ACURA ServiceNews September 1995

Q & A: R-12 to R-134a Conversions

Since S/B 95-008, *Converting R-12 A/C Systems to R-134a,* was released, Tech Line has been fielding a lot of questions. Here are the answers to the most common questions, clarification about the oil quantity, and a correction to the S/B.

Why do we have S/B 95-008? Do we have to start converting A/C systems now?

Nothing has to be done now. We just want to be prepared for the time when R-12 is no longer available or too expensive. (The R-12 A/C systems listed in the bulletin can be converted to use R-134a for about $64, plus refrigerant and labor.) This conversion information also enables you to satisfy customers who want to convert to R-134a for environmental reasons.

How do you remove the R-12 oil from the system?

It's normally not necessary to remove the existing R-12 oil from the system. However, if the car also needs a new compressor at the time of the conversion, drain the oil from the new compressor before you install it. (New compressors contain enough oil for the whole system.)

Does the remaining R-12 oil mix with the R-134a oil?

The R-12 oil does not mix with R-134a refrigerant, so it accumulates in "low" spots in the A/C system and does no harm. The R-134a oil is "carried" by the refrigerant throughout the system.

Some eagle-eyed folks have noticed that step 6 of the bulletin says "Add 120 *ml* of PAG oil. . ." and the kit instructions say "Add 120 *cc* of PAG oil. . ." This isn't a problem; 120 ml is the same as 120 cc.

In step 7 of the bulletin, change "50 ml" to "50 grams" because it's referring to mass, not volume.

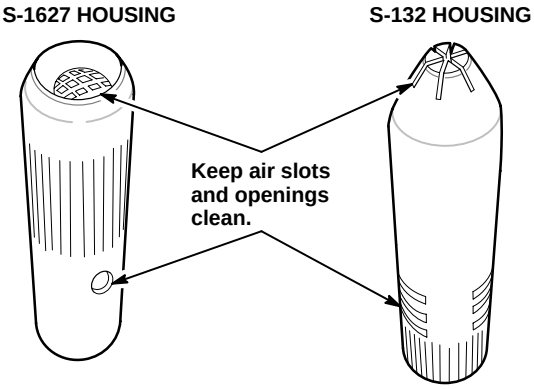
R & R Terminals the Right Way

Before you attempt to remove terminals from a connector housing, refer to S/B 95-007, *Terminal Replacement Instructions,* filed under "Special Tools." This bulletin contains detailed connector illustrations with instructions on how to remove the terminals without damaging them or the connector. Develop your ability to properly remove terminals, and you'll find it easier to verify terminal fit, diagnose circuits, and repair damaged terminals and connectors.

SAE Update for CPS Leak Detector

Back in '92, when some of the '93 models first switched to R-134a refrigerant, all Acura dealers were sent a CPS Products L-780a "Leek-Seeker" leak detector. While we continue to get excellent feedback about these leak detectors, they don't meet the current SAE J1627 standards for leak rate sensitivity. How come? The SAE J1627 standard didn't exist in '92.

These L-780a leak detectors can be easily updated to the SAE J1627 standards by changing the probe tip (sensor housing) to one that flows more air (the S-1627 housing). However, according to CPS Products, you'll get more reliable results with the original tip (the S-132 housing). Just be sure you keep the tip clean and clear of any engine compartment grime. Clean the tip with soap and water; don't use brake cleaner or any other solvents.



If you need to update your current leak detector (some other manufacturers require J1627 equipment for warranty work), or if you're in need of another new leak detector, you can reach CPS Products by phone at (800) 277-3808 or by fax at (305) 687-3743.

New SRS Service Connector: Not Yet

The SRS Service Connector (2W), T/N 07TAZ-SZ50200, is not available yet. This special tool is used to troubleshoot certain SRS trouble codes on the 3.2TL. Instead of merely jumping two terminals like a "short" connector, this connector uses a 2W resistor to simulate the resistance of an airbag inflator. If you need one to diagnose a 3.2TL SRS system problem, call our Special Tools department at (800) 346-6327, and they'll send you a loaner tool.

Track A/C Leaks With Your A/C Leak Detector

An electronic leak detector can be invaluable in locating refrigerant leaks in an A/C system. However, if you're not familiar with the proper techniques for using a leak detector, you may not find and repair the real problem the first time.

Current leak detectors are extremely sensitive. Nowadays, most leak detectors are built to conform to the SAE leak rate sensitivity standard known as J1627. (See the article on the CPS L-780a Leak Detector elsewhere in this issue.) To meet this standard, a leak detector must be able to sniff out a 1/2-ounce-per-year leak from a distance of 1/4 inch while the detector probe is moving 2 inches per second.

With that kind of sensitivity, consider this: Even a small capacity A/C system can tolerate a refrigerant loss of about 2 ounces before there's a noticeable loss in system performance. Consequently, it would take at least four years before a 1/2-ounce-per-year leak might prompt a customer to bring his car in for A/C service. So, even though a good leak detector will find a leak this small, a leak this small really isn't a problem. To fix an A/C system problem right the first time, you must be able to differentiate between significant and insignificant leaks.

When checking an A/C system for leaks, follow these procedures:

- If the system is very low on refrigerant, charge it partially, locate and repair any gross leaks, then charge the system to its normal capacity. (Some leaks are impossible to find unless the system is operating at normal pressures.)
- Refrigerant leaks are also oil leaks. The easiest way to spot a leak is to look for joints or components coated with oily dust. Check for damage and corrosion at the same time.
- When checking the service ports for leakage, be sure the cap seals are in place and the caps are tight. Due to the chemical make-up of the refrigerant and the materials used for the seals, all "Schrader valve" style valve cores allow some refrigerant to permeate through the center seals. The cap is used as the final seal in the system, not just to keep dirt out of the valve. If a valve core were to fail entirely, the cap would retain all the refrigerant. The valve core is there mainly to keep the refrigerant in the system during servicing.
- Both R-12 and R-134a are heavier than air. Always check 360 degrees around all fittings.
- Check the whole system in a continuous path; don't stop the first time the detector indicates a leak. Check all fittings, couplings, service ports, pressure switches, welded areas, and areas around attachment points on lines and components. When checking the crimped metal end on rubber hoses, wiggle the hose around.
- Keep the leak detector on the "Low" setting to cut down on false alarms. On "High," almost anything will set it off (moving air, moisture, other chemicals, leaks too small to repair).
- Move the probe slowly (one inch per second is the recommended rate), and keep it within 1/4 inch of the components. Moving the probe even slower at closer proximities increases the likelihood of finding the leak.
- If the detector begins indicating a leak when it's still several inches from a fitting, you've found a significant leak.
- Check the low-pressure side when the system is not running. Check the high-pressure side when the system is running and also right after turning it off. (The air from the cooling fans may give you false alarms.) Since the compressor and the evaporator are in both sides of the system, check these components when the system is running and when it's off.
- Verify apparent leaks by blowing the area with compressed air, then recheck for leaks. In case of a very large leak, blowing out the area may help pinpoint the exact source of the leak.
- To leak-test the evaporator, run the blower on high for at least 15 seconds, turn it off, and wait 4 minutes for refrigerant to accumulate. Insert the leak detector probe into the evaporator drain hose fitting (if no water's present) or into the opening closest to and below the evaporator (like the heater duct).

ACURA ServiceNews

BSN 17451 (9509)