

Leak Testing

Tools Required

- [J 39400-A](#) Halogen Leak Detector
- [J 41447](#) R-134A A/C Tracer Dye-Box of 24
- [J 42220](#) Universal 12V Leak Detection Lamp
- [J 43872](#) Fluorescent Dye Cleaner
- [J 46297](#) A/C Dye Injector Kit
- [J 46297-12](#) Replacement Dye Cartridges

Refrigerant Leak Testing

Important: General Motors vehicles are now manufactured with fluorescent dye installed directly into the air conditioning (A/C) system.

The fluorescent dye mixes and flows with the polyalkylene glycol (PAG) oil throughout the refrigerant system.

Verifying some passive leaks may require using the [J 39400-A](#) , even though the A/C system contains fluorescent dye.

The only time that adding additional fluorescent dye is required is after flushing the A/C system.

Fluorescent Leak Detector

Fluorescent dye will assist in locating any leaks in the A/C system.

Important: PAG oil is water soluble.

- Condensation on the evaporator core or the refrigerant lines may wash the PAG oil and fluorescent dye away from the actual leak. Condensation may also carry dye through the HVAC module drain.

- Leaks in the A/C system will be indicated in a light green or yellow color when using the leak detection lamp.
Use the leak detection lamp in the following areas:
 - All fittings or connections that use seal washers or O-rings
 - All of the A/C components
 - The A/C compressor shaft seal
 - The A/C hoses and pressure switches
 - The HVAC module drain tube, if the evaporator core is suspected of leaking
 - The service port sealing caps
 - The sealing cap is the primary seal for the service ports.
- Follow the instructions supplied with the [J 42220](#) .
- To prevent false diagnosis in the future, thoroughly clean the residual dye from any area where leaks were found. Use a rag and the approved [J 43872](#) .

Fluorescent Dye Injection

Important: Use only fluorescent dye approved by General Motors.

- [J 41447](#) can be poured directly into a removed A/C component.
- [J 46297-12](#) is injected into the low side port using [J 46297](#) .
- Not all of the fluorescent dyes are compatible with PAG oil. Some types of dye decrease the oil viscosity or may chemically react with the oil.
- R-134A leak detection dye requires time to work. Depending upon the leak rate, a leak may not become visible for between 15 minutes and 7 days.

Important: Do NOT overcharge the A/C system with dye. Use only one 7.39 ml (0.25 oz) charge.

- To prevent false diagnosis, thoroughly clean any residual dye from the service port with a rag and the approved fluorescent dye cleaner [J 43872](#) .

Halogen Leak Detector

Caution: Do not operate the detector in a combustible atmosphere since its sensor operates at high temperatures or personal injury and/or damage to the equipment may result.

Ensure that the vehicle has at least 0.45 kg (1 lb) of refrigerant in the A/C refrigeration system in order to perform a leak test. Refer to [Refrigerant Recovery and Recharging](#) for recharging the A/C system.

Important: Halogen leak detectors are sensitive to the following items:

- Windshield washing solutions
- Many solvents and cleaners
- Some adhesives used in the vehicle

Clean and dry all surfaces in order to prevent a false warning. Liquids will damage the detector.

Important: Follow a continuous path in order to ensure that you will not miss any possible leaks. Test all areas of the system for leaks.

Follow the instructions supplied with the [J 39400-A](#) .

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