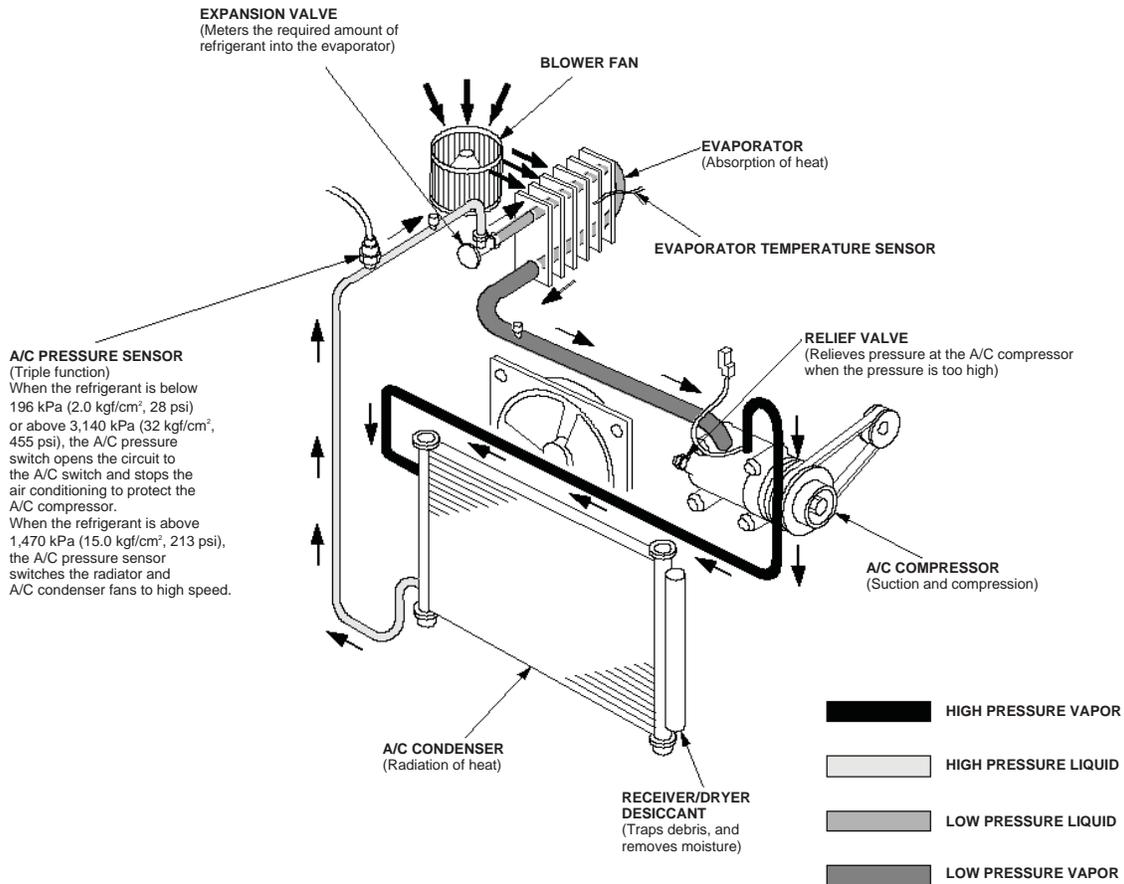
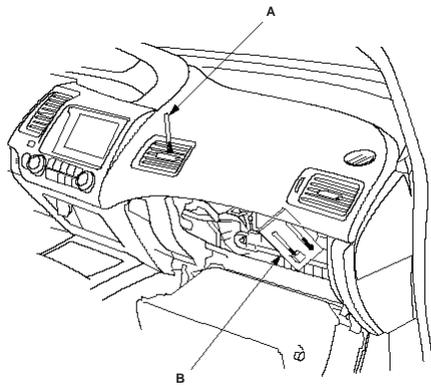


## 2006-2011 Honda Civic A/C Diagnosis and Repair



Symptom	Diagnostic procedure	Also check for
Recirculation control doors do not change between Fresh and Recirculate	Recirculation control motor circuit troubleshooting	<ul style="list-style-type: none"> <li>•HVAC DTCs</li> <li>•Blown fuse No. 36 (10 A) in the under-dash fuse/ relay box</li> <li>•Cleanliness and tightness of all terminals</li> </ul>
Blower, heater controls, and A/C do not work	HVAC control power and ground circuit troubleshooting	<ul style="list-style-type: none"> <li>•HVAC DTCs</li> <li>•Blown fuse No. 36 (10 A) in the under-dash fuse/ relay box</li> <li>•Poor ground at G504</li> <li>•Cleanliness and tightness of all terminals</li> </ul>
Both fans do not run at low speed with the A/C on (but the A/C compressor runs with the A/C on)	Radiator and A/C condenser fan low speed circuit troubleshooting	<ul style="list-style-type: none"> <li>•HVAC DTCs</li> <li>•Blown fuse No. 7 (20 A) (All M/T models and A/T model of K20Z2 engine) or (30 A) (A/T models except K20Z2 engine) in the under-hood fuse/relay box, and No. 36 (10 A) in the under-dash fuse/relay box</li> <li>•Poor ground at G301</li> <li>•Cleanliness and tightness of all terminals</li> </ul>
The A/C condenser fan does not run at high speed (but both fans run at low speed and the A/C compressor operates with the A/C on)	A/C condenser fan high speed circuit troubleshooting	<ul style="list-style-type: none"> <li>•HVAC DTCs</li> <li>•Blown fuse No. 6 (20 A) and No. 15 (7.5 A) in the under-hood fuse/relay box</li> <li>•Poor ground at G301</li> <li>•Cleanliness and tightness of all terminals</li> </ul>
Both fans do not run at high speed with the A/C on (but both fans run at low speed and the A/C compressor operates with the A/C on)	A/C pressure sensor troubleshooting: A/C pressure sensor circuit low voltage, except K20Z2 engine, K20Z2 engine A/C pressure sensor circuit high voltage, except K20Z2 engine, K20Z2 engine ECT troubleshooting: ECT sensor 2 circuit low voltage, except K20Z2 engine, K20Z2 engine, ECT sensor 2 circuit high voltage, except K20Z2 engine, K20Z2 engine	<ul style="list-style-type: none"> <li>•Powertrain DTCs, except K20Z2 engine, K20Z2 engine</li> <li>•Cleanliness and tightness of all terminals</li> </ul>
The A/C compressor clutch does not engage (but both fans run with the A/C on)	<ol style="list-style-type: none"> <li>1. A/C compressor clutch circuit troubleshooting</li> <li>2. A/C signal circuit troubleshooting</li> </ol>	<ul style="list-style-type: none"> <li>•HVAC DTCs</li> <li>•Blown fuse No. 12 (7.5 A) in the under-hood fuse/relay box, and No. 36 (10 A) in the under-dash fuse/relay box</li> <li>•Check compressor thermal limiter</li> <li>•Cleanliness and tightness of all terminals</li> </ul>
A/C system does not come on (both fans and the A/C compressor do not work); heater is OK	A/C pressure sensor troubleshooting: A/C pressure sensor circuit low voltage, except K20Z2 engine, K20Z2 engine A/C pressure sensor circuit high voltage, except K20Z2 engine, K20Z2 engine	<ul style="list-style-type: none"> <li>•Powertrain DTCs, except K20Z2 engine, K20Z2 engine</li> <li>•Cleanliness and tightness of all terminals</li> </ul>

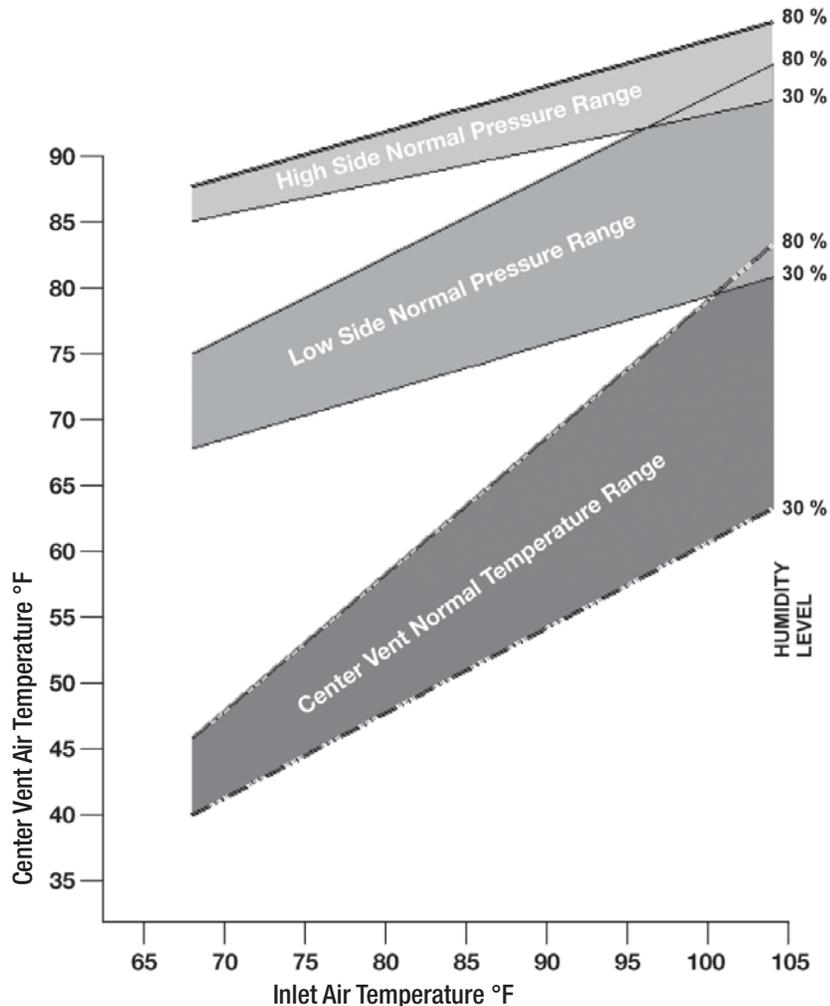
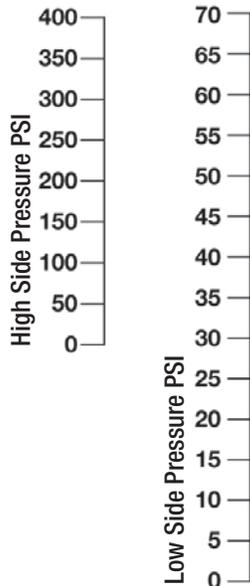
1. Connect a R-134a manifold to the high pressure and the low pressure service ports.
2. Record the relative humidity and ambient air temperature.
3. Open the glove box. Remove the glove box stop on each side, then let the glove box hang down.
4. Insert a thermometer in the dash center vent.
5. Place another thermometer (B) near the blower unit's recirculation inlet duct.



6. Test conditions:
  - Avoid direct sunlight.
  - Open hood.
  - Open front doors.
  - Set the fan switch to highest speed.
  - Set the temperature control dial to the coldest setting.

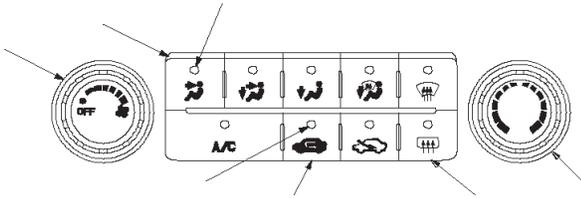
- Press the Max A/C button.
  - Run the engine at 1,500 rpm.
  - No driver or passengers in vehicle.
7. Run the air conditioning for 10 minutes under the above test conditions.
    - Record the air temperature from the thermometer in the center vent.
    - Record air intake temperature near the blower unit.
    - Record the high and low system pressures from the A/C gauges.
  8. To complete the chart:
    - Mark the center vent air temperature on the vertical scale.
    - Mark the inlet air temperature (ambient air temperature) along the bottom line. If you are unable to measure the inlet air temperature use the ambient air temperature.
    - Draw a line straight up from the inlet air temperature to the top of the chart.
    - Mark a point 10 % above and 10 % below the humidity level for each of the 3 zones.
    - From each of the 6 points, draw horizontal lines left across the chart.
    - The center vent air temperature, low side pressure, and high side pressure should fall between the pairs of lines.
    - Any measurements outside any of the pairs of lines indicate the need for further inspection.

Ambient temp	
Humidity %	
Inlet air temp	
Static system pressure 45 psi minimum	
Center vent temp ~30°F < ambient	
Low side pressure Typical: ~ 30 psi	
High side pressure Typical: 2.2 to 2.5 X ambient °F	
Pressure behavior when AC is shut off:	



Test results	Related symptoms	Probable cause	Remedy
Discharge pressure abnormally high	After stopping A/C compressor, pressure drops about 196 kPa (2.0 kgf/cm <sup>2</sup> , 28 psi) quickly, and then falls gradually.	Air in system	Recover, evacuate, and recharge with specified amount.
	No bubbles in sight glass when A/C condenser is cooled by water.	Excessive refrigerant in system	Discharge, evacuate, and recharge with specified amount.
	Reduced or no airflow through A/C condenser.	Clogged condenser or radiator fins A/C condenser or radiator fan not working properly	Clean. Check voltage and fan rpm. Check fan direction.
	Line to A/C condenser is excessively hot.	Restricted flow of refrigerant in system	Restricted lines.
Discharge pressure abnormally low	Excessive bubbles in sight glass; A/C condenser is not hot.	Insufficient refrigerant in system	Check for leak. Charge system.
	High and low-pressures are balanced soon after stopping A/C compressor. Low side is higher than normal.	Faulty A/C compressor discharge valve Faulty A/C compressor seal	Replace the A/C compressor.
	Outlet of expansion valve is not frosted, low-pressure gauge indicates vacuum.	Faulty expansion valve Moisture in system	Replace. Recover, evacuate, and recharge with specified amount.
Suction pressure abnormally low	Excessive bubbles in sight glass; A/C condenser is not hot.	Insufficient refrigerant in system	Repair the leaks. Recover, evacuate, and recharge with specified amount. Charge as required.
	Expansion valve is not frosted, and low-pressure line is not cold. Low-pressure gauge indicates vacuum.	Frozen expansion valve (Moisture in system) Faulty expansion valve	Recover, evacuate, and recharge with specified amount. Replace the expansion valve.
	Discharge temperature is low, and the airflow from vents is restricted.	Frozen evaporator	Run the fan with A/C compressor off, then check evaporator temperature sensor.
	Expansion valve is frosted.	Clogged expansion valve	Clean or replace.
	Receiver/dryer outlet is cool, and inlet is warm (should be warm during operation).	Clogged receiver/dryer	Replace.
Suction pressure abnormally high	Low-pressure hose and check joint are cooler than the temperature around evaporator.	Expansion valve open too long	Repair or replace. Check TEV temp sensor Make sure temp sensor contacts evap.
	Suction pressure is lowered when A/C condenser is cooled by water.	Excessive refrigerant in system	Recover, evacuate, and recharge with specified amount.
	High and low-pressures are equalized as soon as the A/C compressor is stopped, and both gauges fluctuate while running.	Faulty gasket Faulty high-pressure valve Foreign particle stuck in high-pressure valve	Replace the A/C compressor.
Suction and discharge pressures abnormally high	Reduced airflow through A/C condenser.	Clogged A/C condenser or radiator fins A/C condenser or radiator fan not working properly	Clean. Check voltage and fan rpm. Check fan direction.
	No bubbles in sight glass when A/C condenser is cooled by water.	Excessive refrigerant in system	Discharge, evacuate, and recharge with specified amount.
Suction pressures abnormally high and discharge pressure slightly high	Evap freezes up?	Expansion valve stuck open	Replace expansion valve.
Suction and discharge pressures abnormally low	Low-pressure hose and metal end areas are cooler than evaporator.	Clogged or kinked low-pressure hose parts	Repair or replace.
	Temperature around expansion valve is too low compared with that around receiver/dryer.	Clogged high-pressure line	Repair or replace.
Refrigerant leaks	A/C compressor clutch is dirty.	A/C compressor shaft seal leaking	Replace the A/C compressor.
	A/C compressor bolt(s) are dirty.	Leaking around bolt(s)	Tighten bolt(s) or replace A/C compressor.
	A/C compressor gasket is wet with oil.	Gasket leaking	Replace the A/C compressor.

## How to Troubleshoot the HVAC System Using the Self-diagnostic Function



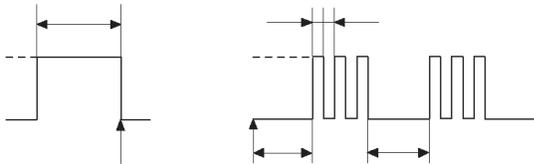
The HVAC control unit has a self-diagnostic function for heating, ventilation, and air conditioning system.

To run the self-diagnostic function, do the following:

1. Turn the ignition switch OFF.
2. Press and hold the recirculation control and rear window defogger buttons, and turn the ignition switch ON (II).
3. Recirculation indicator turns on for 2 seconds, then self-diagnostic function begins.

NOTE:

- The blower motor will run at any speed regardless of the dial positioning.
- In the case of multiple problems, the recirculation indicator will blink the lowest number DTC only.
- If no DTCs are found, the indicator will not blink.



Example of DTC indication Pattern (DTC 3).

DTC (Recirculation Indicator Blinks) Detection Item

- 1 An open in the air mix control motor circuit
- 2 A short in the air mix control motor circuit
- 3 A problem in the air mix control linkage, door, or motor
- 4 An open or short in the mode control motor circuit
- 5 A problem in the mode control linkage, doors, or motor
- 6 A problem in the blower motor circuit
- 7 HVAC control unit internal error
- 8 An open in the evaporator temperature sensor circuit
- 9 A short in the evaporator temperature sensor circuit

Clear the DTCs

1. Turn the ignition switch OFF.
2. Set fan control dial OFF, temperature control dial on MAX COOL.
3. Press and hold the ventilation and recirculation control buttons, turn the ignition switch ON (II).
4. Ventilation indicator turns on for 2 seconds, then DTC clear.

NOTE: After completing repair work, run the self-diagnostic function again to make sure that there are no other malfunctions.

## How To Reprogram The HVAC System For Manual A/C Compressor Control

By default the A/C will run when in defrost mode. The A/C control and indicator light is disabled and there is no way to turn off the A/C compressor.

To reprogram for manual A/C control:

1. With the engine running, set the mode button to panel vents only.
2. Turn key off.
3. Set blower off and the temperature control to coldest.
4. Hold down the **recirculate button** and the **A/C button**, and turn the ignition switch ON (II).
5. The recirculate button indicator light will flash for about seven seconds. Then the A/C green indicator light will flash on. The system is now reprogrammed!

Now the system will work as follows. When selecting defrost or defrost + floor the A/C will come on, along with the A/C indicator light. You can push the A/C button and turn the A/C on and off manually.

## Pressure-Temperature Chart

Saturation Temperature [°F]	Pressure [psig]
-50	18.7
-45	16.9
-40	14.8
-35	12.5
-30	9.8
-25	6.9
-20	3.7
-15	0.1
-10	1.9
-5	4.1
0	6.5
5	9.1
10	11.9
15	15.0
20	18.4
25	22.1
30	26.0
35	30.3
40	35.0
45	40.0
50	45.4
55	51.1
60	57.3
65	63.9
70	71.0
75	78.6
80	86.6
85	95.1
90	104.2
95	113.8
100	124.1
105	134.9
110	146.3
115	158.4
120	171.1
125	184.5
130	198.7
135	213.6
140	229.3
145	245.7
150	263.0

Red numerals = inches Hg below 1 atm