January 20, 2022 Version 13

A/C Leak Detection

Supersedes 07-025, dated November 5, 2021, to revise the information highlighted in yellow.

AFFECTED VEHICLES

ALL

REVISION SUMMARY

Under LEAK DYE APPLICATION CHART, 2022 NSX was added.

LEAK DETECTION TYPES

There are several A/C leak detection tools available.

- Refrigerant Gas Leak Detector
- Ultrasonic Leak Detector
- Leak Dye Detection
  NOTE: There are specific leak dye kits for the R-134a and R-1234yf A/C systems. Make sure you are using the right kit for the system you are working on.
  - R-134a A/C Leak Detection Kit (P/N TRP124893A)
  - R-1234yf A/C Leak Detection Kit (P/N TRP1234YFA)

REFRIGERANT GAS LEAK DETECTOR

A refrigerant leak detector can sense refrigerant gas leaking from the A/C system.

- It is a good alternative if the vehicle cannot accept leak dye.
- The system must be pressurized to use this type of leak detector.

NOTE:

- Refer to the Acura Tool and Equipment Program for the most current, approved tool.
- Refer to the tool manufacturer's information for correct usage.

ULTRASONIC LEAK DETECTOR

An ultrasonic leak detector listens for leaks in the A/C system.

- It is a good alternative if the vehicle cannot accept leak dye.
- The system must under vacuum to use this type of leak detector.

NOTE:

- Refer to the Acura Tool and Equipment Program for the most current, approved tool.
- Refer to the tool manufacturer's information for correct usage.

CLIENT INFORMATION: The information in this bulletin is intended for use only by skilled technicians who have the proper tools, equipment, and training to correctly and safely maintain your vehicle. These procedures should not be attempted by “do-it-yourselfers,” and you should not assume this bulletin applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Acura automobile dealer.

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LEAK DYE DETECTION

Dye is injected into the A/C system. System leaks are visible with an ultraviolet light.

NOTE:

- Only the dyes mentioned in this bulletin from Tracer Products (Tracerline®) are approved for use in Acura vehicles. Other dyes contain solvents that may contaminate the system's refrigerant oil, leading to component failure.
- Adding excessive amounts of dye can lead to compressor damage and failure.
- Leak dye TRPTP9811P12 has been replaced by TRPTP1108P12. Continue to use TRPTP9811P12 until your dealership stock runs out.

Leak Dye Application Chart

Not all models allow leak dye. Use this chart to determine if it can be used.

Model	Year	Leak Dye Part Number
3.2 CL	2001–2003	TRPTP3860P12
3.2 TL	2000–2003	TRPTP3860P12
3.5 RL	2000–2004	TRPTP3860P12
ILX	2013–2018	TRPTP3860P12
	2019–2022	Dye use not allowed
ILX Hybrid	2013–2014	Dye use not allowed
Integra	2000–2001	TRPTP3860P12
MDX	2001–2018	TRPTP3860P12
	2019–2020	TRPTP9811P12 or TRPTP1108P12
	2022	TRPTP9811P12 or TRPTP1108P12
MDX Sport Hybrid	2017–2020	Dye use not allowed
NSX	2000–2005	TRPTP3860P12
	2017–2022	Dye use not allowed
RDX	2007–2018	TRPTP3860P12
	2019–2022	TRPTP9811P12 or TRPTP1108P12
RL	2005–2012	TRPTP3860P12
RLX	2014–2020	TRPTP3860P12
RLX Sport Hybrid	2014–2020	Dye use not allowed
RSX	2002–2006	TRPTP3860P12
TL	2004–2014	TRPTP3860P12
TLX	2015–2020	TRPTP3860P12
	2021–2022	TRPTP9811P12 or TRPTP1108P12
TSX	2004–2014	TRPTP3860P12
ZDX	2010–2013	TRPTP3860P12

R-134A A/C LEAK DETECTION KIT

The R-134a A/C Leak Detection Kit (P/N TRP124893A) is a required special tool. The kit is used to add small amounts of dye to A/C systems to help locate smaller leaks that an electronic leak detector may not find.

When searching for leaks, always begin by using an electronic leak detector. Refer to service bulletin 18-073, *Bosch ROBLD020 Dual Mode Refrigerant Gas Leak Detector*, for tips on using this tool, then follow up with the OPTIMAX Jr. A/C Leak Detection Kit.

This detection kit complements but does not replace the electronic leak detector.

R-134a A/C Leak Detection Kit (P/N TRP124893A) includes these items:

- TPOPUVP OPTI-PRO™ UV Plus, rechargeable violet light LED leak detection flashlight (battery included)
- TRPTP3860P12 - (6) R-134a/PAG TRACER-STICKS® Cartridges
- TRPTP19 - GLO-AWAY™ PLUS Fluorescent Dye Cleaner
- TRPTP9940 - Fluorescence-Enhancing Glasses
- TRPTP22 - (1) purge capsule (empty)
- TRPTP20 - R-134a hose with adapter/coupler/fitting
- TRPTP14 - USB charger (not pictured)



Using the R-134a A/C Leak Detection Kit

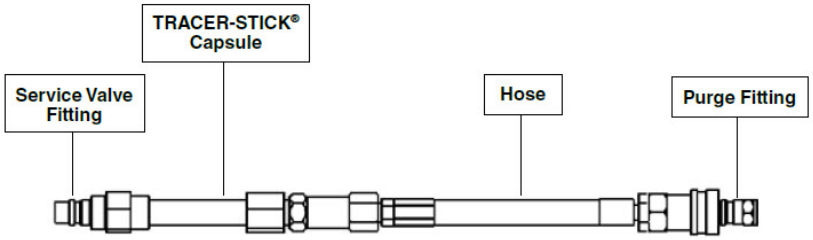
NOTE:

- Read and review all safety related information provided in the kit before operation.
- Do not run the A/C system while the dye injector is connected or is being used.
- Do not connect the dye injector to a system that is evacuated.
- The system must contain enough refrigerant to run the compressor and circulate the dye in order to find leaks.
- The dye may damage the paint and finishes on the vehicle, as well as staining hands and clothing.
- Store in a cool place, away from sunlight.

1. Before adding any leak-detection dye, check if there is dye in the system now.
   - Check for a label in the engine compartment indicating that fluorescent leak-detection dye has been added to the system.
   - Dye may have been added even though no label is present. To confirm this, do the following:
     - Put on the fluorescence-enhancing glasses, and remove the low-side service port sealing cap.
     - Direct the ultraviolet lamp into the valve stem area. If dye has been previously added, the lubricant traces will have a bright yellow fluorescent glow. You may need to press the port's valve stem briefly to release some lubricant and dye from the system.
   - If there is no dye in the system, go to step 2.
   - If there is dye in the system, go to step 5. **Do not add more dye.**
2. Add the dye.

   NOTE: Air and moisture must be evacuated from the hose assembly if it is being used for the first time, or if it has been stored with the control valve open. If the air and moisture have been evacuated, go to step 3; otherwise, do the following:

   2.1. Assemble the injection hose as shown in the diagram using the EMPTY Tracer-Stick® capsule and the purge fitting.



   2.2. Connect the service valve fitting to the low side hose of the A/C recovery and charging station.
   2.3. Following the manufacturer's instructions for your recovery and charging station, evacuate the hose assembly for about **3 minutes**.
   2.4. When evacuation is complete, disconnect the hose assembly from the A/C recovery and charging station.
   2.5. Remove the service valve fitting and the empty dye capsule from the set, and store them for future use.
3. Connect the hose assembly and the Tracer-Stick® dye capsule:



   3.1. For best results, the Tracer-Stick® should be connected so that the embossed arrow points toward the refrigerant flow.
   3.2. Do not remove both caps at the same time.
   3.3. Replace the cap the arrow points away from with the service valve fitting.
   3.4. Remove the cap the arrow points toward and connect the stick to the hose.

4. Connect the A/C service equipment:
   4.1. Connect the hose assembly with the Tracer-Stick® to the vehicle's low-side service port and to the refrigerant source.
   4.2. The flow through the Tracer-Stick® will be controlled by the valves at the refrigerant source.
   4.3. Inject the dye by operating the A/C on high and allowing a small amount of refrigerant through the stick until it is cleared of all dye (liquid refrigerant works best).
   NOTE:
   - The Tracer-Stick® has a flow restrictor to allow for liquid refrigerant to be used without concern.
   - If you have recovered refrigerant to weigh as part of your diagnostics, or if there is a low charge, it is more
   - efficient to recharge the system using normal procedures before installing the hose assembly. Dye can then be added using about **0.05 lb (0.02 kg)** of refrigerant.
   - You do not need to connect the service equipment's high-side hose to the vehicle to install the dye. If the high-side hose is connected, make sure its coupler valve is closed before proceeding.
   - Do not use the A/C recovery and charging station to recover or evacuate the A/C system when a full dye capsule is attached. The dye will be drawn into the service equipment instead of being added to the vehicle's A/C system.
5. Inspect the A/C system for leaks.
   5.1. Run the A/C system for **5 to 10 minutes** to circulate the dye through the system. Large leaks will be seen immediately as a fluorescent yellow glow.
   5.2. Smaller leaks may require at least **90 minutes** of vehicle operation before they become visible.
   NOTE:
   - Based on the case, you may return the vehicle to the client. Be sure to schedule a return visit **24 to 48 hours** later to ensure the dye has circulated through the system.
   - Turn the ECON button OFF before running the A/C system (If equipped).
   5.3. Stop the vehicle's engine, and inspect the system for leaks using the OPTI-PRO™ UV Plus flashlight and fluorescence-enhancing glasses from the kit. Low ambient light conditions (a dark work area) will aid in locating the leak.
   NOTE: Not all UV lamps work well with all types of fluorescent dye. Use only the lamp provided in the kit to inspect for leaks.
   5.4. Inspect the entire system. Be sure to check these locations:
   - damaged and corroded areas
   - fittings
   - hose-to-line couplings
   - refrigerant controls
   - service ports
   - brazed or welded areas
   - areas near attachment points
   5.5. Check for evaporator leaks from the evaporator drain tube area using the ultraviolet lamp and glasses.
   5.6. After repairing a leak, remove any fluorescent residue using the GLO-AWAY dye cleaner from the kit and hot water. Follow the instructions on the bottle.

R-1234YF A/C LEAK DETECTION KIT

The R-1234yf A/C Leak Detection Kit (P/N TRP1234YFA) is a required special tool. It is used to add small amounts of dye to A/C systems to help locate smaller leaks that an electronic leak detector might not find.

When searching for leaks, always begin by using an electronic leak detector. Refer to service bulletin 18-073, *Bosch ROBLD020 Dual Mode Refrigerant Gas Leak Detector*, for tips on using this tool, then follow up with the R-1234yf A/C Leak Detection Kit.

This detection kit complements but does not replace the electronic leak detector.

NOTE: TRPTP1108P12 R-1234yf Low Density POE Mini-EZ dye and TRPTP10 R-1234yf hose/coupler with purge fitting were auto-shipped in July 2020 for use with this kit.

R-1234yf A/C Leak Detection Kit (P/N TRP1234YFA) includes these items:

- TPOPUVP OPTI-PRO™ UV Plus, rechargeable violet light LED leak detection flashlight (battery included)
- TRPTP1108P12 - (3) R-1234yf Low Density POE Mini-EZ™ Dye Cartridges
- TRPTP9845 - EZ-Ject™ injector assembly
- TRPTP10 - R-1234yf hose/coupler with purge fitting
- TRPTP9940 - Fluorescence-enhancing glasses
- TRPTP19 - Glo-Away™ plus fluorescent dye cleaner
- TRPTP21 - Green carrying case
- TRPTP14 - USB charger (not pictured)

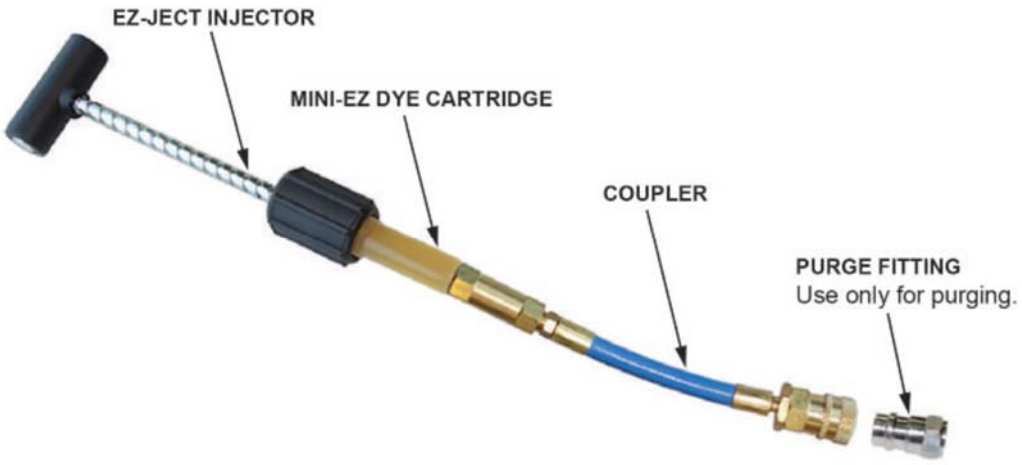


Using the R-1234yf A/C Leak Detection Kit

NOTE:

- Read and review all safety related information provided in the kit before operation.
- Do not run the A/C system while the EZ-Ject dye injector is connected or is being used.
- Do not connect the EZ-Ject dye injector to a system that is evacuated.
- The system must contain enough refrigerant to run the compressor and circulate the dye in order to find leaks.
- The dye may damage the paint and finishes on the vehicle, as well as staining hands and clothing.
- Store in a cool place, away from sunlight.

1. Before adding any leak-detection dye, check if there is dye in the system now.
   - Check for a label in the engine compartment indicating that fluorescent leak-detection dye has been added to the system.
   - Dye may have been added even though no label is present. To confirm this, do the following:
     - Put on the fluorescence-enhancing glasses, and remove the low-side service port sealing cap.
     - Direct the ultraviolet lamp into the valve stem area. If dye has been previously added, the lubricant traces will glow bright yellow. You may need to press the port's valve stem briefly to release some lubricant and dye from the system.
   - If there is no dye in the system, go to step 2.
   - If there is dye in the system, go to step 13. **Do not add more dye.**
2. Unscrew the handle on the EZ-Ject injector completely, and screw in the Mini-EZ dye cartridge.
3. Holding the cartridge vertically, remove the cap and screw the cartridge firmly to the coupler.
4. Insert the adapter/purge fitting into the coupler.
5. Turn the handle to push forward the plunger until a small amount of dye exits the assembly.



6. Remove the adapter/purge fitting.
7. Clean any excess dye from the coupler.
8. The R-1234yf coupler is now purged, ready for use, and will be full of dye.

   NOTE: If the dye charge is lost, repeat steps 2 through 7.
9. Connect the coupler to the service port on the vehicle.
10. Turn the plunger clockwise to inject the dye.
11. Use one 0.25 oz (7.4 ml) Mini-EZ dye cartridge for one vehicle.
12. Disconnect the coupler from the service port, and wipe both clean.
13. Start the engine, and run the A/C system on maximum for **5 to 10 minutes** to circulate the dye.
14. Turn the ignition to OFF.

15. Inspect for possible leaks with the OPTI-PRO Plus flashlight. Leaks will glow bright yellow. The fluorescence will be brightest under low-light conditions.

    15.1. Inspect the entire system. Be sure to check these locations:
    - damaged and corroded areas
    - fittings
    - hose-to-line couplings
    - refrigerant controls
    - service ports
    - brazed or welded areas
    - areas near attachment points

    15.2. Check for evaporator leaks from the evaporator drain tube area using the ultraviolet lamp and glasses.

16. Residual dye could give a false leak indication. Run the A/C system **5 to 10 minutes** and inspect with the ultraviolet light. If there is no visible glow, all leaks have been repaired.

17. To find smaller leaks, run the A/C system for a minimum of **90 minutes** and inspect it again.

    NOTE:
    - Based on the case, you may return the vehicle to the client. Be sure to schedule a return visit **24 to 48 hours** later to ensure the dye has circulated through the system.
    - Turn the ECON button OFF before running the A/C system (If equipped).

18. After the leaks are repaired, clean the residual dye (from the leak sites) with a cloth and GLO-AWAY Dye Cleaner. Check with the lamp to make sure all dye residue is removed.

END