

CLEANING	131
SEAT UPHOLSTERY	131
PLASTIC AND VINYL	132
WINDOWS	132
STAINLESS STEEL	132
FORMICA	132
CARPET	132
RUBBER COMPONENTS	132
FLOOR CLEANING	132
EXTERIOR SURFACES	132
WINDSHIELD	133
FLUID LEVEL VERIFICATION	133
ENGINE OIL LEVEL	133
TRANSMISSION OIL LEVEL	134
POWER STEERING FLUID LEVEL	135
COOLING FAN RIGHT ANGLE GEARBOX OIL LEVEL	136
DRIVE AXLE WHEEL BEARING OIL LEVEL	136
FRONT AND TAG AXLE WHEEL HUBS	136
COOLANT FLUID LEVEL	136
WINDSHIELD WASHER & HEADLIGHTS WASHER RESERVOIRS	137
OTHER VERIFICATIONS	137
AIR TANK PURGE	137
FIRE EXTINGUISHERS	138
FUEL FILTER / WATER SEPARATOR	138
AIR COMPRESSOR BELT TENSION ADJUSTMENT	139
FAN AND ALTERNATOR DRIVE BELTS	139
BACK-UP CAMERA	139
AIR FILTER RESTRICTION INDICATOR	139
A/C AND HEATING SYSTEM AIR FILTERS	140
HOSE INSPECTION	140
LUBRICATION	141
WHEELS AND TIRES	141
WHEEL BEARINGS	141
SERVICE BRAKE TEST	141
PARKING/EMERGENCY BRAKE TEST	141
EXTERIOR LIGHTING VERIFICATION	141
GENERAL RECOMMENDATIONS	143

130 Care and Maintenance


COMPONENTS IDENTIFICATION 145
WALK-AROUND INSPECTION (BEFORE EVERY TRIP) 146

CLEANING

The cleaning information provided in this section is regarded as recommended cleaning practices. Cleaning results may vary depending on the condition of the stain. Always clean stains promptly for best results.

NOTE

Use only approved cleaning products such as PrevoSt A.P.C., all purpose cleaner (PrevoSt # 683664). 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.

 **CAUTION**

Custom fabrics and materials may require different cleaning and maintenance practices. Consult your converter.

SEAT UPHOLSTERY

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

NOTE


The abrasive nature of dirt and grit. will reduce upholstery life expectancy. Vacuum regularly.

Removal Of Stains And Marks

Depending on the nature of the stain, apply one of the two methods explained below to remove stains and marks on wool plush.

Method One:


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

 **DANGER**

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

Method Two

1. Wet the stain with a solution of household detergent and lukewarm water. Do not soak the stain;
2. Rub the stain with a damp cloth;
3. 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 one. If stain persists, repeat method one using methylated spirits instead of solvent.

Alcoholic Beverage Stains

Remove alcoholic beverage stains by wetting the stain with water, then cleaning following method two.

Burns

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

Cosmetic Stains

Remove stains left by cosmetics by following method one then method two.

Ink Stains

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

Blood, Urine Or Vomit Stains

Remove such stains by following method two.

Copying Ink - Ball-Point Pen Ink

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

Marking Ink (Felt-tip Pens)

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

Oil, Grease And Paint

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

Rust Stains

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

Tar

Soften tar with benzene, then treat using method one followed by method two.

Chewing Gum

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

PLASTIC AND VINYL

Clean plastic and vinyl trim using a clean damp cloth or sponge. For vinyl trim marks, use a lukewarm all purpose cleaner or a mild saddle soap. Remove water spots and soap traces using a clean damp cloth or sponge. Dry with a clean soft cloth.

Remove grease, tar or oil stains with a clean cloth or sponge and an all purpose or solvent-type vinyl cleaner.

Apply a colorless vinyl or leather protective product to maintain the luster and pliability of the plastic or vinyl surface.

WINDOWS

Clean the inside of the windows with a solution of one part vinegar to ten parts water.

STAINLESS STEEL

Use a stainless steel cleaner and follow the manufacturer's instructions. Stainless steel cleaning solution may be ordered from Prevost Car Inc. quoting part number 68-0356.

FORMICA

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

CARPET

Vacuum carpets regularly to prolong carpet life.

RUBBER COMPONENTS

Use only pure water or glycerin to clean stains on rubber components.

 CAUTION
Never use solvents on rubber components.

FLOOR CLEANING

Clean vinyl 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 per cent Clorox in warm water.


<i>NOTE</i>
<i>For custom or special floor covering materials, consult the manufacturer or your converter for information on how to clean and maintain these types of floors.</i>


EXTERIOR SURFACES


Frequent washing and waxing of the vehicle exterior will help protect the finish and luster. The paint finish is attacked by the abrasive effects of airborne particles and corrosive pollutants.


Before washing the exterior of the vehicle, close the fresh air dampers using the "REC" button located on HVAC control panel and on the air intake duct in the evaporator compartment. Install keyhole protectors to prevent water from penetrating. Rinse vehicle with water to remove all loose dirt. Wash vehicle using a quality brand car wash soap. Follow manufacturer's recommendations for cleaning. Rinse well with water.

The vehicle exterior should be cleaned, waxed and buffed when water droplets no longer form on the painted surfaces.

 **CAUTION**
Hot water can damage paint. Keep water cool or lukewarm.

 **CAUTION**
Make sure cleaning solutions are not harmful to painted surfaces. Read the manufacturer's instructions before using.

 **CAUTION**
Do not spray water jet directly into fresh air inlet dampers.

 **CAUTION**
Do not aim high pressure water jet at radiator doors. This could damage the radiator fins.

To prevent corrosion, remove caked-on dirt and road salt from the vehicle underbody using a high pressure water jet. Clean wheel housings, bumpers, muffler, tailpipe and brackets.

Carry out corrosion prevention cleaning at least twice a year. Spray underneath of the vehicle and let soak before cleaning. Let engine and exhaust system cool down before cleaning.

Tar Or Oil

Remove tar or oil as soon as possible with an approved automotive tar and oil remover or turpentine. Thoroughly clean area with car wash soap and water. Let dry, then wax.

Insects

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

Tree Sap

Remove tree sap or bird droppings with lukewarm soap and water. Do not allow to harden.

WINDSHIELD

To prevent windshield wiper streaking, keep silicone sprays away from windshield. Remove road film and wax build-up from windows with lukewarm soap and water or with an alcohol-based cleaning agent. If a chamois is used to

dry and polish glass, use it exclusively for that purpose.

Wiper Blades

To avoid tearing frozen wiper blades, loosen them before removing. Remove and clean wiper blades periodically with an alcohol-based cleaning solution. Clean wiper blades using a sponge or soft cloth.

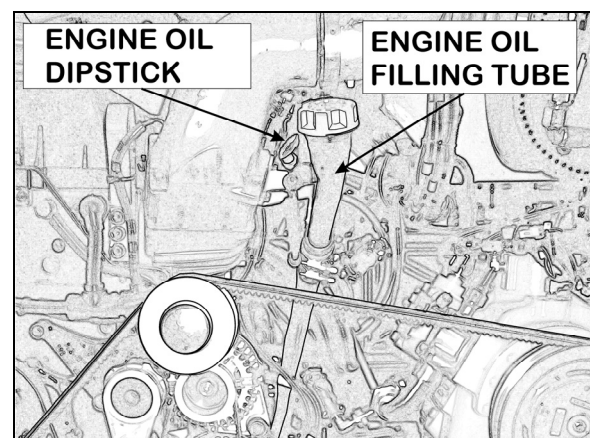
FLUID LEVEL VERIFICATION

Periodic inspection of oil level is the most economical and easiest way to help your vehicle perform at its best. Rigorous oil level inspection and replacement will greatly help minimize expensive and unscheduled repairs.

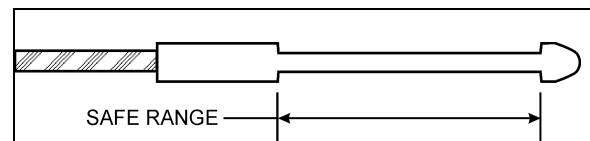
ENGINE OIL LEVEL

Check engine oil level when engine is still warm and with vehicle parked on a level surface. Shut OFF engine and wait at least 10 minutes for oil to drain into oil pan before checking. Check engine oil level daily or before each trip. Add oil as required. Do not overfill. Remove dipstick, wipe clean and fully reinsert to ensure an accurate reading. Remove dipstick and check engine oil level.

Do not let the oil level fall below the marking on the dipstick. **Do not** overfill so the level is above the upper marking on the dipstick. Add oil through the oil filler pipe as required in order to maintain level within the safe range




ENGINE BOIL DIPSTICK - VOLVO D13 ENGINE 01192




VOLVO D13 ENGINE OIL LEVEL DIPSTICK 01195


TRANSMISSION OIL LEVEL


DANGER

To prevent personal injury, do not service transmission wearing loose clothing. Stand clear of the engine and rotating components while checking the oil level.


CAUTION

Do not mix fluid types or brands because of possible incompatibility.


CAUTION

Use clean fluid and containers when filling transmission. Never use containers that have contained water or anti-freeze (Glycol).

Allison Automatic Transmission Oil Level

Transmission fluid level may be checked using dipstick or transmission control pad display. For more information on how to use the shift selector display to check the transmission oil level, refer to Appendix C under "Allison transmission oil level check using the pushbutton shift selector" in this manual.

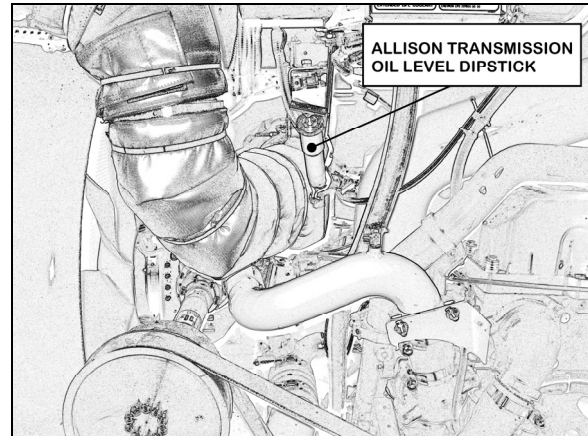
The transmission fluid level dipstick is accessible through the engine compartment rear door and is located on the left side of the engine.

To check the transmission fluid level, a "cold check" and a "hot check" must be performed. A cold check must be made when the transmission fluid is between 60°F and 120°F (16°C and 50°C).

NOTE

Perform the cold check first to verify the transmission fluid level before performing the hot check.

To prevent dirt and foreign matter from entering the transmission, clean the end of the oil fill tube before removing dipstick. To remove dipstick, unscrew filler cap approximately three turns and pull out dipstick.

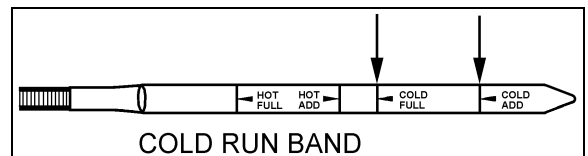


ENGINE L. H. SIDE


01189

- **Cold Check**

Run the engine until the transmission fluid temperature is between 60°F and 120°F (16°C and 50°C). With the engine idling, make sure the parking brake is applied and the transmission is in neutral (N). Remove and wipe the dipstick with a clean cloth. Check oil level. If the oil level is within the COLD RUN band, the oil level is correct and a hot check can be performed. If the oil level is on or below the lower line of the COLD RUN band, add oil until the level lies within the COLD RUN band. If the oil level is above the COLD RUN band, drain oil until the level is within the band.



TRANSMISSION FLUID LEVEL DIPSTICK (TYPICAL) 07050

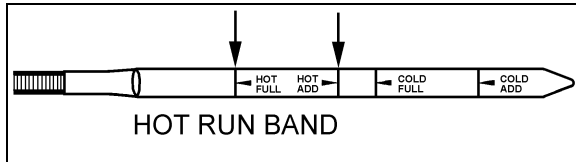

CAUTION

The oil level rises as oil temperature rises. Do not add oil above the "cold run" band before the transmission reaches 180°F to 220°F (82°C to 104°C).

- **Hot Check**

Make sure the transmission fluid temperature is between 180°F and 220°F (82°C and 104°C) before performing the hot check. Run the engine between 1,000 and 1,200 RPM for approximately one minute to purge air from the system. With the engine idling and the parking brake applied, shift transmission from forward (D) to reverse (R) and back into neutral (N) to fill clutch cavities with oil. Remove and clean

dipstick, then check oil level. If the oil level is on or under the lower HOT RUN line, add just enough oil to bring up the level to the middle of the HOT RUN band.



TRANSMISSION FLUID LEVEL DIPSTICK (TYPICAL) 07049

Replace dipstick and tighten the filler tube cap until the rubber seal is correctly seated.

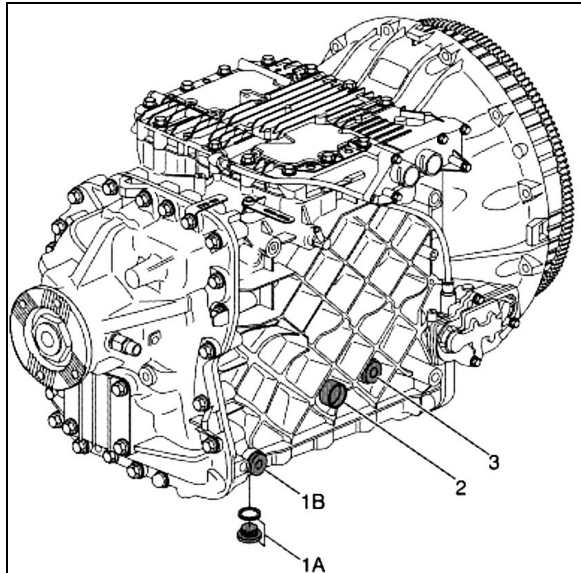


CAUTION

Do not overfill transmission fluid reservoir. Severe damage may result.

I-Shift Transmission Oil Level

Check the transmission oil level at each service interval. Park the vehicle on a level surface. Check the oil level through the sight glass on the side of the transmission. Add oil as necessary. Always use the correct Volvo approved synthetic oil (Castrol Syntrans SAE 75W85).



I-SHIFT TRANSMISSION OIL CHANGE

- Vehicle should be on horizontal ground when oil is changed;
- Do not check oil level straight after a journey (incorrect measurement). Undertake the check once the transmission oil has cooled down (lower than 104°F or 40 °C);
- Check oil level using transmission sight glass (2) ;

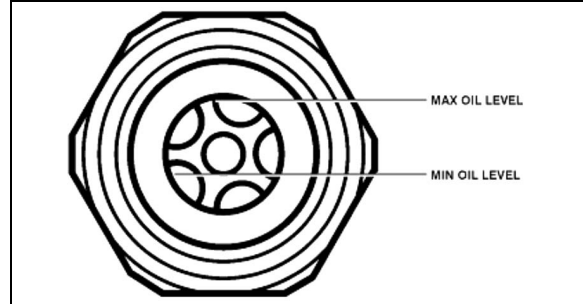
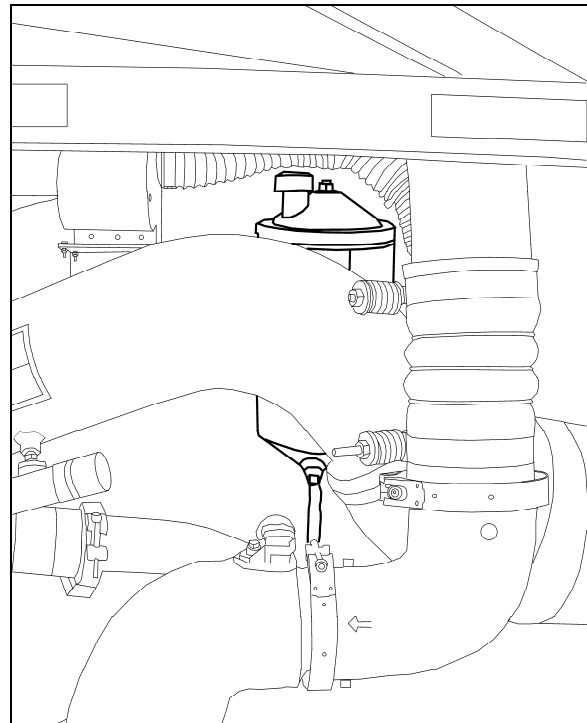


FIGURE 1: SIGHT GLASS FOR CHECKING OIL LEVEL

- Add oil through the oil filling point if necessary (3) ;
- Torque tighten fill plug to 26±4 Lb-Ft (35±5 Nm).

POWER STEERING FLUID LEVEL

The vehicle is equipped with a power steering system. The hydraulic fluid tank is located in the engine compartment.



ENGINE COMPARTMENT

14059

Check fluid level as follows:

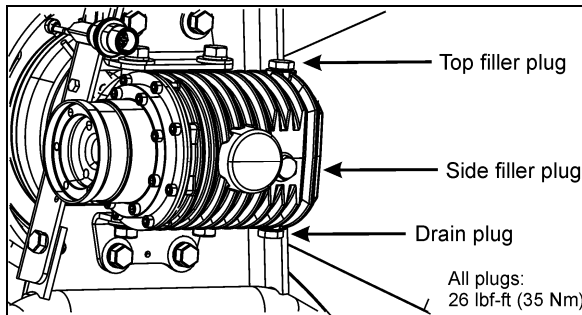
1. Stop engine, open engine compartment doors and place rear start switch to OFF position;
2. Unscrew and remove the dipstick located on top of the fluid tank and wipe with a clean rag;

3. Replace dipstick in tank, then remove to check fluid level;
4. Add hydraulic fluid until it reaches the FULL mark on the dipstick (use Dexron II, Dexron IIE, Dexron III or Mercon fluid type);
5. Replace and tighten dipstick;
6. Place engine rear start switch to *NORMAL* position. Close engine compartment doors.

COOLING FAN RIGHT ANGLE GEARBOX OIL LEVEL

Check cooling fan right angle gearbox oil level as follows:

1. Stop engine, open engine compartment doors and place engine rear start switch to *OFF* position;
2. Remove side oil filler plug;
3. Add oil through the top or side oil filling point if the oil level has fallen below the side oil filling point;
4. The oil level is correct once the top of the oil has reached the bottom of the side oil filling point or once oil has already started to escape from the side oil filling point;
5. Replace the seal and screw the side and top filler plugs back in;
6. Place engine rear start switch to *NORMAL* position. Close engine compartment door.



RIGHT ANGLE GEARBOX OIL LEVEL CHECK 05118

DRIVE AXLE WHEEL BEARING OIL LEVEL

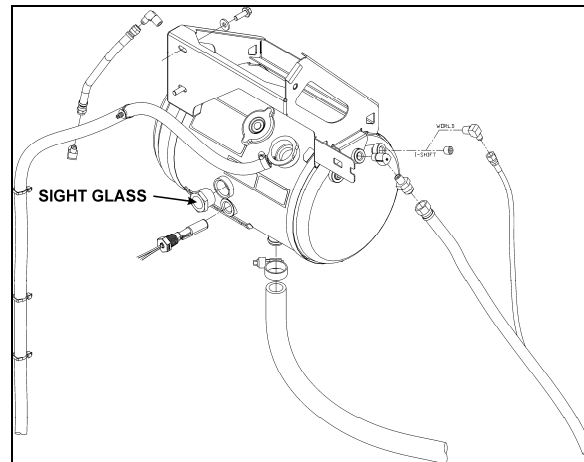
Drive axle wheel bearings are lubricated by the differential oil. Maintain differential oil at correct level to ensure adequate lubrication of drive axle wheel bearings at all times.

FRONT AND TAG AXLE WHEEL HUBS

The unitized hub bearings used on the NDS range of axles, are non-serviceable items. Bearings are pre-adjusted, lubricated and have seals fitted as part of the manufacturing process. The bearings are greased for life and there is no need or facility for re-lubrication.

COOLANT FLUID LEVEL

Coolant level is correct when coolant is visible through the surge tank sight glass when cold. If coolant level is low, fill system with the same 50-50 mixture normally used. **Do not** mix two different types of coolant. Refer to the Maintenance Manual for proper coolant type specifications or see the label affixed near the coolant surge tank on the vehicle.



COOLANT LEVEL SIGHT GLASS 05094

WARNING

Hot engine coolant is under high pressure. Allow engine to cool down before adding coolant.

CAUTION


On Volvo D13 engine, use **only** Extended Life Coolant (ELC). **Do not** add supplemental coolant additives (SCA) to extended life coolant. **Do not** use a coolant filter containing Supplemental Coolant Additives (SCA).

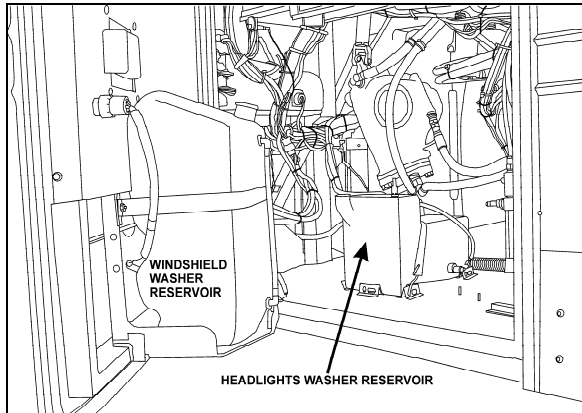
WINDSHIELD WASHER & HEADLIGHTS WASHER RESERVOIRS

The windshield washer reservoir and headlights washer reservoir are located in the front service compartment. The windshield washer reservoir has a capacity of 5.3 US gallons (20 liters) while the headlights washer reservoir has a capacity of 2.6 US gallons (10 liters). Check fluid level regularly.

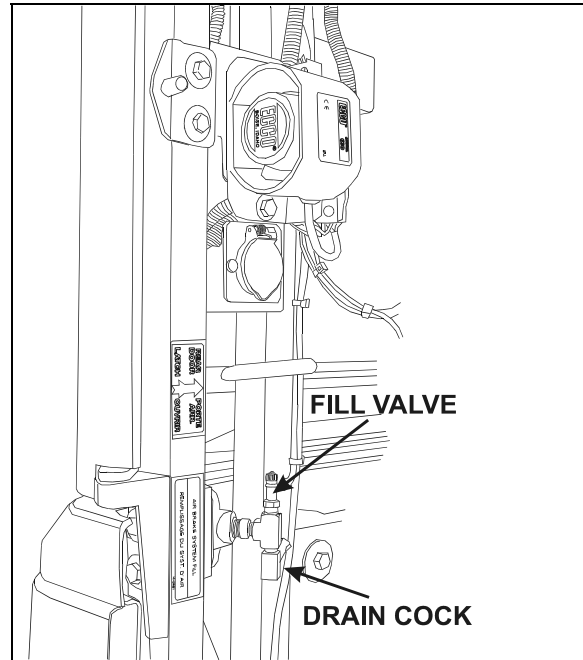
The windshield spray jets are located on the windshield wipers and are angled to spray towards the center of the windshield.

Adjust the headlights washer nozzles according to the instructions found in section 23 of the maintenance manual. You may use water or windshield washer fluid as well.

	<p>CAUTION</p>
<p>During cold weather days, use windshield washer fluid suitable for freezing temperature only.</p>	



FRONT SERVICE COMPARTMENT RESERVOIRS 18381



ENGINE COMPARTMENT 12130

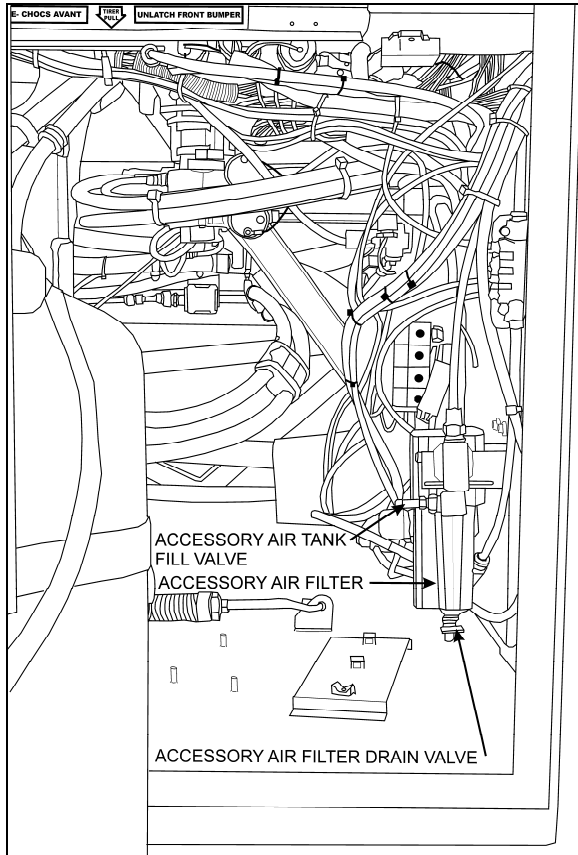
The accessory air tank drain cock is accessible from the front service compartment. The wet air tank drain cock is accessible from the engine compartment. All air tanks are equipped with a drain cock underneath the tank. Refer to the "Lubrication and Service Check Point Chart" in the "Maintenance Manual" for tank locations.

Drain tanks by turning cocks counterclockwise.

OTHER VERIFICATIONS

AIR TANK PURGE

The vehicle may be equipped with up to twelve air tanks. Purge accessory and wet air tanks before each trip. The primary and secondary air tanks must be purged at every oil change. Oil changes should be scheduled at least every 12,500 miles (20 000 km).



FRONT SERVICE COMPARTMENT

12218

FIRE EXTINGUISHERS

Inspect fire extinguishers monthly to insure operation in emergency situations.

On extinguishers with a pressure gauge, the needle should be in the green or *NORMAL* range. Refill or replace extinguisher if pressure is below normal;

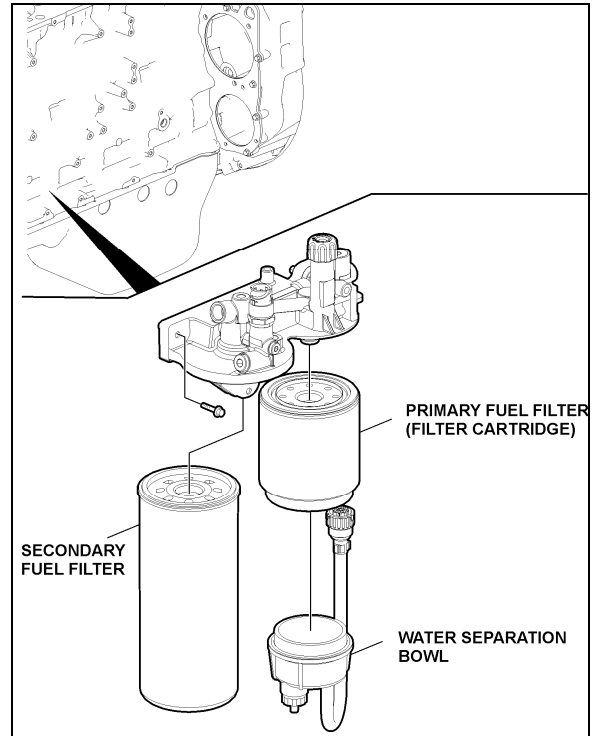
Check that seal on handle is intact;

Check that hose nozzle is in good condition and the nozzle is free of obstruction;

Keep fire extinguishers clean.

FUEL FILTER / WATER SEPARATOR

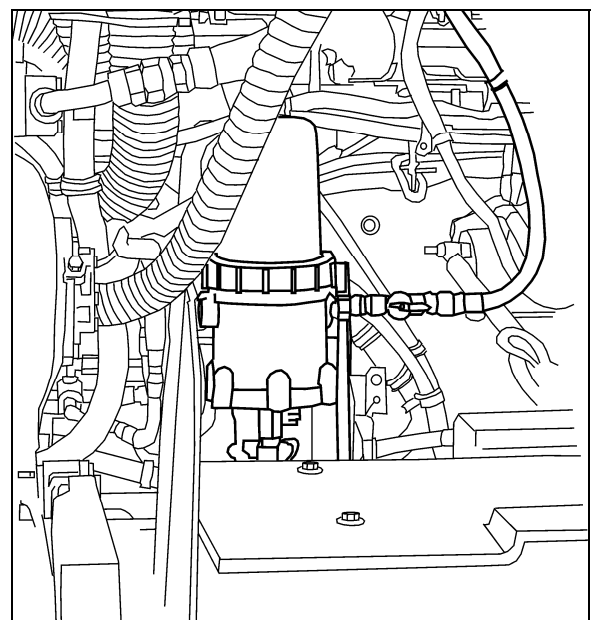
A primary fuel filter is installed on the engine. This filter may consist of a filter cartridge with a drain valve at the bottom, or a filter cartridge, a water separation bowl and may have a fuel heater built in. It is used to prevent water from entering the fuel system. The primary fuel filter should be drained periodically or when the telltale light on the dashboard illuminates if equipped with this system. To drain water, loosen the drain valve below the separator. Close the drain valve when finished.



FUEL FILTERS WITH VOLVO D13 ENGINE

03085

The optional Fuel Pro 382 diesel fuel filter system consists of a permanently mounted fuel processor, a replaceable filter element, a filter element cover and collar and a fluid filter base assembly. This system is installed between the fuel tank and the fuel pump and replaces the primary fuel filter. The filter serves as a water separator as well as a fuel filter. To drain, turn ¼ turn the drain valve below filter, close when water has been flushed out.



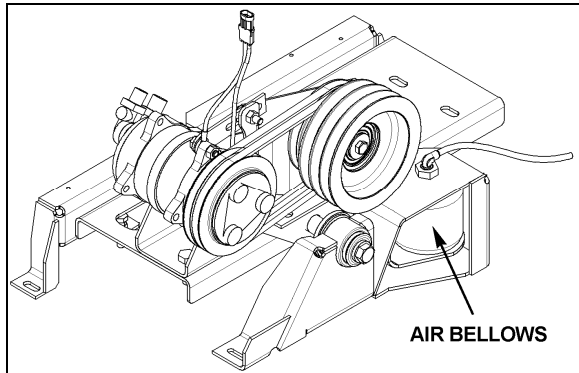
DAVCO FUEL PRO 382 INSTALLATION

03032

A/C COMPRESSOR BELT TENSION ADJUSTMENT

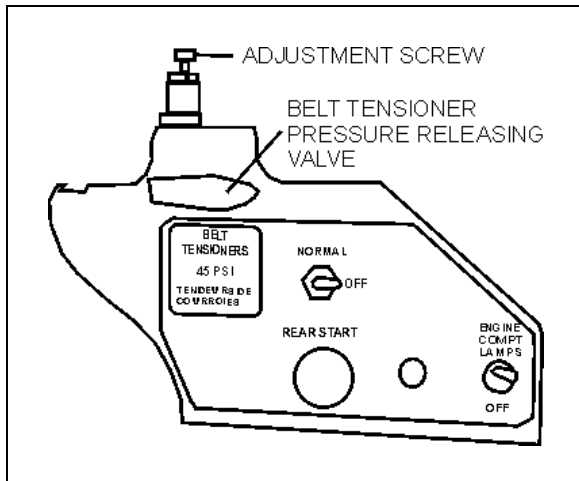
The air conditioning compressors are driven by V-belts.

Belt tensioning is applied through air bellows which are adjusted by an air pressure regulating valve mounted in the engine compartment, right behind the belt tensioning pressure control valve. The correct pressure of 35 psi (241 kPa) is set at the factory. Periodically verify the pressure at the regulating valve using a tire pressure gauge and correct if necessary.



AIR BELLOWS 01059

For belt replacement, air pressure must be released from bellows by means of the belt tensioning pressure control valve. This valve, mounted close to the pressure regulating valve, is manually operated. Before handling, be sure that all engine stopping safety precautions have been observed.



PRESSURE REGULATING VALVE 12175

- Refer to the Parts Manual, Maintenance Manual or "Service Bulletins" for recommended belt sizes and tension settings;

- Periodically inspect belt and pulleys for wear or damage;
- Do not treat belts with any compounds. Keep belts dry.

FAN AND ALTERNATOR DRIVE BELTS

These belts have automatic belt tensioner to keep the correct tension without adjustment.

BACK-UP CAMERA

The optional back-up camera is located on the rear cap. To clean the camera's protective glass, spray with soapy water. Wipe with a clean damp rag or wiper blade.

! DANGER

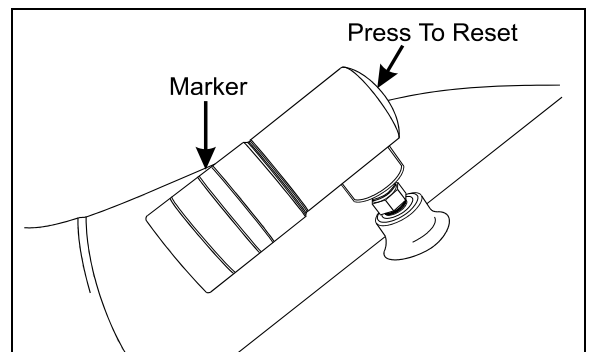
To avoid injury, do not clean camera with transmission in reverse (R). Shut off engine and apply parking brake before cleaning.

! CAUTION

To prevent scratches to the camera protective glass, do not wipe with dry rag. Use a clean damp rag.

AIR FILTER RESTRICTION INDICATOR

A filter restriction indicator (optional) is used to monitor the vacuum level between the air filter and engine. A red marker is displayed when the air filter is clogged. When a red marker is displayed, the air filter must be replaced. Reset by pressing on the indicator's extremity.



RESTRICTION INDICATOR 01052

The filter restriction indicator is located on the engine air intake duct.

A/C AND HEATING SYSTEM 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. To clean filters, back flush with water, then dry with air.

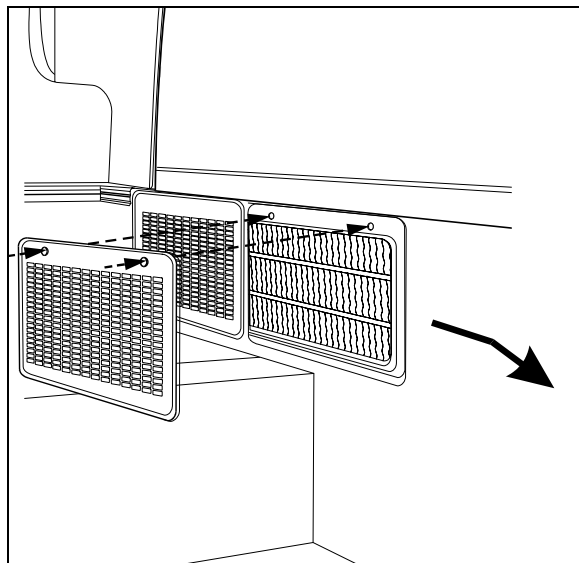
CAUTION
Do not use high pressure water jet to avoid damaging filter.

CAUTION
Be sure not to reverse filter upon installation.

Driver's HVAC Unit Air Filters

The driver's HVAC unit air filters are located behind the R.H. console. To gain access to the A/C filters, unscrew the grill located at the top step of the entrance door steps. Remove the filters for cleaning or replacement.

NOTE
If the windshield is continuously fogged, check that the driver's air filters are not clogged.



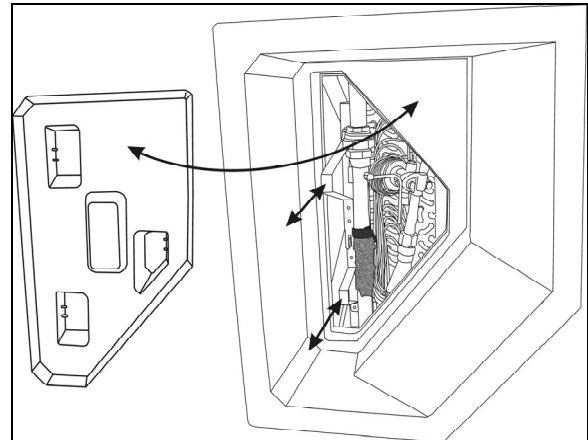
ACCESS TO DRIVER'S HVAC UNIT AIR FILTERS 22172

Cabin HVAC Unit Air Filters

The cabin HVAC unit air filters are located in the evaporator compartment on driver's side of the vehicle. To access, open the baggage

compartment forward of the evaporator compartment. An access door held shut by three retaining tabs is located in the wall separating the baggage compartment and the evaporator compartment. Remove the access door, slide out the top then bottom filter for maintenance purposes.

CAUTION
Be sure not to install filters in inverted position.



CABIN HVAC UNIT ACCESS DOOR & AIR FILTERS REMOVAL 22178

HOSE INSPECTION

Inspect hoses regularly to ensure efficient, economical and safe operation of the engine and related equipment.

Inspect hoses for leaks. Carefully inspect all fittings, clamps and ties. To prevent chafing, make sure hoses are not touching shafts, couplings, heated surfaces, sharp edges or other parts. Since hose clamps and ties can vibrate loose or fail over time, inspect frequently and tighten or replace as necessary.

Correct leaking hoses immediately. Failure to correct leaks can cause severe damage to the equipment, as well as increase operating costs due to lost fluids. Treat fuel and oil leaks as an immediate fire hazard.

WARNING
Fire hazard - personal injury and property damage may result from fire caused by leaking flammable fluids.

Hose Service Life

Hoses have a limited service life. Thoroughly inspect hoses annually. Look for surface damage or indications of twisted, worn, crimped, cracked or leaking lines. Replace damaged hoses immediately.

Hoses should be replaced during major overhaul or after a maximum of five years service. Make sure replacement hoses match the original equipment manufacturer's specifications.

LUBRICATION


Grease all lubrication points during scheduled maintenance. For heavy loads or extended use, lubricate more often. Refer to the end of this chapter or to Maintenance Manual, section 24 for information on lubrication.

WHEELS AND TIRES

Check for loose wheel nuts. Both aluminum alloy and steel wheel nuts should be tightened to 450 to 500 foot-pounds (610 to 680 Nm.) torque.

Keep the tires inflated to the recommended inflation pressure to prolong tire life and for safety.

NOTE
Recommended tire inflation pressures are given in the "Coach Final Record", placed in the technical publications package supplied with the vehicle. The cold tire inflation pressures are on the Department of Transport certification plate located on the L.H. console besides the driver's seat.

 **WARNING**
 Do not exceed maximum inflation pressure. Incorrect tire pressure increases tire wear and could lead to loss of driving control because of reduced road handling. Check tire pressure regularly.

WHEEL BEARINGS

Check wheel bearing cover for overheating (especially after brake work) during fuel stops by touching the wheel bearing cover.

SERVICE BRAKE TEST

Check for correct pressure build-up. Pressure loss should not exceed 3 psi/minute (21 kPa/minute) with engine stopped and without brake applied. Perform a full brake application. Air loss should not exceed 7 psi/minute (48 kPa/minute).

PARKING / EMERGENCY BRAKE TEST

Release parking/emergency brakes. Pump service brake pedal until air pressure drops to 65 psi (448 kPa). Make sure the warning buzzer operates and that the emergency brakes apply (the control valve knob lifts up). Allow air pressure to reach 95 psi (655 kPa) before releasing parking brake.

Driving the vehicle while the parking brake is applied should not be possible.

EXTERIOR LIGHTING VERIFICATION

Exterior Lighting Test Mode

This useful function allows quick verification of the vehicle exterior lights.

Activating the test mode:

When the vehicle is stationary (parking brake applied), pull up the multi-function lever 3 times within 3 seconds to activate the test mode. This test can be done when the engine is not running providing that the battery charge is sufficient (above 24.0 volts).

The telltale panel alarm emits a sound each second to remind that the test mode is in progress.

Stopping the test mode:

To stop the test mode, pull up the multi-function lever once or turn the ignition OFF or remove the parking brake.

IMPORTANT NOTE
The test mode is useful to check the functioning of the multiplex outputs and the exterior lights. It doesn't test the functionality of the commands related to the exterior lighting. For a complete testing, the directional signal commands, the headlights commands and the brake pedal have to be checked before. Once these commands tested, activate the test mode to check the exterior lighting.

Using the test mode:

First, test the functionality of the commands related to the exterior lighting:

- Activate the right directional signal and check that the corresponding telltale light illuminates.
- Activate the left directional signal and check that the corresponding telltale light illuminates.
- Press on the brake pedal and check that the STOP telltale light illuminates.

Once these commands tested, activate the test mode to check the exterior lighting by pulling up the multi-function lever 3 times within 3 seconds.

Go to the front of the vehicle and check the lights:

- First the left and right directional signals.
- Identification lights and clearance lights.
- Low beams.
- High beams.

Go to the left side of the vehicle:

- Directional signals.
- Marker lights.
- Directional signals.
- Marker lights.

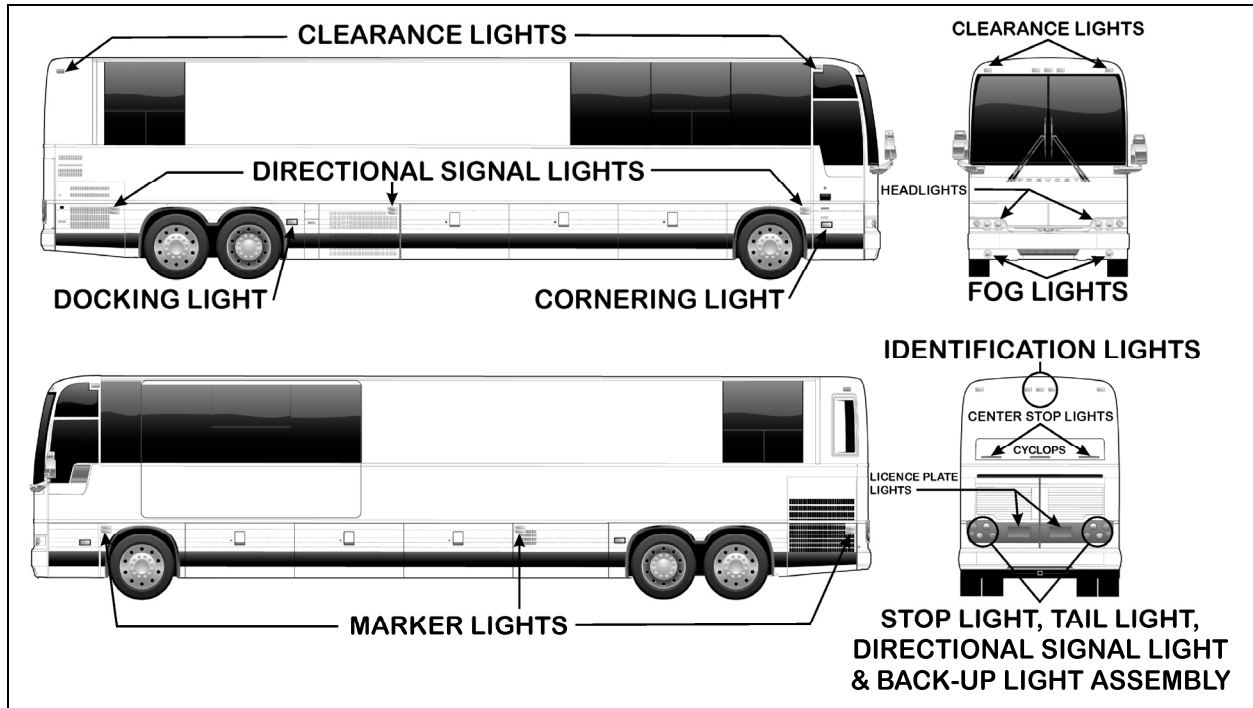
Go to the rear of the vehicle:

- Directional signals.
- Identification lights and clearance lights.
- Stoplights and taillights.
- Back-up lights and back-up alarm (option).

<i>IMPORTANT NOTE</i>

<i>To check the back-up lights and back-up alarm, you must flip the starter selector switch to REAR START position. (If the engine is running, do this quick enough so that the engine does not stop).</i>
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Go to the right side of the vehicle (same sequence as left side).




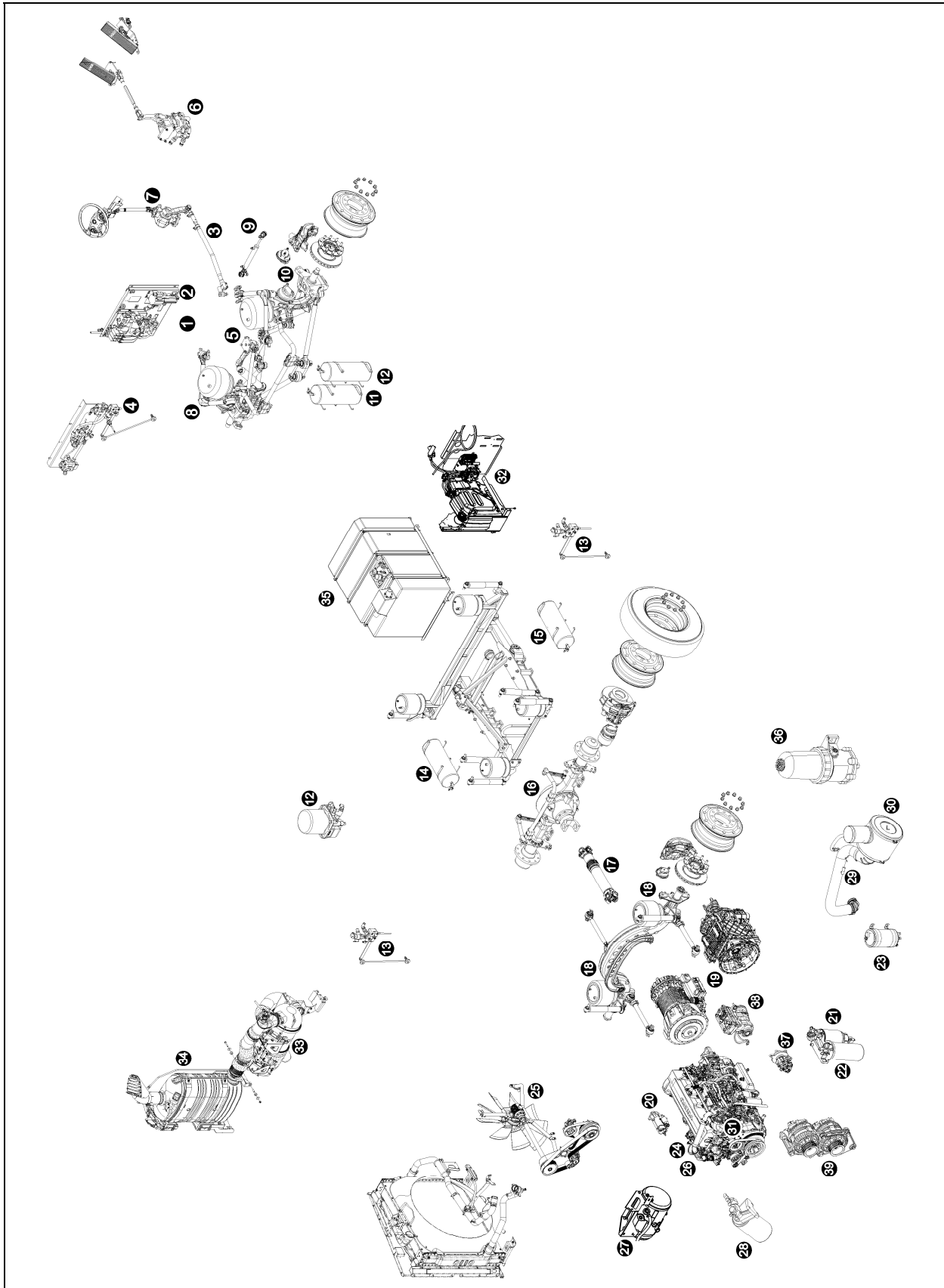
VARIOUS LIGHTS LOCATION

GENERAL RECOMMENDATIONS

- Understand basic principles of vehicle operation;
- Always maintain the vehicle in good running condition;
- Do not drive with low fuel. If the fuel tank runs dry, the engine will not start until the air is bled from the fuel system. Refer to "Maintenance Manual" for more information;
- Allow engine to run for at least two minutes at slow idle before shutting OFF;
- Engine should be at idle when shifting from neutral (N) to forward (D) or from neutral (N) to reverse (R);
- The automatic transmission does not have a park (P) position. Place transmission in neutral (N) position and apply parking brake when the vehicle is stopped. A warning buzzer will sound if the engine is stopped and the parking brake has not been applied when foot pressure is removed from the brake pedal;
- Always follow the procedures described in this manual;
- Unless stated otherwise, shut OFF the engine before performing all servicing, lubrication and maintenance tasks;

- Do not attempt to push or pull-start a vehicle equipped with an automatic transmission;
- The vehicle may be damaged if towed with the axle shafts or driveshaft connected. Do not push or pull-start the vehicle in first or reverse gears;
- Two chemical fire extinguishers are stored near the back of the driver's seat. In case of fire, immediately evacuate all occupants. Human life safety is the first priority. Do not attempt to extinguish the fire if there is immediate danger or risk for personal injury;
- When driving on ice and snow, accelerate and decelerate gradually.

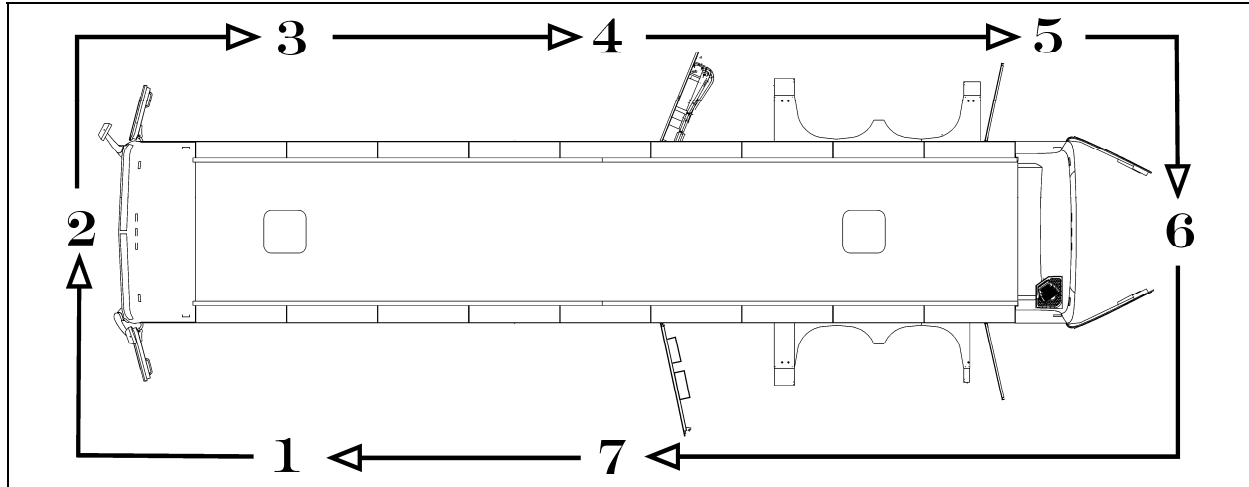
	<p>WARNING</p>
<p>Report all problems affecting passenger or driver safety to your service center or an authorized service center. Have problems corrected immediately.</p>	



COMPONENTS IDENTIFICATION (REPRESENTATION MAY DIFFER SLIGHTLY FROM AN ACTUAL VEHICLE)

COMPONENTS IDENTIFICATION			
1	Accessories air tank drain cock	21	Primary fuel filter
2	Accessories air filter	22	Secondary fuel filter
3	Steering drag link	23	Power steering fluid tank
4	Height control valve (front)	24	Engine oil filter
5	Bell crank	25	Cooling fan gearbox
6	Dual brake application valve (E-10P)	26	Allison transmission oil dipstick
7	Steering column U-joints	27	Engine coolant surge tank
8	Upper A-arm ball joint	28	Coolant filter & conditioner
9	Hydraulic power cylinder	29	Engine air filter restriction indicator
10	Steering king pin	30	Engine air filter
11	Secondary air tank	31	Engine oil dipstick and filler tube
12	Accessories air tank	32	DEF tank
13	Height control valve (rear)	33	Diesel particulate filter
14	Wet air tank	34	SCR catalytic converter
15	Primary air tank	35	Diesel fuel tank
16	Differential	36	Davco Fuel Pro 382 fuel filter
17	Propeller shaft	37	Power steering pump
18	Tag axle lever pivot	38	Air compressor
19	Transmission	39	Alternators
20	Starter		

WALK-AROUND INSPECTION (BEFORE EVERY TRIP)



NOTE

Inspect the vehicle in a circular manner as shown in the illustration.

Approaching the Vehicle

- Check under the vehicle for oil, fuel, coolant leaks or other signs of damage.
- Check exterior body surfaces for signs of breaks or damage.
- Check that baggage and service compartment doors are properly closed.

Preparation

- Drain accumulated water from accessory and wet air tanks.
- Close air tank drain valves.
- Start the engine and let the air pressure build up to normal. Stop engine.
- Switch on hazard warning flashers.
- Make sure parking brakes are applied.

Step 1: Front Left Side of the Vehicle

- Check condition of wheel rim. Especially look for cracks, missing nuts, bent or broken studs.
- Check condition of tire: properly inflated, no serious cuts, bulges, tread wear or any signs of misalignment; valve stem not touching wheel or rim; valve cap in place.

- Check windshield and headlights washer reservoir fluid level and add if necessary.

Step 2: Front of the Vehicle

- Check for damage and clean if dirty.
- Check windshield wiper arms for proper spring tension.
- Check wiper blades for any damage, “dead” rubber and attachment to arm.
- Check clearance and identification lights, they should be clean, operating and of the proper color. Refer to “Exterior Lighting Verification” in Care and Maintenance chapter.
- Turn on headlights. High and low beams should be operating and lenses clean. If equipped, check fog lights. Refer to “Exterior Lighting Verification” in Care and Maintenance chapter.
- Left and right front turn signal lights clean, operating and proper color. Refer to “Exterior Lighting Verification” in Care and Maintenance chapter.
- Check to see that there is no mud, snow, ice build-up or other obstruction in front of the ACB radar sensor, if applicable.

Step 3: Front Right Side of the Vehicle

- Check condition of wheel rim. Especially look for cracks, missing nuts, bent or broken studs.
- Check condition of tire: properly inflated, no serious cuts, bulges, tread wear or any signs of misalignment; valve stem not touching wheel or rim; valve cap in place.

Step 4: Rear Right Side of the Vehicle

- Check condition of wheels and rims. Especially look for cracks, missing nuts, bent or broken studs.
- Check condition of tires: properly inflated, no serious cuts, bulges, tread wear or any signs of misalignment; valve stems not touching wheels or rims; valve caps in place and no objects stuck between the wheels.

Step 5: Engine Compartment Right Side Area

- Check engine and surrounding areas for coolant, oil and fuel leaks.
- Check fuel/filter water separator and drain if necessary. Check for leaks.
- Check wiring harness for signs of damage.

Step 6: Engine Compartment

- Check engine and surrounding areas for coolant, oil and fuel leaks.
- Check wiring harness for signs of damage.
- Check condition of drive belts.
- Check engine crankcase oil level, add if necessary.
- Check Allison transmission fluid level (can also be checked from push-button shift selector), add if necessary.
- Check power steering reservoir fluid level, add if necessary.
- Check coolant surge tank fluid level, add if necessary.

- Check air cleaner restriction indicator, replace air cleaner when red signal locks in full view.
- Check stop light, tail light, directional signal light and back-up light assembly; operating, clean and proper color. Refer to "Exterior Lighting Verification" in Care and Maintenance chapter.

Step 7: Rear Left Side of the Vehicle

- Check condition of wheels and rims. Especially look for cracks, missing nuts, bent or broken studs.
- Check condition of tires: properly inflated, no serious cuts, bulges, tread wear or any signs of misalignment; valve stems not touching wheels or rims; valve caps in place and no objects stuck between the wheels.

Inside the Vehicle

- Check for proper operation of the entrance door.
- Check steps; clean them if there is any substance that makes them slippery, which makes vehicle entry/exit hazardous.
- Check that emergency exit windows can be opened then close all windows securely.
- Verify proper operation of windshield wiper/ washer.
- Adjust and clean mirrors for adequate rear view vision.
- Start engine and check for proper operation of all gauges and indicator lights.
- Check for proper operation of electric and air horns and back-up alarm.

Perform a brake test. Check both primary and secondary pressure gauges.