January 23, 2021 Version 8

A/C Leak Detection

Supersedes Version 7, dated October 22, 2020, to revise the information highlighted in yellow.

AFFECTED VEHICLES

ALL

REVISION SUMMARY

Under LEAK DYE, the Leak Dye Application Chart was revised to include current models and leak dye kit numbers.

LEAK DETECTION TYPES

There are several A/C leak detection tools available.

- Refrigerant Gas Leak Detector
- Ultrasonic Leak Detector
- Leak Dye

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

LEAK DYE

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

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. Here are your choices:

- R-134a - OPTIMAX Jr.™ A/C Leak Detection Kit (P/N TRP124893)
- R-1234yf - R-1234yf Leak Detection Kit (P/N TRP1234YF)

NOTE:

- Only the dyes mentioned below from Tracer Products (Tracerline®) are approved for use in Honda 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- Leak dye TRPTP9811P12 has been replaced by TRPTP1108P12.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
Accord	2000–2017	TRPTP3860P12
	2018–2021	TRPTP9811P12 or TRPTP1108P12
Accord Hybrid	2005–2007	Dye use not allowed
	2014–2015, 2017	
	2018–2021	TRPTP9811P12 or TRPTP1108P12
Accord Plug-In Hybrid	2014	Dye use not allowed
Civic	2000–2015	TRPTP3860P12
	2016–2021	TRPTP9811P12 or TRPTP1108P12
Civic GX	2000–2011	TRPTP3860P12
Civic Hybrid	2003–2015	Dye use not allowed
Civic Natural Gas	2012–2015	TRPTP3860P12
Clarity Fuel Cell	2017–2021	Dye use not allowed
Clarity Electric	2017–2019	Dye use not allowed
Clarity Plug-In Hybrid	2017–2021	Dye use not allowed
Crosstour	2011–2015	TRPTP3860P12
CR-V	2000–2016	TRPTP3860P12
CR-V (1.5 L)	2017–2021	TRPTP9811P12 or TRPTP1108P12
CR-V (2.4 L)	2017–2019	Dye use not allowed
CR-V Hybrid	2020–2021	TRPTP9811P12 or TRPTP1108P12
CR-Z	2011–2016	Dye use not allowed
Element	2003–2011	TRPTP3860P12
Fit	2007–2018	TRPTP3860P12
	2019–2020	TRPTP9811P12 or TRPTP1108P12
Fit EV	2013–2014	Dye use not allowed
HR-V	2016–2018	TRPTP3860P12
	2019–2021	TRPTP9811P12 or TRPTP1108P12

Leak Dye Application Chart (cont.)

Insight	2000–2006	Dye use not allowed
	2010–2014	
	2019–2021	TRPTP9811P12 or TRPTP1108P12
Odyssey	2000–2017	TRPTP3860P12
	2018–2022	TRPTP9811P12 or TRPTP1108P12
Passport	2000–2002	TRPTP3860P12
	2019–2021	TRPTP9811P12 or TRPTP1108P12
Pilot	2003–2015	TRPTP3860P12
	2016–2021	TRPTP9811P12 or TRPTP1108P12
Prelude	2000–2001	TRPTP3860P12
Ridgeline	2006–2014	TRPTP3860P12
	2017–2021	TRPTP9811P12 or TRPTP1108P12
S2000	2000–2009	TRPTP3860P12

OPTIMAX JR. A/C LEAK DETECTION KIT

The OPTIMAX Jr.™ R-134a A/C Leak Detection Kit (P/N TRP124893) 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.

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

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

- 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.

NOTE:

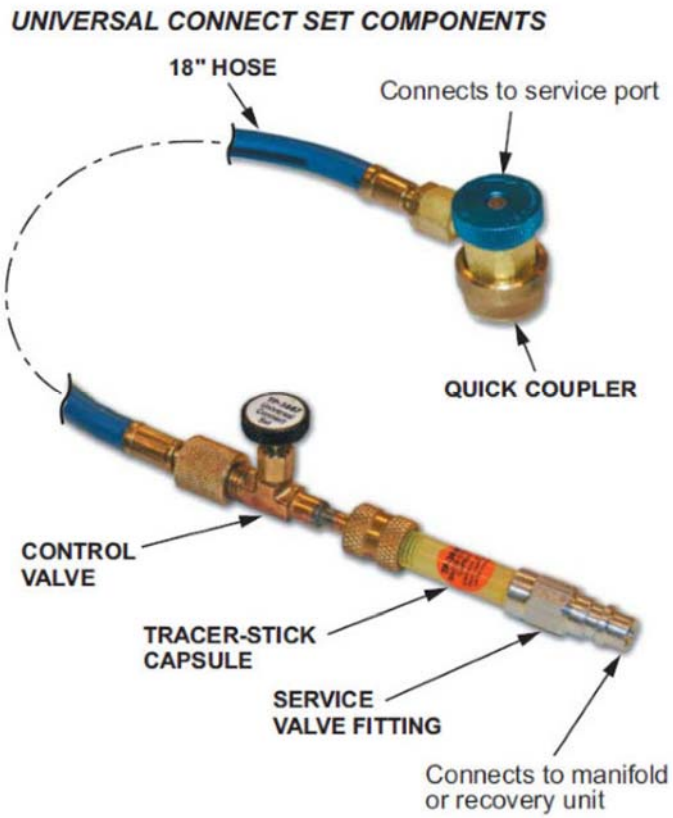
- Read and review all safety related information provided in the kit before operation.
- Do not run the A/C system while the dye injector is connected or is being used.
- Do not connect the dye injector to a system that is evacuated.
- The system must contain enough refrigerant to run the compressor 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 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 about **3 minutes**.
   2.5. When evacuation is complete, be sure the set's control valve is close (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:



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 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:

4.1. 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.

4.2. Open the blue hand-wheel valves on both quick couplers. Leave the control valve (black knob) on the universal connect set closed.

NOTE:

- 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 universal connect set. 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 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.

   5.4. 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 LEAK DETECTION KIT

The R-1234yf Leak Detection Kit (P/N TRP1234yf) 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 R1234yf 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 TRP1234yf) includes these items:

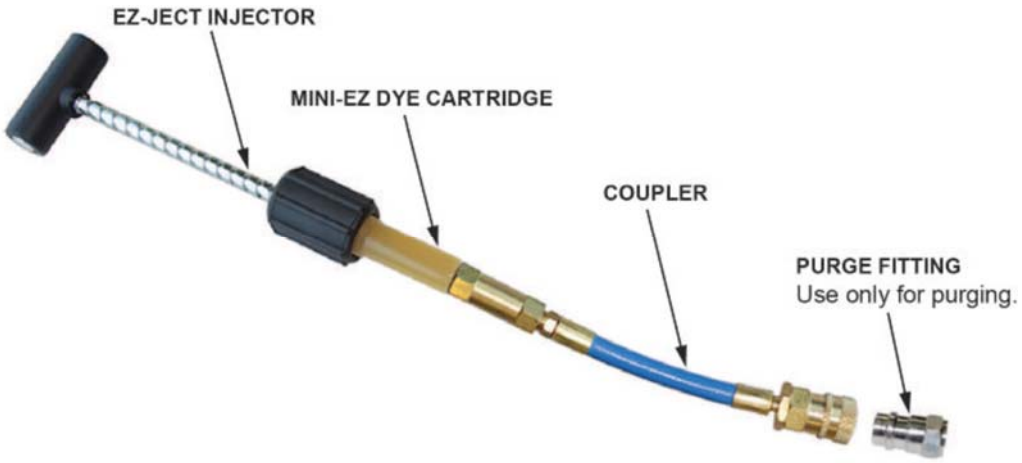
- TRP8655 - OPTI-PRO™ Plus violet light LED leak detection flashlight
- TRP98110301 - (3) Mini-EZ™ R1234yf A/C dye cartridges
- TRP9845 - EZ-Ject™ injector assembly
- TRP128021 - R-1234yf hose/coupler with check valve and purge fitting
- TRP127568 - lithium-ion rechargeable battery
- TRP128508 - smart A/C charger
- TRP121107.- fluorescence-enhancing glasses
- TRP120884 - GLO-AWAY™ dye cleaner
- TRP121107 - black carrying case

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 to10 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