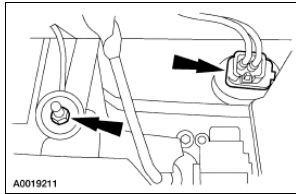
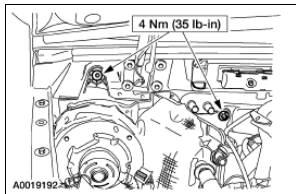


7. Disconnect the vacuum harness connector. Remove the nut.



8. Remove two nuts, one bolt, and the A/C evaporator housing (19850).

- Remove the nut located at the bottom of the A/C evaporator housing first.
- To remove the A/C evaporator housing, rotate the A/C evaporator housing counterclockwise. Then tip the evaporator core end towards the front of the vehicle.



9. To install, reverse the removal procedure.

- Lubricate the refrigerant system with the correct amount of clean PAG Refrigerant Compressor Oil (R-134a Systems) or equivalent. For additional information, refer to [Section 412-00](#).
- Install new O-ring seals lubricated in amount of clean PAG Refrigerant Compressor Oil (R-134a Systems) or equivalent.
- Lubricate the coolant hoses with MERPOL® or plain water only, if needed.

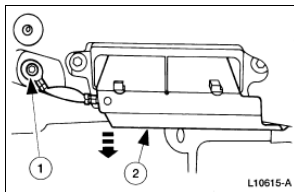
Heater Core**Removal and Installation**

1. **NOTE:** If a heater core leak is suspected, the heater core (18476) must be leak tested before it is removed from the vehicle. For additional information, refer to [Section 412-00](#).

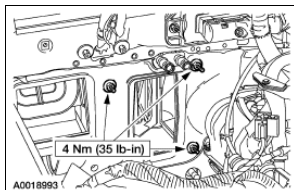
Prepare the vehicle for heater core removal.

1. Remove the A/C evaporator housing (19850). For additional information, refer to [Section 412-03](#).
2. Remove the instrument panel (04320). For additional information, refer to [Section 501-12](#).
3. Remove the powertrain control module (PCM) (12A650). For additional information, refer to [Section 303-14](#).

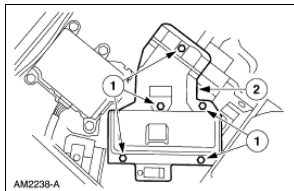
2. Remove the PCM heat sink.
 1. Remove the ground strap screw.
 2. Remove the heat sink.



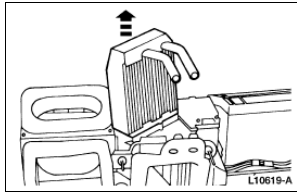
3. Remove the four nuts from the engine side of the dash panel. Position the plenum chamber (18471) on the vehicle floor.



4. Remove the heater core cover.
 1. Remove the screws.
 2. Remove the heater core cover.



5. Remove the heater core.
 - During installation, be sure to install a new oval foam seal around the heater core inlet and outlet tubes.

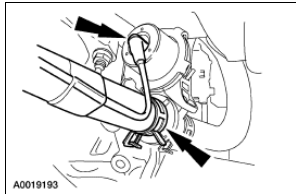


6. To install, reverse the removal procedure.

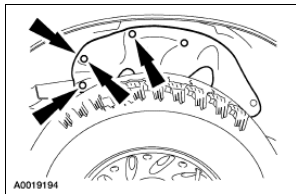
Heater Control Valve

Removal and Installation

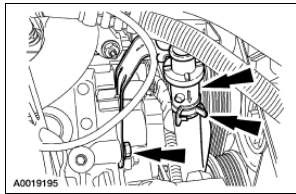
1. Prepare the vehicle for heater water control valve assembly (18495) removal.
 1. Drain the engine coolant. For additional information, refer to [Section 303-03](#).
 2. Remove the air cleaner assembly. For additional information, refer to [Section 303-12](#).
2. Disconnect the vacuum hose and heater hose.



3. Remove the retaining pins. Position the inner fender well access mat out of the way.



4. Disconnect the heater hose. Remove the bolt and the heater water control valve assembly.



5. To install, reverse the removal procedure.
 - Lubricate the coolant hoses with MERPOL® meeting Ford specification ESE-M99B144-B or plain water only, if needed.

General Specifications

Item	Specification
Lubricants	
PAG Refrigerant Compressor Oil (R-134a Systems) F7AZ-19589-DA (Motorcraft YN-12-C)	WSH-M1C231-B

Torque Specifications

Description	Nm	lb-ft	lb-in
A/C manifold and tube peanut fittings	8		71
A/C clutch bolt	11-14		98-123
A/C compressor mounting bolts	24	18	
A/C manifold tube bolt	20	15	
Accumulator to evaporator core fitting	39	29	
Condenser to evaporator tube peanut fittings	8		71
Speed control servo bolt	11	8	

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 (2884)
- A/C condenser core (19712)
- A/C evaporator core (19860)
- Suction accumulator (19C836)
- Connecting refrigerant lines

The refrigeration system operation is controlled by the:

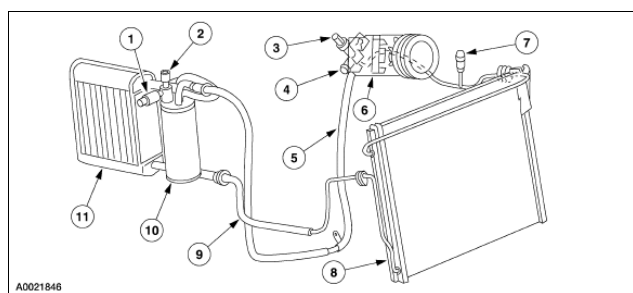
- A/C evaporator core orifice (19D990).
- A/C cycling switch (19E561).
- A/C compressor pressure relief valve (19D644).
- A/C pressure cutoff switch (19D594).

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 evaporator core, at the condenser to evaporator tube connection, to meter the liquid refrigerant into the A/C evaporator core.

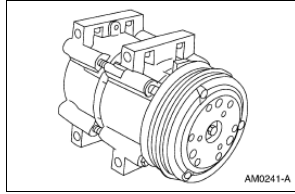
Refrigeration System Components

Item	Part Number	Description
1	19E561	A/C cycling switch
2	19E762	A/C charge port valve (low side)
3	19D594	A/C pressure cutoff switch
4	19D644	A/C compressor pressure relief valve
5	19D734	A/C manifold and tube
6	19703	A/C compressor
7	19E762	A/C charge port valve (high side)
8	19712	A/C condenser core
9	19835	Condenser to evaporator tube

10	19C836	Suction accumulator
11	19860	A/C evaporator core

A/C Compressor and Clutch Assembly

FS-10 A/C Compressor



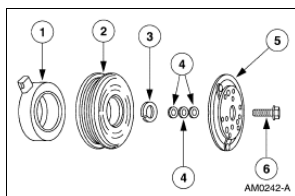
NOTE: Internal A/C compressor components are not serviced separately. The FS-10 A/C compressor is serviced only as an assembly. The A/C clutch, A/C clutch pulley (2E884), A/C clutch field coil (2987) and the shaft seal are serviceable.

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 FS-10 A/C compressor has the following characteristics:

- A ten-cylinder swashplate design utilizing the tangential design mount.
- A one-piece lip-type seal (replaceable 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 Refrigerant Compressor Oil (R-134a Systems) or equivalent. This oil contains special additives required for the A/C compressor.
- The A/C compressor oil from vehicles equipped with an 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.

A/C Compressor Clutch Assembly



Item	Part Number	Description
1	2987	A/C clutch field coil
2	2E884	A/C clutch pulley
3	N805388-S2	Pulley snap ring
4	19D648	A/C clutch hub spacer
5	2884	A/C clutch
6	N805332-S2	A/C clutch bolt

The magnetic A/C clutch has the following characteristics:

- It drives the compressor shaft.
- When battery positive voltage (B+) is applied to the A/C clutch field coil, the A/C clutch is drawn toward the A/C clutch pulley.
- The magnetic force locks the A/C clutch 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 A/C clutch move the A/C clutch 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. For specifications regarding operating pressure(s), refer to [Section 414-00](#).
- 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 design 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 condense refrigerant gas to liquid refrigerant as it is cooled.

Refrigerant Lines

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 condenser to evaporator tube contains high pressure liquid refrigerant upstream of the A/C evaporator core orifice.

The A/C manifold and tube is attached to the A/C compressor, is sealed with O-ring seals, and has the following features:

- The upstream side contains low pressure refrigerant gas.
- The downstream side contains high pressure refrigerant gas and a fitting used to mount a serviceable high-pressure A/C charge port valve.
- The downstream side also contains a fitting used to mount the A/C pressure cutoff switch. A long-travel Schrader-type valve stem core is installed in the fitting so that the A/C pressure cutoff switch can be removed without discharging the A/C system.

A/C Evaporator Core

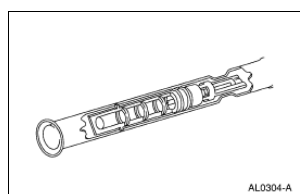
NOTE: The evaporator core (19860) is not separately serviceable, it is serviced only with the evaporator core housing assembly.

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 the plate/fin type with a unique refrigerant flow path.

- 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.
- This flow pattern accelerates the flow of refrigerant and oil through the A/C evaporator core.

A/C Evaporator Core Orifice

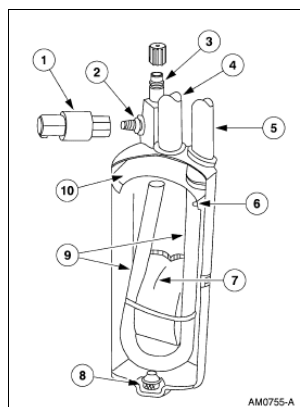


NOTE: A new A/C evaporator core orifice should be installed whenever a new A/C compressor is installed.

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

- It is color-coded red.
- It is located in the A/C evaporator core inlet tube.
- 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-rings on the A/C evaporator core orifice prevent the high-pressure liquid refrigerant from bypassing the A/C evaporator core orifice.
- Adjustment or service cannot be made to the A/C evaporator core orifice assembly. A new evaporator core orifice assembly must be installed.

Suction Accumulator



Item	Part Number	Description
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