



87-20-02 - Refrigerant Leak Diagnosis Using Nitrogen

Release date: 6/8/2022

Condition

Applicable Vehicles					
Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
All	2010-2023	All	All	All	All

Revision Table			
Instance Number	Published Date	Version Number	Reason For Update
2061094/7	6/8/22	87-20-02	Updated to include ID.4.
2061094/5	6/6/22	87-20-02	Update model and model year applicability.
2061094/2	11/11/20	87-20-02	Administrative.
2061094/1	10/29/20	87-20-02	Original publication.

Diagnosing a large/medium leak with the use of Nitrogen.



Note:

This bulletin must be read in its entirety before beginning repair.

Technical Background

This bulletin explains the use of Nitrogen to aid in refrigerant leak diagnosis in cases where the refrigerant evacuation process will not pass the vacuum test due to a large to medium leak where there is no refrigerant in the A/C system.

This tester may speed up the diagnostic process and help identify some larger leaks without having to recharge the system with refrigerant and dye. In most cases if the refrigerant is very low or empty there is usually a large leak in the system.



Note:

In cases where a leak is not present using the nitrogen test further diagnosis is required. It will be necessary to inject dye into the refrigerant circuit and recharge the system.



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Production Solution

No production change required.

Service

To perform this procedure you must have the NITROKITG and (oxygen free) Nitrogen.

The nitrogen tank on KLI9210DLX Evaporative Emissions Tester can also be used with the NITROKITG.

**Note:**

Only the nitrogen tank on the KLI9210DLX should be used. The KLI9210DLX machine should not be attached to the vehicle or damage to A/C system components will occur.

Although mentioned in Elsa Pro do not use compressed air on the refrigerant circuit. The use of compressed air instead of nitrogen can introduce contamination and moisture into the refrigerant circuit.

Before setting up the NITROKITG on the vehicle, check for pressure in the refrigerant circuit. If there is refrigerant in the system evacuate the refrigerant circuit using an approved R134a/R1234yf refrigerant station.



Figure1. Removing the KLI9210DLX manifold.

Attach to the NITROKITG manifold to the nitrogen tank.

**Note:**

If using the KLI9210DLX remove the smoke manifold set and install the NITROKIT manifold set (Figures 1 and 2).



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Figure 2. Installing NITROKITG manifold set.



Attach the yellow feed hose to the tank manifold regulator and the other end to the single gauge pressure regulator (Figures 3 and 4).

Figure 3.



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Figure 4.



Note:

Pay close attention to the inlet arrow on the single gauge pressure regulator when attaching the yellow hose.



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Figure 5.

Attach the red feed hose to the single gauge pressure regulator and attach the other end to the high side coupler valve.

Attach the high side coupler to the vehicle (Figure 5).

**Note:**

There are different high side couplers depending on the systems refrigerant type (R1234yf or R134a). Use the appropriate coupler based on the system you are working on.



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Figure 6.

Temporarily open the vehicle high side coupler to check for any pressure in the system. (Figure 6)

**Note:**

If pressure is observed the refrigerant circuit is not empty and must be evacuated in order to continue. Repeat step 1.



Figure 7.

Close the high side coupler on the vehicle and make sure both manifold regulators are fully closed.

Open the valve on the nitrogen tank and adjust the manifold regulator to 200 psi (Figure 7).



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Figure 8.

Reopen the vehicles high side coupler and slowly start to open the single gauge regulator in 50 psi increments.

Listen for any pressure leaks. If none are identified increase the pressure by another 50 psi up to 200 psi (Figure 8).

! **Note:**

A soapy water mix can be sprayed around A/C system joints and components in conjunction with this kit to help pin point a leak location. Additionally, the NITROKITG can be used with locally sourced Tracer Gas. Using tool LDA1000H (Leak Detector) the 5% of hydrogen that is mixed in with the nitrogen makes it easier for the tool to detect leaks.





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Warranty

Information only.

Required Parts and Tools

Tool Description	Tool No:
<p>Nitrogen test kit</p> 	<p>NITROKITG</p>
	<p>Compressed Nitrogen Gas</p> <p>(Locally Sourced)</p>

Additional Information

All part and service references provided in this Technical Bulletin are subject to change and/or removal. Always check with your Parts Dept. and Repair Manuals for the latest information.