412-00 Air Conditioning System Performance Test

1. Close (clockwise screw in) red and blue manifold gauge set valves (Fig. 1). Close (counterclockwise screw out) red and blue control valves and connect to one end of corresponding hoses.
3. Yellow Hose -- Connect both ends of hose to gauge set.
4. Red Hose -- Connect one end to bottom of gauge set; connect other end with red high pressure coupler to high pressure valve on vehicle (red cap receiver-drier near radiator).
5. Blue Hose -- Connect one end to bottom of gauge set; connect other end with blue low pressure coupler to low pressure valve on vehicle (blue cap on line near rear of engine).
6. Open (clockwise screw in) blue and red control valves on hoses.
7. Start vehicle, open windows, turn on A/C to full cold and let gauges stabilize.
8. Obtain low and high pressures by reading innermost black band on gauges.
   (NOTE: >0=psi low pressure side, <0=inHg vacuum equipment. Ignore all other bands.)
9. Compare to the following chart to determine if readings are within Normal range:

Ambient Temp (°F)	Low Side Gauge (psi)	High Side Gauge (psi)
65°	25 - 35	135 - 155
70°	35 - 40	145 - 160
75°	35 - 45	150 - 170
80°	40 - 50	175 - 210
85°	45 - 55	225 - 250
90°	45 - 55	250 - 270
95°	50 - 55	275 - 300
100°	50 - 55	315 - 325
105°	50 - 55	330 - 335
110°	50 - 55	340 - 345

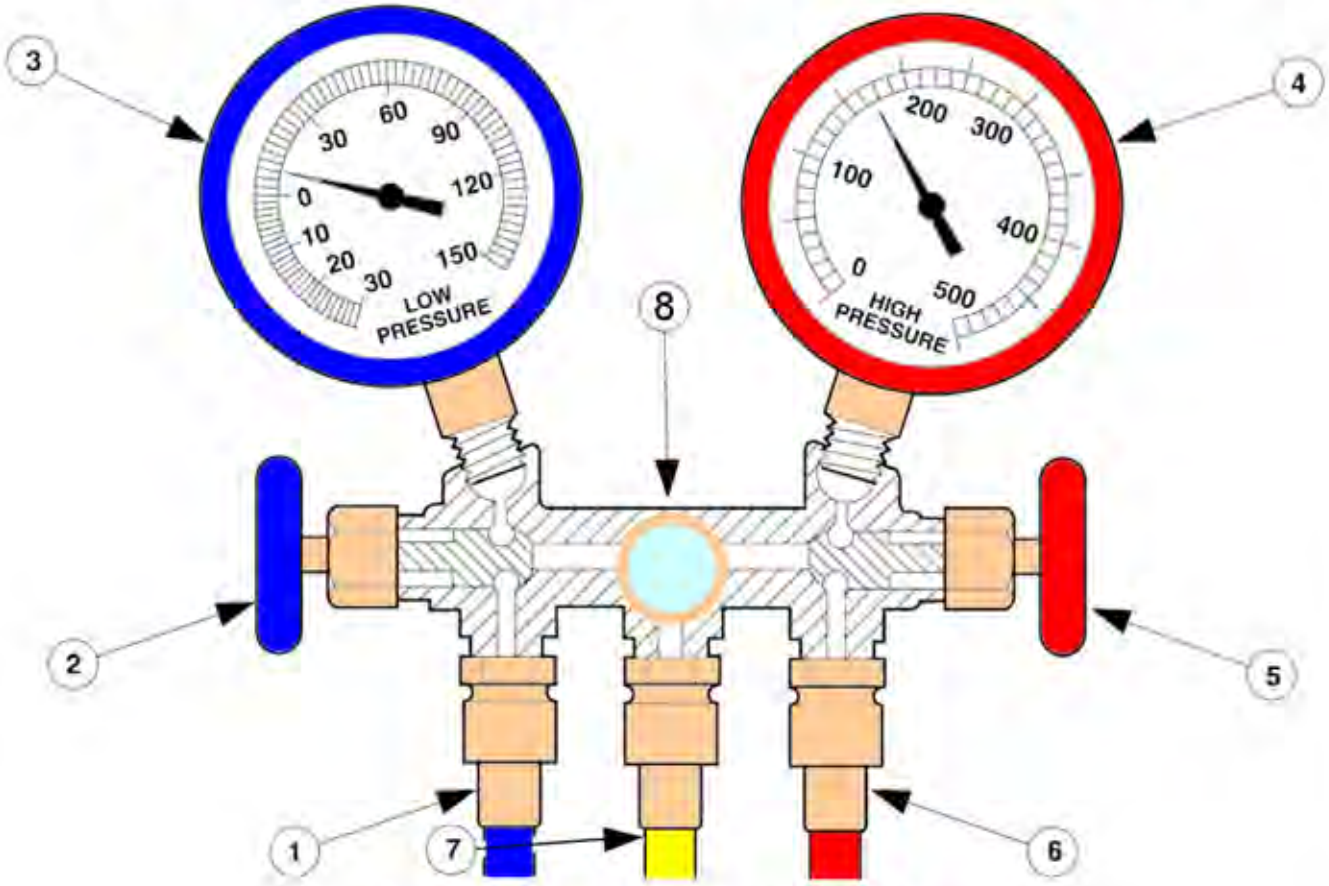
412-00 Air Conditioning System Pressure Fault Diagnosis

Low Side	High Side	Discharge Air Fault	Cause
normal	normal	initially cool then warms	moisture in system
low	normal	initially cool then warms	moisture in system
low	low	slightly cool or warm	refrigerant charge low
low	low	slightly cool or frost @ expansion valve	expansion valve stuck closed
low	low	slightly cool, sweat or frost @ restriction	restriction in High Side
high	high	warm, high side pipes hot	refrigerant charge high
high	high	warm, high side pipes hot	inefficient condensor cool
high	high	warm, sweat or frost at evaporator	expansion valve stuck open
high	low	compressor noisy (gauge needle vibrates)	defective reed valve

412-00 Air Conditioning System Recharge

10. Yellow Hose -- Connect one end to bottom of gauge set; connect other end to R134a tank.
11. Invert R134a tank and open tank valve.
12. Open (counterclockwise screw out) blue manifold gauge valve. Coolant will begin to flow from tank through gauge set (visible in sight glass) and into vehicle through low pressure valve. The low pressure gauge will increase.
13. When air from A/C gets cold, close blue manifold gauge valve. Allow system to stabilize and reread low and high pressure gauges. Compare to the preceeding chart to determine if readings are within Normal range.
14. If Low, then continue charging by repeating Steps 12.-13.
15. If High, then close (counterclockwise screw out) blue control valves and disconnect blue hose coupler from vehicle. Bleed pressure from vehicle system, reconnect blue hose, and recheck pressures.
16. If Normal, then close (counterclockwise screw out) red and blue control valves and disconnect couplers from vehicle. Close R134a tank valve and disconnect yellow hose from tank.

412-00 Air Conditioning Manifold Gauge Set



1 LOW pressure service hose

2 LOW pressure gauge valve

3 LOW pressure gauge

4 HIGH pressure gauge

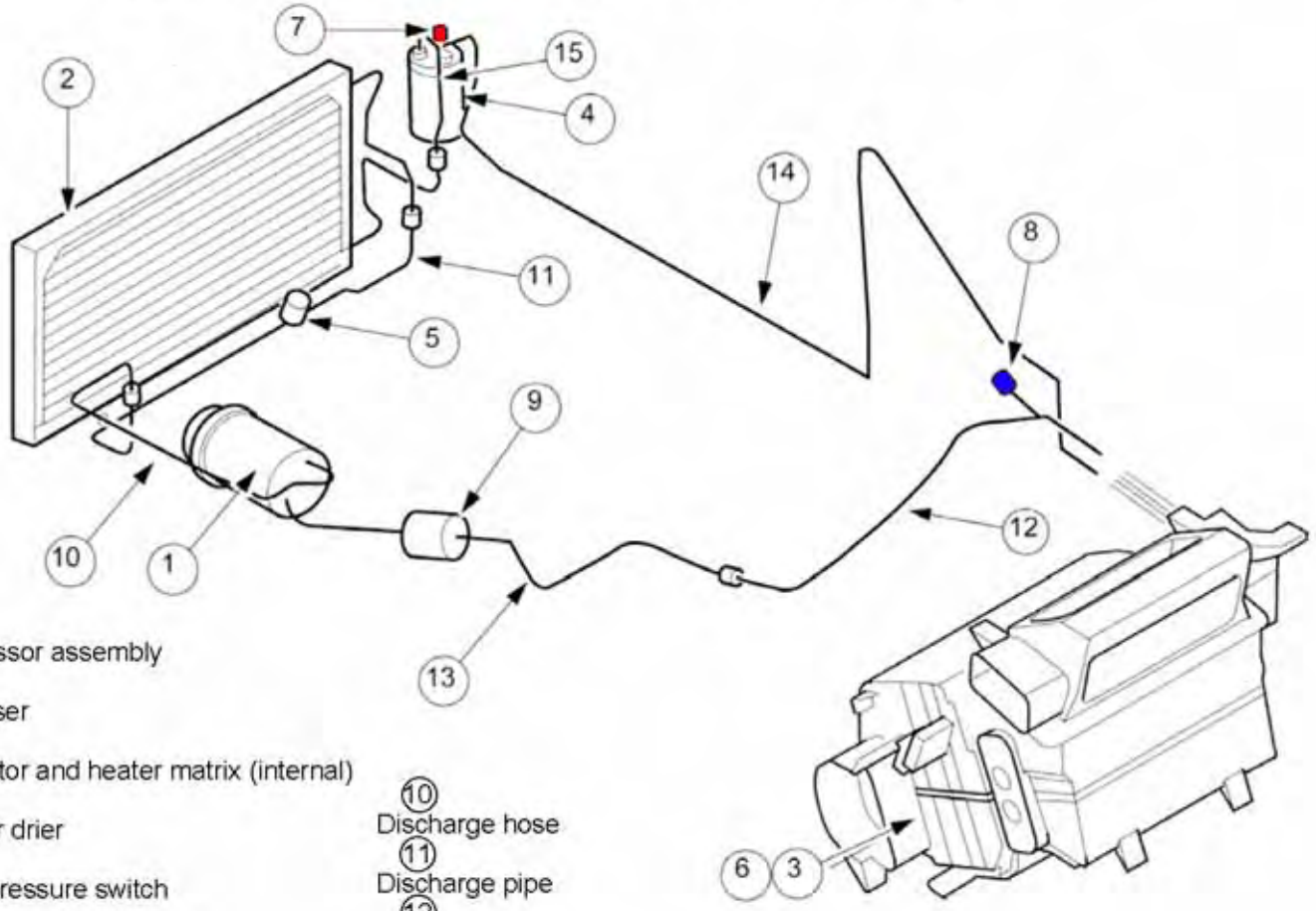
5 HIGH pressure gauge valve

6 HIGH pressure service hose

7 refrigeration charging (aka service) hose

8 sight glass

Jaguar XK8 Thermostatic Expansion Valve A/C System



1 Compressor assembly
2 Condenser
3 Evaporator and heater matrix (internal)
4 Receiver drier
5 4-level pressure switch
6 Expansion valve (internal)
7 High-side charge port
8 Low-side charge port
9 Suction muffler
10 Discharge hose
11 Discharge pipe
12 Suction hose
13 Suction pipe
14 Liquid line
15 Jumper hose (condenser hose)