
TABLE OF CONTENTS

Safety precautions.....	3 - 7
Defensive driving.....	3 - 8

STARTING AND STOPPING PROCEDURES 4 - 1

General information.....	4 - 1
Detroit Diesel Electronic Control (DDEC).....	4 - 2
World Transmission WT Electronic Control System.....	4 - 3
Manual transmission.....	4 - 7
Cold weather starting.....	4 - 7
Daily inspection.....	4 - 8
Recommendations.....	4 - 9
Heating and air conditioning.....	4 - 10
Preheating systems.....	4 - 13
Windshield washer reservoir.....	4 - 14
Jump starting.....	4 - 15
Electric circuit protection.....	4 - 16
Tires.....	4 - 18
Jacking points.....	4 - 20
Towing.....	4 - 20
Retractable tag axle.....	4 - 21
Tag axle unloaded.....	4 - 21

TECHNICAL INFORMATION 5 - 1

Dimensions.....	5 - 1
Weights.....	5 - 2
Capacities.....	5 - 2
Fuel type.....	5 - 2
Wheels and tires.....	5 - 2
Belts.....	5 - 3
Engines.....	5 - 3
Transmissions.....	5 - 3
Drive axle ratio.....	5 - 3
Brakes.....	5 - 4
Antilock braking system (ABS).....	5 - 4
Steering.....	5 - 4
Electrical system.....	5 - 4

Sound system.....	5 - 5
Video system.....	5 - 5
Suspension.....	5 - 5
Alignment.....	5 - 5
Heating and air conditioning.....	5 - 5
Oil specifications.....	5 - 6
Preheating systems.....	5 - 7
Storage volume.....	5 - 7
Seats.....	5 - 7
Data plate and certification.....	5 - 7
Light bulb data.....	5 - 10
DDEC III diagnostic codes.....	5 - 12
World transmission WT diagnostic codes.....	5 - 14

CARE AND MAINTENANCE 6 - 1

Interior cleaning.....	6 - 1
Exterior cleaning.....	6 - 3
Oil verification.....	6 - 4
Air tanks.....	6 - 7
Coolant level verification.....	6 - 7
Water separator.....	6 - 7
Belt tensioners.....	6 - 8
A/C and heating air filters.....	6 - 8
Flexible hose maintenance.....	6 - 9
Lubrication.....	6 - 9
Fire extinguishers.....	6 - 9
110-120 volt in-station lighting.....	6 - 9
110-120 volt in-station connectors.....	6 - 9
Back-up camera.....	6 - 10
Filter restriction indicator.....	6 - 10
Lavatory maintenance.....	6 - 10
First service on new vehicle.....	6 - 12
Lubrication and servicing schedule.....	6 - 13

SERVICE LITERATURE 7 - 1

Care & maintenance

INTERIOR CLEANING

To provide consistent and quality passenger service, the coach interior must be kept clean at all times. Scheduled servicing of the coach shall include cleaning of all passenger areas.

NOTE: Use only approved cleaning products obtained through a recognized cleaning product supplier. Never use stain protection products on new fabrics. To prevent permanent staining of fabrics, clean stains soon after they occur. Incorrect treatment of stains can worsen them. Get help from a cleaning specialist to remove stubborn stains.

NOTE: The cleaning information provided in this section are recommended cleaning practices. Cleaning results may vary depending on the condition of the stain. Always clean stain promptly for best results.

Seat Upholstery

Normal Cleaning

Firmly beat the seat upholstery with a blunt object, such as a wooden paddle, to release dust and dirt. Vacuum the seat upholstery fabric in the direction of the stitching using an upholstery nozzle.

NOTE: Upholstery life will be reduced due to the abrasive nature of dirt and grit. Vacuum the seat upholstery regularly.

Removal of Stains and Marks

Remove stains and marks from the wool plush as follows:

Method 1

- Apply a nonflammable solvent (Trichloroethylene) to stained area with a clean, white absorbent rag.
- Clean stain starting at the outer edges of the stain and working in towards the center.
- Blot affected area frequently with a clean, dry absorbent cloth to prevent stain rings caused by excess solvent.

WARNING: Use solvents in a well ventilated area. Open all windows and doors.

Method 2

- Wet the stain with a solution of household detergent and lukewarm water. Do not soak the stain.
- Rub the stain with a damp cloth.
- Rinse cloth after each application.

CAUTION: Do not use soap, soap powder, ammonia, soda, bleach or cleaning products containing any of these compounds.

Beverage Stains

Remove beverage stains by following method 1. If stain persists, repeat method 1 using methylated spirits instead of solvent.

Alcoholic Beverage Stains

Remove alcoholic beverage stains by wetting the stain with water, then clean following method 2.

Burns

Scrape burnt area using a knife or razor blade then clean following method 2. Consult an upholstering specialist when dealing with extensive burns.

CARE & MAINTENANCE

Cosmetic Stains

Remove stains left by cosmetics by following method 1 then method 2.

Ink Stains

Remove ink stains following method 2. If stain persists, apply a warm oxalic acid solution. Rinse with water.

Blood stains

Remove blood stains following method 2.

Urine

Remove urine stains following method 2.

Vomit

Remove vomit stains following method 2.

Copying Ink - Ballpoint Pen Ink

Treat with methylated spirits, blotting frequently to avoid spreading stain, followed by method 2.

Marking Ink (Felt-Tip Pens)

Treat with Methyl-Ethyl-Ketone (MEK) followed by method 2.

Oil, Grease and Paint

Remove excess using a knife. Treat with method 1 followed by method 2. If stain persists, repeat procedure.

Rust

Remove rust stains by following method 2. Apply a warm oxalic acid solution to stained areas. Rinse with water.

Tar

Soften Tar with benzene and then treat using method 1 followed by method 2.

Chewing Gum

Soften gum with cyclohexane. Carefully scrape off stains using a sharp knife or razor blade.

Plastic and vinyl

Use a clean, damp cloth or sponge to keep trim free from dust. For other soilage, use a lukewarm all purpose cleaning solution or a mild saddle soap for vinyl trim. Remove water spots and soap traces with a clean, damp cloth or sponge. Use a clean, soft cloth to rub dry.

Grease, tar or oil stains can be removed with a clean cloth or sponge soaked with an all purpose cleaner or with a solvent-type vinyl cleaning agent.

Occasionally, apply a colorless vinyl or leather preservative to retain the material's luster and pliability.

Windows

To clean inside surface of the windows, use a commercial glass cleaner or a 10 to 1 mix of water and white vinegar. For maximum visibility, keep your windows clean at all times.

Rubber components

Should be treated only with pure water or glycerin.

Pressure laminates

Normal maintenance consists in wiping surfaces with a damp cloth and detergent. Remove spillage at once to avoid permanent stains.

To remove stains, first try cleaning the affected area with a household detergent, methylated

spirits or mineral turpentine. If stain is still present, try a mild abrasive and water solution.

Stainless steel

Use a stainless steel cleaner available at any automotive washing and cleaning specialist and follow manufacturer's instructions.

Formica

Remove stains on formica surfaces with a household detergent, methylated spirits or mineral turps. Clean with a mild abrasive and water solution if stains persist.

Carpet

Vacuum carpets regularly to prolong carpet life.

Floor cleaning

Clean floors with a quality nonionic detergent cleaner. Follow the manufacturer's recommendations for cleaning.

Remove any excess detergent solution using a wet/dry vacuum or mop. Rinse floor with a solution of one part Clorox to ten parts warm water.

Polish dry floor using a high-speed buffer and a smooth, red 3-M polishing pad.

Mop floor periodically with a solution of 5% Clorox in warm water.

EXTERIOR CLEANING

The paint on your vehicle is very durable, but must be protected from harsh weather conditions that can make it lose its luster. Therefore, wash and wax your vehicle often. The longer the dirt is left on the paint, the greater the risk of damaging the glossy finish; either by scratching (if the dirt is rubbed into the paint), or simply by the chemical effect dirt particles have on painted surfaces.

Begin by spraying water over the entire vehicle to remove all loose dirt, then wash with a car washing-soap in the concentration recommended by the manufacturer. Rinse afterwards with a generous stream of water.

NOTE: *The vehicle paintwork needs polishing or preserving when water no longer forms droplets on the surface.*

CAUTION: *Do not use hot water. Lukewarm to cool water is less harmful to the paint. Do not use solutions that can damage the body paint.*

Do not aim the water jet directly into openings such as the A/C & heating compartment door grille to avoid water penetration in the fresh air intake duct. If the water jet is under high pressure, avoid aiming the jet directly on condenser and radiator doors as the fins of cores may be damaged.

Do not wash or wax your vehicle in direct sunlight.

The underside of the vehicle picks up dirt and road salt used to keep streets and highways free of snow and ice. To protect against corrosion, it is important to remove mud, debris and road salt from the underside with a powerful water jet. Be sure to include the wheelhousings, bumpers, muffler, tailpipe and brackets. This should be done twice a year and is best accomplished after the vehicle has been driven through a heavy rain. The exterior of the vehicle, engine, engine compartment, aluminum wheels and mirrors should always be washed as soon as possible after accumulating road salt.

NOTE: *Let engine and exhaust cool down before washing.*

Tar or oil

Do not allow tar or oil to remain on the paint. Remove as soon as possible with tar remover or turpentine. After applying cleaning fluids, always wash with a lukewarm water and soap solution, then apply a new coat of wax.

CARE & MAINTENANCE

Insects

Remove as soon as possible with a lukewarm water and soap solution or insect remover.

Tree sap and bird droppings

Do not allow tree sap or bird droppings to harden on the paint. Remove with a lukewarm water and soap solution.

Windows

Keep silicone sprays off the windshield to avoid wiper smear in rain. Clean all windows regularly to remove road film and bus-wash wax buildup. Use a lukewarm soap and water solution or an alcohol-based cleaning agent. If a chamois is used for polishing the glass, it should be used exclusively for that purpose.

Wiper blades

If wiper blades are frozen, remove ice gently by hand to avoid blade damage. Remove all wiper blades periodically and clean them thoroughly with an alcohol-based solution. Use a sponge or soft cloth and wipe lengthwise. Replace wiper blades if they are damaged or do not clean well.

OIL VERIFICATION

Engine oil level

Ideally, check engine oil level when oil is warm with vehicle on a level surface; for instance, during every fuel filling. First, stop engine and wait at least 10 minutes for the oil to drain back into the oil pan. Then, pull out the dipstick, wipe clean, reinsert the dipstick and note the oil level. Maintain the oil level between the two marks on the dipstick, and never allow it to drop below the "L" mark. If required, add oil from the oil reserve tank using the tank valve, then check oil level again. No advantage is gained by having oil level

above the "F" mark. Do not forget to shut off oil reserve tank valve as too much oil can be harmful to the engine.

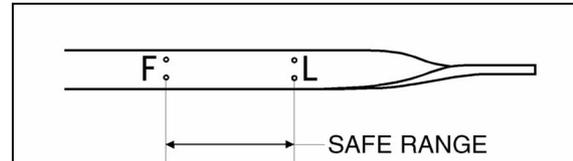


FIGURE 101

01027

NOTE: For location of engine oil dipstick and engine oil reserve tank see figure on page 2-37.

Automatic transmission oil level

Manual oil level check procedure

NOTE: For "Electronic Readout of Oil level sensor" and other transmission related information, see pages 4-3 through 4-7.

WARNING: When checking the oil level, be sure that the transmission is in Neutral, parking brake is properly engaged, and the wheels are chocked. Unexpected and possible sudden vehicle movement may occur if these precautions are not taken.

Special care must be taken not to touch the engine coolant tubing and/or exhaust pipe, as this could cause severe burns.

Do not wear loose clothing and stay away from rotating parts during procedure. Personal injury could occur.

NOTE: Clean around the end of fill tube before removing dipstick. This will aid in preventing dirt and/or foreign matter from entering the fluid system, which can cause valves to stick, undue wear of transmission parts, or clog passages.

Cold Check

The purpose of the Cold Check is to determine if the transmission has enough fluid to be operated safely until a Hot Check can be made.

If the engine has been shut down for an extended period of time, park the vehicle on a level surface and apply the parking brake.

Run the engine for at least 1 minute. Shift to Drive and operate the engine for 30 seconds at 1000-1500 rpm; then shift to Reverse to clear the hydraulic system of air. Then shift to Neutral and allow the engine to idle (500-800 rpm).

After wiping the dipstick clean (see page 2-37 for dipstick location), check the fluid level. If the fluid on the dipstick is within the COLD RUN band, the level is satisfactory. If the fluid level is not within this band, add or drain fluid as necessary to bring the level to the COLD RUN band.

Perform a HOT CHECK at the first opportunity after normal operating temperature (71°C-93°C; 160°F-200°F) is reached.

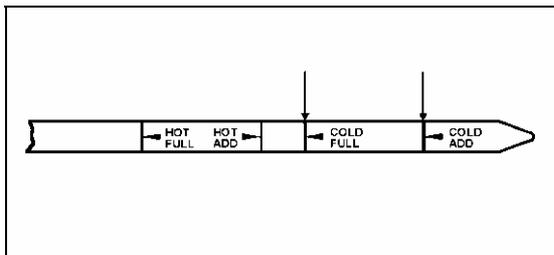


FIGURE 102 07006

CAUTION: An accurate fluid level check cannot be made unless the engine is idling (500-800 rpm) in Neutral, the transmission fluid is at the proper temperature, and the vehicle is on a level surface.

Hot Check

Because the fluid level rises as temperature increases, the fluid must be hot to ensure an accurate check.

Be sure fluid has reached normal operating temperature (71°C-93°C; 160°F-200°F).

Park the vehicle on a level surface and shift to Neutral. Apply parking brake and allow the engine to idle (500-800 rpm).

After wiping the dipstick clean, check the fluid level. The safe operating level is anywhere within the HOT RUN band on the dipstick.

If the level is not within this band, add or drain fluid as necessary to bring the level within the HOT RUN band.

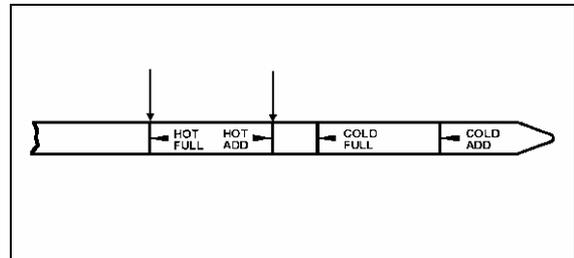


FIGURE 103 07007

Manual transmission oil level

(6 speed & 7 speed)

Oil check

Manual transmission oil should be checked with engine stopped and cold.

WARNING: Before servicing the coach, park safely over a repair pit, apply parking brake, stop engine and set main battery disconnect switch (XL-40) or battery master switch (XL-45) to the "OFF" position.

Unscrew the fill plug and check if the oil level is at the plug thread level.

Refill

Refill manual transmission oil as follows:

- Remove fill plug.
- Add oil until it overflows.
- Clean oil from the transmission case and the fill plug.
- Replace fill plug.

Clutch pedal master cylinder fluid level

Maintain the clutch pedal master cylinder fluid level at the reservoir seam. The fluid reservoir is located under the dashboard near the clutch pedal.

CARE & MAINTENANCE

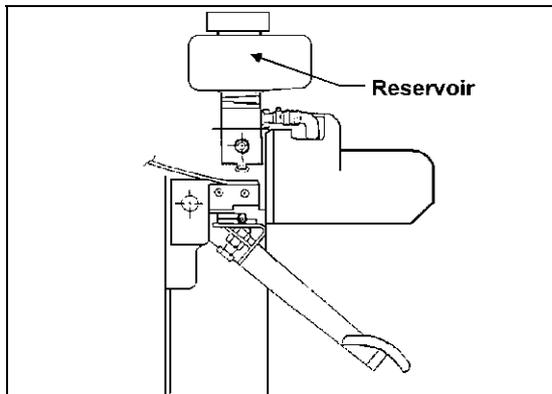


FIGURE 104

07009

Power steering oil level

Your vehicle is equipped with an integrated power steering system. The power steering fluid reservoir is located on the upper R.H. side of engine in the engine compartment (see page 2-37). To check fluid level, proceed as follows:

1. Stop engine, and open both engine rear doors.
2. Unscrew and remove the dipstick located on top of reservoir and wipe with a clean rag.
3. Insert dipstick in reservoir, then remove it again to check fluid level.
4. Adjust level to "FULL" mark using proper dipstick side depending on fluid temperature, use "DEXRON IIE or DEXRON III" automatic transmission fluid.
5. Reinsert and tighten the dipstick.

Fan gearbox oil level

The radiator fan is belt driven from the engine crankshaft pulley through a standard gearbox which is designed with two output shafts (for location of gearbox, see page 2-37). To check fluid level, proceed as follows:

1. Stop engine and make sure that all engine safety precautions have been observed.

2. Remove the dipstick located on top of gearbox and wipe with a clean rag.
3. Insert dipstick in gearbox case, then remove again to check fluid level.
4. Adjust level to \diamond Full \diamond mark using Mobil SHC 634 synthetic oil.
5. Reinsert the dipstick.

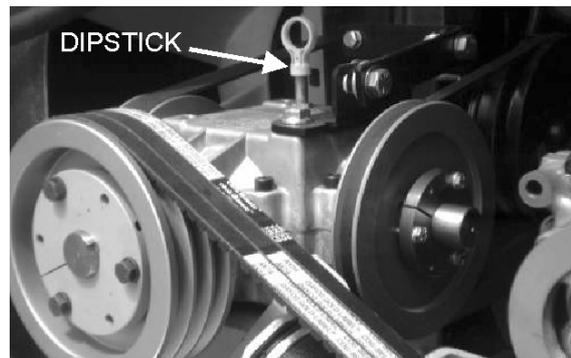


FIGURE 105: Fan gearbox

05008

A/C compressor

The level is acceptable when oil is visible in the sight glass on R.H. side of compressor. For an accurate reading, release tension on belts, then level compressor. The oil level should be in center of sight glass. (see A/C compressor location on page 2-37). To check oil level on compressor used on the optional auxiliary A/C system, refer to the maintenance manual.

Wheel bearing oil level

The oil level for the front and tag axle wheel bearings must be maintained to the level mark in the cap. The level is determined by a line, indicated by arrows, which is incorporated to the plastic lens and passes underneath the words "OIL LEVEL". To check oil level after vehicle has been driven, wait at least 15 minutes to ensure that oil has settled. Drive axle wheel bearings are lubricated by the differential oil. Maintain differential oil level to ensure adequate lubrication of drive axle wheel bearings at all times.

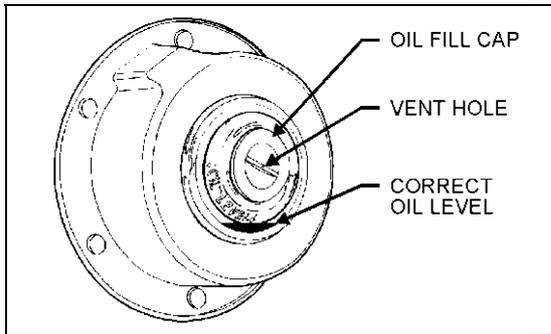


FIGURE 106 13003A

CAUTION: Wheel bearing oil fill cap is supplied with a very small vent hole in its center. Occasionally insert a small tip (toothpick size) to be sure that hole is not plugged; a plugged hole may cause leakage when heat expands the oil and air.

NOTE: On vehicles equipped with grease-lubricated wheel bearings, pack with wheel bearing grease.

AIR TANKS

The air coming from the air dryer is first forwarded to the wet air tank, then to the primary, supplementary primary, secondary and accessory air tanks. Two additional air tanks may have been installed on the vehicle: the kneeling air tank and emergency/parking brake overrule air tank.

The accessory air tank must be purged during pre-starting inspection. A good practice is to purge this reservoir at the end of every working day by using the remote accessory air tank drain valve located in steering compartment underneath accessory air filter.

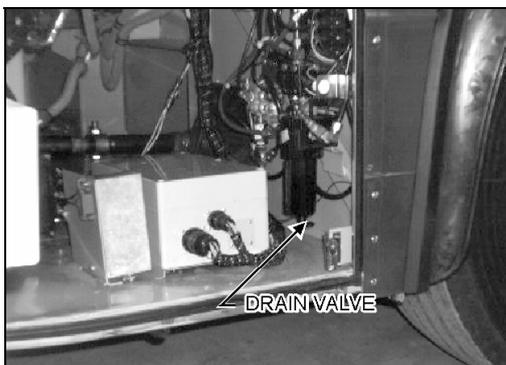


FIGURE 107 12012

Furthermore, purge all tanks using their bottom drain valve each time the oil and filters are changed (maximum 12,500 miles 20,000 km)).

For tank locations, refer to figure in "Lubrication and servicing schedule" further in this section.

COOLANT LEVEL VERIFICATION

The cooling system is completely filled when the coolant (cold) is visible in the sight glass of the surge tank (see page 2-37 for location). If topping-up is necessary, fill the system with the same mixture ratio already used in the system.

WARNING: Hot engine coolant is under pressure. Never remove cap when coolant is hot as severe burns can result. Allow engine to cool before checking coolant level.

WATER SEPARATOR (Optional)

A fuel filter/water separator may be installed in engine's primary fuel filter location, in engine compartment, to prevent water infiltration in engine fuel system. It should be drained periodically, or when the water separator indicator lamp lights in dashboard. To drain, loosen self venting drain below separator, and tighten after water has been flushed out.

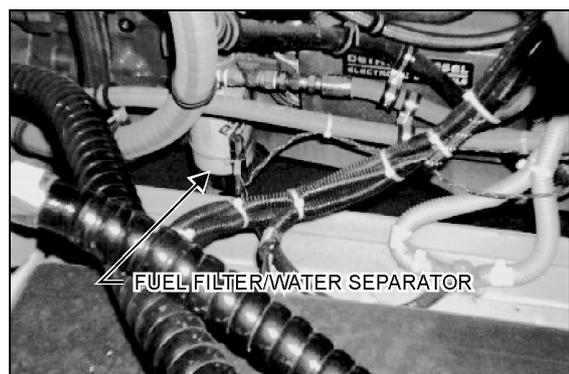


FIGURE 110 03004

CARE & MAINTENANCE

BELT TENSIONERS

Belt tensioning is applied through air bellows which are adjusted by an air pressure regulating valve mounted in engine compartment above the doors. For proper operation of the air bellows, adjust the upper tensioning bracket to provide a 2 3/8" - 2 1/2" (60 - 64 mm) extension with the pneumatic system under normal pressure and the pressure regulating valve set at 50 psi (345 kPa) for Series 60 engines and at 70 psi (482 kPa) for Series 50 engines.

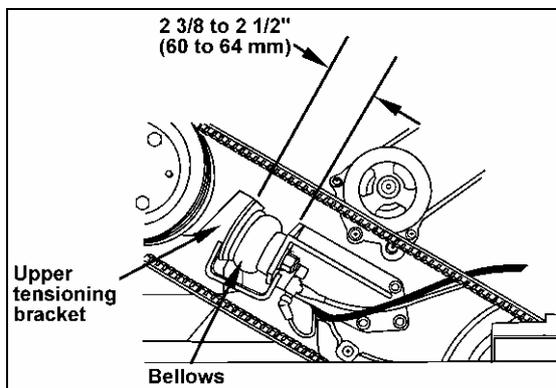


FIGURE 111

12017A

For belt replacement, air pressure must be released from bellows by means of the belt tensioner pressure releasing valve. This valve (see page 2-37 for location) mounted above the engine doors close to the pressure regulating valve, is manually operated. Before handling, be sure that all engine safety precautions have been observed.

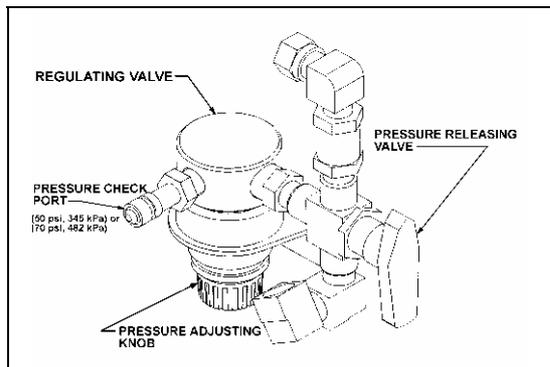


FIGURE 112

12110

A/C AND HEATING AIR FILTERS

For maximum air conditioning and heating system efficiency, air filters should be inspected and cleaned as required in maintenance schedule to ensure proper ventilation of the evaporator and heating radiator cores.

Driver's system

Air filter for driver's system is located under dashboard. To gain access, turn counterclockwise both 3/4 turn knurled fasteners of A/C and heating unit access panel, then lift and remove panel.

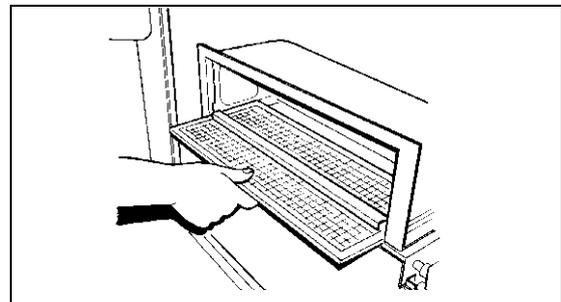
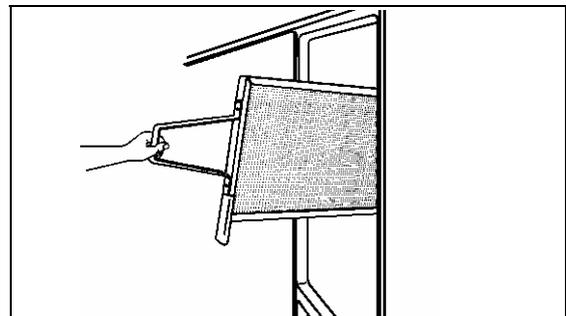


FIGURE 113

22011

Central system

The central system uses two (2) air filters, they are located in the A/C and heating compartment. To gain access, open driver's side baggage compartment, forward of A/C and heating compartment, and open the air filter access panel by unscrewing the three (3) retaining screws. Slide out the upper filter first, then slide out the other.



FLEXIBLE HOSE MAINTENANCE

The performance of engine and related equipment is greatly affected by the flexible hoses' ability to carry fluids or gases. Maintenance of hoses is an important element in ensuring efficient, economical, and safe operation of your vehicle.

Pre-starting inspection

Inspect hoses for leaks, and check all fittings, clamps, and ties carefully. Ensure that hoses are not resting on or touching shafts, couplings, heated surfaces including exhaust manifolds, any sharp edges, or other obviously damaging areas. Since all machinery vibrates and moves to a certain extent, clamps and ties can fatigue with time. To ensure proper support, inspect fasteners frequently and tighten or replace them as necessary.

Leaks

Investigate leaks immediately to determine if fittings have loosened or cracked, and also if hoses have ruptured or worn through. Take corrective action immediately. Leaks are not only potentially detrimental to machine operation, but can also result in added expenses caused by the need to replace lost fluids.

WARNING: *Personal injury and/or property damage may result from fire due to the leakage of flammable fluids, such as fuel or lubricating oil.*

Service life

A hose has a limited service life which is controlled by many factors. With this in mind, it is recommended that all hoses be thoroughly inspected annually. Look for surface damage or indications of twisted, worn, crimped, brittle, cracked, or leaking lines. Hoses having the outer surface worn through or a damaged metal reinforcement should be considered unfit for further service.

It is also recommended that all hoses in this vehicle be replaced during major overhaul and/or after a maximum of five service years.

Replacement hoses and hardware should always be at least equal in quality to that of the O.E.M.

LUBRICATION

A lubrication chart is provided in this section to give locations of key service points on the vehicle. Cleaning, removal or disassembly procedures (required for lubrication purposes) are covered in the applicable sections of this manual.

Lubrication intervals are based on recommendations for normal operating conditions. Where more severe service is encountered, more frequent attention will be required.

FIRE EXTINGUISHERS

In order for fire extinguishers to operate adequately in emergency situations, we strongly recommend that all units be inspected on a monthly basis.

- Check that pressure is adequate and recharge if required.
- Check that seal on handle is intact.
- Check that hose or nozzle is not restricted.
- Keep fire extinguishers clean.
- Note inspection date

110-120 VOLT IN-STATION LIGHTING

An optional exterior connection allows the use of a 110-120 volt lighting system when coach is being serviced or cleaned.

The receptacle for in-station lighting is located L.H. front side of coach between steering compartment door and front axle. A power cable connected at this point will turn on the interior fluorescent lights. It's circuit breaker, located in steering compartment, beneath driver's floor must be reset manually if tripped.

110-120 VOLT IN-STATION CONNECTORS

CARE & MAINTENANCE

The 110-120 volt power connector can be accessed through the engine oil reserve tank service door (see pages 2-34/35 for location). Connect the female extension cord plug to the vehicle's male connector and the other end of the extension cord to a 110-120 VAC outlet only.

Use the heaters whenever the coach is parked for an extended period of time in cold weather and a suitable power source is available.

Both the engine block heater and the water tank heater will automatically be activated when plugged in to an external power source.

CAUTION: Use only a 110-120 VAC power source and only a grounded type (three pronged) extension cord with a minimum rated current capacity of 15 amps. Disconnect the cord before starting engine.

BACK-UP CAMERA

A back-up camera with TV monitor can be installed as an option. When the transmission is placed in (R) reverse range, the camera and TV monitor are automatically switched on. They will switch off when the vehicle is taken out of (R) reverse range.

To clean the camera's protective glass, spray with soapy water and wipe with a clean damp rag or wiper blade.

WARNING: To avoid injury, do not clean camera with transmission in (R) reverse range. Shut-off engine and apply parking brake before cleaning.

CAUTION: To prevent scratches to the camera's protective glass, do not wipe with a dry rag; use a clean damp one.

FILTER RESTRICTION INDICATOR

An optional filter restriction indicator is used to monitor the vacuum level between the air filter and engine. A "red flag" is displayed when the air filter is clogged.

The indicator is located on the engine air intake near the turbocharger. When the "red flag" is

displayed, the air filter must be replaced. Press down on indicator to reset flag.

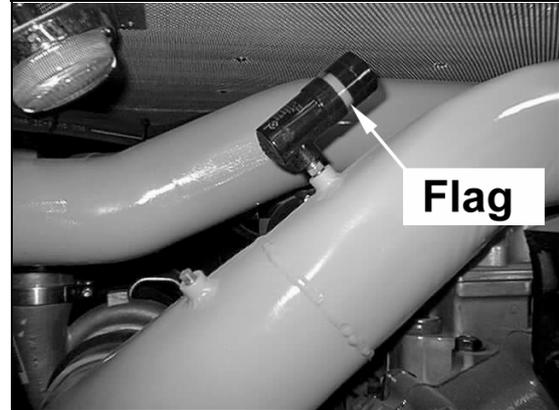


FIGURE 115

04002

LAVATORY MAINTENANCE

Routine draining and filling of lavatory tanks should be performed by maintenance personnel only. If no appropriate power source (110-120 VAC) is available to connect the optional tank heating element (see page 2-34/35 for heater plug location), and if engine or heating failure occurs in extreme weather conditions, emergency draining of water tanks should be performed under the most suitable conditions and should at all times be supervised by driver.

Fresh water reservoir draining

The fresh water reservoir can be drained by simply opening the fresh water drain cock. Don't forget to close cock when draining is done.

CAUTION: If fresh water tank heater is inoperative or not installed on your vehicle, water should be drained from reservoir under cold weather conditions since it might freeze and damage both reservoir and connecting links.

NOTE: If your vehicle is supplied with a 110-120 volt fresh water tank heater, see "110-120VOLT IN-STATION CONNECTORS" on page 6-9.

Fresh water reservoir filling

Plug the fresh water supply hose to the fresh water tank fill connection; fill the reservoir until the overflow tube leaks, signaling that reservoir is full.

WARNING: Never put antifreeze in fresh water reservoir; antifreeze is toxic.

WARNING: If reservoir has not been drained for an extended period of time, draining and filling operations must be repeated three (3) times in order to clean reservoir and eliminate contaminated water.

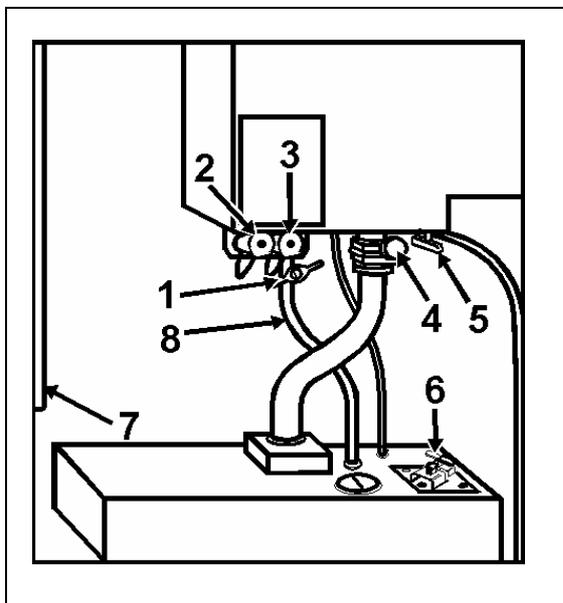


FIGURE 116

23025

- 1..... Main sump tank overflow cock
- 2..... Fresh water tank fill connection
- 3..... Toilet sump tank fill connection
- 4..... Main sump tank drain valve
- 5..... Fresh water tank drain cock
- 6..... Auxiliary sump tank drain valve
- 7..... Fresh water tank vent and overflow indicator
- 8..... Main sump tank clear overflow tube

Main sump tank draining

To drain sump tank, simply pull main sump tank drain valve until draining is done.

Main sump tank filling

Open the main sump tank overflow cock and connect a water supply hose to the toilet sump tank fill connection. The main tank is full when water starts flowing into the auxiliary tank through the main sump tank clear overflow tube. Close main sump tank overflow cock.

CAUTION: In cold weather, add 2 gallons (9 liters) of antifreeze (e.g.: ethylene glycol) in the toilet before filling main tank.

Auxiliary sump tank draining

First, remove drain cap located under auxiliary sump tank then pull auxiliary sump tank drain valve lever up. To close, push valve lever completely down to its locking position. Reinstall drain cap.

NOTE: It is unlawful to dump sump tank contents in any location other than those designated as such.

Cleaning cabinet

The access door, located at rear of coach on R.H. side can ease cleaning of lavatory. Use this door to introduce electrical cords, vacuum cleaner hoses etc..

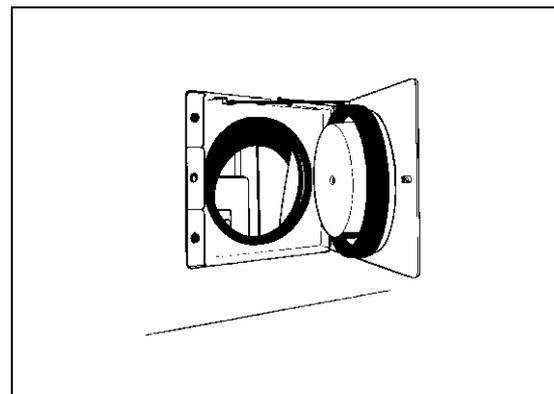


FIGURE 117

23026

CARE & MAINTENANCE

When recirculating water in the toilet is soiled, drain main sump tank into the optional auxiliary tank and perform the filling procedure of the main tank.

When a full draining is required, clean main tank by repeating the draining and filling operations while leaving the auxiliary sump tank drain valve opened. Close valves and pour a pack of commercial toilet deodorant (Prévost part #900329) in toilet before adding the antifreeze and starting final filling of main tank.

WARNING: The toilet deodorant contains products that can be very irritating to skin. Use rubber gloves when handling and then clean toilet seat.

WARNING: Antifreeze must comply with the effective environmental act.

CAUTION: When cold weather is expected and there is no antifreeze in the tank, both sump tanks must be drained.

NOTE: If there is no antifreeze solution in the tank, there is less risk of freezing if engine is operating due to the heat it produces.

New vehicles do not have an antifreeze solution in the sump tanks at time of delivery.

FIRST SERVICE ON NEW VEHICLE

Differential oil

Factory-filled oil in differential on new vehicle should be drained and refilled between 1,000 miles (1 600 km) and 3,000 miles (4 800 km) of initial operation, then according to the lubrication and servicing schedule.

Coolant filter

The coolant filter is designed to recover the soldering residues trapped inside coolant lines during their initial assembly; perform initial element changing once vehicle has run approximately 3,000 miles (4 800 km), then according to the lubrication and servicing schedule. The coolant filter is mounted in A/C & Heating Compartment.

NOTE: If additional soldering has been performed on any points of coolant piping, replace coolant filter element as outlined on new vehicle (3,000 miles (4 800 km)).

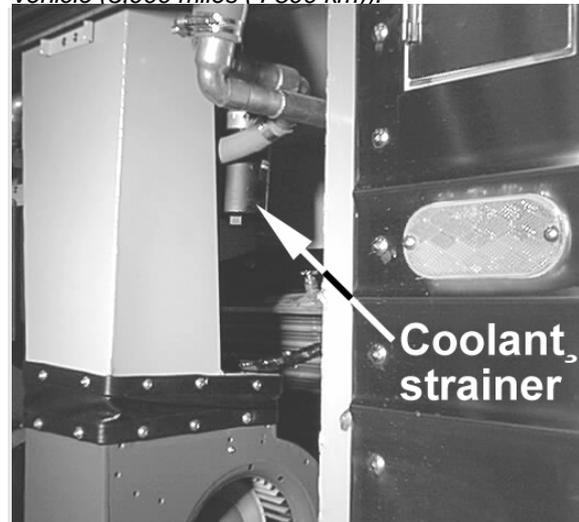


FIGURE 119: A/C & Heating Compartment

05021A

Automatic transmission oil filter

Change cartridge after first 3,000 miles (4 800 km), then after each 25,000 miles (40 000 km) as specified in the lubrication and servicing schedule. Check the oil frequently (with engine stopped); if necessary, add sufficient oil to raise level to the proper mark on dipstick.

Manual transmission

We recommend an initial oil change and flush after the transmission is placed in actual service. This change should be made any time following 3000 miles (4800 km), but *never exceeding 5000 miles (8000 km)*.

Engine oil

There is no special break-in period since engine break-in has been done in factory; Therefore oil should be changed according to the lubrication and servicing schedule intervals. Check the oil at every fuel filling. If necessary, add sufficient oil to raise the level to the proper mark on dipstick.

LUBRICATION AND SERVICING SCHEDULE

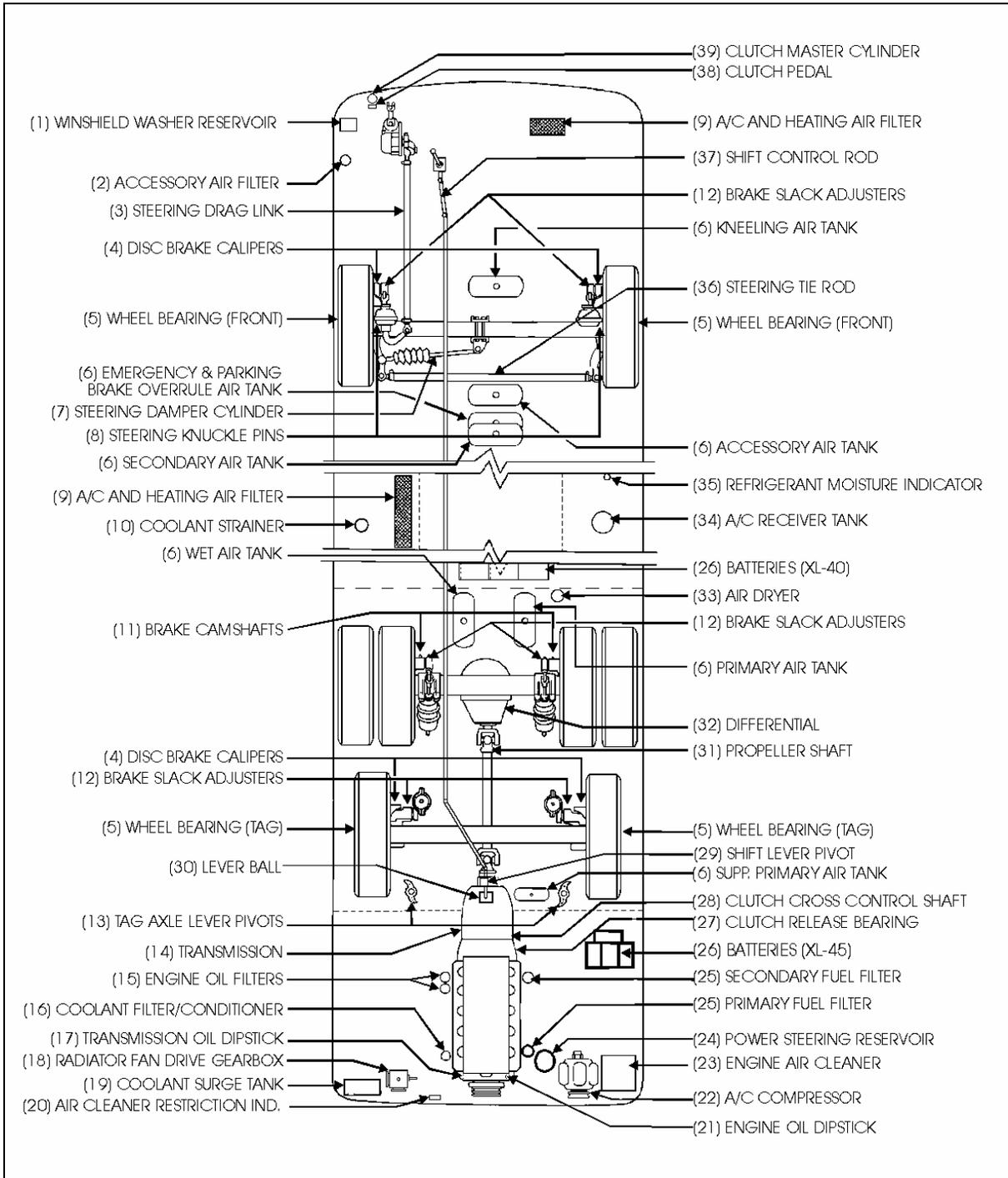


FIGURE 120

24001D

BEFORE OPERATING VEHICLE, PERFORM EACH POINT LISTED IN "STARTING AND STOPPING PROCEDURES" SECTION UNDER HEADING "DAILY INSPECTION..." (PAGE 4-8).

NOTE: Perform the "FIRST SERVICE ON NEW VEHICLE" as outlined on page 6-12.

DAILY WALK-AROUND INSPECTION

It is a good practice to make a basic visual inspection of key areas on the vehicle on a daily basis and to report any problem areas to maintenance personnel for immediate correction.

A) Outside the vehicle

ITEM*	DESCRIPTION
---	Check for leaks under vehicle and in engine compartment
---	Check that baggage and service compartment doors close properly
---	Inspect tires and wheels for correct tire pressure, wear or damage, and for missing wheel stud and nuts
1	Check windshield washer fluid level and add if necessary
---	Check condition of windshield wiper blades
---	Verify proper operation of all road lights, signal lights, brake lights, marker lights, and back-up lights; Replace light bulbs as required
2	Purge accessory air filter and accessory air tank
5	Check front and tag axle wheel bearing oil level

B) Engine compartment

ITEM*	DESCRIPTION
21	Check engine crankcase oil level; Add if necessary
17	Check automatic transmission oil level (level can be checked from pushbutton shift selector); Add if necessary
20 & 23	Check air cleaner restriction indicator, replace air cleaner when red flag locks in full view
24	Check power steering reservoir fluid level; Add if necessary
19	Check coolant surge tank fluid level; Add if necessary
25	Drain accumulated water in primary fuel filter/water separator (if equipped)

* Item numbers refer to figure on page 6-13

C) Inside the vehicle

ITEM	DESCRIPTION
---	Check for proper operation of the entrance door
---	Inspect cleanliness in the steps, aisles, seating area and lavatory
---	Check that emergency exit windows and roof escape hatches can be opened, then close all windows and hatches securely
---	Verify proper operation of windshield wiper/washer
---	Check rear view mirrors for broken glass; Adjust mirrors for adequate rear view vision
---	Start engine and check for proper operation of all gauges and indicator lights
---	Apply brakes and check both primary and secondary pressure gauges
---	Check for proper operation of horns, and back-up alarm

PERIODIC LUBRICATION AND SERVICING SCHEDULE

A) Service every 6,250 miles (10 000 km) or twice a year, whichever comes first.

ITEM*	DESCRIPTION	REMARKS	LUBRICANT &/OR PART**
23	Engine Air Cleaner	Inspect and clean, replace element if required	Filter: #53-0197
22	A/C Compressor	Check oil level, add if necessary	Polyolester oil
34	A/C Receiver Tank	Check refrigerant level, add if necessary	HFC 134a
35	Refrigerant Moisture Indicator	Replace filter dryer unit according to moisture indicator	Filter: #95-0231 (XL-40) #95-0262 (XL-45)
32	Differential	Check oil level, add if necessary	Varies upon operating areas. See Lubricant Specification Chart
18	Radiator Fan Drive Gearbox	Check oil level, add if necessary	Synthetic oil Mobil SHC 634
31	Propeller Shaft	Grease one fitting on each universal joint and one fitting on slip joint	Multi purpose grease
13	Tag Axle Lever Pivot	Grease one fitting on each pivot	Multi purpose grease
12	Brake Slack Adjuster	Grease one fitting on each slack adjuster (all axles)	Rockwell 0-616-A, Grade 1
7	Steering Damper Cylinder	Grease one fitting at cylinder rod end	Multi purpose grease
36	Steering Tie Rod	Grease one fitting at each end	Multi purpose grease
4	Disc Brake Calipers	Grease two fittings on each of front and tag axles.	Rockwell 0-616-A, Grade 1
3	Steering Drag Link	Grease one fitting at each end	Multi purpose grease
14☐	Manual Transmission	Check oil level, add if necessary	Engine oil: SAE 30, 40, 50 or gear oil: SAE 80, 90
30☐	Lever Ball	Grease one fitting	Multi purpose grease
28☐	Clutch Cross Control Shaft	Grease three fittings	Multi purpose grease
27☐	Clutch Release Bearing	Grease one fitting	Multi purpose grease

* Item numbers refer to figure on page 6-13

** See end of this section for lubricant and part number specifications.

☐ With manual transmission only.

B) Service every 12,500 miles (20 000 km) or once a year, whichever comes first.

ITEM*	DESCRIPTION	REMARKS	LUBRICANT &/OR PART**
15	Engine	Change oil and filters	Motor oil: SAE 15W40, API CF-4 Filters: #51-0458
25	Fuel Filters	Change primary and secondary fuel filters (Fill with clean fuel before installation)	Primary: #51-0137 Prim. w/sep.: #53-1390 Secondary: #51-0128
16	Coolant Filter/Conditioner	See ◇ F) Miscellaneous Service ◇	-----
39 [⊠]	Clutch Master Cylinder	Check oil level	Brake fluid (DOT 3)
6	Air Tanks	Drain accumulated water in all tanks	-----
9	A/C and Heating Air Filters	Clean or replace elements	Driver's air filter: # 87-1049 Central air filter: # 87-1069

C) Service every 25,000 miles (40 000 km) or once a year, whichever comes first.

ITEM*	DESCRIPTION	REMARKS	LUBRICANT &/OR PART**
38 [⊠]	Clutch Pedal	Check and adjust if necessary	-----
37 [⊠]	Shift Control Rod Universal Joints	Grease four fittings	Low Temperature grease
14	Automatic Transmission	Change oil and filters	Dexron-II or Dexron-III

* Item numbers refer to figure on page 6-13

** See end of this section for lubricant and part number specifications.

⊠ With manual transmission only.

D) Service every 50,000 miles (80 000 km) or once a year, whichever comes first.

ITEM*	DESCRIPTION	REMARKS	LUBRICANT &/OR PART**
24	Power Steering Reservoir	Replace oil filter cartridge element	Cartridge: #66-0987
10	Coolant Strainer	Replace element	Element # 87-1029
19	Coolant Surge Tank	Test coolant solution	-----
8	Steering Knuckle Pins	Grease two fittings on each knuckle	Multi purpose grease
14▣	Manual Transmission	Change oil	Engine oil: SAE 30, 40, 50 or gear oil: SAE 80, 90
29▣	Shift Lever Pivot	Dismantle and lubricate all components	Low Temperature grease
18	Radiator Fan Drive Gearbox	Change oil	Synthetic oil Mobil SHC 634
---	Flexible hoses	Thoroughly inspect all hoses	-----

E) Service every 100,000 miles (160 000 km) or once every two years, whichever comes first.

ITEM*	DESCRIPTION	REMARKS	LUBRICANT &/OR PART**
2	Accessory Air Filter	Change filter element	Element # 64-1340
33	Air Dryer	Change cartridge	Cartridge # 64-1244
39▣	Clutch Master Cylinder	Drain oil and refill	Brake fluid (DOT 3)
32	Differential	Change oil, clean breathers	Varies upon operating areas. See Lubricant Specification Chart
11	Brake Camshaft	Grease one fitting on each drive axle drum brake	Multi purpose grease

* Item numbers refer to figure on page 6-13

** See end of this section for lubricant and part number specifications.

▣ With manual transmission only.

F) Miscellaneous Service

ITEM*	DESCRIPTION	REMARKS	LUBRICANT &/OR PART
26	Battery Terminals	Clean and coat terminals yearly	Battery terminal coating
19	Cooling System	Drain, flush and refill every two years or 200,000 miles (320 000 km)	Engine coolant
---	Discharge Tubes (rubber tubes located under vehicle)	Every three months: Check 4 condenser's discharge tubes Check 6 evaporator's discharge tubes Check 2 front discharge tubes	-----
16	Coolant Filter/Conditioner	Replace Precharge Element Filter with a Maintenance Element Filter after 12,500 miles (20 000 km) or after one year, whichever comes first. Then, install a new Maintenance Element Filter and replace every 200,000 miles (320 000 km) or two years, whichever comes first. Note: A Precharge Element Filter must be installed each time the cooling system is drained and flushed prior to installing a Maintenance Element filter.	Maintenance Filter: #550630 Precharge Filter: #550629

* Item numbers refer to figure on page 6-13.

Lubricant Specifications

ITEM*	DESCRIPTION	SPECIFICATIONS
21	Engine Oil	SAE Viscosity Grade: 15W40 API Classification: CF-4
24	Power Steering Oil	Automatic Transmission Oil (Dexron-II or Dexron-III)
19	Engine Coolant	Low silicate, ethylene glycol coolant 50% antifreeze/water solution is normally used. Antifreeze concentration should be between 30% and 67%.
22	A/C Compressor Oil	Polyolester Oil, HFC 134A compatible Castrol SW-68 (POE) or equivalent
32	Differential Oil	Multigrade gear oil meeting MIL-L-2105-D: 85W140 is recommended. If temperature drops below 10°F (-12°C), 80W90 should be used, and below -15°F (-26°C), 75W90 should be used. In extreme conditions or for better performance, full synthetic gear oil can be used.
18	Fan Gearbox Oil	Synthetic oil Mobil SHC 634 or equivalent
17	Automatic Transmission Oil	Dexron-II or Dexron-III
	Manual Transmission Oil	Heavy duty engine oil meeting MIL-2104-C: SAE 30 (Northern climate), SAE 40, SAE 50 Straight mineral gear oil: SAE 80 (Northern climate), SAE 90

Lubricant Specifications (Cont'd)

ITEM*	DESCRIPTION	SPECIFICATIONS
39	Clutch Master cylinder Oil	Heavy duty brake fluid meeting DOT 3 specifications
	Low Temperature Grease	Good quality low temperature grease; Prolab AF-100 grade 1, or equivalent
---	Multi Purpose Grease	Good quality lithium-base grease: NLGI No.2 Grade is suitable for most temperatures NLGI No.1 Grade is suitable for extremely low temperatures

* Item numbers refer to figure on page 6-13.

Part Number Specifications

ITEM*	DESCRIPTION	PREVOST NO	SUPPLIER NO
15	Engine Oil Filters	#51-0458	Detroit Diesel: 25014505 AC Rochester Div. GM: PF2100
24	Power Steering Reservoir Oil Filter	#66-0987	Nelson #83804 E
23	Engine Air Cleaner Filter	#53-0197	Nelson: 70337-N Baldwin: PA-2839 Donaldson: P52-2874 Fram: CA-7113
35	Refrigerant Filter Dryer Unit	#95-0231 (XL-40) #95-0262 (XL-45)	Alco controls: EKH 307S (modified) Henry #815031 - XH9
25	Engine Primary Fuel Filter	#51-0137	Detroit Diesel: 23518481 AC Rochester Div. GM: TP-915D
25	Engine Primary Fuel Filter with Water Separator (optional)	#53-1390	Racor # S 3202
25	Engine Secondary Fuel Filter	#51-0128	Detroit Diesel: 23518482 AC Rochester Div. GM: TP-916D
16	Engine Coolant Filter/Conditioner	#55-0630	Detroit Diesel: 23507545 Nalco Chemical Company: DDF3000
9	A/C and Heating, Driver's Air Filter	#87-1049	Permatron Corp.: Model "R"
9	A/C and Heating, Central Air Filter	#87-1069	Permatron Corp.:IN 1x10x37 EXACT
14	Automatic Transmission Oil Filter Kit	#57-1687	Allison: 29503829
10	Coolant Strainer	#87-1029	Parker # 925566
2	Accessory Air Filter	#64-1340	Pneumac #4338-04
33	Air Dryer Cartridge	#64-1244	Allied Signal #107796

* Item numbers refer to figure on page 6-13.