

A/C Capacities: '90 Thru '98 Models

One of the worst things you can do to an A/C system is add too much refrigerant when you're recharging it. But with S/Ms giving refrigerant capacities in grams, and recovery-recycling-recharging units showing capacities in pounds, ounces, or kilograms, you could miscalculate the amount of refrigerant you're adding.

This chart will help you to add the right amount of R-12 or R-134a. A/C systems for '90 thru '98 vehicles are shown. For each system, the refrigerant quantity is given in grams, kilograms, pounds, and ounces. Make a copy of this chart, and keep it handy when you're recharging A/Cs.

Year/Model	Refrigerant	Capacity:			
		Grams (g)	Kilograms (kg)	Pounds (lb)	Ounces (oz)
'90-91 Civic '90-91 CRX	R-12	550-650 g	0.550-0.650 kg	1.2-1.4 lb	19.4-22.9 oz
'90-91 Prelude '90-91 Accord L4	R-12	900-950 g	0.900-0.950 kg	2.0-2.1 lb	31.7-33.4 oz
'92-93 Civic '93 del Sol	R-12	600-650 g	0.600-0.650 kg	1.3-1.4 lb	21.1-22.9 oz
'92 Prelude	R-12	750-800 g	0.750-0.800 kg	1.7-1.8 lb	26.4-28.2 oz
'92-93 Accord L4	R-12	800-850 g	0.800-0.850 kg	1.8-1.9 lb	28.2-29.9 oz
'94-95 Civic '94-97 del Sol	R-134a	500-550 g	0.500-0.550 kg	1.1-1.2 lb	17.6-19.4 oz
'95-97 Accord V6	R-134a	550-600 g	0.550-0.600 kg	1.2-1.3 lb	19.4-21.1 oz
'93-96 Prelude '94-98 Accord L4 '98 Accord V6 '95-98 Odyssey (front A/C) '96-98 Civic	R-134a	600-650 g	0.600-0.650 kg	1.3-1.4 lb	21.1-22.9 oz
'94-98 Passport	R-134a	650 g	0.650 kg	1.4 lb	22.9 oz
'95-98 Odyssey (front/rear A/C)	R-134a	800-850 g	0.800-0.850 kg	1.8-1.9 lb	28.2-29.9 oz
'97-98 Prelude	R-134a	700-750 g	0.700-0.750 kg	1.5-1.7 lb	24.6-26.4 oz
'97-98 CR-V	R-134a	650-700 g	0.650-0.700 kg	1.4-1.5 lb	22.9-24.6 oz
'98 EV (Electric Vehicle)	R-134a	1,150-1,200 g	1.150-1.200 kg	2.5-2.6 lb	40.5-42.2 oz

NOTE: Pounds and ounces are rounded off to the nearest tenth of a pound and tenth of an ounce.

On retrofitted systems, the R-134a capacity is decreased from the R-12 capacity by 50 grams (.05 kilograms, .11 pound, or 1.76 ounces). *This decrease is incorrectly listed in the retrofit kit instructions as 50 ml.*

A/C Retrofit Part Numbers



Here are the vehicles you can convert to R-134a and the retrofit kit part numbers. For retrofit info, refer to the instructions in each kit, and to S/B 95-020, *Converting R-12 A/C Systems to R-134a* (filed under Accessories in your S/B binder).

Year/Model	R-134a Retrofit Kit
'85-87 Civic '86-87 Accord	P/N 38020-SM4-A2AH, H/C 4729836
'88-93 Civic '88-93 Accord '90-92 Prelude	P/N 38020-SM4-A1AH, H/C 4729828

A/C Conversion Tips

To avoid problems when you convert an R-12 system to R-134a, do these things first:

All Vehicles

- If the A/C is undercharged or doesn't cool properly, determine the cause, and correct it. Causes may include refrigerant leaks, line restrictions, system contamination, or other damage to system components.
- If the compressor makes abnormal noise, the system pressures may be off, or the hoses may be improperly routed. If the pressures and the hoses are OK, repair or replace the compressor.
- If any of the components, fittings, or lines were disconnected for longer than an hour, replace the receiver-dryer.
- Make sure the engine cooling system is full and working properly (coolant in good condition, thermostat working, hoses in good condition, coolant temperature switch OK, fans turning the right direction, etc.).

'91-92 Accords

Replace receiver line A if the charge valve on it points toward the alternator. The replacement line is P/N 80341-SM1-A18, H/C 4052049.

'85-91 Civics and '86-89 Accords with Keihin (Hadsys) Compressors

Replace the complete Keihin compressor, including the clutch, stator, shaft seals, and brackets. Parts for the Keihin compressor replacement are listed in Parts Information Bulletin A95-0005, *Component Sub-assemblies for A/C Compressors*.

What to Do With R-12 Oil on Retrofits

Lately, some confusion has come up on what to do with R-12 oil when you retrofit A/Cs to R-134a. The two possible scenarios you'll face are reusing the compressor or replacing it. Here's what to do for each:

- If you reuse the compressor (what you'll do most of the time), follow the retrofit procedure in the retrofit kit and then add 120 cc of PAG oil before you recharge with R-134a. The R-12 oil remaining in the system shouldn't cause any problems.
- If you need to replace the compressor, drain all the refrigerant oil out of the new one before you install it. (New compressors are pre-filled with R-12 oil, even those labeled "R-134a Retrofit.") Then when you install the compressor, add 120 cc of PAG oil.

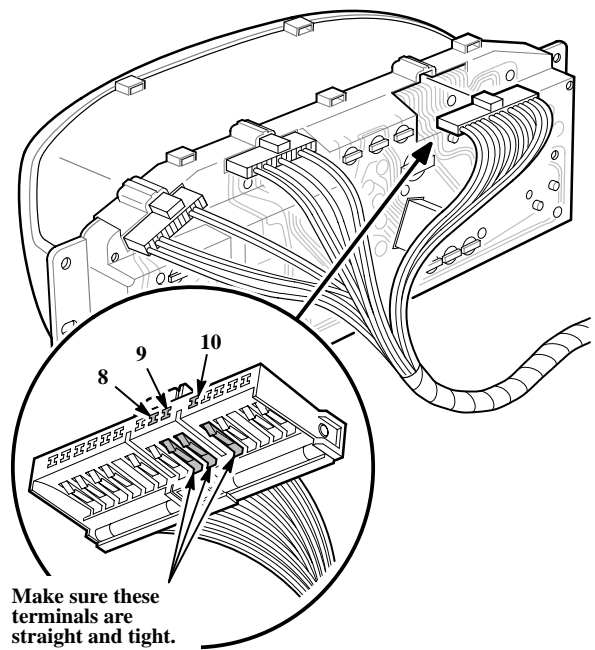
Temp Gauge and Tach Don't Work: '98 Passport

NOTE: This problem may or may not be intermittent.

To fix a non-working tachometer and a coolant temperature gauge that always reads hot, first check fuse No. 11 (15 A) in the passenger's fuse box. If the fuse is good, but you still have the problem, remove the gauge panel, and fix connector I1 (it plugs into the back of the panel). Here's how:

NOTE: If the Passport you're working on also needs the charging system product update (S/B 98-020), fix the connector when you do the product update. This way, the gauge assembly won't need to be removed twice.

1. To access the I1 connector, remove the driver's door sill molding, the left kick panel, the instrument panel, and the gauge panel. (Step-by-step removal is covered in steps 1 thru 8 of S/B 98-020 *Product Update Campaign: Passport Charging System*, filed under Engine Electrical in your Service Bulletin binder.)
2. Disconnect the I1 connector from the back of the gauge panel, and make sure the male terminals (especially Numbers 8, 9, and 10) are straight and tight.



3. Reconnect the connector, and reinstall the parts you removed.

Some Evaporator Noise Is Normal

All A/C evaporators produce a certain amount of noise because of the refrigerant running through the system. But if the noise is louder than on other identical vehicles, there may be too much moisture in the system, or it may be overcharged. Here's what to do:

First, do an A/C performance test to check the system pressures and temperatures (see S/B 96-012 *Air Conditioning System Performance Test*, filed under Accessories in your S/B binder).

Then, evacuate the refrigerant using your recovery-recycling-charging unit and a micron vacuum gauge. A micron gauge is useful because it lets you read vacuum within the 29-inch-range, and small changes in vacuum greatly affect the boiling point of moisture. (For more info on micron vacuum gauges, refer to the September '97 issue of S/N.)

If you don't have a micron vacuum gauge, you'll need to evacuate the system for 3 to 4 hours. (Make sure your vacuum pump is in good working order and that it has the correct amount of clean oil in it.)

Either way you evacuate (with or without a micron gauge), you can shorten the evacuation time and increase its effectiveness by running the engine, with the heater and blower on High, and Recirc on, during the evacuation.

After recharging, make sure that the system pressures and temperatures are correct by comparing them with the A/C performance test chart in S/B 96-012.

Daytime Running Lights for Current U.S. Models?

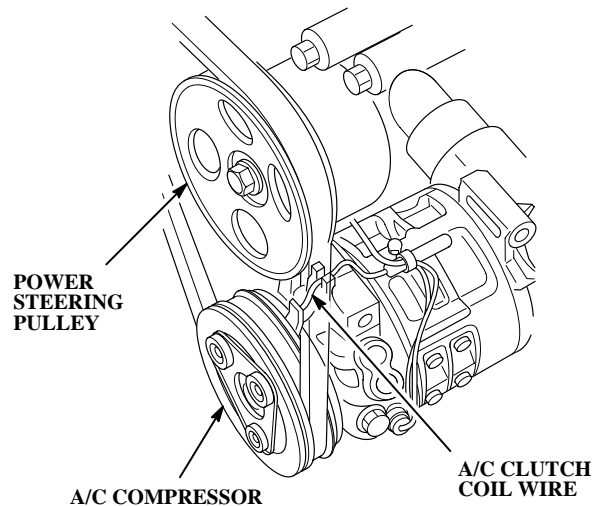
No. Although many S/Ms and ETMs show daytime running lights on Canadian models, this feature can't be retrofitted to a U.S. model. If customers ask you about adding this feature to their vehicles, please tell them it's not possible.

A Common Cause of Door Water Leaks

The plastic cover (rain protector) inside each door is there to keep water from getting into the passenger's compartment. If you have a vehicle with a water leak from the door, remove the door panel, and look for a tear in the plastic cover or a break in its adhesive. If the cover is torn, replace it. If there's a break in the adhesive, reseal the cover with Door Panel Seal Adhesive, P/N 08712-0003, H/C 4162186.

A/C Blows Fuse: '98 Passport

If the A/C on a '98 Passport doesn't work, check fuse No. 5 (10 A) in the engine compartment fuse box. If it's blown, check the routing of the A/C clutch coil wire between the compressor and the power steering pump. (To see it, you need to look at the compressor through the left wheel well.)



If the wire is shorting out against the P/S pulley or the bracket that attaches it to the compressor, repair the wire and reroute it.

Use S/B for Audio Unit Error Codes

If an error code is displayed on the audio unit of any Honda with a CD player or changer, refer to S/B 91-007, *Audio Unit Error Codes* (revised 10/6/97, and filed under Accessories in your S/B binder). This S/B has troubleshooting charts for all error codes, including ones for Passport. It also shows how to remove a stuck CD magazine from the changer, and it provides handling and inspection tips for CDs.

Transmitter Trunk Release Button Operation

To open the trunk with the keyless remote transmitter on a '98 Accord, you need to *press and hold the Trunk Release button for almost 2 seconds*. This is normal; don't try to fix it. If the trunk won't open, even when you hold the button down (not common, but possible), replace the passenger's multiplex control unit.

Brake Fluid Bleeding

NOTE: This subject was also covered in the March '94 issue of S/N.

As you know, most Maintenance schedules recommend changing the brake fluid every 30,000 miles. But changing the fluid in the master cylinder reservoir alone doesn't satisfy this recommendation; the *entire* system must be flushed.

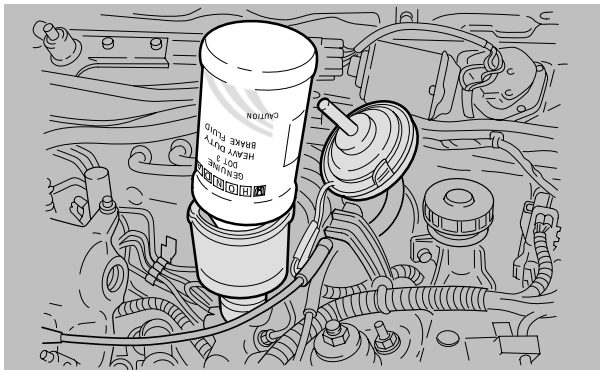
The best way to bleed or flush the brake system is by using a vacuum bleeder or a pressure bleeder. When used properly, either one will ensure that the old brake fluid is thoroughly flushed out.

Before You Bleed

1. Remove the master cylinder reservoir cap and strainer. Then stir the fluid in the reservoir to get any sediment in suspension, and remove it with a turkey baster. (If you're also replacing the brake pads, push the caliper pistons in to force more of the old fluid into the reservoir, and remove that fluid too.)
2. Refill the reservoir with clean brake fluid, and repeat the stirring and removal process until the reservoir is as clean as possible.
3. Refill the reservoir one more time, and continue with vacuum or pressure bleeding.

Vacuum Bleeding

1. Open a full bottle of genuine Honda DOT 3 Brake Fluid (P/N 08798-9008), and then quickly turn it upside down into the master cylinder reservoir. (The reservoir won't overflow; it's the same principle as a bottled water dispenser.) This increases the reservoir capacity by 12 ounces and minimizes the chance of bleeding it dry.



2. Use the bleeding sequence from section 19 of the appropriate S/M, and follow the bleeding instructions that come with your vacuum bleeder.

Vacuum bleeding is also covered in the Honda Technical Training Module BK-16, *Vacuum Brake Fluid Replacement*.

Pressure Bleeding

1. Install the appropriate Power Probe pressure bleeder adapter on the master cylinder. Power Probe adapters are available through the Honda Tool and Equipment program at (888) 424-6857.
2. Use the bleeding sequence from section 19 of the appropriate S/M, and follow the bleeding instructions that come with your pressure bleeder.

Pressure bleeding is also covered in the Honda Technical Training Module BK-17, *Pressure Brake Fluid Replacement*.

'98 CR-Vs Have Seat Belt Tensioners

The front seat belts on '98 CR-Vs are equipped with automatic seat belt tensioners. Tensioners increase the effectiveness of the seat belts by instantly and securely retracting them in a severe front-end collision. After the tensioners deploy in a collision, you'll need to replace them along with the airbags and the SRS unit. For more info, refer to section 24 (Restraints) in the '97-98 CR-V S/M.

Don't Mess With Seat Belt Retractors

Whenever you work on a seat belt system, *never take apart or lubricate the seat belt retractors*. The retractors contain many small parts that are easily damaged. Using lubricants on these parts is a sure way to make them fail. If there's a problem with the retractor, don't mess around, replace it.

New Tool for CV Boot Bands

To install new bands on CV boots, use the new boot band tool (T/N KD-3191, H/C 5816871). In April, this tool was sent to your dealership along with an S/B describing how to use it (98-018, *Boot Band Tool*, filed under Tools in your S/B binder). If you have questions on using the boot band tool, refer to the S/B.

Replacement boot bands come in two sizes: large (P/N 44327-SV4-305, H/C 5316781) and small (P/N 44329-SV4-305, H/C 5316799). For vehicle applications, refer to the latest Parts Catalog.

Fix the ATF Quantities in '98 S/Ms

On several pages of the '98 Accord and Odyssey S/Ms, the ATF quantities are incorrect. Here are the affected S/Ms, the pages, and the correct ATF specs to write in:

Accord S/M, Page 2-12; Odyssey S/M, Page 3-5

Standard or New	Service Limit
For fluid change: 2.5 L (2.6 US qt, 2.2 Imp qt) For overhaul: 6.2 L (6.6 US qt, 5.5 Imp qt)	

6.1 6.4 5.4

Accord S/M, Page 14-109

Automatic Transmission Fluid Capacity:
2.5 l (2.6 U S qt, 2.2 Imp qt) at changing
~~6.2 l (6.6 U S qt, 5.5 Imp qt) at overhaul~~

6.1 6.4 5.4

Accord Coupe L4/V6 S/M Supplement, Page 2-14

Standard or New	Service Limit
For fluid change: 2.7 L (2.9 US qt, 2.4 Imp qt) For overhaul: 6.0 L (6.3 US qt, 5.3 Imp qt)	
850 –910 kPa (8.7 –9.3 kgf/cm ² , 120 –130 psi)	800 kPa (8.2 kgf/cm ² , 120 psi)
840 –920 kPa (8.6 –9.4 kgf/cm ² , 120 –130 psi)	790 kPa (8.1 kgf/cm ² , 120 psi)

6.1 6.4 5.4

Accord Coupe L4/V6 S/M Supplement, Page 3-4:

Do the following items and items in A, B, and C.
M/T: 1.9 L (20 US qt, 1.7 Imp qt) Use Genuine Honda
A/T: F23A1, F23A4 engines: ~~2.7~~L (2.9 US qt, 2.4 Imp qt)
(*1 see page 14-109).
J30A1 engine: 2.9 L (3.1 US qt, 2.6 Imp qt)
(*2 see page 14-111).

2.5 2.6 2.2

Accord Coupe L4/V6 S/M Supplement, Page 3-4:

- Replace transmission fluid. Use Genuine Honda MTF or ATF.
 - M/T : 1.9 L (2.0 US qt, 1.7 Imp qt)
 - A/T : F23A1, F23A4 engines : ~~2.7~~L (2.9 US qt, 2.4 Imp qt)
J30A1 engine : 2.9 L (3.1 US qt, 2.6 Imp qt)

*1: Refer to the 98 ACCORD Service Manual.
*2: Refer to the 98 ACCORD V6 Service Manual Supplement.

Odyssey S/M, Page 4-4 and 4-6

2.5	Capacity for change: 6.3 l (6.7 US qt, 5.5 Imp qt) Check specific gravity for freezing point.
2.6	2.7 l (2.9 US qt, 2.4 Imp qt) for change with Genuine HONDA Premium Formula ATF
	<ul style="list-style-type: none"> • Check the brake pad and disc thickness. Check for damage or cracks. • Check the wheel cylinder for leaks.

Odyssey S/M, Page 14-115

Automatic Transmission Fluid Capacity:
~~2.7 l (2.9 US qt, 2.4 Imp qt) at changing~~
~~6.0 l (6.3 US qt, 5.2 Imp qt) at overhaul~~

6.1 6.4 5.4

Multiplex Sleep Mode Fix: '98 Accord S/M

On page 22-127 of the '98 Accord S/M, there's an error in the multiplex control unit sleep mode confirmation. Please correct step 2 like this:

2. Confirming the sleep mode:
 - 1) Check for voltage between the communication line.
There should be ~~no~~ *approx. 12V* voltage with the sleep mode ON.
There should be standard voltage with the sleep mode OFF (see the voltage test table on page 22-125).

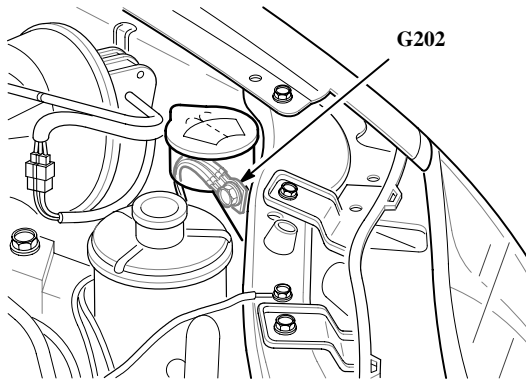
Intermittent Wiper Operation: '98 Accord

On '98 Accords with variable intermittent wipers (all except DX), the intermittent feature is a little different from other vehicles because it's speed-sensitive.

The wipers have three settings: variable intermittent, low, and high. In low and high, the wipers operate continuously. In variable intermittent, the wipers operate once every few seconds, and also change slightly with vehicle speed, working faster as you drive faster. And when you drive over 12 mph with intermittent set to its shortest delay, the wipers switch to low speed; this is how they're supposed to work.

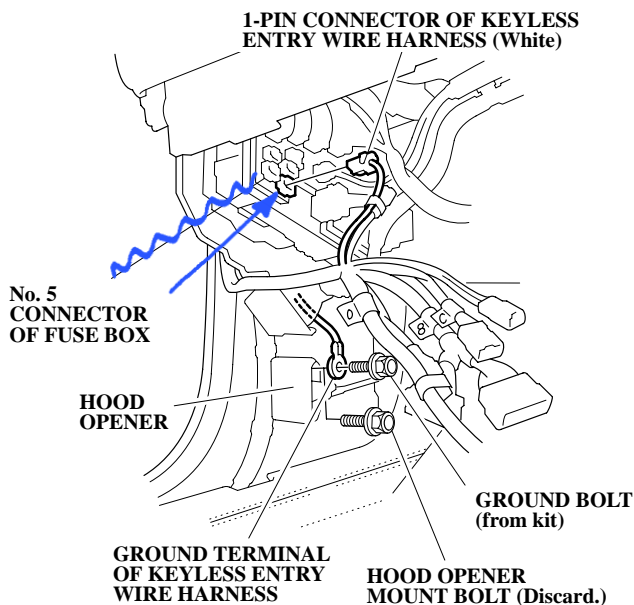
Wipers Operate When Headlights Turn On

If the wipers on a '98 Civic operate when you turn the headlights on (without turning the wiper switch on), check for a loose G202 ground in the left front corner of the engine compartment.



Don't Misconnect the Security Wire Harness

To avoid misconnecting the security system wire harness on a '98 Accord, make sure you connect the white, 1P connector to the No. 5 connector on the driver's fuse/relay box. This correction is needed in the installation instructions for the security system (publication number AII 18899, page 9, step 29) and the LX keyless entry (publication number AII 18935, page 6, step 18). Here's what the correction should look like in your installation instructions:



Don't Return Good Radios

Of all CR-V radios returned under warranty, we're finding that 70 percent of them have no apparent problems. Please help us reduce unnecessary radio replacement by following these important tips:

- Don't replace a CR-V radio for a keyless entry problem. Unlike Civics, the keyless entry control unit is not in the radio chassis. If there's a problem with the keyless entry system, refer to S/B 98-022, *Keyless Remote Transmitter Does Not Work*, filed under Body Electrical in your S/B binder.
- Make sure that all electrical connections between the radio and anything else (antenna, Honda optional audio equipment, etc.) are secure and correct. (This is especially important after installation of a Honda CD player or cassette player.) Just one loose or misconnected wire can cause a problem.
- For reception complaints, make sure the customer knows that the antenna needs to be fully extended when the radio is on. (You'd be surprised at how many problems can be resolved by this one.)
- To check radio reception, compare it with an identical vehicle. Some reception complaints are caused by normal things like weak radio station signals, interference from buildings or other large objects, and even thunderstorms.
- Whenever you return a radio, send it back with a *completed* audio system diagnosis and core return form (reorder number Y0386). To complete the form, you need to diagnose the problem and check off what you found wrong, describing the failure or complaint in as much detail as possible. Just writing down that the radio is "inop," and that you "solved the problem by replacing the radio" isn't good enough.

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