

## Engine Cooling System

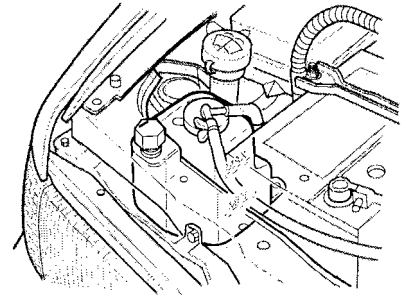
The engine cooling system is designed to maintain the engine at the proper operating temperatures. The cooling system was filled at the factory with a quality engine coolant. The engine cooling system is designed to use coolant (a mixture of water and ethylene glycol antifreeze) rather than plain water. The engine coolant solution should be used year-round. It has many advantages such as:

- provides freezing protection as low as  $-33^{\circ}\text{F}$  ( $-36^{\circ}\text{C}$ )
- provides boiling protection up to  $262^{\circ}\text{F}$  ( $128^{\circ}\text{C}$ )
- protects against rust and corrosion in the cooling system
- maintains the proper engine temperature for efficient operation and emission control
- allows proper operation of the engine coolant temperature gauge

See the Maintenance Schedule in this section to find out when the engine coolant must be replaced.

### Checking the Coolant Level

Check the engine coolant level at the interval shown in the Maintenance Schedule unless there is evidence of leaking or overheating. The engine coolant level should be between the maximum and the minimum level marks on the radiator reserve tank.



### Recommended Lubricant

Ambient Temperature	Lubricant Viscosity to Be Used	
	Rear Axle	Front Axle
Below $50^{\circ}\text{F}$ ( $10^{\circ}\text{C}$ )	SAE 80 or SAE 80W-90	SAE 75W-90 synthetic
$0^{\circ}\text{F}$ to $90^{\circ}\text{F}$ ( $-18^{\circ}\text{C}$ to $32^{\circ}\text{C}$ )	SAE 90 or SAE 80W-90	SAE 75W-90 synthetic
Above $50^{\circ}\text{F}$ ( $10^{\circ}\text{C}$ ) consistently	SAE 140	SAE 80W-90 or SAE 80W-140

You usually do not need to remove the radiator cap to check the engine coolant level.

**⚠ WARNING**

Removing the radiator cap while the engine is hot can cause the coolant to spray out, seriously scalding you.

Always let the engine and radiator cool down before removing the radiator cap.

### Adding Engine Coolant

To add engine coolant, remove the cap on the radiator reserve tank and fill the tank up to the maximum level mark. Add a 50/50 mixture of water and a good quality ethylene glycol antifreeze.

If you need to add engine coolant frequently, see your Honda dealer for a cooling system check.

If the proper quality antifreeze is used, there is no need to add extra inhibitors or additives. They may be harmful to the proper operation of the system.

### Cooling System Service

The cooling system should be serviced at the intervals specified in the Maintenance Schedule as follows:

- Wash the radiator cap and filler neck with clean water.
- Check the engine coolant level in the radiator and have it tested for freeze protection. Add ethylene glycol antifreeze, if needed, to maintain freeze protection at  $-33^{\circ}\text{F}$  ( $-36^{\circ}\text{C}$ ).

- Have the cooling system and radiator cap tested for a pressure capacity of 15 psi (105 kPa). If a replacement cap is needed, use a cap specified for your model.
- Tighten all radiator and heater hose clamps and inspect all hoses. Replace the hoses if they are swollen, "checked," or otherwise worn. Carefully tighten the hose clamps at the radiator. Overtightening could bend or collapse the radiator fittings.
- Clean the front of the radiator core and air conditioning condenser.

It is the owner's responsibility to:

- Maintain the cooling system freeze protection at  $-33^{\circ}\text{F}$

( $-36^{\circ}\text{C}$ ) to ensure protection against corrosion and loss of engine coolant from boiling. This should be done even if freezing temperatures are not expected.

- Add ethylene glycol-based antifreeze when antifreeze has to be added because of engine coolant loss or if more protection against freezing at temperatures lower than  $-33^{\circ}\text{F}$  ( $-36^{\circ}\text{C}$ ) is needed. Do not use an alcohol-based or methanol-based antifreeze, or plain water. They boil at a lower point, and do not provide corrosion protection.

## Thermostat

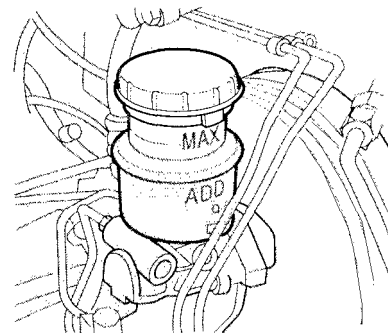
The engine coolant temperature is controlled by a thermostat, which stops engine coolant flow through the radiator until a preset temperature is reached. This thermostat is installed in the engine coolant inlet on the front of the engine block. The same thermostat is used in both winter and summer.

## Other Required Maintenance

### Brake Master Cylinder

Check the master cylinder fluid level in the reservoir every time you check the engine oil level.

The level should be between the MAX and ADD level line. If the level is lower than the ADD level line, fill to the MAX level line with DOT-3 or DOT-4 fluid.



If the diaphragm inside the reservoir cap is deformed, return it to the original (collapsed) condition, then tighten the cap.

It is normal for the brake fluid level to go down slightly as the front brake pads wear. So be sure to keep the reservoir fluid at the proper level.

If the reservoir needs frequent refilling, it may indicate a serious mechanical problem.

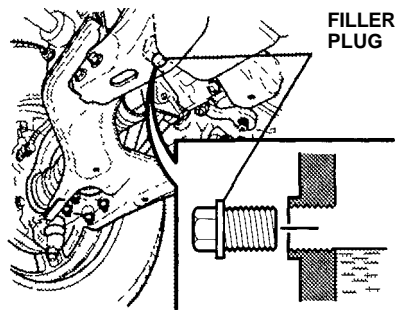
Brake fluid absorbs water from the air. Never use brake fluid that has been open to the air for an extended period. Throw it away and use new brake fluid from a sealed container.

### NOTICE

*Brake fluid can damage your vehicle's paint. Thoroughly clean up any brake fluid spills.*

## Shift-on-the-Fly System

The fluid level in the system should be checked at the intervals shown in the Maintenance Schedule.



Remove the filler plug and make sure the fluid level is up to the edge of the hole. If it is not, add GL-5 gear oil to bring to that level. Use the same GL-5 gear oil specified for the front axle (see page [212](#)).

## Front Wheel Bearings

Clean and repack the front wheel bearings whenever the front brake pads are replaced. Due to the weight of the tire and wheel assembly it is recommended that they be removed from the hub before lubricating the bearings to prevent damage to the oil seal.

"Long Fiber" grease should not be used to lubricate the wheel bearings. It can cause damage. Clean the old grease out of the bearings and hubs before repacking.

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## Hood Latch and Hinges

Lubricate the hood latch assembly and hood hinge assembly as follows:

1. Wipe off any accumulation of dirt or contamination on the latch parts.
2. Apply multipurpose-type grease (NLGI No. 1 or 2) to the hood latch pin cam.
3. Apply light engine oil to all pivot points in the release mechanism.
4. Lubricate hood hinges with multipurpose-type grease (NLGI No. 1 or 2).
5. Check the hood hinges and latch mechanism to assure they are working correctly.

## Air Conditioning

Periodically have your Honda dealer check your air conditioning system to be sure there has been no loss in cooling output. See your Honda dealer if you suspect that the system is not performing as it should.

## Body Lubrication

Normal use of a vehicle causes metal-to-metal movement at certain points in the body. Noise, wear and improper operation at these points will result when a protective film of lubricant is not provided.

For exposed surfaces such as door checks, door lock bolts, lock striker plates, etc., apply a thin film of light engine oil.

Any lubricant should be used sparingly. After application, all

excess lubricant should be carefully wiped off.

The seat adjusters and seat track should be lubricated with water-resistant EP chassis lubricant.

There are other points on the vehicle body which may occasionally require lubrication. Window regulators and controls are confined in the space between the upholstery and the outside door panel. Easy access to the working parts may be made by removing the trim. Door weatherstrips and rubber hood bumpers should be lightly coated with a rubber lubricant.

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## Front (4WD Only) and Rear Propeller Shaft

Lubricate the sliding yoke with EP chassis grease. Lubricate universal joints with grease containing MoS<sub>2</sub> (molybdenum disulfide-type grease) at the intervals shown in the Maintenance Schedule. Also check the propeller shaft flange-to-pinion bolts for proper torque of 64 N.m (46.3 lb-ft).

Most lubrication recommendations and procedures for four-wheel drive-equipped vehicles are the same for the corresponding components in conventional drive vehicles.

## Exhaust System

Check the complete exhaust system and nearby body areas for damaged, missing, or mispositioned parts, open seams,

holes, loose connections, or other deterioration that could allow exhaust fumes to seep into the passenger compartment or cause heat build-up in the floor pan. Any necessary corrections should be made immediately. For continued safety, exhaust system pipes and resonators rearward of the muffler must be replaced whenever a new muffler is installed.

## Fuel Line and Fuel Tank/Cap

Inspect the fuel tank, cap and lines for damage that could cause leakage. Inspect the fuel cap and gasket for correct sealing ability and indications of physical damage. Replace any damaged or malfunctioning parts.

## Drive Belt

Check the belt driving the alternator, power steering pump, and air conditioning compressor.

Look for cracks, fraying, and wear. Replace as necessary.

## Timing Belt

The timing belt should normally be replaced at the intervals shown in the Maintenance Schedule.

## Valve Clearance

Incorrect valve clearance will result in increased engine noise and lower engine output, thereby adversely affecting engine performance.

## Spark Plugs

Replace the spark plugs with the type specified in the "Technical Data" section.

## Clutch

Check the clutch play at the pedal. Lubricate the clutch pedal bushing and clevis pin, at the intervals shown in the Maintenance Schedule, with water-resistant chassis lubricant. If you hear a squeaking noise coming from the area of the bushing or clevis pin at the clutch pedal arm when the clutch pedal is depressed, lubricate it with water-resistant EP chassis grease.

Check the fluid level in the clutch reservoir at the interval shown in the Maintenance Schedule. If the fluid is low in the reservoir, it

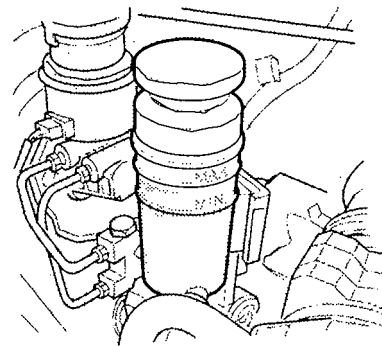
should be filled to the maximum level line with DOT-3 or DOT-4 fluid.

## Fluid or Lubricant Levels

Check the fluid or lubricant level in the brake master cylinder, clutch master cylinder, power steering reservoir, rear axle, engine and transmission, windshield washer reservoir and engine coolant at specified intervals.

## Power Steering

Check the fluid level in the power steering fluid reservoir as recommended in the Maintenance Schedule. The fluid level should be between the "MIN" and "MAX" marks on the reservoir.



Use only automatic transmission fluid labeled DEXRON III.

## Exterior

### Accelerator Pedal Linkage

Lubricate the accelerator pedal fulcrum pin with multipurpose

### Wheel Alignment

Proper wheel alignment improves tire mileage. Your vehicle's suspension parts should be inspected often and aligned when needed (see the "Technical Data" section). Improper alignment will cause the front tires to roll at an angle that will result in faster tire wear.

Proper tire balancing provides the best riding comfort and helps reduce tire tread wear.

Out-of-balance tires can cause annoying vibration and uneven tire wear such as cupping and flat spots.

### Washing Your Vehicle

The best way to preserve your vehicle's finish is to keep it clean by frequent washings. Wash the vehicle with lukewarm or cold water.

Do not use hot water or wash in direct sunlight. Do not use strong soap or chemical detergents. All cleaning agents should be promptly flushed from the surface and not allowed to dry on the finish.

### Polishing and Waxing Your Vehicle

Polishing is recommended to remove accumulated residue and eliminate any "weathered" appearance.

Your Honda dealer offers several polishes and cleaners that have proven to maintain the original finish appearance and durability.

### Protection of Exterior Bright Metal Parts

Bright metal parts should be cleaned regularly to keep their luster. Washing with water is all that is usually needed. However, chrome polish may be used on chrome or stainless steel trim, if necessary. A coating of wax, rubbed to a high polish, is recommended for all bright metal parts.

### Care of Aluminum Wheels

Aluminum wheels have a clear-coat finish similar to paint. Use a chamois skin, sponge or other soft material when washing the wheels.

### Foreign Material Deposits

Calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings,



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chemicals from industrial chimneys, and other foreign matter may damage your vehicle's finish if allowed to remain on painted surfaces.

Prompt washing may not completely remove all of these deposits. Additional cleaners may be needed. When using chemical cleaners developed for this purpose, be certain they are safe for use on painted surfaces.

### **Finish Damage**

Any stone chips, fractures or deep scratches in the finish should be repaired promptly. Exposed metal will corrode quickly and may develop into a major repair expense. Minor chips and scratches can be repaired using touch-up materials available from your Honda dealer.

### **Corrosion Protection**

Your vehicle has been designed and built to resist corrosion. Special materials and protective finishes were applied to most parts of your vehicle when it was built to help maintain its good looks, strength and reliable operation. However, some parts that are normally not visible (such as certain parts under the vehicle and under the hood) are strong enough so that surface rust will not affect their reliability. So corrosion protection is not needed or used on these parts. By omitting unneeded rust protection on such parts and applying extra protection where it is needed most, the best value is assured for the vehicle buyer.

### **Sheet Metal Damage**

If your vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to the parts repaired or replaced so that corrosion protection is restored. (Also see "Finish Damage.")

### **Underbody Maintenance**

Corrosive materials used for ice and snow removal and dust control can collect on the underbody. If these materials are not removed, accelerated corrosion (rust) can occur on underbody parts such as fuel lines, frame, floor pan, and exhaust system even though they have

been coated with corrosion protectants.

At least every spring, flush these materials from the underbody with plain water. Take care to thoroughly clean any areas where mud and other debris can collect. Sediment packed in closed areas of the frame should be loosened before being flushed.

## Interior

With the use of modern trim materials it is very important that proper cleaning techniques and cleaners be used. Failure to do this on the first cleaning may result in water spots, spot rings or setting of stains, all of which make it more difficult to remove on a second cleaning.

The portion of the following cleaning instructions that are in ALL CAPITAL LETTERS are especially important and MUST be followed.

Dust and loose dirt that accumulate on interior fabrics should be removed often with a vacuum cleaner or soft brush. Vinyl or leather trim should be wiped regularly with a clean damp cloth. Normal trim soil, spots or stains can be cleaned with conventional cleaners.

### **Remember These Basic Steps Before Cleaning**

1. Remove stains as quickly as possible before they become "set."
2. Use a clean cloth or sponge and change to a clean area often. (A SOFT brush may be used if stains persist.)
3. Use solvent-type cleaners only in a well ventilated area; also, do not saturate the stained area.
4. If a ring forms after spot cleaning, clean the entire area IMMEDIATELY.
5. Follow specific instructions on the cleaning products' labels.

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## Cleaning Fabric

### *Cleaning General Soilage or Water Spots From Fabric Trim*

Multipurpose powdered cleaner is excellent for this type of cleaning and for cleaning panel sections where small cleaning rings may be left from spot cleaning.

- Vacuum the area thoroughly to remove loose dirt.
- ALWAYS clean a full trim assembly or complete trim section. Mask surrounding trim along stitch or welt-lines.
- Mix the multipurpose powdered cleaner in strict accordance with the directions on the label of its container. Mix in proportion for smaller quantities.

- USE SUDS ONLY ON A CLEAN SPONGE OR SOFT BRISTLE BRUSH. DO NOT SATURATE FABRIC OR RUB HARSHLY WITH THE BRUSH.
- IMMEDIATELY AFTER CLEANING, WIPE OFF EXCESS CLEANER WITH A SLIGHTLY DAMP ABSORBENT TOWEL OR CLOTH.
- IMMEDIATELY AFTER WIPING, FORCE-DRY THE FABRIC WITH AN AIR HOSE, HEAT DRYER, OR HEAT LAMP. Use caution if you are using a heat dryer or heat lamp so you do not damage the fabric.
- When trim materials that have a sheen or lustrous finish are dry, wipe them with a soft, clean cloth to restore the sheen.

### *Spot Cleaning Fabric With Solvent Cleaner*

Before trying to remove a spot or stain from fabric, determine as accurately as you can what kind of spot or stain it is and how long it has been there. Some spots or stains can be removed with water or mild soap solution (see "Removal of Specific Stains"). Spots or stains should always be removed as soon as possible.

Some types of stains or soilage, such as lipstick, inks and grease, are very difficult (sometimes impossible) to completely remove. When cleaning this type of stain or soilage be sure not to enlarge the soiled area. Fabric cleaner (solvent type) is excellent for spot-cleaning grease, oil or fat stains.

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- Gently scrape the stain off trim material with a clean, DULL knife or scraper. USE VERY LITTLE CLEANER, light pressure, and a clean cloth (preferably cheesecloth). Cleaning should be from the outside of the stain, "FEATHERING" towards the center. Keep changing to a clean section of the cloth.
  - When the stain is cleaned from the fabric, immediately dry the area with an air hose, heat dryer or heat lamp to help prevent a cleaning ring. (Use caution with a heat dryer or lamp to prevent damage to fabric.)
  - If a ring forms, immediately repeat the cleaning operation over a slightly larger area with emphasis on "FEATHERING" towards its center. If a ring still

remains, mask off surrounding trim sections and clean the entire affected area with a multipurpose powered cleaner (as described under "Cleaning General Soilage or Water Spots From Fabric Trim").

### ***Removal of Specific Stains***

#### **Grease or Oil Stains**

These include grease, oil, butter, margarine, shoe polish, coffee with cream, chewing gum, cosmetic creams, vegetable oils, wax crayon, tar and asphalts.

- Carefully scrape off excess stain; then use fabric cleaner (solvent type) as previously described.

- Shoe polish, wax crayons, tar and asphalt will stain if allowed to remain on trim; they should be removed as soon as possible. Use caution as cleaner will dissolve them and may cause them to "bleed."

#### **Non-Greasy Stains**

These include catsup, coffee (black), egg, fruit juice, milk, soft drinks, wine, vomit and blood.

- Carefully scrape off excess stain; then sponge stain with cool water.
- If a stain remains, use a multipurpose powdered cleaner (foam type) as previously described.

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- If an odor persists after cleaning vomit or urine, treat area with a water-baking soda solution: 1 teaspoon (5 milliliters) baking soda to 1 cup (250 milliliters) of warm water.
  - Finally, if needed, clean lightly with a fabric cleaner (solvent type).

### **Combination Stains**

These include candy, ice cream, mayonnaise, chili sauce and unknown stains.

- Carefully scrape off excess stain; then clean with cool water and allow to dry.
- If stain remains, clean with a fabric cleaner (solvent type).

### **Cleaning Vinyl or Leather Trim**

Ordinary soilage can be removed from vinyl or leather with warm water and a mild soap such as saddle soap, oil soap or equivalent.

- Apply a small amount of soap solution and allow it to soak for a few minutes to loosen dirt; then rub briskly with a clean, damp cloth to remove dirt and traces of soap. (This may be repeated several times, if necessary.)
- Some compounds such as tar, asphalt, shoe polish etc. will stain if allowed to remain on trim. They should be wiped off as quickly as possible and the area cleaned with a clean cloth dampened with vinyl cleaner (solvent type).

### **Seat Belt Care**

- Clean seat belts only with mild soap and lukewarm water.
- Do not bleach or dye belts since this may severely weaken them.

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## **Cleaning Glass Surfaces**

Glass surfaces should be cleaned on a regular basis. Use of glass cleaner will remove normal tobacco smoke and dust films sometimes caused by ingredients used in vinyls and interior plastics.

Never use abrasive cleaners to clean the glass. They may cause scratches or damage the defogger wires in the rear window.

## ***Tinted Glass***

Tinted, heat-reflecting glass has a metal coating on the interior side. Always clean this metal coating with plain water or a neutral detergent, not harsh chemicals. Wipe with a clean, soft cloth or a paper towel.