



# A/C System Service

## Pressure Test Chart

NOTE: Performance Test on page 21-70.

TEST RESULTS	RELATED SYMPTOMS	PROBABLE CAUSE	REMEDY
Discharge (high) pressure abnormally high	After stopping compressor, pressure drops to about 200 kPa (2.0 kg/cm <sup>2</sup> , 28 psi) quickly, and then falls gradually.	Air in system	Recover, evacuate and recharge with specified amount. Evacuation: see page 21-83 Charging: see page 21-84
	No bubbles in sight glass when condenser is cooled by water.	Excessive refrigerant in system	Recover, evacuate and recharge with specified amount.
	Reduced or no air flow through condenser.	<ul style="list-style-type: none"> <li>• Clogged condenser or radiator fins</li> <li>• Condenser or radiator fan not working properly</li> </ul>	<ul style="list-style-type: none"> <li>• Clean</li> <li>• Check voltage and fan rpm</li> <li>• Check fan direction</li> </ul>
	Line to condenser is excessively hot.	Restricted flow of refrigerant in system	• Restricted lines
Discharge pressure abnormally low	Excessive bubbles in sight glass; condenser is not hot.	Insufficient refrigerant in system	<ul style="list-style-type: none"> <li>• Check for leak</li> <li>• Charge system</li> </ul>
	High and low pressures are balanced soon after stopping compressor. Low side is higher than normal.	<ul style="list-style-type: none"> <li>• Faulty compressor discharge valve</li> <li>• Faulty compressor seal</li> </ul>	Replace the compressor
	Outlet of expansion valve is not frosted, low pressure gauge indicates vacuum.	<ul style="list-style-type: none"> <li>• Faulty expansion valve</li> <li>• Moisture in system</li> </ul>	<ul style="list-style-type: none"> <li>• Replace</li> <li>• Recover, evacuate and recharge with specified amount.</li> </ul>
Suction (low) pressure abnormally low	Excessive bubbles in sight glass; condenser is not hot.	Insufficient refrigerant	<ul style="list-style-type: none"> <li>• Repair the leaks.</li> <li>• Recover, evacuate and recharge with specified amount.</li> <li>• Charge as required.</li> </ul>
	Expansion valve is not frosted and low pressure line is not cold. Low pressure gauge indicates vacuum.	<ul style="list-style-type: none"> <li>• Frozen expansion valve</li> <li>• Faulty expansion valve</li> </ul>	Replace the expansion valve
	Discharge temperature is low and the air flow from vents is restricted.	Frozen evaporator	Run the fan with 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.	<ul style="list-style-type: none"> <li>• Expansion valve open too long</li> <li>• Loose expansion capillary tube</li> </ul>	Repair or replace.
	Suction pressure is lowered when condenser is cooled by water.	Excessive refrigerant in system	Recover, evacuate and recharge with specified amount.
	High and low pressure are equalized as soon as the compressor is stopped and both gauges fluctuate while running.	<ul style="list-style-type: none"> <li>• Faulty gasket</li> <li>• Faulty high pressure valve</li> <li>• Foreign particle stuck in high pressure valve</li> </ul>	Replace the compressor
Suction and discharge pressures abnormally high	Reduced air flow through condenser.	<ul style="list-style-type: none"> <li>• Clogged condenser or radiator fins</li> <li>• Condenser or radiator fan not working properly</li> </ul>	<ul style="list-style-type: none"> <li>• Clean condenser and radiator</li> <li>• Check voltage and fan rpm</li> <li>• Check fan direction</li> </ul>
	No bubbles in sight glass when condenser is cooled by water.	Excessive refrigerant in system	Recover, evacuate and recharge with specified amount.
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	Compressor clutch is dirty.	Compressor shaft seal leaking	Replace the compressor
	Compressor bolt(s) are dirty.	Leaking around bolt(s)	Tighten bolt(s) or replace compressor
	Compressor gasket is wet with oil.	Gasket leaking	Replace the compressor
Compressor heat damage	Black soot inside compressor and hoses.	Restriction or leak in system.	Flush entire system, replace rubber lines or hoses.