



Auto Air Conditioner Blowing Warm Air, Not Cooling

by [Larry Carley](#) copyright 2019 AA1Car.com

Is your car's air conditioner blowing warm air only and no cool air? Your A/C cooling problem could be caused by any of the following:

Your A/C system may have lost its charge of refrigerant. This is probably the most common cause of a no cooling problem. Another possible cause of no cooling may be that your A/C compressor is not engaging when you turn on the A/C. This can be caused by an electrical fault in the A/C compressor circuit or the magnetic clutch that drives the compressor. Another cause could be an internal obstruction inside the refrigerant circuit that is preventing refrigerant from circulating inside the A/C system. Another possibility might be a blend air door inside the HVAC unit that is stuck in the HEAT position and is preventing air from flowing through the A/C evaporator.

Compressor Checks

- ☑ Start with the compressor. Does it engage when you turn on the A/C?

If so, the compressor is working and the A/C system probably contains enough refrigerant to make cold air, so the problem is inside the HVAC unit. Replace the motor that controls the blend air door (this is a difficult job and best left to a professional since it involves tearing apart the HVAC unit -- about an 8 to 10 hour job!).

If the compressor does not engage when you turn on the A/C, see if it will run by jumping the compressor clutch wire directly to the battery (use a fused jumper wire). If the compressor works when you jump it, and the A/C blows cold air, the system contains refrigerant and the fault is likely a bad A/C compressor clutch relay or a bad clutch cycling switch or pressure switch.

If the compressor does not engage when you jump it, the problem is a bad compressor clutch.

If the clutch engages but the compressor does not turn (the belt will start to slip and squeal), the compressor is locked up and you need a new compressor.

If the compressor clutch engages and turns the compressor, but the A/C still does not blow cold air, the system is probably low on refrigerant and needs to be recharged.

Refrigerant Checks

✔ Connect an A/C pressure gauge to the HIGH SIDE service port (located in the high pressure hose that runs between the compressor and the condenser in the front of the engine compartment). The gauge will tell you if there is any pressure in the system. Simply depressing the service fitting valve with a small screwdriver to see if any refrigerant squirts out is NOT an accurate check because it tells you how much pressure is in the system. It may still have some pressure but not enough to trip the low pressure safety switch so the compressor will engage.

If your A/C system is low or out of refrigerant, check for leaks, then have the A/C system vacuum purged to remove air. After the air is out, it can be recharged with the specified amount of refrigerant. It is important to get any air out as this will reduce cooling efficiency and may make the compressor noisy.

A/C System Functional Checks

✔ If the refrigeration circuit seems to be working (refrigerant in the system, compressor running and building pressure), but there is still no cooling, the problem might be an obstruction in the orifice tube (located in the high pressure hose between the condenser in the front of the radiator, and the evaporator located in the passenger compartment). A blockage here will prevent the refrigerant from entering the evaporator or recirculating through the refrigeration circuit.

If the orifice tube is plugged, the high side pressure reading will be lower than normal, and the low side reading will also be lower than normal because no refrigerant is circulating through the system.

✓ If the refrigeration circuit seems to be functioning normally (compressor running, frost or condensation on the high pressure line from the condenser to the evaporator), but no cool air is blowing out of the ducts inside the car (and the blower is working), the fault is likely a BLEND AIR door that is stuck in the HEAT position, or possibly a badly clogged cabin air filter that is restricting airflow. Another possibility would be a fault in the automatic climate control system such as a interior temperature sensor or control module.

My advice to you if you know nothing about A/C service is to find a repair shop that specializes in A/C repairs and let them diagnose and repair your air conditioning cooling problem. Today's A/C systems with automatic climate control are very complex and require special tools and know-how to diagnose and repair.

A/C DIAGNOSIS CHART

Low Side	High Side	Duct Temp	Possible Cause
Low	Low	Warm	Low refrigerant charge
High	High	Warm	Overcharge of refrigerant
High	High	Some Cool	Air in the system or Overcharge
Normal	Normal	Warm	Moisture in the system
Low	Low	Warm	Expansion valve stuck closed
Low	Low	Warm	Orifice tube plugged
Low	Low	Warm	High side restriction
High	Low	Warm	Compressor or control valve failed

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This air conditioning diagnostic chart shows typical Low and High side gauge readings, and duct temperatures for common A/C cooling problems.

A/C Gauge Readings

To determine the HIGH SIDE and LOW SIDE pressures inside your vehicle's air conditioning system, you need an A/C Gauge Set. The Gauge Set must be connected to the A/C service ports on vehicle to read the pressures while the system is running.

With the engine OFF, connect the A/C Gauge Set High Pressure Hose (the one with the larger coupler fitting) to the High Side service port (usually located in the compressor output line that goes from the compressor to the condenser). Connect the Low Pressure Hose (the one with the smaller coupling) to the Low Side Service port (usually located on the accumulator, or on the suction hose that goes from the evaporator to the compressor).

Start the engine, turn on the A/C to MAX, and rev the engine to 2000 RPM. Hold the engine speed and note the High and Low side pressure gauge readings.

NOTE: *High and Low side pressure readings will vary with ambient temperature and humidity. The higher the temperature and/or humidity, the higher the gauge readings.*

With late model R134a systems, good high pressure readings should range from 150 to 220 PSI at 80 degrees F, 170 to 250 PSI at 90 degrees F, and 195 to 280 PSI at 100 degrees F.

A High side pressure reading of less than 150 PSI indicates a low charge or a compressor problem. A high pressure reading over 300 PSI would indicate an overcharge condition (too much refrigerant in system) or a restriction in the high side.

Good low pressure readings with R134a should usually be in the 30 to 35 PSI range. If higher, there may be a low side restriction. If the reading is lower, the system may be low on refrigerant.

With older R12 A/C systems (1994 model year vehicles and older that have NOT been retrofitted to R134a), the HIGH side pressure readings will typically be 150 to 185 PSI at 80 degrees F, 175 to 205 PSI at 90 degrees F, and 200 to 250 PSI at 100 degrees F. Normal LOW side readings with R12 should be around 20 to 30 PSI for an expansion valve system, or 15 to 40 PSI for an orifice tube system.



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