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2007 FORD SportKa OEM Service and Repair Workshop Manual

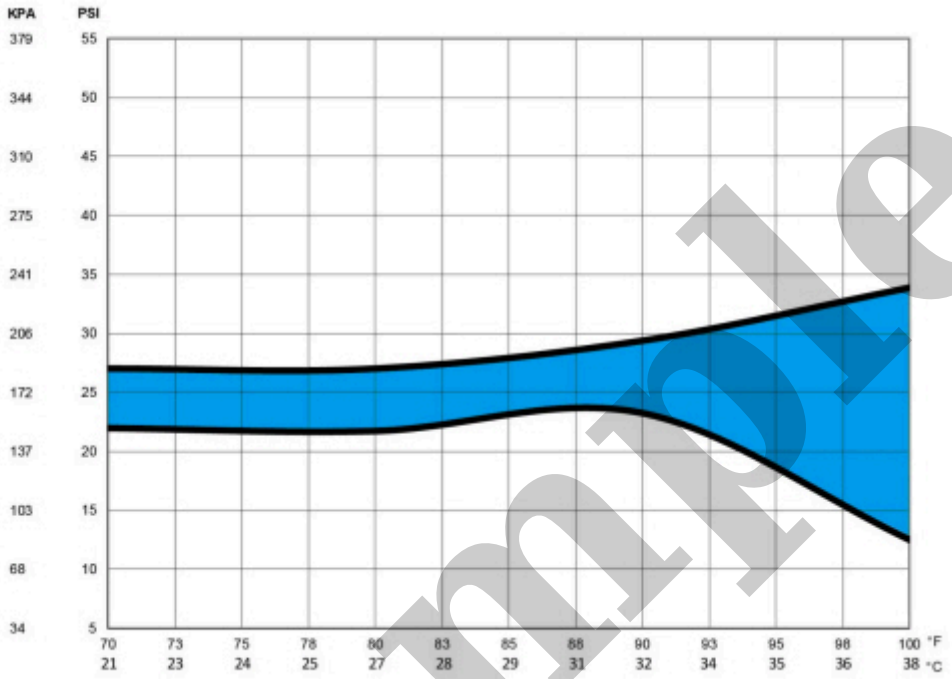
Go to manual page

Click here to learn about symbols, color coding, and icons used in this manual.

9. Record the suction pressure. If the pressure is fluctuating, record the average value.
10. Determine if the suction pressure falls within the normal operating limits using the

    Normal Refrigerant Suction Pressures 21 - 38 °C (70 - 100 °F) Ambient (30 - 60% Relative Humidity)

    chart below.



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11. **NOTE**

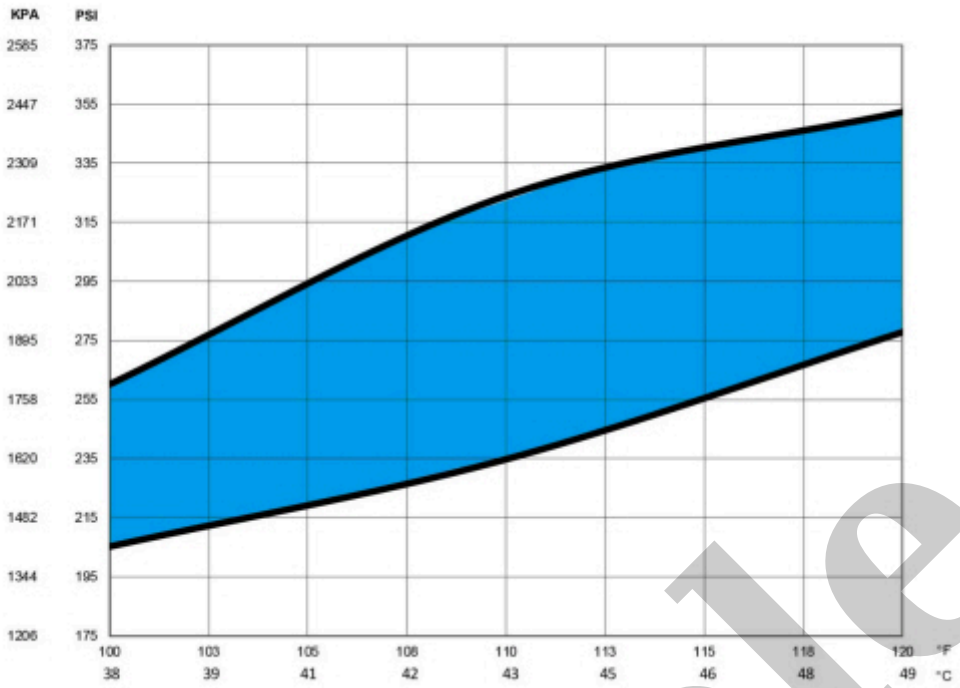
    Use the following table to guide diagnosis of the refrigerant system if operating pressures are outside normal limits.

NOTE

Proper A/C (air conditioning) system diagnosis on vehicles with Electric Compressors is dependent on correct refrigerant system charge and tested in ambient temperatures above 21°C (70°F). Never replace an Electric Compressor without first recovering and recharging the A/C (air conditioning) system to vehicle specification and retesting in ambient temperatures above 21°C (70°F).

Normal to High	Low	• Thermostatic expansion valve (TXV) not operating correctly –– not opening
Normal to Low	Normal to Low	• Evaporator –– low or restricted air flow, evaporator sensor bad
Normal to High	Low	• Evaporator internal blockage.
High	Low	• IHX (internal heat exchanger) line restricted (liquid line restriction)(if equipped).
Erratic Operation or Compressor Not Running		• Ambient Air Temperature (OAT) (AAT) sensor — poor connection • A/C pressure transducer — poor connection • Evaporator temperature sensor — poor connection • Low refrigerant charge — leak in system • High Side Restrictions (Cycling) (condenser, liquid line/ IHX (internal heat exchanger) restriction, receiver/drier restriction). • Compressor operation interrupted by PCM (powertrain control module) or electric drivetrain controls.
Additional Possible Components or Causes Associated With Inadequate Compressor Operation		• Refrigerant pressure outside operating range. • Insufficient (low) high voltage supply to electric compressor. • High voltage battery coolant cooler stuck in position. • Front evaporator shut off valve (if present) –– stuck in position • Rear evaporator shut off valve (if present) –– stuck in position • Suction accumulator (if present) — refrigerant oil bleed hose plugged • Receiver drier (if present) — restricted

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



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Click here to learn about symbols, color coding, and icons used in this manual.

9. Record the suction pressure. If the pressure is fluctuating, record the average value.
10. 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 - 40% Relative Humidity)

    chart below.

Refer to the chart below.

High (Discharge) Pressure	Low (Suction) Pressure	Component — Causes
High	Normal to High	• Condenser — inadequate airflow • Active grill shutter (if equipped) or Cooling Fan improper function –– debris or blocked front end airflow • Engine — overheating • FHEV (full hybrid electric vehicle) , PHEV (plug-in hybrid electric vehicle) & BEV (battery electric vehicle) high voltage battery coolant cooler capacity could be reduced.
Normal to High	Normal	• Refrigerant overcharge — air in refrigerant
Normal to Low	High	• A/C Compressor — low performance
Normal to Low	Normal to High	• A/C suction line — partially restricted or plugged [a]
Normal to Low	Low	• Low refrigerant charge — leak in system. • A/C suction line — partially restricted or plugged [b]
Normal to High	Low	• Internally restricted condenser or receiver drier, IHX (internal heat exchanger) restriction (suction line restriction).
Normal to High	High	• Thermostatic expansion valve (TXV) not operating correctly – not closing
Normal to High	Low	• Thermostatic expansion valve (TXV) not operating correctly –– not opening
Normal to Low	Normal to Low	• Evaporator –– low or restricted air flow, evaporator sensor bad
Normal to High	Low	• Evaporator internal blockage.

Reset the Outside Air Temperature Sensor Learned Values

412-00 Climate Control System - General Information	***2022 F-150***
General Procedures	***Procedure revision date: 09/29/2021***

Reset the Outside Air Temperature Sensor Learned Values

Configuration

1. **NOTE**

   The ambient air temperature sensor is a critical component for correct Air Conditioning (A/C) and Heating, Ventilation, and Air Conditioning (HVAC) system operation. Make sure after the reset is carried out the temperature is displaying correctly in the vehicle.

   NOTE

   The outside air temperature sensor is also referred to as the ambient air temperature sensor in this manual.

   Using the diagnostic FDRS (Ford Diagnosis and Repair System) scan tool, follow the on screen prompts to run and reset the outside air temperature sensor learned values.

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

NOTE

A new A/C (air conditioning) compressor may come equipped with an A/C (air conditioning) clutch disc and hub, A/C (air conditioning) compressor pulley and A/C (air conditioning) 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 (air conditioning) compressor to the new compressor prior to installation of the A/C (air conditioning) compressor if suitable for reuse.

NOTE

Removal steps in this procedure may contain installation details.

All vehicles or All vehicles

1. Recover the refrigerant. Refer to the appropriate Recovery procedure in Group 412.
2. Remove the RHF (right-hand front) fender splash shield.

   Refer to: Fender Splash Shield(501-02 Front End Body Panels, Removal and Installation).

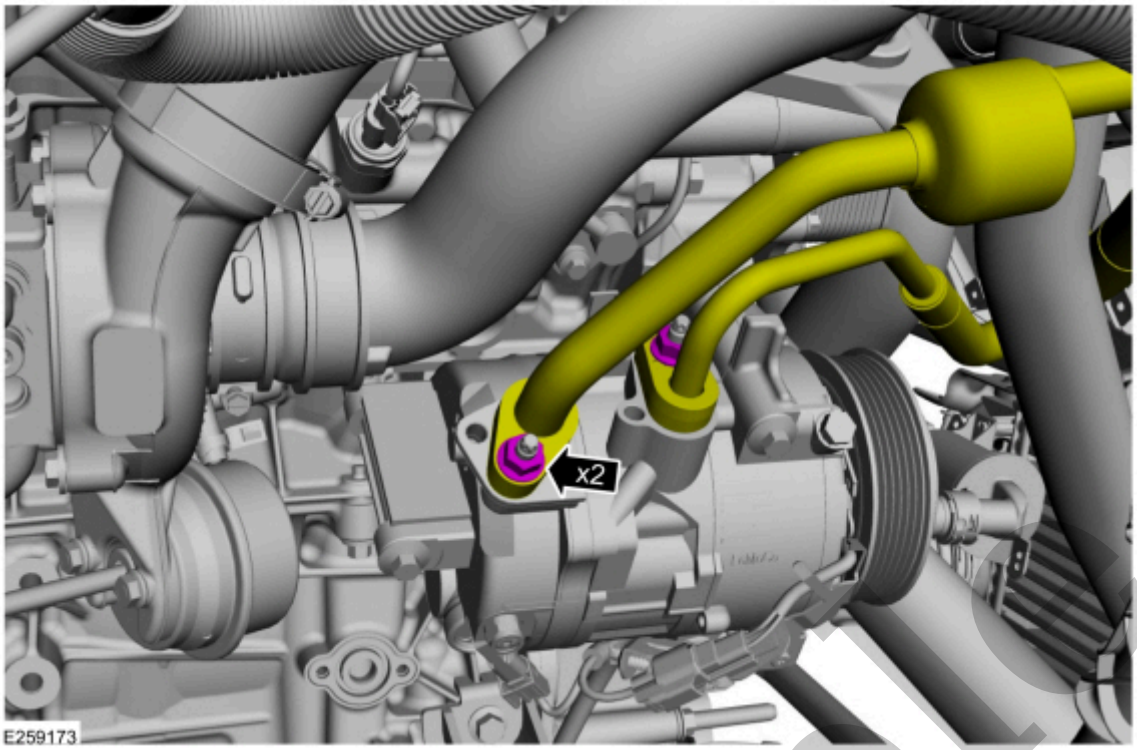
Vehicles with dual generators

3. Remove the secondary generator.

   Refer to: Generator - 2.7L EcoBoost (238kW/324PS)(414-02 Generator and Regulator, Removal and Installation).

All vehicles or All vehicles

4. Rotate the accessory drive belt tensioner clockwise and position the accessory drive belt off the A/C (air conditioning) compressor pulley.

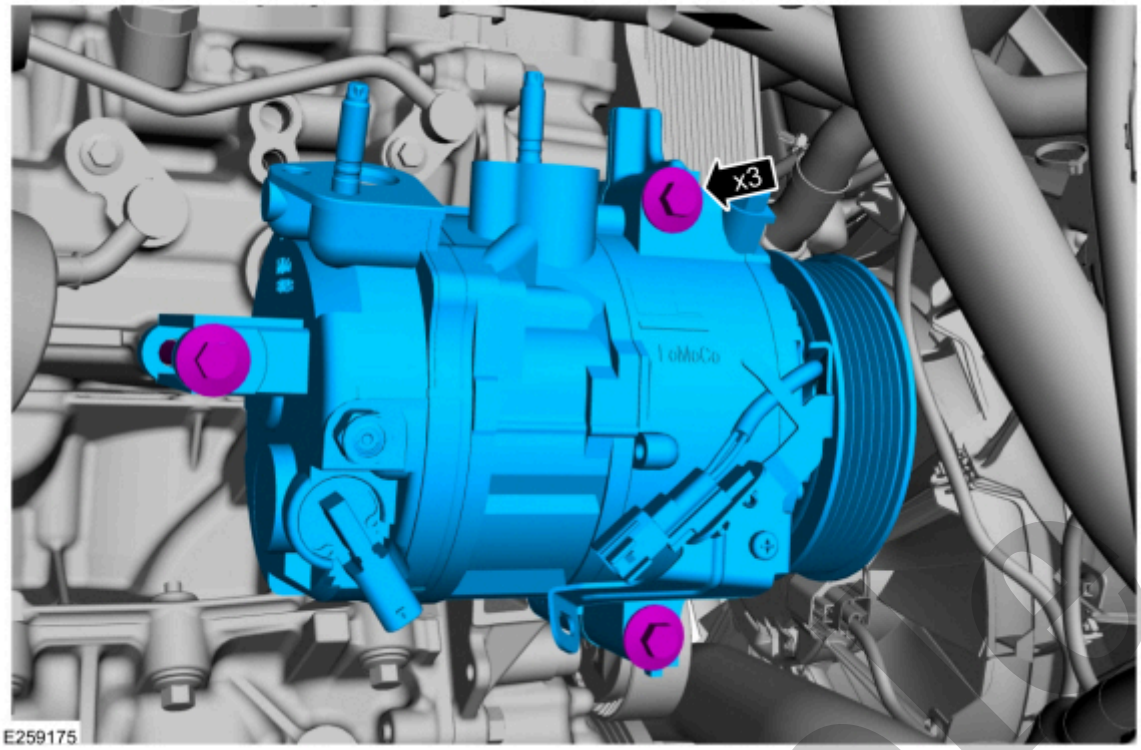


Click here to learn about symbols, color coding, and icons used in this manual.

6. **NOTE**

   Frame removed for clarity.

   Disconnect the electrical connectors and detach the wiring harness retainer.



Click here to learn about symbols, color coding, and icons used in this manual.

Installation

1. To install, reverse the removal procedure.
2. **NOTE**

   Frame removed for clarity.

   Tighten the A/C (air conditioning) compressor bolts in the sequence shown.

   Torque : 18 lb.ft (25 Nm)

Click here to learn about symbols, color coding, and icons used in this manual.

4. **NOTICE**

   Only use the specified material to lubricate the seals.

   Install and lubricate new O-ring seals. Refer to the appropriate Specifications in Group 412.

5. Lubricate the refrigerant system with the correct amount of clean PAG oil. Refer to the appropriate Refrigerant Oil Adding procedure in Group 412.