

High (Discharge) Pressure	Low (Suction) Pressure	Component Causes
Normal to Low	Low	- Low refrigerant charge or leak in system - A/C suction line partially restricted or plugged^b
Erratic Operation or Compressor Not Running		- Ambient Air Temperature (AAT) sensor poor connection - A/C pressure transducer poor connection - Evaporator temperature sensor poor connection - Low refrigerant charge or leak in system
Additional Possible Components or Causes Associated With Inadequate Compressor Operation		
- Control assembly switch dirty contacts or sticking open - Compressor operation interrupted by engine computer		
Additional Possible Components or Causes Associated With a Damaged Compressor		
- Suction accumulator refrigerant oil bleed hose plugged - Refrigerant leaks		

^a Low pressure reading will be normal to high if restriction is downstream of service access valve.

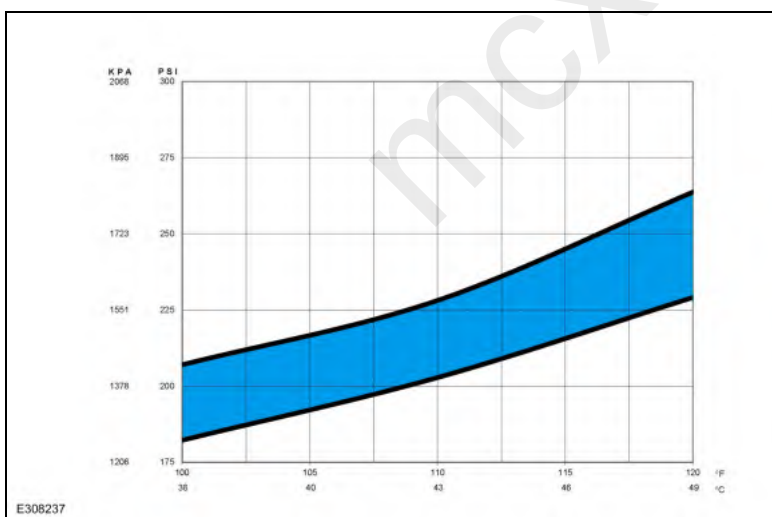
^b Low pressure reading will be low if restriction is upstream of service access valve.

Inspection

1. **NOTE:** Procedure 3 at Ambient Temperature Above 38 °C (100 °F)

Run the engine until it reaches normal operating temperature.

- Connect the air conditioning service unit to the refrigerant system.
- Set the A/C system temperature to the lowest possible temperature setting with the dual function disabled (if equipped). Manually set blower on HI. If the vehicle has a fresh air/recirc button, set it to FRESH. If the vehicle has an A/C switch or compressor on switch, set it to A/C ON.
- Open all vehicle windows and leave the hood open for the test. Open the rear hatch and/or rear doors (if equipped).
- Confirm the compressor is operating and the engine cooling fan(s) are operating or engaged. Allow the vehicle to idle until the suction (low-side) and discharge (high-side) pressures are stable or fluctuate in a range that repeats.
- Record the ambient (shop) temperature.
- Record the discharge pressure. If the pressure is fluctuating, record the average value.
- Determine if the discharge pressure falls within the normal operating limits using the **Normal Refrigerant Discharge Pressures 38 - 49 °C (100 - 120 °F) Ambient (15 - 40% Relative Humidity)** chart below.



- Record the suction pressure. If the pressure is fluctuating, record the average value.

- Determine if the suction pressure falls within the normal operating limits using the **Normal Refrigerant Suction Pressures 38 - 49 °C (100 - 120 °F) Ambient (15 -**

The graph illustrates the relationship between pressure (KPA and PSI) and temperature (°F and °C) for E308238. The y-axis represents pressure in KPA (136 to 414) and PSI (20 to 60). The x-axis represents temperature in °F (100 to 120) and °C (38 to 49). A blue shaded region indicates the operating range, bounded by two black lines that decrease as temperature increases.

Temperature (°F)	Temperature (°C)	Upper Pressure (KPA)	Lower Pressure (KPA)
100	38	~360	~320
105	40	~345	~315
110	43	~330	~310
115	46	~315	~305
120	49	~300	~295

- NOTE:** Proper A/C system diagnosis on vehicles with Electric Compressors is dependent on correct refrigerant system charge and tested in ambient temperatures above 21.4°C (70.4°F). Never replace an Electric Compressor without first recovering and recharging the A/C system to vehicle specification and retesting in ambient temperatures above 21.4°C (70.4°F).

^a Low pressure reading will be normal to high if restriction is downstream of service access valve.

^b Low pressure reading will be low if restriction is upstream of service access valve.

Removal and Installation

Air Conditioning (A/C) Compressor - 2.3L EcoBoost (201kW/273PS)

Materials

Name	Specification
Motorcraft® Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A

Removal

NOTICE: If installing a new A/C compressor due to an internal failure of the old unit, carry out the following procedures to remove contamination from the A/C system. Failure to remove contamination from the A/C system, if present, will result in poor A/C performance and/or damage to the new A/C compressor and other components.

- If A/C flushing equipment is available, carry out flushing of the A/C system prior to installing a new A/C compressor.
- If A/C flushing equipment is not available, replace all contaminated components after a new A/C compressor has been installed.
- Install a new Thermostatic Expansion Valve (TXV) as directed by the A/C flushing.
- Install a new receiver drier element as directed by the A/C flushing.

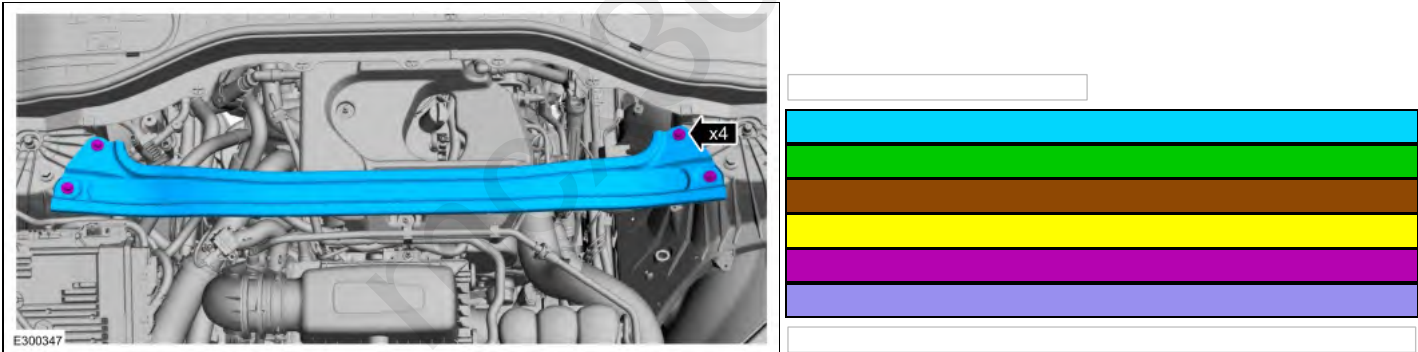
NOTICE: During the removal of components, cap, tape or otherwise appropriately protect all openings to prevent the ingress of dirt or other contamination. Remove protective materials prior to installation.

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

NOTE: A new A/C compressor may come equipped with an A/C clutch disc and hub, A/C compressor pulley and A/C clutch field coil already installed. If these components are not pre-installed, it will be necessary to transfer these parts from the old A/C compressor to the new compressor prior to installation of the A/C compressor if suitable for reuse.

NOTE: Removal steps in this procedure may contain installation details.

1. Recover the refrigerant. Refer to the appropriate Recovery procedure in Group 412.
2. Remove the bolts and the suspension support bar.
Torque: 22 lb.ft (30 Nm)



3. **NOTICE:** Do not pull the engine appearance cover forward or sideways to remove. Failure to press straight upward on the underside of the cover at the attachment points may result in damage to the cover or engine components.
 1. Remove the engine appearance cover nuts.
 2. Place your hand under the engine appearance cover at the grommet location and push straight up to release the grommet from the stud.
 3. After the grommet has been released from the stud, remove the appearance cover from the engine.