tools
Courtesy of FORD MOTOR CO.

3. Install the A/C clutch field coil.
 1. Place the A/C clutch field coil on the A/C compressor with the electrical connector correctly positioned.
 2. Place the special tool on the A/C clutch field coil.
 3. Place the special tool on the special tool.
 4. Use the special tool to install the A/C clutch field coil until bottomed completely against the A/C compressor.

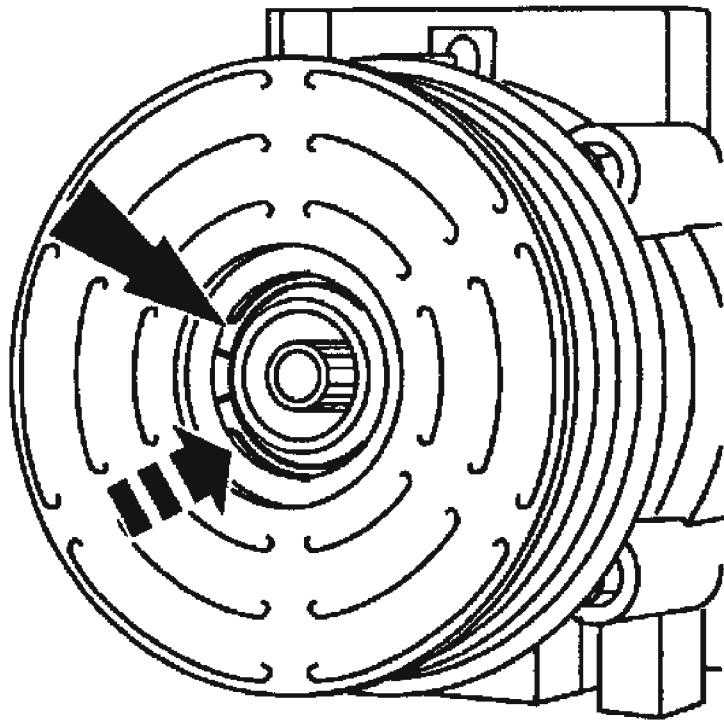
NOTE: The A/C clutch pulley is a tight fit on the A/C compressor head; it must be correctly aligned during installation.



L10157-A

Fig. 28: Installing A/C Clutch Pulley
Courtesy of FORD MOTOR CO.

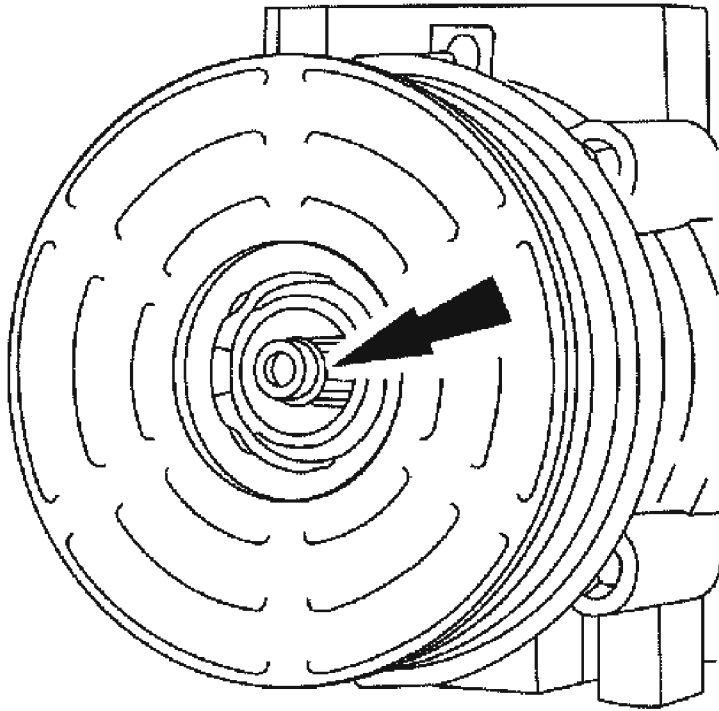
4. Install the A/C clutch pulley.
5. Install the pulley snap ring with the bevel side out.



L10158-A

Fig. 29: Installing Pulley Snap Ring With Bevel Side Out
Courtesy of FORD MOTOR CO.

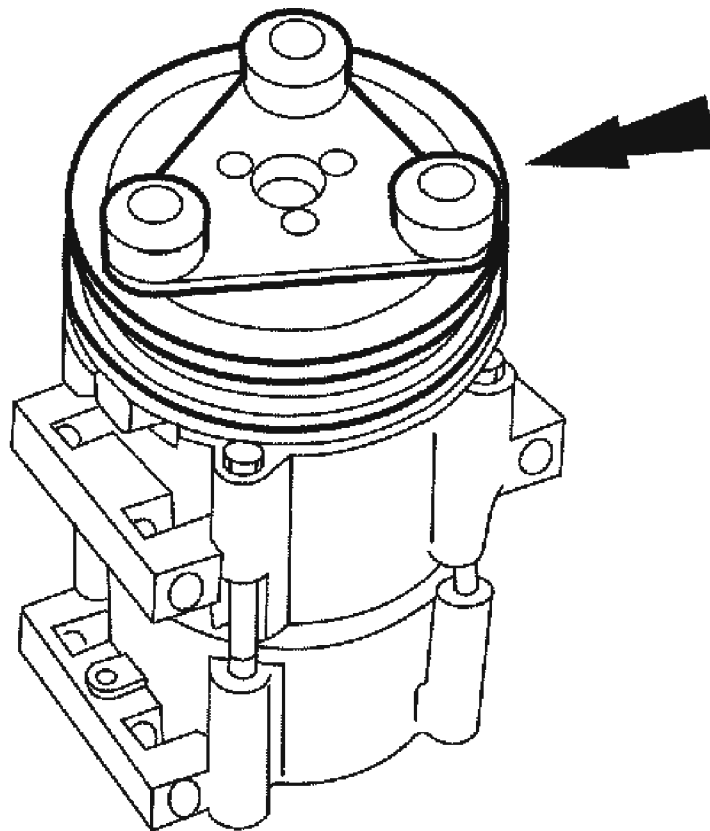
6. Place one nominal thickness A/C clutch disc and hub spacer inside the clutch disc and hub spline opening.



AL0325-A

Fig. 30: Placing Nominal Thickness A/C Clutch Disc And Hub Spacer Inside Clutch Disc And Hub Spline Opening
Courtesy of FORD MOTOR CO.

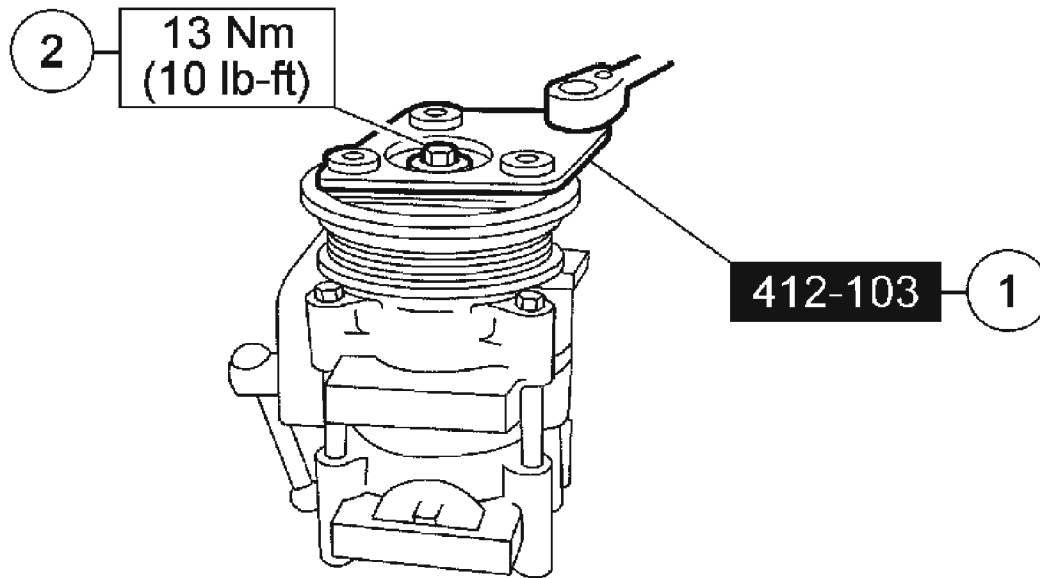
7. Install the A/C clutch disc and hub.



L10159-A

Fig. 31: Locating A/C Clutch Disc & Hub
Courtesy of FORD MOTOR CO.

8. Install the A/C clutch disc and hub retaining bolt.
 1. Hold the A/C clutch disc and hub with the special tool.
 2. Tighten the bolt.



A0087385

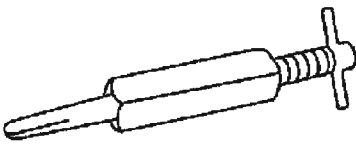
Fig. 32: Installing A/C Clutch Disc And Hub Retaining Bolt
 Courtesy of FORD MOTOR CO.

9. Measure and adjust the clutch air gap. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .
10. Install the A/C compressor. For additional information, **AIR CONDITIONING (A/C) COMPRESSOR**.

EVAPORATOR CORE ORIFICE

Special Tool(s)

EVAPORATOR CORE ORIFICE SPECIAL TOOLS

| | |
|---|---|
|  <p>ST1224-A</p> | Remover/Installer, Fixed Orifice 412-034 (T83L-19990-A) |
| | Remover, Broken Orifice 412-035 (T83L-19990-B) |

2005 Ford Focus ZX4 S

2005 HVAC Air Conditioning - Focus



ST1223-A

Material

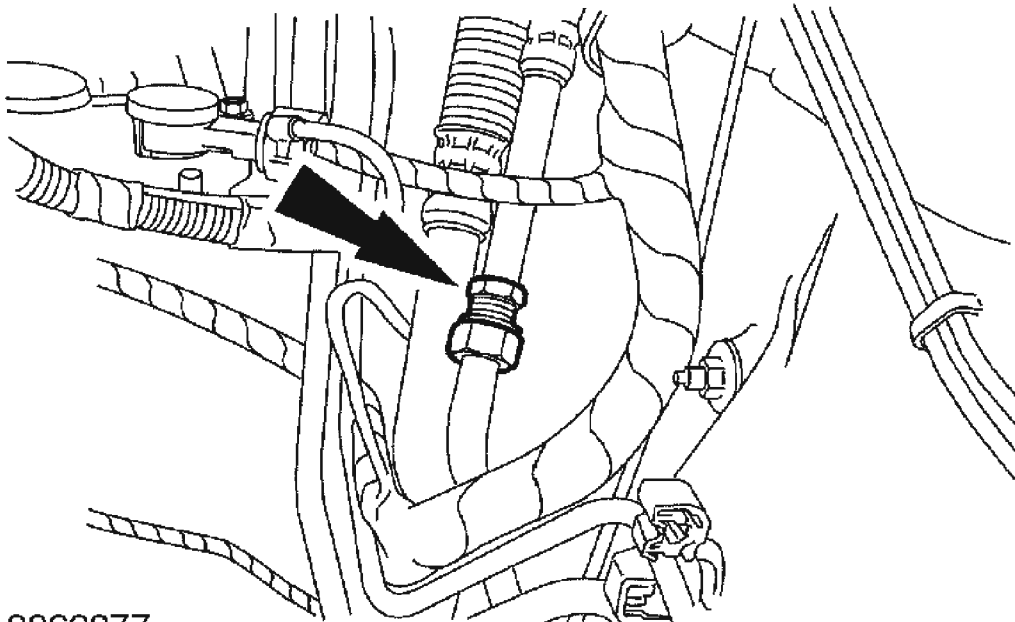
MATERIAL SPECIFICATIONS

| Item | Specification |
|--|---------------|
| PAG Refrigerant Compressor Oil for R134a Systems F7AZ-19589-DA | WSH-M1C231-B |
| Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA | ESH-M2C31-A2 |

Removal

All vehicles

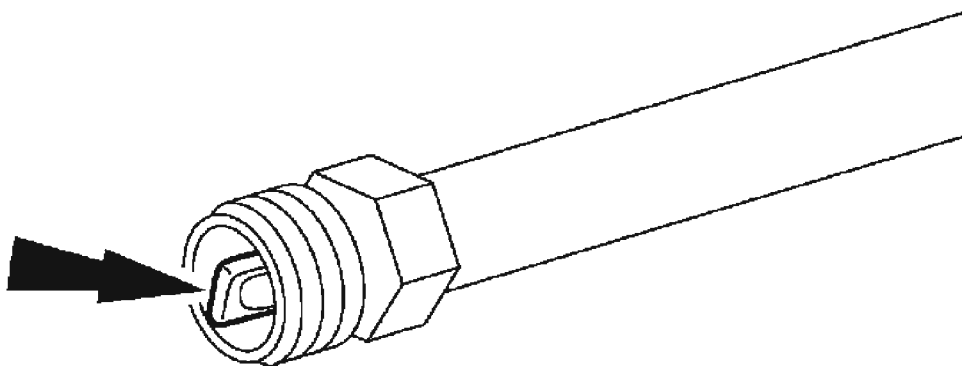
1. Recover the refrigerant. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .
2. Position the vehicle on a hoist with the gear selector in NEUTRAL. For additional information, refer to **JACKING AND LIFTING** .
3. Disconnect the evaporator core orifice connection.
 - Discard the O-ring seal.



A0069077

Fig. 33: Disconnecting Evaporator Core Orifice Connection
Courtesy of FORD MOTOR CO.

4. Inspect the evaporator core orifice for damage.

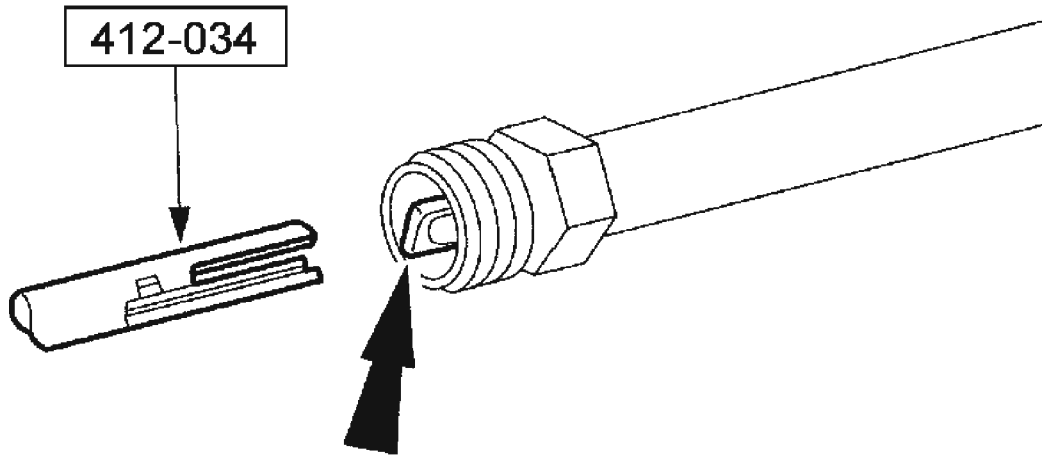


A0016879

Fig. 34: Inspecting Evaporator Core Orifice For Damage
Courtesy of FORD MOTOR CO.

Vehicles with a serviceable evaporator core orifice

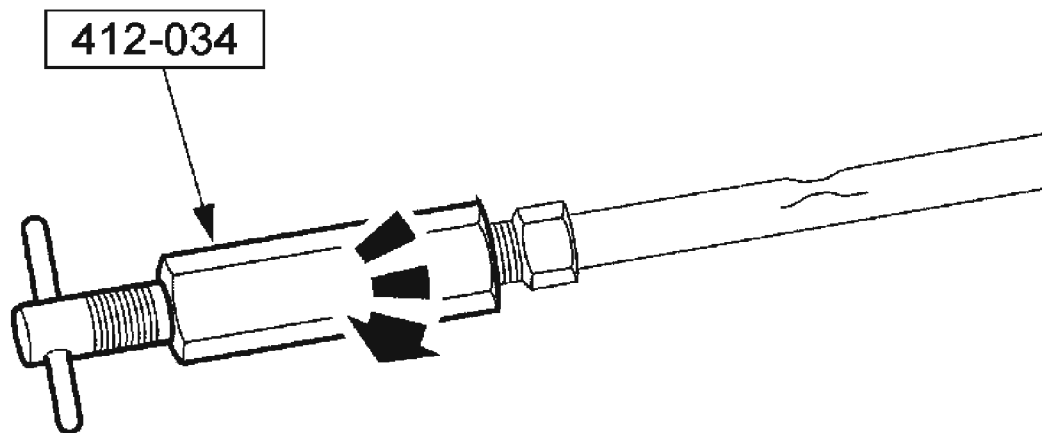
5. Engage the special tool with the evaporator core orifice.



A0016880

Fig. 35: Engaging Special Tool With Evaporator Core Orifice
Courtesy of FORD MOTOR CO.

6. Holding the special tool T-handle stationary, rotate the special tool body to remove the evaporator core orifice.



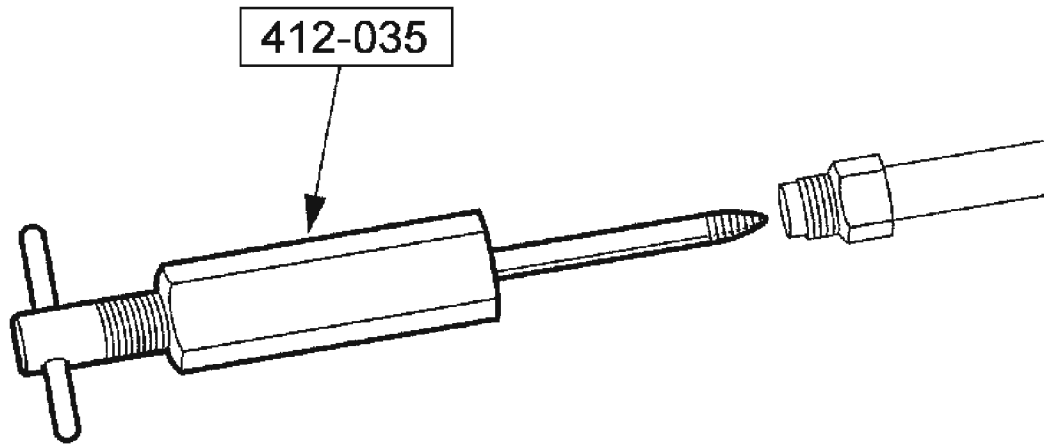
A0016881

Fig. 36: Rotating Special Tool Body To Remove Evaporator Core Orifice

Courtesy of FORD MOTOR CO.

Vehicles with a damaged or broken evaporator core orifice

7. Screw the end of the special tool into the evaporator core orifice.

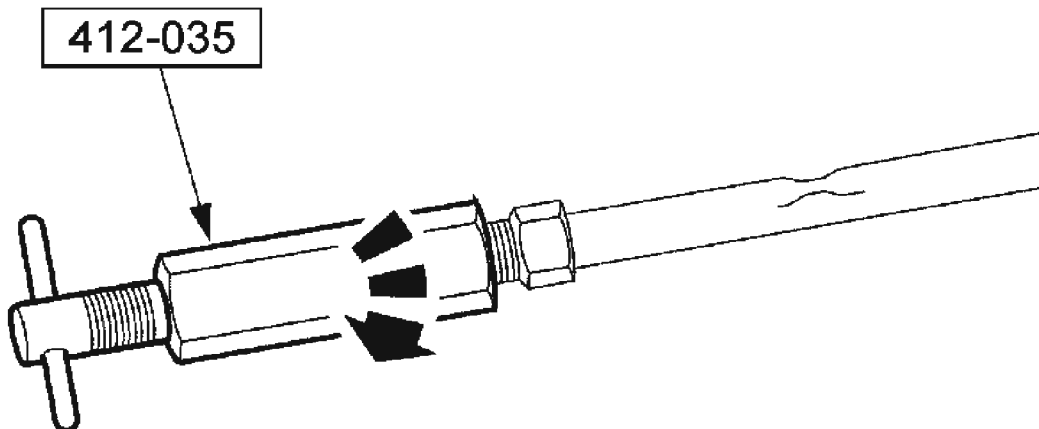


A0016882

Fig. 37: Screwing End Of Special Tool Into Evaporator Core Orifice

Courtesy of FORD MOTOR CO.

8. Holding the special tool T-handle stationary, rotate the special tool body to remove the broken evaporator core orifice.



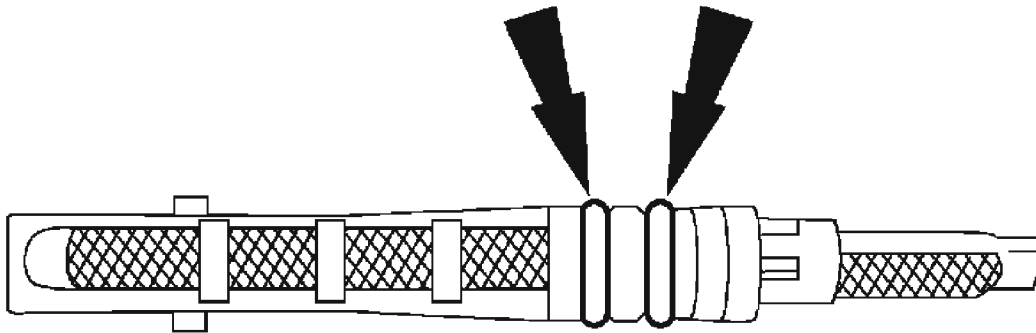
A0016883

Fig. 38: Rotating Special Tool Body To Remove Broken Evaporator Core Orifice
Courtesy of FORD MOTOR CO.

Installation

CAUTION: Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA (Motorcraft YN-9-A) should be used to lubricate R-134a refrigerant system O-ring seals only and should not be added to the R-134a refrigerant system as an A/C compressor lubricant. PAG Refrigerant Compressor Oil F7AZ-19589-DA (Motorcraft YN-12-C) or equivalent meeting Ford specification WSH-M1C231-B only should be used as an A/C compressor lubricant.

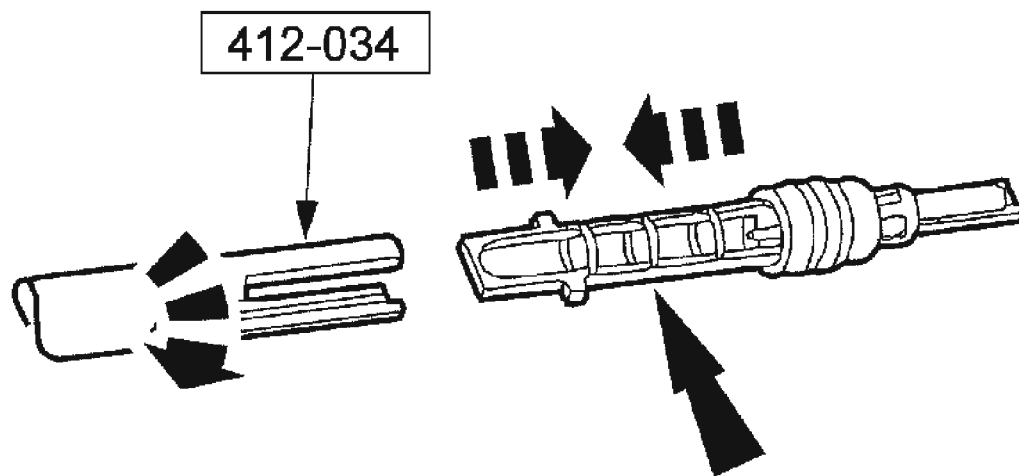
1. Install new O-ring seals on the evaporator core orifice.
 - Lubricate the new O-ring seals with PAG oil or equivalent.



A0016887

Fig. 39: Installing New O-Ring Seals On Evaporator Core Orifice
Courtesy of FORD MOTOR CO.

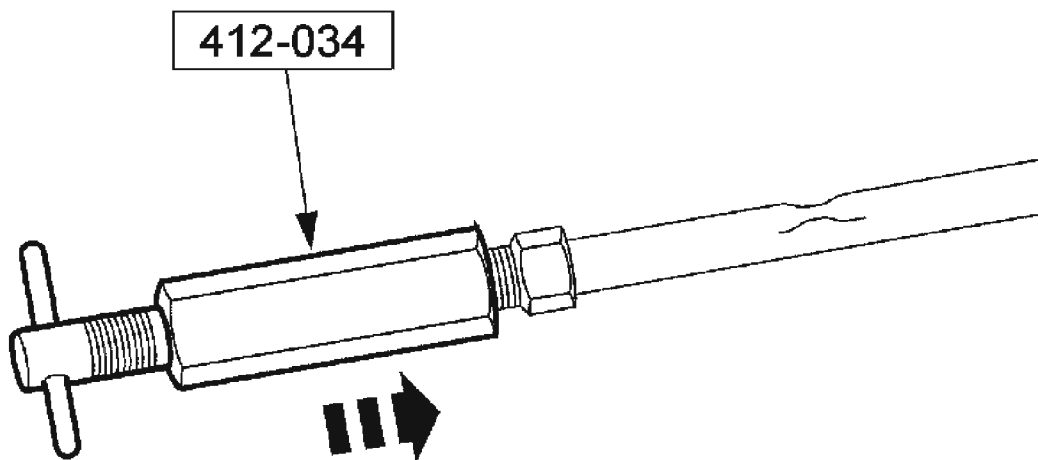
2. Position the evaporator core orifice in the special tool.



A0016884

Fig. 40: Positioning Evaporator Core Orifice In Special Tool
Courtesy of FORD MOTOR CO.

3. Using the special tool, install the evaporator core orifice.



A0016886

Fig. 41: Installing Evaporator Core Orifice Using Special Tool
Courtesy of FORD MOTOR CO.

4. Connect the evaporator core orifice access fitting.
 - Install a new O-ring seal lubricated in clean mineral oil.

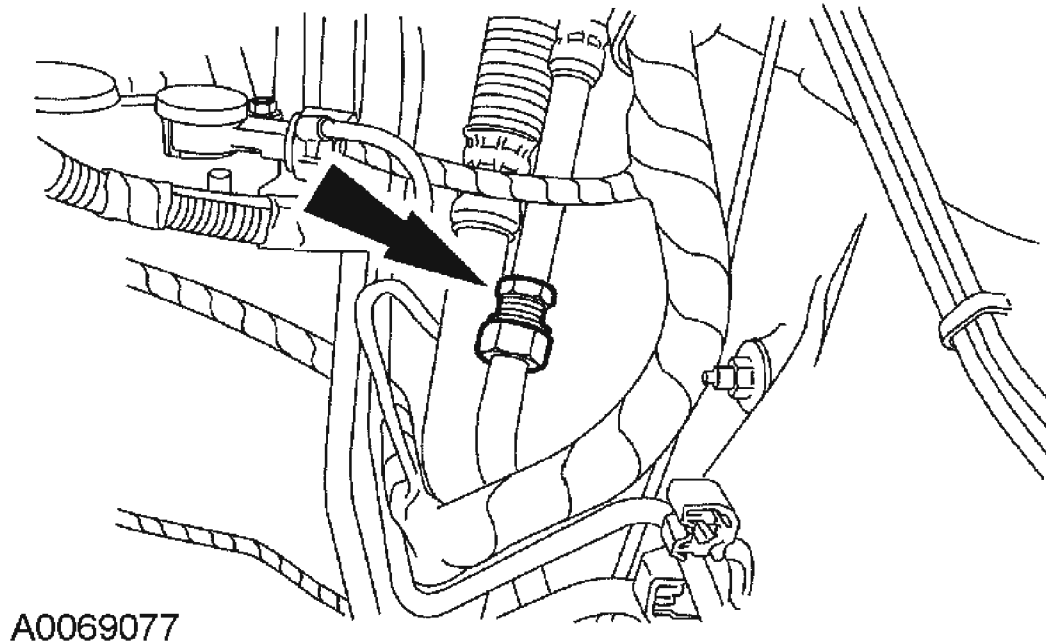


Fig. 42: Connecting Evaporator Core Orifice Access Fitting
 Courtesy of FORD MOTOR CO.

5. Evacuate, leak test and charge the refrigerant system. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .

SUCTION ACCUMULATOR

Material

SUCTION ACCUMULATOR MATERIAL SPECIFICATION

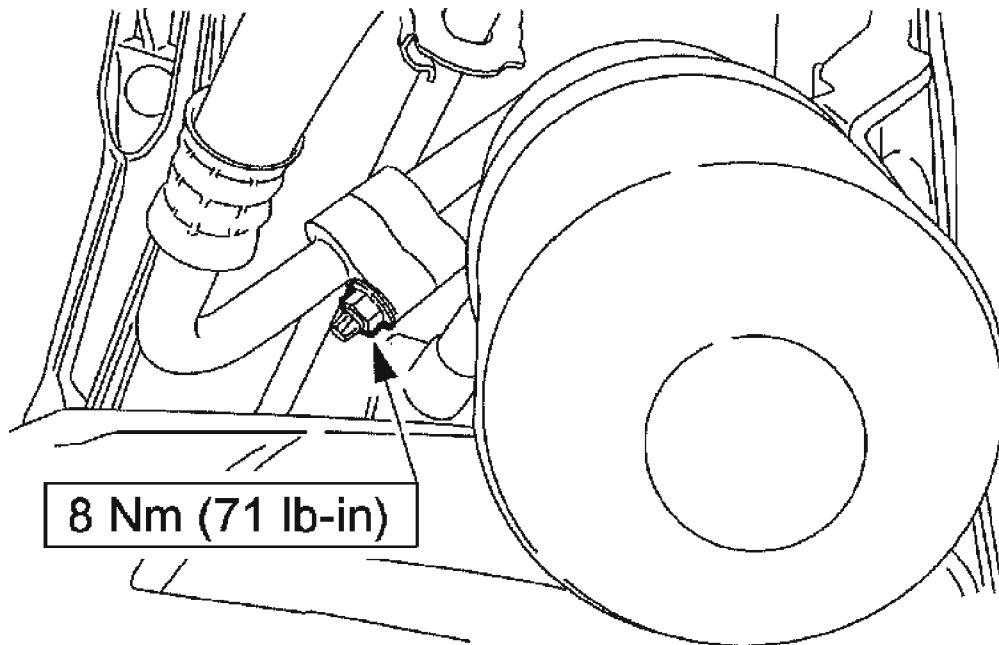
| Item | Specification |
|--|---------------|
| PAG Refrigerant Compressor Oil for R134a Systems F7AZ-19589-DA | WSH-M1C231-B |
| Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA | ESH-M2C31-A2 |

Removal and Installation

CAUTION: Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA (Motorcraft YN-9-A) should be used to lubricate R-134a

refrigerant system O-ring seals only and should not be added to the R-134a refrigerant system as an A/C compressor lubricant. PAG Refrigerant Compressor Oil F7AZ-19589-DA (Motorcraft YN-12-C) or equivalent meeting Ford specification WSH-M1C231-B only should be used as an A/C compressor lubricant.

1. Position the vehicle on a hoist with the gear selector in NEUTRAL. For additional information, refer to **JACKING AND LIFTING** .
2. Recover the refrigerant. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .
3. Remove the lower radiator air deflector.
4. Disconnect the compressor manifold and tube assembly at the suction accumulator.
 - Discard the O-ring seal.



A0069048

Fig. 43: Disconnecting Compressor Manifold And Tube Assembly At Suction Accumulator

Courtesy of FORD MOTOR CO.

5. Remove the suction accumulator bracket nut.

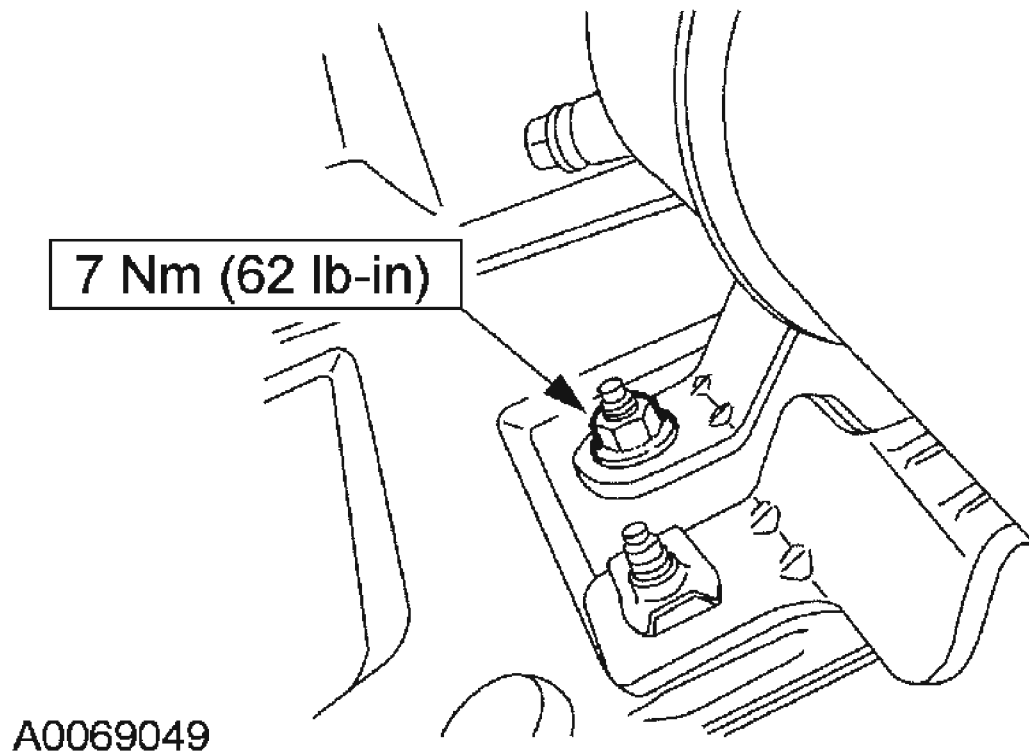
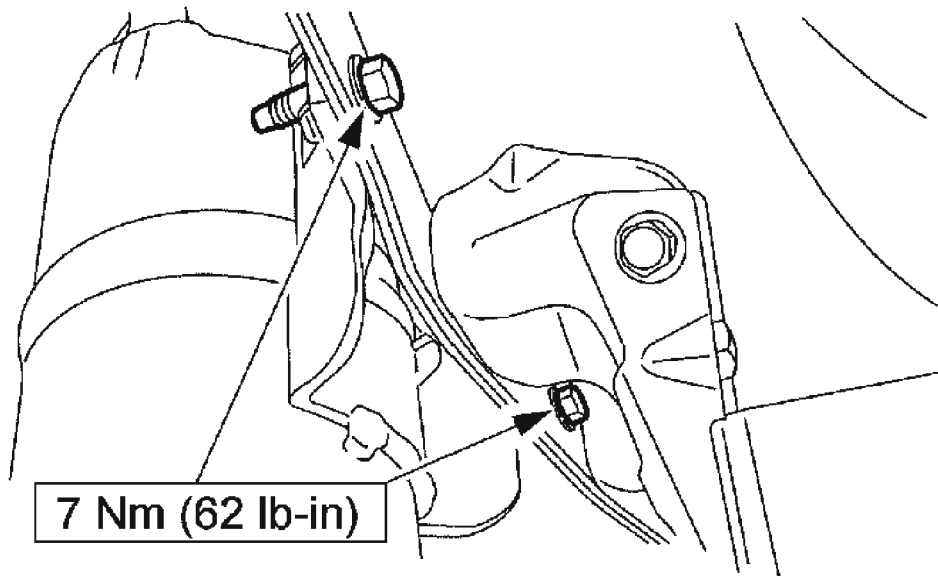


Fig. 44: Removing Suction Accumulator Bracket Nut
Courtesy of FORD MOTOR CO.

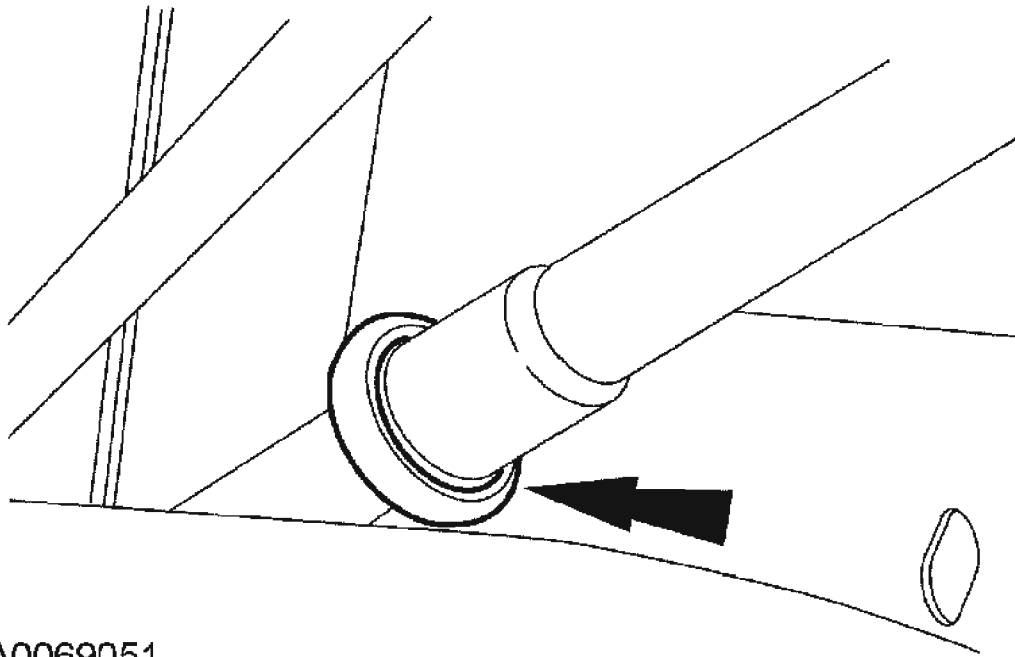
6. Remove the suction accumulator bracket bolts.



A0069050

Fig. 45: Removing Suction Accumulator Bracket Bolts
Courtesy of FORD MOTOR CO.

7. Disconnect the evaporator outlet line fitting at the suction accumulator.
 - Discard the O-ring seals.



A0069051

Fig. 46: Disconnecting Evaporator Outlet Line Fitting At Suction Accumulator
Courtesy of FORD MOTOR CO.

8. Remove the suction accumulator.
9. To install, reverse the removal procedure.
 - Install new O-ring seals lubricated in clean mineral oil.
 - Lubricate the refrigerant system with the correct amount of clean PAG oil. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .
10. Evacuate, leak test and charge the refrigerant system. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .

CONDENSER CORE

Material

CONDENSER CORE MATERIAL SPECIFICATIONS

| Item | Specification |
|--|---------------|
| PAG Refrigerant Compressor Oil for R134a Systems F7AZ-19589-DA | WSH-M1C231-B |
| Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA | ESH-M2C31-A2 |

Removal and Installation

CAUTION: Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA (Motorcraft YN-9-A) should be used to lubricate R-134a refrigerant system O-ring seals only and should not be added to the R-134a refrigerant system as an A/C compressor lubricant. PAG Refrigerant Compressor Oil F7AZ-19589-DA (Motorcraft YN-12-C) or equivalent meeting Ford specification WSH-M1C231-B only should be used as an A/C compressor lubricant.

1. Position the vehicle on a hoist with the gear selector in NEUTRAL. For additional information, refer to **JACKING AND LIFTING**.
2. Recover the refrigerant. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION**.
3. Remove the lower radiator air deflector.
4. Disconnect the refrigerant lines from the condenser core.
 - Discard the O-ring seals.

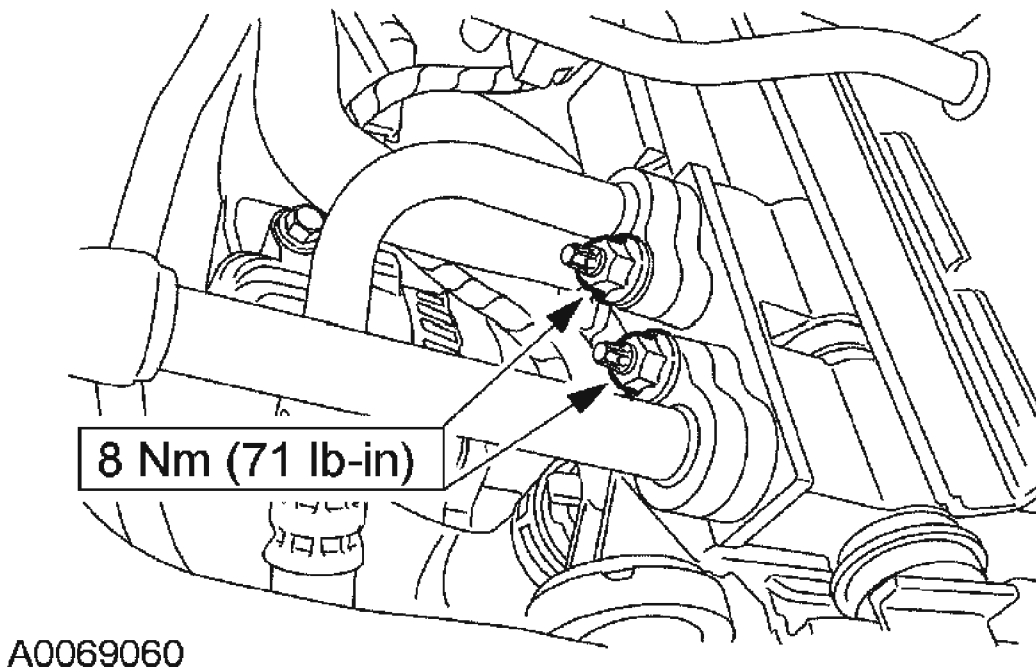
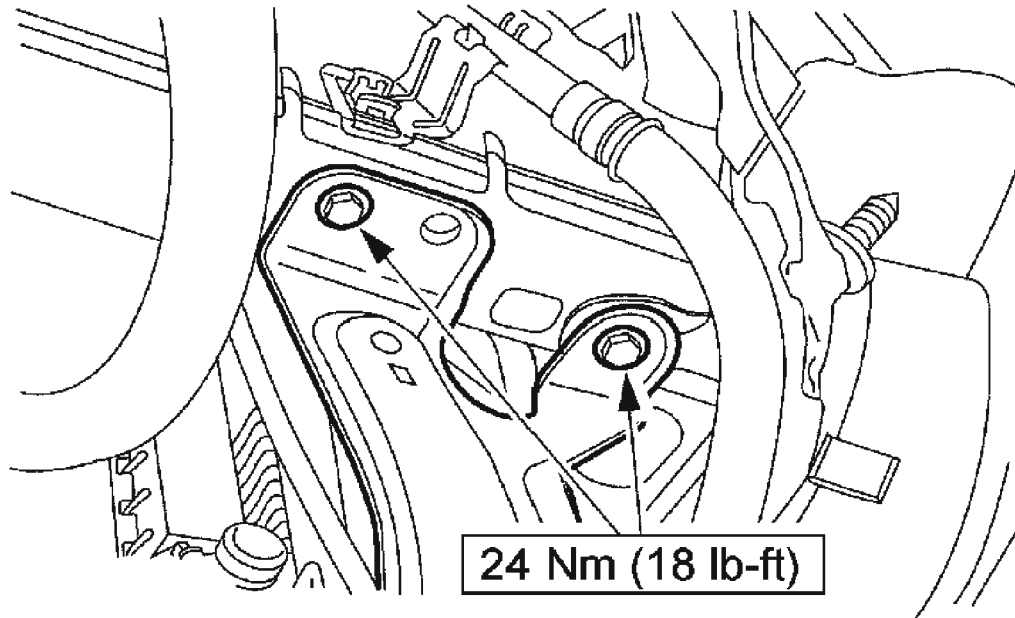


Fig. 47: Disconnecting Refrigerant Lines From Condenser Core
Courtesy of FORD MOTOR CO.

CAUTION: Support the radiator crossmember using a transmission jack or similar.

NOTE: RH side of radiator support shown, LH side similar.



A0069061

Fig. 48: Removing Lower Radiator Support Bolts
Courtesy of FORD MOTOR CO.

5. Remove the four lower radiator support bolts.
6. Remove the condenser core.
 1. Unclip the condenser pin.
 2. Pull the condenser core to the side and remove.

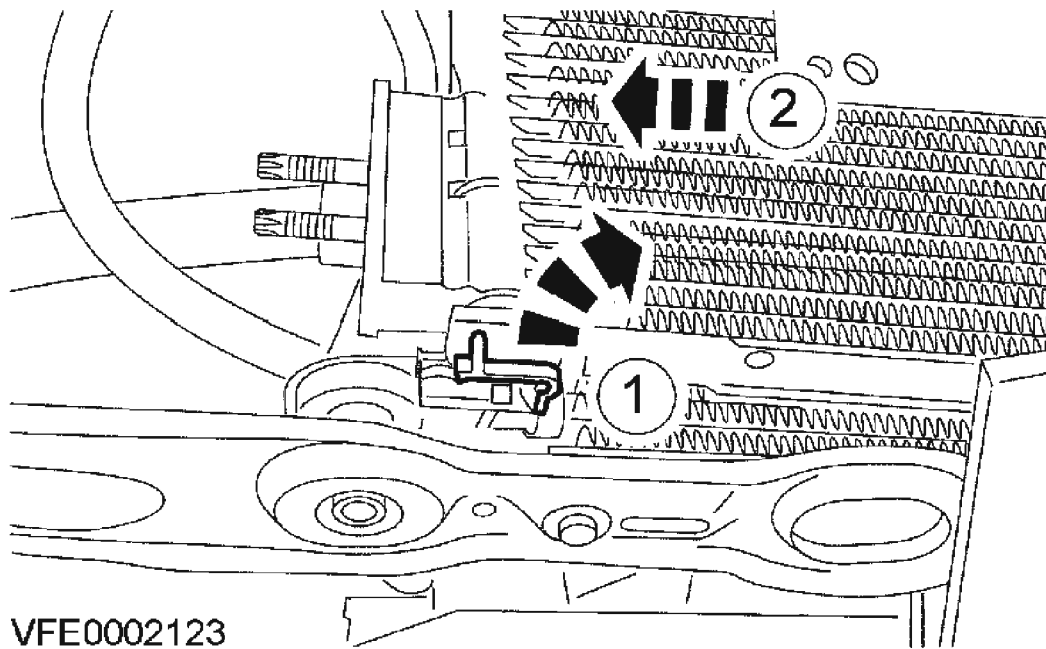


Fig. 49: Removing Condenser Core
 Courtesy of FORD MOTOR CO.

7. To install, reverse the removal procedure.
 - Install new O-ring seals lubricated in clean mineral oil.
 - Lubricate the refrigerant system with the correct amount of clean PAG oil. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .
8. Evacuate, leak test and charge the refrigerant system. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .

COMPRESSOR MANIFOLD AND TUBE ASSEMBLY

Material

COMPRESSOR MANIFOLD AND TUBE ASSEMBLY MATERIAL SPECIFICATIONS

| Item | Specification |
|--|---------------|
| PAG Refrigerant Compressor Oil for R134a Systems F7AZ-19589-DA | WSH-M1C231-B |
| Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA | ESH-M2C31-A2 |

Removal and Installation

CAUTION: Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA (Motorcraft YN-9-A) should be used to lubricate R-134a refrigerant system O-ring seals only and should not be added to the R-134a refrigerant system as an A/C compressor lubricant. PAG Refrigerant Compressor Oil F7AZ-19589-DA (Motorcraft YN-12-C) or equivalent meeting Ford specification WSH-M1C231-B only should be used as an A/C compressor lubricant.

NOTE: Installation of a new suction accumulator is not required when repairing the air conditioning system except when there is physical evidence of contamination from a failed A/C compressor or damage to the suction accumulator.

1. Remove the A/C compressor. For additional information, **AIR CONDITIONING (A/C) COMPRESSOR** in this section.
2. Remove the lower radiator air deflector.
3. Disconnect the fitting at the accumulator.
 - Discard the O-ring seal.

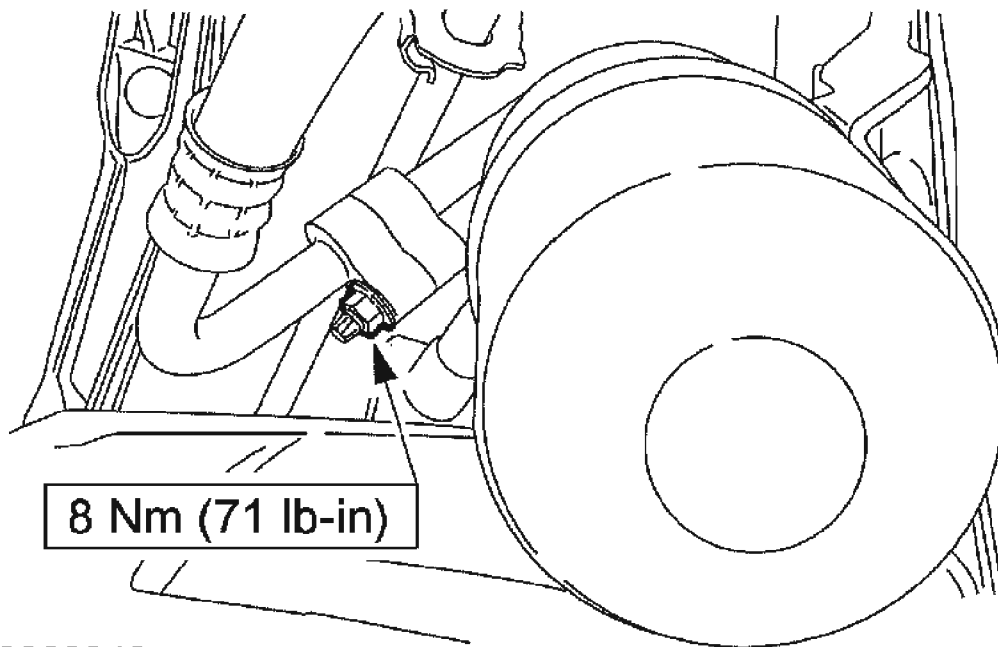
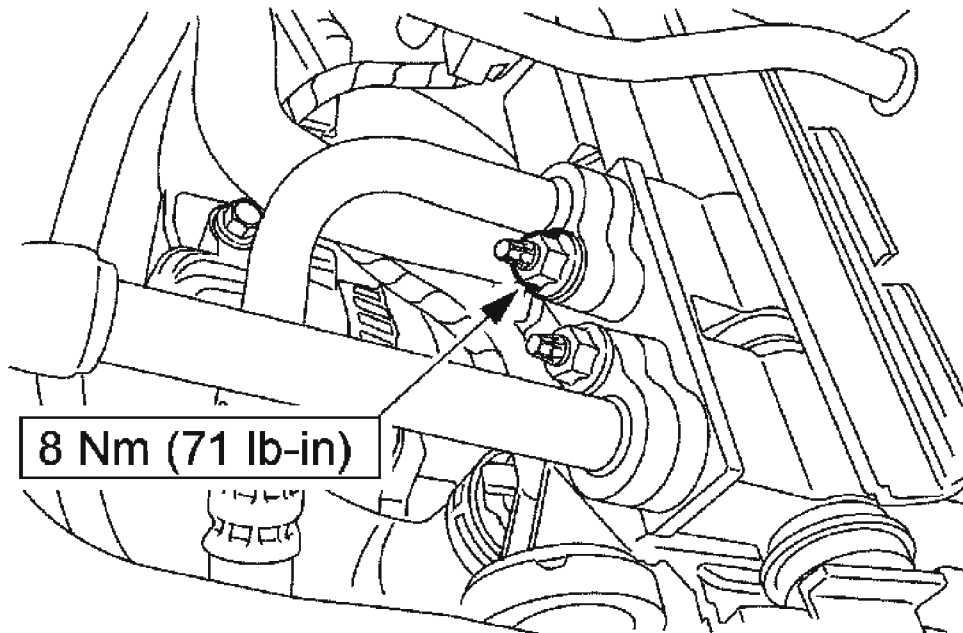


Fig. 50: Discarding O-Ring Seal
Courtesy of FORD MOTOR CO.

4. Disconnect the fitting at the condenser.
 - Discard the O-ring seal.



A0069070

Fig. 51: Discarding O-Ring Seal
 Courtesy of FORD MOTOR CO.

5. Remove the compressor manifold and tube assembly.
6. To install, reverse the removal procedure.
 - Install new O-ring seals lubricated in clean mineral oil.
 - Lubricate the refrigerant system with the correct amount of clean PAG oil. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION**.

CONDENSER TO EVAPORATOR LINE

Material

CONDENSER TO EVAPORATOR LINE MATERIAL SPECIFICATIONS

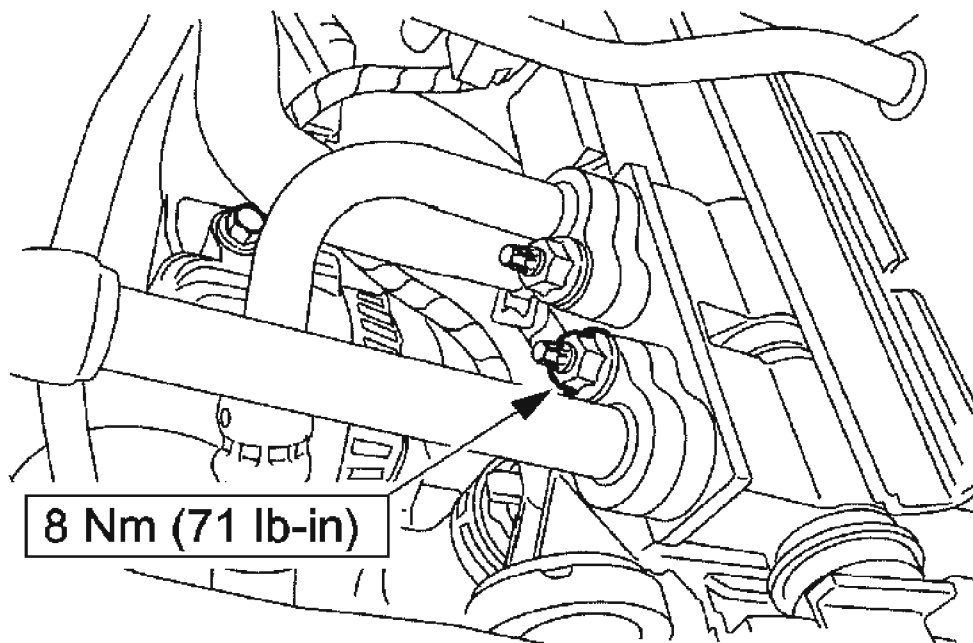
| Item | Specification |
|--|---------------|
| PAG Refrigerant Compressor Oil for R134a Systems F7AZ-19589-DA | WSH-M1C231-B |
| Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA | ESH-M2C31-A2 |

Removal and Installation

CAUTION: Refrigerant Compressor Oil (Mineral Oil) F73Z-19577-AA (Motorcraft YN-9-A) should be used to lubricate R-134a refrigerant system O-ring seals only and should not be added to the R-134a refrigerant system as an A/C compressor lubricant. PAG Refrigerant Compressor Oil F7AZ-19589-DA (Motorcraft YN-12-C) or equivalent meeting Ford specification WSH-M1C231-B only should be used as an A/C compressor lubricant.

NOTE: Installation of a new suction accumulator is not required when repairing the air conditioning system except when there is physical evidence of contamination from a failed A/C compressor or damage to the suction accumulator.

1. Position the vehicle on a hoist with the gear selector in NEUTRAL. For additional information, refer to **JACKING AND LIFTING** .
2. Recover the refrigerant. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .
3. Remove the RH inner fender splash shield. For additional information, refer to **FRONT END BODY PANELS** .
4. Disconnect the fitting at the condenser core.
 - Discard the O-ring seals.



A0069069

Fig. 52: Discarding O-Ring Seal
Courtesy of FORD MOTOR CO.

5. Disconnect the dual function pressure switch electrical connector.

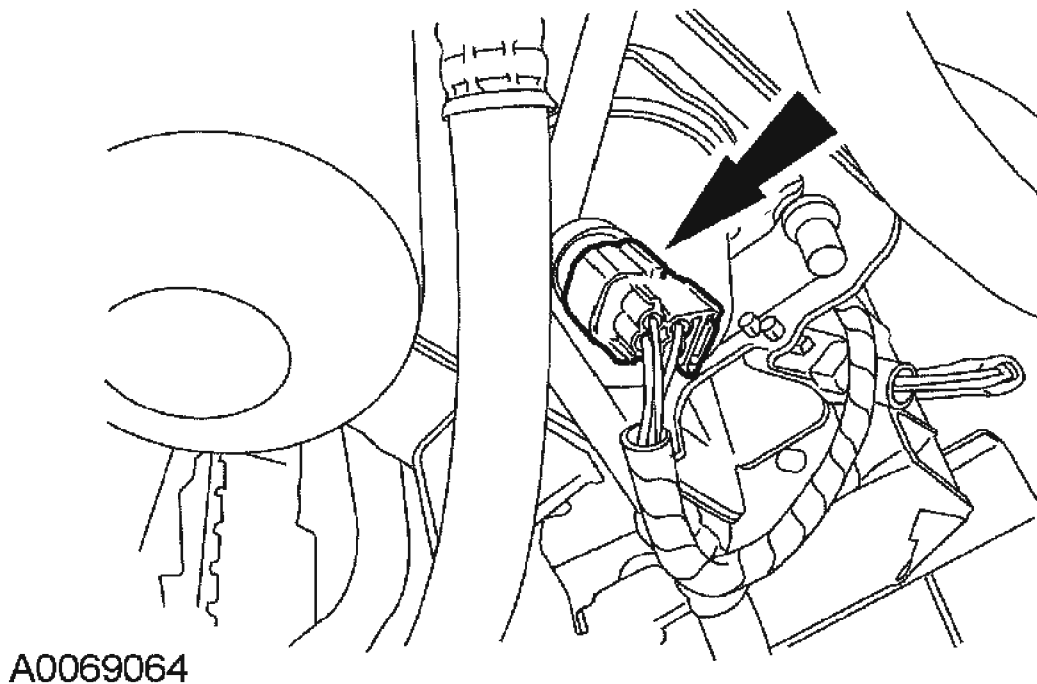
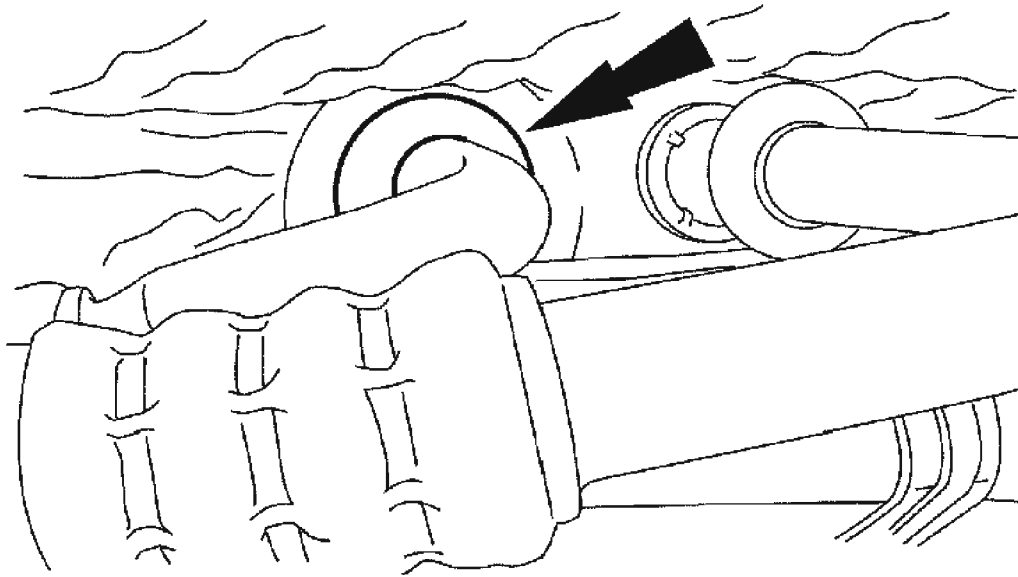


Fig. 53: Disconnecting Dual Function Pressure Switch Electrical Connector
Courtesy of FORD MOTOR CO.

6. Disconnect the fitting at the evaporator core inlet and remove the condenser to evaporator line.
 - Discard the O-ring seals.



A0069068

Fig. 54: Discarding O-Ring Seals
Courtesy of FORD MOTOR CO.

7. To install, reverse the removal procedure.
 - Install new O-ring seals lubricated in clean mineral oil.
 - Lubricate the refrigerant system with the correct amount of clean PAG oil. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .
8. Evacuate, leak test and charge the refrigerant system. For additional information, refer to **CLIMATE CONTROL SYSTEM-GENERAL INFORMATION** .