

July 10, 2018

Version 3

A/C Leak Detection

Supersedes 07-025, dated October 12, 2007, see REVISION SUMMARY.

REVISION SUMMARY

This service bulletin has been extensively revised, American Honda recommends to review the whole bulletin.

AFFECTED VEHICLES

All vehicles with conventional A/C Compressors

GENERAL INFORMATION

There are specific leak dye kits for the R-134a and R-1234yf A/C systems; make sure you use the correct kit for to the A/C system you are working on:

- **R-134a** - OPTIMAX Jr.™ A/C Leak Detection Kit (P/N TRP124893)
- **R-1234yf** - R-1234yf Leak Detection Kit (P/N TRP1234yf)

NOTES

- **Do not** use leak-trace dye in any Acura hybrid vehicle equipped with a dual-scroll compressor. This can increase the chance of electric shock. The compressor is easily identified by the orange high-voltage cable that is connected to the compressor body.
- Only Tracer-Stick or Mini-EZ single-dose fluorescent dye capsules 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.

ORDERING INFO

One **OPTIMAX Jr. A/C Leak Detection Kit** (P/N TRP124893) and one **R-1234yf Leak Detection Kit** (P/N TRP1234yf) was shipped to each dealer as a required special tool. Additional kits and replacement capsules may be ordered through the Honda Tool and Equipment Program. On the iN, select **Service > Service Bay > Tool and Equipment Program > Equipment Catalog** tab, then **Air Conditioning Equipment**; or call (888)424-6857.

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.

OPTIMAX JR. A/C LEAK DETECTION KIT

The OPTIMAX Jr.™ R-134a A/C Leak Detection Kit (P/N TRP124893) for Acura vehicles is a required 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 *18-036 Bosch ROBLD020 Dual Mode Refrigerant Gas Leak Detector*, for tips on using this tool, then follow up with the OPTIMAX Jr.

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

OPTIMAX Jr. A/C Leak Detection Kit (P/N TRP124893) includes:

- TRP8640CS - OPTIMAX Jr.™ cordless, fluorescent leak detection flashlight lamp (includes 3 standard AA batteries)
- TRP38600601 - (6) 0.06 oz. (1.7 g) Tracer-Stick® R134a/PAG A/C dye capsules with ID labels
- TRP3887 - R-134a Universal Connect Set™
- TRP120884 - GLO-AWAY™ dye cleaner
- TRP9940 - fluorescence-enhancing glasses
- TRP1143 - (1) empty Tracer-Stick dye capsule



Using the OPTIMAX Jr.

1. Before adding any leak-detection dye, check to see 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:
 - 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.

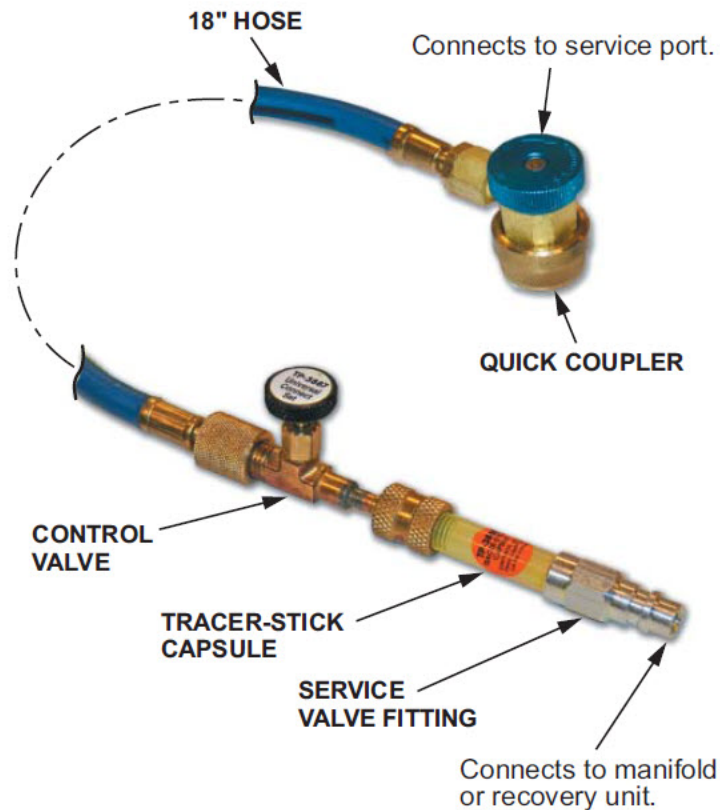
NOTE

Air and moisture must be evacuated from the universal connect set 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. Attach the empty dye capsule (provided in the dye kit) to the control valve fitting.

- 2.2. Attach the service valve fitting (provided in the kit) to the empty dye capsule.
 - 2.3. Attach the low-side hose of the A/C recovery and charging station, and open the quick coupler's hand-wheel valve. Then open the control valve (black knob) on the universal connect set.
 - 2.4. Following the manufacturer's instructions for your recovery and charging station, evacuate the universal connect set **for approximately 3 minutes**.
 - 2.5. When evacuation is complete, be sure the set's control valve is closed (finger tight), and disconnect the A/C recovery and charging station.
 - 2.6. Remove the service valve fitting and the empty dye capsule from the set, and store them for future use.
3. Connect the universal connect set and the Tracer-Stick dye capsule:

UNIVERSAL CONNECT SET COMPONENTS:



- 3.1. Be sure the quick coupler and control valves on the set are closed.
- 3.2. Remove the low-side service port sealing cap, and connect the set to the low-side service port using the quick coupler.
- 3.3. Hold a new dye capsule so that the embossed arrow is pointing up. Remove the black end cap, and carefully attach the capsule to the control valve fitting.

NOTE

The capsule must be held with the embossed arrow pointing up or the dye will leak out of the capsule.

- 3.4. Turn the capsule so the embossed arrow is pointing down. Remove the orange end cap, and carefully attach the service valve fitting provided in the kit (finger tight).

NOTE

The capsule must be held with the embossed arrow pointing down or the dye will leak out.

4. Connect the A/C service equipment:

With the universal connect set and dye capsule attached to the vehicle's low-side service port, connect the A/C refrigerant recovery and charging station's low-side hose quick coupler to the service valve fitting. Open the blue hand-wheel valves on both quick couplers. Leave the control valve (black knob) on the universal connect set closed.

NOTES

- If you have recovered refrigerant to weigh it 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 universal connect set. Dye can then be added using approximately 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 at least 15 minutes to circulate the dye through the system. Large leaks will be seen immediately as a fluorescent yellow glow. Smaller leaks may require at least 24 hours of vehicle operation before they become visible. Operate the A/C system as much as possible during this time to keep the dye circulating.
- 5.2. Stop the vehicle's engine and inspect the system for leaks using the ultraviolet (UV) lamp 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.

5.3. 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

5.4. Check for evaporator leaks by illuminating the evaporator drain tube area with the UV lamp and glasses.

5.5. 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 LEAK DETECTION KIT

The R-1234yf Leak Detection Kit for Honda vehicles, P/N TRP1234yf, is a required 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 might not find.

When searching for leaks, always begin by using an electronic leak detector. Refer to Service Bulletin *18-036 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 detector.

R-1234yf A/C Leak Detection Kit (P/N TRP1234yf) includes:

- TRP8655 - OPTI-PRO™ Plus Violet Light LED Leak Detection Flashlight
- TRP98110301 - (3) Mini-EZ™ R-1234yf A/C Dye Cartridges
- TRP9845 - EZ-Ject™ Injector Assembly
- TRP128021 - R-1234yf Hose/Coupler with Check Valve and Purge Fitting
- TRP127568 - Lithium-ion Rechargeable Battery
- TRP128508 - Smart A/C Charger
- TRP9940 - Fluorescence-enhancing Glasses
- TRP120884 - GLO-AWAY™ Dye Cleaner
- TRP121107 - Black Carrying Case

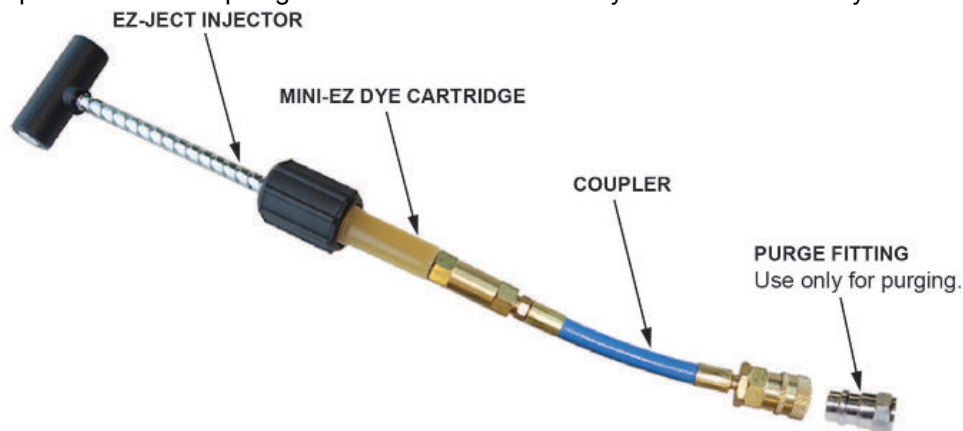


Using the R-1234yf A/C Leak Detection Kit

NOTICE

- Do not operate the A/C system while the EZ-Ject dye injector is connected or being used.
- Do not connect the EZ-Ject dye injector to a system that is evacuated.
- The system must contain enough refrigerant to operate the compressor and circulate the dye in order to find leaks.
- Wear protective glasses or goggles while using the EZ-Ject dye injector and while working on any vehicle systems.
- Keep out of reach of children.

- May damage paints and finishes.
 - May stain hands and clothing.
 - Store in a cool place, away from sunlight.
1. Before adding any leak-detection dye, check to see 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:
 - 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. 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 3 and 4.

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 engine OFF.

15. Inspect for possible leaks with the OPTI-PRO Plus flashlight. Leaks will glow bright green. 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 by illuminating the evaporator drain tube area with the UV lamp and glasses.
16. After the leaks are repaired, clean the residual dye (from the leak sites) with a cloth and GLO-AWAY Dye cleaner. Check the lamp to make sure all dye residue is removed.
17. Residual dye could give a false leak indication. Run the A/C system 5-10 minutes and inspect with the violet light. If there is no visible glow, all leaks have been repaired.
18. To find smaller leaks, operate the A/C system over the next 24 to 48 hours and inspect again.

END