

SUPPLEMENTAL INSTRUCTIONS PACKET

(INCLUDES CHARGING PROCEDURES AND DIAGNOSTICS)

PLEASE NOTE: IF YOU ARE NOT EXPERIENCED/COMFORTABLE WITH EVACUATING AND CHARGING AN AC SYSTEM WE HIGHLY RECOMMEND THAT YOU TAKE THE VEHICLE TO A SHOP THAT SPECIALIZES IN AIR CONDITIONING

SYSTEM CHARGING PROCEDURES

If you have the correct tools you can service the system yourself or several auto parts stores will rent you the required gauges and vacuum pump so that you can charge the system yourself. Follow these simple steps to charge the system yourself. **However, please note that charging errors, such as overcharging your system, will void the warranty.**

1. Assemble your gauges and hang them on the inside of your hood in a position that makes them easy to read. Ensure the blue line is connected to the low-pressure fitting on the left side of the gauge cluster. The yellow line connects to the middle of the gauge cluster as serves as your vacuum and charging line. The red line connects to the high pressure fitting on the right side of the gauge assembly. (See **photo 14** and **15**)
2. The first step of charging your system is vacuuming out air and contaminants from the system. Connect the red (high pressure) and blue (low pressure) vacuum lines and fittings to the ports on the high and low pressure side of the compressor line fittings. The fittings are different sizes so this process is error proof. See photo 16
3. Connect the yellow hose from your gauge assembly to your vacuum pump.
4. Ensure both the high and low pressure Schrader valves are fully open by turning the knob on the valve to the "open" position. This depresses the Schrader valve and the system is now considered open. You'll also want to ensure that both the low pressure and high pressure knobs on the gauges are open. With this configuration, your A/C system is full open and ready for vacuum.
5. Turn your vacuum pump and vacuum the system for approximately 45 minutes. This ensures your system is free from contaminants prior to charging. The low pressure reading should read 29 Hg or lower in vacuum. The high pressure gauge should read negative and will likely be "pegged" out. Before turning off the vacuum pump after the 45 minutes of vacuuming, close the high and low pressure knobs on the gauges (NOT on the compressor hose fittings, you need to leave these open).

6. Your system is now done with the vacuuming process. Before charging, make sure you have a fully sealed system by verifying gauge readings have not shifted. The low pressure reading should still be between 20-29 Hg vacuum. The high pressure should still be reading negative pressure. If any of these gauge readings have shifted after an hour of holding a vacuum, you have a leak and need to determine where it is coming from. The most likely culprit is loose fittings, so check the entire system thoroughly to determine where the leak is coming from. Once you have diagnosed and repaired the source of the leak, perform steps 3 and 4 again.
7. You are now ready to charge your system. The system requires approximately 1.5lbs (two 12 oz cans) of **R-134A** refrigerant (**any other type of refrigerant WILL damage the system and void your warranty**). Remove the yellow line from the vacuum pump and connect it to a can of refrigerant. You will need to purchase an adapter that screws to the can which depresses the plunger so you can charge the system. (See **photo 18**)
8. Once the can of refrigerant is open, open the cap and depress the yellow line Schrader valve on the gauge for a second or two so that air in the yellow line purges out. This ensures there will be no air in your system while charging.
9. Start your Jeep and turn the air conditioner fan on the highest speed setting. Open the low-pressure valve on the gauge. During charging, you will not open the high-pressure valve at any time. At this time, your system should be filling with refrigerant. Gently shake the can as the system is filling.
10. While charging the system, the pressure switch on the dryer/receiver will start reading pressure and when minimum pressure requirements are met will turn on the compressor. While charging the system, you should feel the can of refrigerant getting very cold to the touch. The can will also become lighter as the system continues to charge. The air out of the vents should start getting colder as pressure builds.
11. Once the first can is empty, you'll have to close the low pressure valve on the gauge assembly prior to changing out refrigerant cans. This ensures no air will be introduced to the system. Connect and open (depress the adapter plunger to open the can) the second can of refrigerant, depress the yellow line Schrader valve again to purge any air out of the yellow line prior to opening the low-side pressure valve. Open the low-side pressure valve and your system will now be charging again.
12. The most important part of charging your system is the high-side pressure reading. Though the Jeep Air A/C kit is designed to use approximately 1.5 lbs of refrigerant, this can fluctuate slightly. You'll want to charge the system until the high-side pressure gauge reads and stabilizes between **200-220 lbs** of pressure. **Ensure that at no time the stabilized high-side pressure reading exceeds 250 psi.** Once the high-side is stabilized between this pressure reading, you'll feel very cold air coming out of the vents and your charge is complete. The air temperature reading from the vents should read between **37-45** degrees if the system is functioning properly. **NOTE:** Generally

the pressure will drop and stabilize approximately 20-30 psi once the valves are closed.

13. Remove the high-side and low-side fittings from the Schrader valve ports on your A/C lines. Your system charge is now complete.

Photo 14



Photo 15

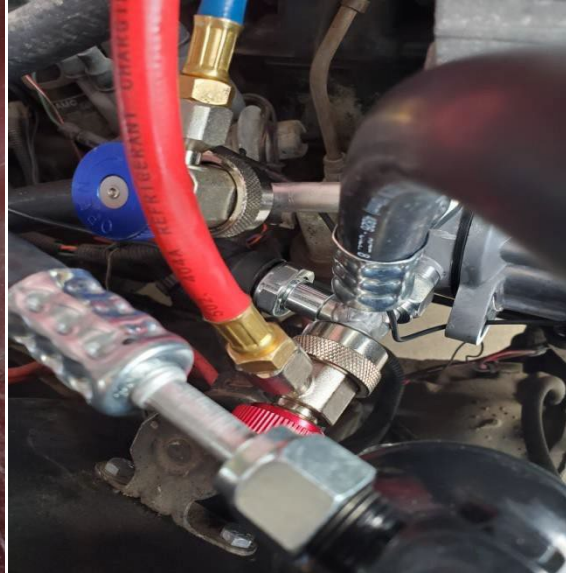


Photo 16



Photo 17



Photo 18



TROUBLESHOOTING GUIDE

This guide will help you determine whether or not the system is functioning as it should be. The following conditions will determine the system operation and simulate airflow as if you were driving down the road:

- Place thermometer in center vent
- Connect gauges to high and low side charging ports
- Put blower motor switch on medium speed
- Close all doors and windows
- Put a shop fan in front of the condenser (grill).
- Run engine idle up to 1500 rpm.

Acceptable Operating Pressure Ranges (Please note these pressures are based upon ambient temperature so there is a range)

- High Side: 160-250 PSI (* Rule of thumb is two times the ambient daytime temperature plus 15-20%)
- Low Side:
 - 20-30 PSI (Expansion Valve and Receiver Drier Systems)
 - 32-40 PSI (Orifice Tube and Accumulator Drier Systems)
- Center Vent Temperature: 37-45 Degrees F

Typical Problems encountered during initial charging:

- Noisy Compressor
 - Generally cause by overcharging: Both the high and low side will be abnormally high and it will cause the compressor to make noise due to the continued cylinder head pressures. The system will need to be evacuated and charged to the correct R134a charge.
 - Also caused by air introduced into the system during evacuation or charging: The moisture will cause ice to form in the refrigerant as it flows through the system and will cause the compressor to growl under acceleration. The system needs to be evacuated and recharged.
- System Not Cooling
 - Incorrect refrigerant charge
 - Too much moisture in the system
 - Inadequate airflow to the condenser: The condenser needs airflow to be able to liquefy the refrigerant properly. Abnormally high pressures will be an indicator of inadequate airflow. You can check the airflow by putting a large fan in front of the condenser and see if the pressure drops significantly, if so you will need to

see whether an auxiliary fan is needed or whether you engine fan is not pulling enough. Or a shroud might also be necessary if that is missing.

- Expansion Valve Failure: Can be caused by dirt or debris entering the system during installation.
- Restriction in the system

We are available for support Monday through Friday. Please note when planning the installation we do observe all major holidays and are closed the last two weeks of December.

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