
	<b>VOLUME</b> 3	GROUP <b>Climate Control</b>	MODEL <b>Sedona</b>
		NUMBER <b>008</b>	DATE <b>April 2005</b>
<b>TECHNICAL SERVICE BULLETIN</b>			
<b>SUBJECT:</b> SEDONA A/C DIAGNOSIS AND PERFORMANCE TESTING			

This bulletin provides information related to testing and diagnosis of the Sedona Air Conditioning System. Customers may complain of noise or insufficient interior cabin cooling. This technical information will assist in determining the correct procedure for repair of the Air Conditioning System.

 <b>CAUTION</b>
<ul style="list-style-type: none"> <li>• <b>Air Conditioning refrigerant or lubricant vapor can irritate your eyes, nose or throat.</b></li> <li>• <b>Take care in connecting service equipment.</b></li> <li>• <b>DO NOT breathe refrigerant or vapors.</b></li> </ul>

PRELIMINARY CHECKS:

- Applicable Technical Service Bulletins, *Technician Times* or Pitstop Articles
- Install scan tool and check for current and history codes
- Check and test A/C fuse
- A/C blower operation (test all blower speeds)
- Temperature door operation
- A/C compressor, pressure switches and thermocon electrical connections
- Condenser fins for obstructions
- Cooling fan speed operations (low and high)
- Check A/C compressor drive belt tension and A/C compressor clutch operation
- Charging system voltage level and battery condition
- Check Service Information on Kia Service Information System (KSIS)

Repair as necessary, before proceeding to performance test.

**File Under: Climate Control**

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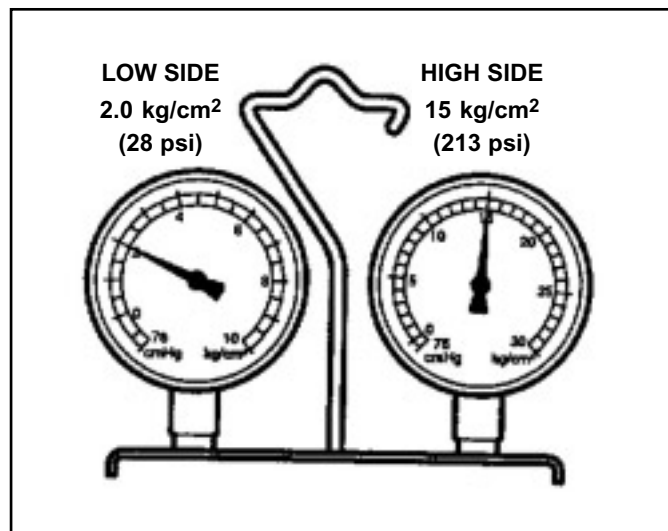
**Circulate To:**       **General Manager**     **Service Manager**     **Parts Manager**  
 **Service Advisor(s)**  **Technician(s)**     **Body Shop Manager**     **Fleet Repair**

**SUBJECT:**

**SEDONA A/C DIAGNOSIS AND PERFORMANCE TESTING**

**PERFORMANCE TEST:**

- Install manifold gauge set to the high and low side service port.
- Install temperature gauge into dash center vent to monitor output temperatures.
- Place inside front and rear blower on medium speed.
- Place a large fan in front of the A/C condenser, this simulates driving conditions with airflow across condenser.
- Run the engine at 2,000 rpm, monitor high and low side pressures and record. Monitor the inside temperature dash vent gauge and record. See pressure chart on next pages.
- Normal gauge reading are approximately 21~28 psi on the low side (Suction) and 206~213 psi on the high side (Discharge). Pressure readings will vary slightly depending on the ambient temperature and humidity levels.



**\* NOTICE**

**SERVICE PRECAUTIONS:**

- When working on A/C systems all equipment must be in good working condition and properly maintained.
- All weight scales must be in working order and unobstructed to properly charge the A/C system.
- All refrigerants must be recovered per Federal Law Clean Air Act, any residual refrigerant must be recovered and not released into the atmosphere.
- Flushing of the A/C system may be required, prior to re-charging the A/C system dependent on contamination of the A/C system. Always flush the A/C system after an internal compressor failure.

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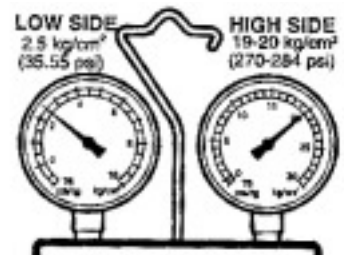
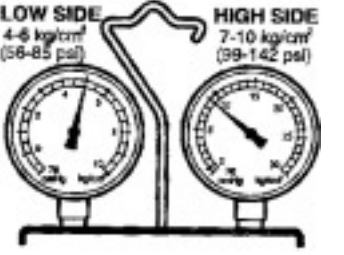
## PRESSURE DIAGNOSIS CHART:

Symptoms	Probable Causes	Remedy	Manifold Gauge Readings
1. Low pressure and high pressure are low. 2. Cooler outlet air is a little cooler.	<ul style="list-style-type: none"> <li>Refrigerant leak</li> </ul>	<ul style="list-style-type: none"> <li>Check and repair.</li> <li>Add refrigerant.</li> </ul>	
1. Low pressure and high pressure are high.	<ul style="list-style-type: none"> <li>Faulty cooling or condenser freezing.</li> <li>Belt slip.</li> </ul>	<ul style="list-style-type: none"> <li>Maintain the proper level of refrigerant.</li> <li>Clean the condenser.</li> <li>Adjust the belt.</li> </ul>	
1. Low pressure and high pressure are high. 2. Low pressure pipe is not cold.	<ul style="list-style-type: none"> <li>Air in the system.</li> </ul>	<ul style="list-style-type: none"> <li>Clean or replace the receiver drier.</li> <li>Check for oil contamination.</li> </ul>	
1. Low pressure side indicates negative pressure and high pressure side indicates low pressure. 2. Frost or dew on pipes connected with receiver or expansion valve.	<ul style="list-style-type: none"> <li>Dust or moisture frozen at expansion valve.</li> <li>Refrigerant leak.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the receiver-drier and replace the expansion valve.</li> <li>Replace the expansion valve if the receiver-drier is faulty.</li> </ul>	
1. Low side pressure sometimes goes to negative pressure or normal.	<ul style="list-style-type: none"> <li>Intake moisture is frozen at expansion valve hole.</li> <li>Moisture in A/C system.</li> </ul>	<ul style="list-style-type: none"> <li>Replace receiver-drier.</li> </ul>	

Note: Pressure Diagnosis Chart continues on next page.

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## PRESSURE DIAGNOSIS CHART CONTINUED:

Symptoms	Probable Causes	Remedy	Manifold Gauge Readings
1. Low pressure and high pressure are high. 2. Much frost or dew on the low pressure side piping.	<ul style="list-style-type: none"> <li>Expansion valve failure. Receiver-drier faulty.</li> <li>Flow control faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Replace receiver drier.</li> <li>Check for oil contamination.</li> </ul>	
1. Low side pressure is high and high side pressure is low.	<ul style="list-style-type: none"> <li>Leak inside compressor.</li> </ul>	<ul style="list-style-type: none"> <li>Replace compressor.</li> </ul>	

## SYMPTOM DIAGNOSIS:

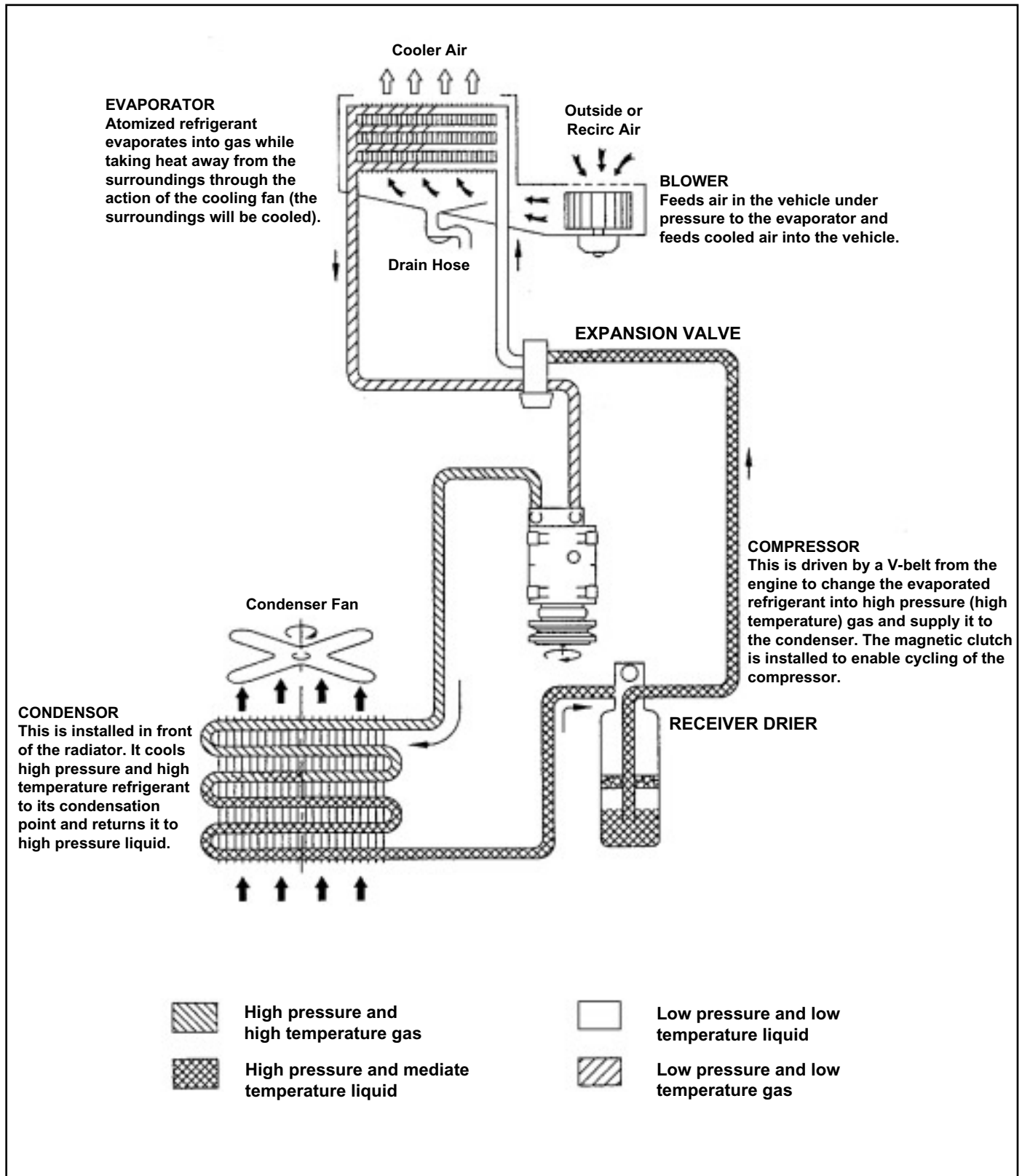
Customer/Technician Concern	Correct Service Procedure
* Vibration & humming noise while idling the engine in Park.	Replace Suction hose with P/N 1K52Y 61462B for vehicles produced before 12/02. Check for interference between A/C lines and body.
A/C compressor noise with no cooling complaints.	Check crankshaft pulley and compressor mountings. Inspect A/C for undercharge condition. Do not replace A/C compressor.
A/C compressor locking up or clutch slippage.	Check refrigerant amount for over-charge. Replace compressor if necessary.
* Intermittent high pitched whine or siren type noise from rear A/C unit.	Replace the rear expansion valve, P/N: 1K56E 61R16B. This applies to vehicles produced before 12/20/03.
* Low Refrigerant Condition	Inspect high side discharge hose at compressor, crimp under heat shield, if leaking replace with P/N: 1K52Y 61463B. During recharge, add A/C dye and leak test system after driving.

\* Check warranty history for previous part replacement to avoid replacing the same components.

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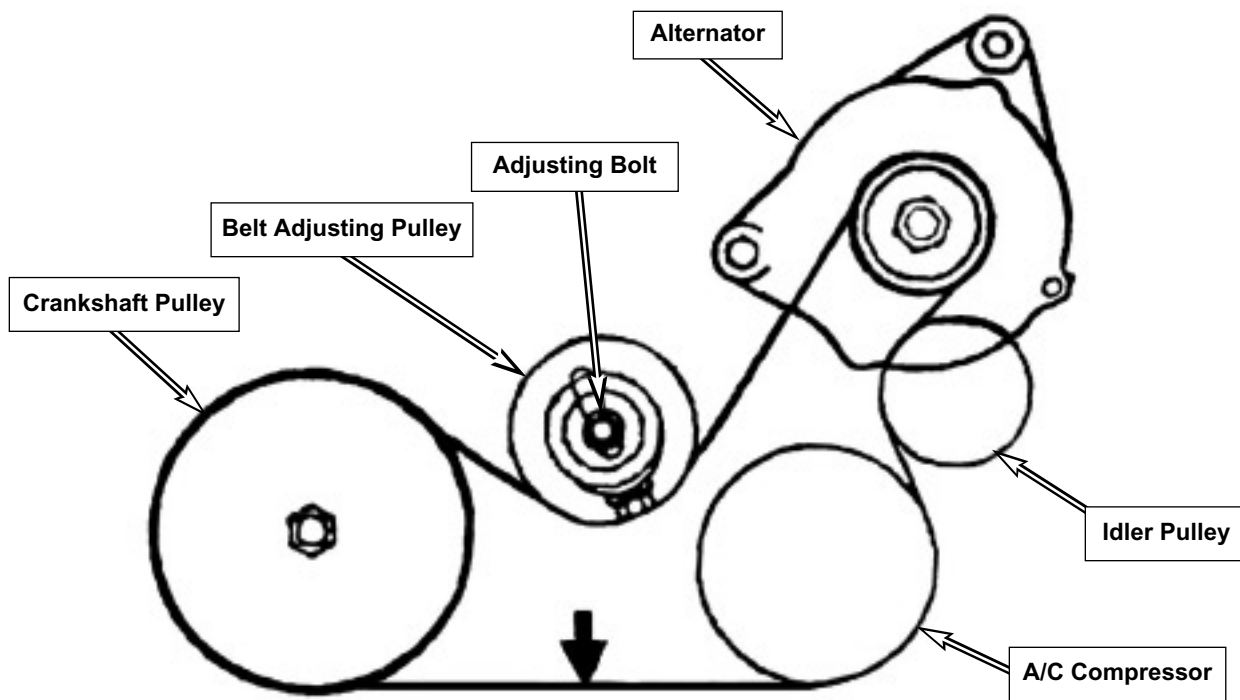
**BASIC A/C REFRIGERANT SYSTEM:**



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**A/C DRIVE BELT:**



**Measure deflection when applying 20-22 lbs of force in the direction of the solid black arrow in above illustration.**

Description	Measured Deflection
New Belt	5.0 - 5.5 mm
Used Belt	6.0 - 7.0 mm

**AFFECTED PRODUCTION RANGE:**  
2002-2005MY Sedona vehicles.