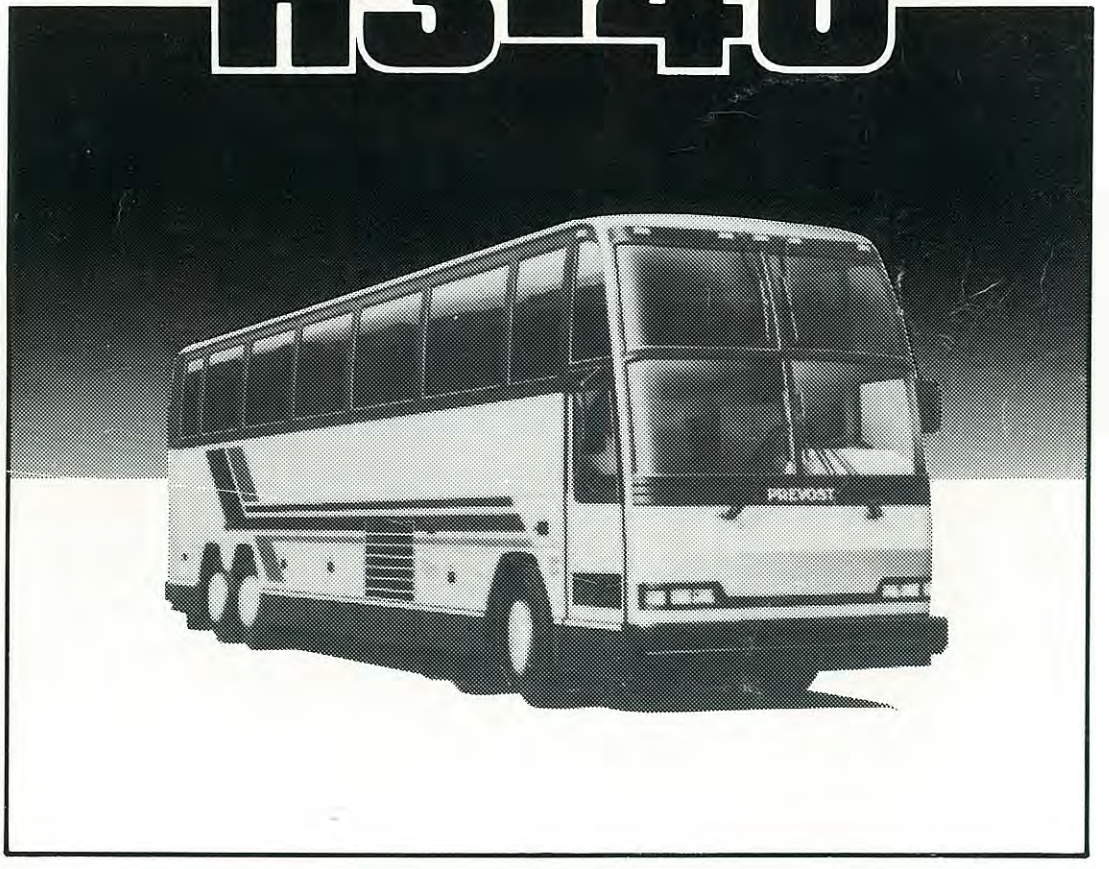
PREVOST®

H3-40



Operator's Manual

TABLE OF CONTENTS

INTRODUCTION

Thank you for having purchased one of our new models. This state-of-the-art vehicle is the result of many years of technical research and road testing. Rest assured that it has been manufactured according to quality standards that define the PRÉVOST coaches.

We suggest that you read this manual carefully to help assure enjoyable and troublefree operation of the coach, while ensuring maximum comfort and safety of your passengers. This manual should be kept in vehicle for convenient reference at all times. We also suggest that it remains with the vehicle at the time of resale. Please notify PRÉVOST CAR INC. if the vehicle ownership is transferred so that our records can be kept current.

This publication covers all the equipments including options installed in our factory. Therefore, you may find explanations for equipment not installed on your vehicle.

Text, figures and specifications given are based on the latest information available at the time of printing. Since improvement is a constant goal at PRÉVOST, we reserve the right to make changes at any time without notice and without incurring any obligation.

The following words are used to emphasize particular information:

WARNING: Identifies instructions which if not followed, could result in personal injury.

CAUTION: Denotes instructions which if not followed, could cause serious damages to vehicle components.

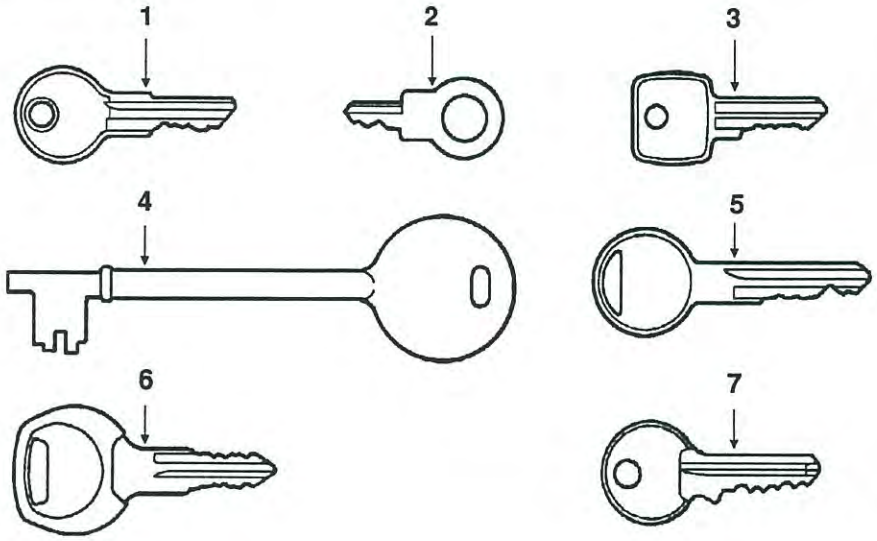
NOTE: Indicates supplementary information needed to fully complete an instruction.

For your own protection and to ensure a longer service life of your coach, heed our "CAUTIONS", "WARNINGS" and "NOTES". Ignoring them could result in extensive damage and/or serious personal injury.

OPERATING INSTRUCTIONS

KEYS

According to optional equipment, up to seven different key models may have been provided with the vehicle, which are used as described hereafter:



OE3B0201

1- Ignition switch

Use this key to activate electrical circuits and/or to start engine.

2- Tachograph

Use this key to open the tachograph cover for card replacement.

3- Towel and toilet tissue dispensers, cleaning cabinet

Use this key (LF #92201-England) when both dispensers must be refilled, or to gain access to the hose in the cleaning cabinet.

4- Lavatory door lock

Use this key to unlock the lavatory door or to prohibit access to lavatory.

5- Driver's personal compartment lock

Use this key to lock or unlock the driver's personal compartment.

6- Exterior compartments

Use this key to lock or unlock any exterior compartment door, including the fuel tank filling access door. It is also possible to lock or unlock the baggage compartment doors from the inside using a switch (see page 2 - 5) located in driver's compartment.

7- Video system compartment lock

Use this key to lock or unlock the video compartment in the second front L.H. parcel rack

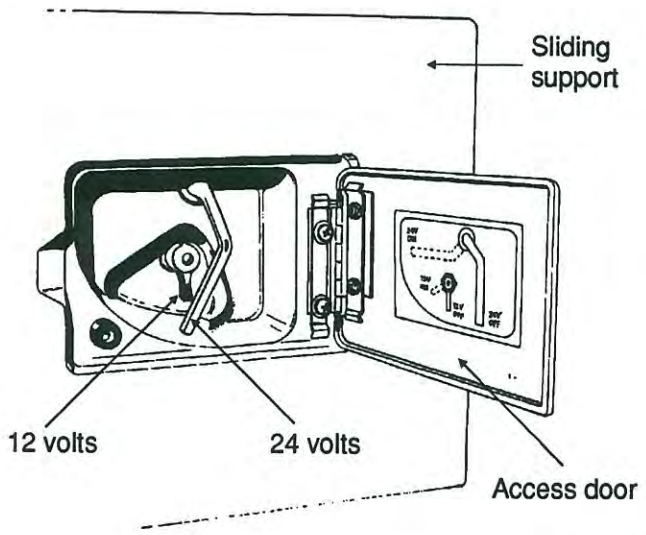
NOTE: For your protection against theft:

A) Record the key numbers and keep them in a safe place. Do not keep them in the vehicle.

B) It is advisable to deposit a duplicate of each of these keys in a safe place, so they can be obtained without difficulty in case of loss.

MAIN BATTERY DISCONNECT SWITCHES

Two manual switches for the 12 and 24 volt systems are located at rear of the sliding power support access door, at right of the engine compartment R.H. side door.



CAUTION: When coach is parked overnight or for an extended period of time, the main battery disconnect switches should be set to the *"OFF"* position.

NOTE: When the main battery disconnect switches are set to the *"OFF"* position, all electrical supply from the batteries is cut off, with the exception of the ECU (Electronic Control Unit), ECM (Electronic Control Module), electric horn, tachograph clock, fire detectors, preheating system control module and timer, as well as the preset radio station programming memory.

FUEL TANK FILLING

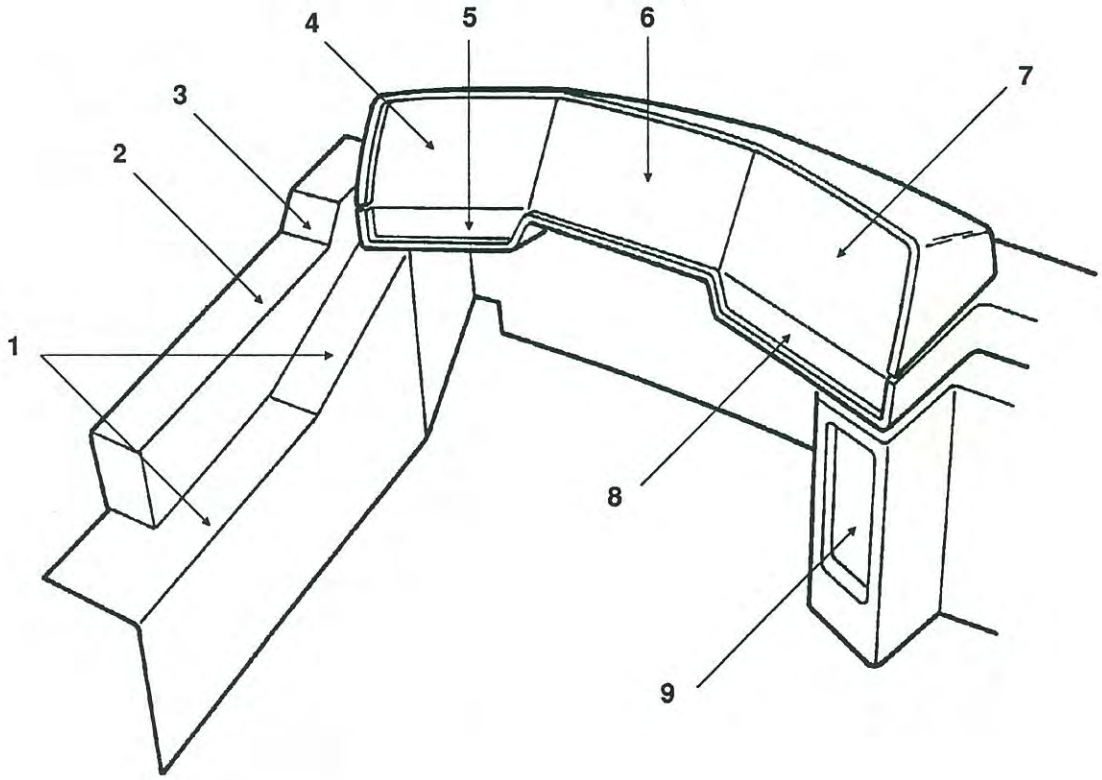
A small door located in centre on left side of vehicle provides access to the fuel tank filler neck. Another filler neck is accessible on the right side of vehicle from the narrow door at left of condenser compartment (see page 2 - 25).

These two doors can be unlocked with the key provided. The access door on left side of vehicle must be locked again when closing to remove key; as for the door besides the condenser, the key must be returned to its initial position before closing the door.

NOTE: The nozzle will automatically shut off when tank will be approximately 95% full.

CAUTION: Do not fill to more than 95% of the tank capacity.

CONTROL AND INSTRUMENT PANELS



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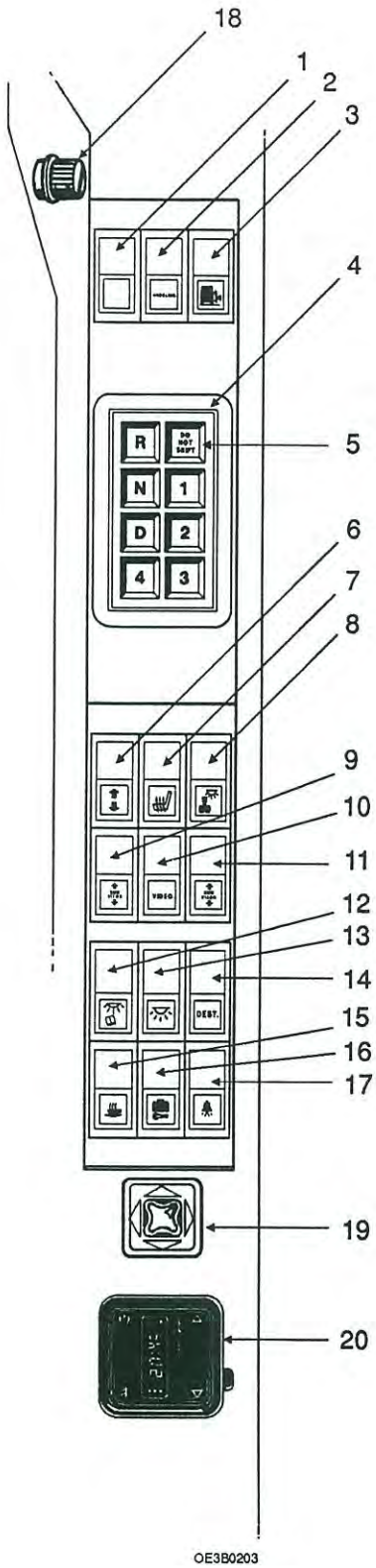
L.H. SIDE CONTROL PANEL



Switches

1- Blank for additional switch

2- Kneeling

Push down switch momentarily to lower front of vehicle, and up to raise it to its initial position (see page 3 - 2).

3- Front door

Push down rocker switch to open or close the front door.

4- Transmission push button selector or shift lever

To select forward, reverse or neutral range of transmission. Refer to heading on automatic transmission in this section.

5- *"DO NOT SHIFT"* warning light

As a light bulb, buzzer and ATEC system check, the *"DO NOT SHIFT"* light will flash with the ignition switch *"ON"*. After about two seconds the light and buzzer will turn off. If the light remains on or illuminates afterwards, the ATEC system (Allison Transmission Electronic Control) has detected a major problem. For additional information, refer to the heading dealing with the operation of the automatic transmission push button shift selector later in this section.

6- Driver's window

Push up rocker switch and hold in position to raise the driver's window.

Push down rocker switch and hold in position to lower the driver's window.

7- Driver's seat heating

Push down rocker switch to activate heating system in driver's seat.

8- Driver's lights

Push down rocker switch to turn on the two ceiling lights above driver. These lights are frequently used for nighttime operation when passengers board or leave the coach.

9- Left sun visor

Push up rocker switch an hold in position to raise left sun visor.

Push down rocker switch and hold in position to lower left sun visor.

10- Video system

Push down rocker switch to actuate TV monitors, TV converter and the video cassette player electrical circuit.

NOTE: When radio is on and video system switch is activated, the speakers of the passenger section will be shut off and connected to the video system. However, the driver's speakers will still be connected to the radio.

11- Right sun visor

Push up rocker switch and hold in position to raise right sun visor.

Push down rocker switch and hold in position to lower right sun visor.

12- Reading lamps

Reading lamps are controlled by two different switches. Push down this rocker switch to energize the whole reading lamp circuit. Individual reading lamp can then be activated by each passenger using the switch incorporated in reading lamp body.

Reading lamps are mounted under parcel racks and can be focused to provide proper illumination for each passenger.

13- Interior lighting

Push down three position rocker switch to first position to operate aisle dome lights, and push to second position to energize the fluorescent lighting and aisle dome lights simultaneously.

The aisle dome lights are located on front of parcel racks, while fluorescent lighting are located under the parcel racks. Use of these lights should be avoided when engine is not running.

14- Destination sign light

Push down rocker switch to illuminate the destination sign light.

15- Galley

Push down rocker switch to energize the galley circuit.

16- Baggage door lock

Push up rocker switch to unlock the doors and push down to lock.

17- Passenger and hostess chime

Push down rocker switch to activate chime systems allowing operation of chime and hostess buttons by passenger.

18- Instrument & control lighting dimmer

Turn dimmer in a clockwise direction to increase instrument and control panel brightness.

19- Outside mirror control

Turn pointer knob to the left or right according to the mirror, then push button in the appropriate direction to adjust mirror to the desired angle.

20- Water heater timer

Preset timer to operate water heater as outlined in this section.

AUTOMATIC TRANSMISSION

The operation and driving of a coach with an automatic transmission is similar to the driving of an automobile equipped with automatic transmission. Proper ranges should be selected according to driving speeds to improve vehicle performance and control. The transmission is fully automatic. Speed ratio of power converter changes automatically as vehicle speed increases and direct-drive goes in and out as necessary, modulated by vehicle speed, and accelerator position.

Push button-type range selector (ATEC)

The push button-type range selector is totally electronic. The range selector displays seven or six push button pads: R (reverse), N (neutral), D (drive), 4 (fourth) only on 5-speed transmission, 3 (third), 2 (second), and 1 (first). The range selector also has a *"DO NOT SHIFT"* light and a warning tone.

Operation

When any of the push button pad is pressed, a beep sounds and the pad lights up to indicate the transmission is ready to operate in the selected range. When the ATEC system detects a serious problem in the transmission, a buzzing tone sounds for 5 seconds, and a *"DO NOT SHIFT"* light turns on to warn the driver that the transmission is held-in-gear. If another pad is depressed, the buzzing sound will continue until the original range is selected. If problem disappears, the light will go out, but a trouble code will remain stored in the ECU (Electronic Control Unit).

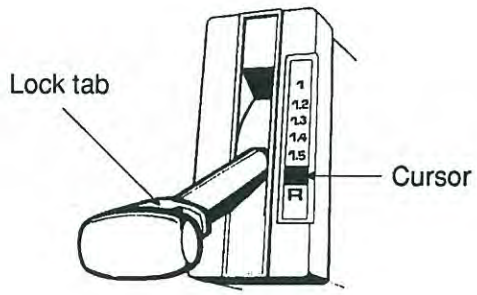
NOTE: This light may also turn on when starting in extreme cold weather conditions (see heading *"Transmission warm-up"*, page 4 - 5).

Range selector (NON ATEC)

The selector has seven or six ranges: R (reverse), N (neutral), 1-5 (drive) only on 5-speed transmission, 1-4 (fourth range), 1-3 (third range), 1-2 (second range), 1 (first range).

Operation

Pull up lock tab to move selector, then release when red cursor is over the desired range.



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NOTE: The selector must be in Neutral (N) position to start engine.

Automatic transmission operation

A) Reverse (R)

Use this position for backing the vehicle. Vehicle should be completely stopped before shifting from a forward gear to reverse or from reverse to forward. A reverse warning signal will be automatically activated upon selection of this range.

B) Neutral (N)

Use this position to start engine. Select neutral (N) when checking vehicle accessories, and for extended periods of engine idle operation; apply parking brake. The push button range selector will automatically select neutral when the ignition switch is turned on after engine has been shut off.

WARNING: Always apply parking brake before leaving driver's seat.

CAUTION: Detroit Diesel engines should not be idled for extended periods at *"low"* idle (approximately 550 rpm). For extended idling, engine should run at *"fast"* idle (approximately 1100 rpm).

C) Drive (D or 1-5) (1-4 on 4-speed transmission)

Use this high range for normal driving conditions. When this range is selected, the vehicle will start in first or second range and will automatically upshift to a higher range as output speed increases. As the vehicle slows down, output speed decreases, and the transmission automatically downshifts to the correct range.

NOTE: If a slick surface condition should occur with an ATEC system transmission, the ECU (Electronic Control Unit) will command converter operation (disconnect lockup) and inhibit downshifts for a period of time or until normal wheel speed has been restored.

NOTE: Manual shifting should only be used when required by traffic conditions as outlined hereafter.

D) Third (3 or 1-3) and fourth (4 or 1-4) ranges

Select these ranges when driving on moderate grades, or when load and traffic conditions require the use of restricted speed. Upshifting and downshifting are automatic.

E) Second range (2 or 1-2)

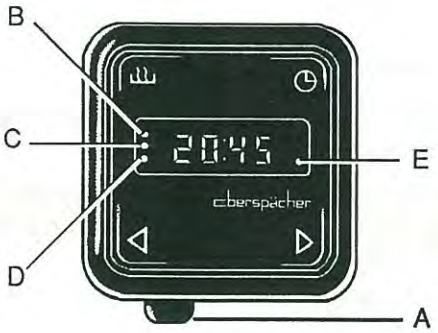
Select this range when operating in heavy and congested traffic. The transmission will start in first and automatically upshift second. When slowing, the transmission will automatically downshift to first range. Low ranges provide progressively greater engine and retarder braking power (the lower the range, the greater the engine braking power).

F) First range (1)

Select this range when pulling through mud and snow, or when driving up steep grades. This range provides maximum engine braking power.

In the lower ranges (1, 2, 3, and 4), transmission will not upshift above the highest gear selected unless engine speed for that gear is exceeded.

WATER HEATER TIMER



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This timer located on L.H. side control panel is used to program the starting and stopping time of the preheating system.

CAUTION: The preheating system should not operate for more than one hour before starting the engine as this could discharge batteries.

Time display

Pull lever A forward*

Time setting

Pull lever A forward and press on ◁ or on ▷

Heating startup

(possible regardless of preselection)

Press on

Display of heating time in minutes, operation indicator light E is flashing

Heating startup, continuous operation

Pull lever A forward and press simultaneously on

Heating shutoff

Press on . With automatic delay to allow cooling

Preselection of heating startup time

Memorization of 3 startup times

Display of memorized times

(heating will turn on automatically at preselected time)

Press once on ◷ : Heating is set for the 1st startup time**, indicator light B is on.

Press twice on ◷ : Heating is set for the 2nd startup time**, indicator light C is on.

Press three times on ◷ : Heating is set for the 3rd startup time**, indicator light D is on.

Neutral position: Press four times on ◷ : No display or display of time*. No preselected startup time

Setting of startup times**:

1st memory: Press momentarily on ◷ B is on

2nd memory: Press momentarily on ◷ C is on

3rd memory: Press momentarily on ◷ D is on

Setting of startup time by pressing on ◁ or ▷

Neutral position: press once again on ◷ :

No display or display of time*, the preset times are still in memory

* Eventually permanent display of time with the vehicle ignition switch on

** Display of heating startup time turns out after approximately 20 seconds, or time display*

WARNING: Preheating system must not operate when vehicle is parked inside or during fuel fill stops.

NOTE: Preheating system uses the same fuel as the engine.

In case of failure:

1. Shut off and turn on heating.
2. Check main circuit breaker and overheating switch.
3. Have it repaired in a specialized shop.

VIDEO SYSTEM REMOTE CONTROL

Press on video system switch located on L.H. side control panel to turn on video cassette player, TV converter and TV monitors.

Remote control must be connected to the video cassette player. Refer to figure 1.

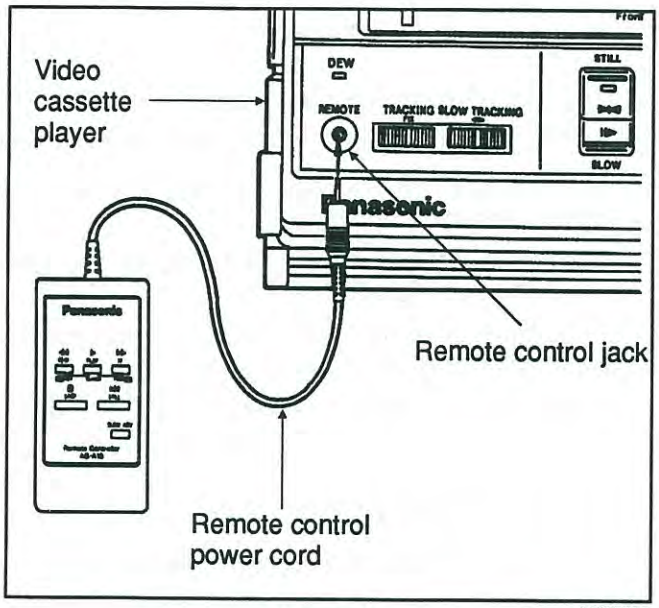


Figure 1

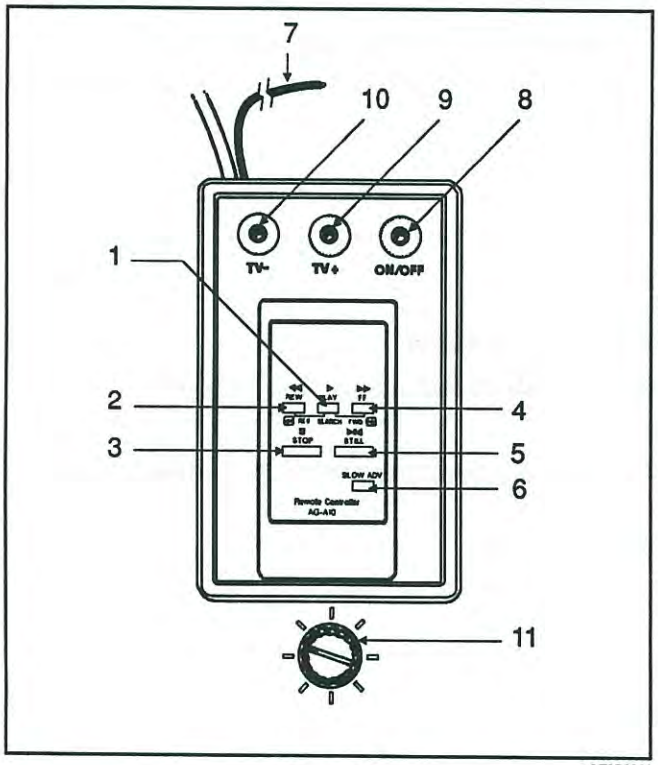


Figure 2

NOTE: The video operation without the remote control is outlined in the manufacturer's instruction manual, which is located in the video cassette player compartment.

1. Play button

Press this button to play back the recorded tape.

2. Rewind button

Press this button to rewind tape. When pressed and held during playback, the reserve search mode is engaged with the tape running.

3. Stop button

Press this button to stop the tape.

4. Fast forward button

Press this button to fast forward the tape. When pressed and held during playback, the forward search mode is engaged with the tape running.

5. Still button

During playback, press this button to view a still picture. Press this button once more to release from still mode.

6. Slow advance button

When noise appears with the still playback image, press this button to clear noise from still picture.

7. M2 Jack

Insert into the *"Remote"* outlet on front of the video.

Refer to figure 1.

8. Video or TV converter button

Press to select video or TV converter.

NOTE: When you turn on Video switch on side control panel, the video will turn on automatically.

9. Channel Up button

Press and release to select next higher channel.

Press and hold to scan upward.

10. Channel Down button

Press and release to select next lower channel.

Press and hold to scan downward.

11. Volume

Turn button clockwise to increase volume.

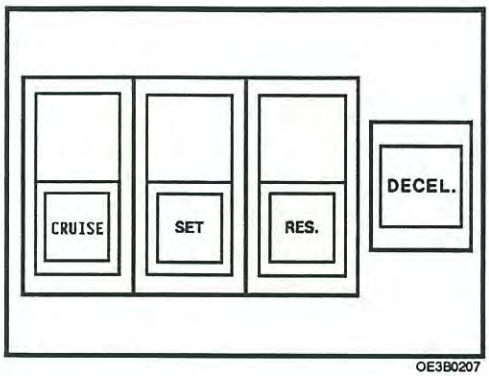
*** Mute**

Press and release TV + and TV - simultaneously once to turn sound off.

Press again simultaneously to turn sound on.

For these 2 last operations, hold button during 3 seconds and release.

CRUISE CONTROL



Introduction

The cruise control is an automatic speed control system that allows you to maintain a constant cruising speed above 35 mph (55 km/h) without depressing the accelerator pedal. The four control switches are located on a panel in driver's compartment.

WARNING: Do not use the cruise control system when driving conditions do not permit maintaining a constant speed, such as in heavy traffic or on roads that are winding, icy, snow covered, slippery, or with a loose driving surface.

Setting vehicle speed

To turn on the system, push down *"Cruise"* rocker switch, set the vehicle speed by accelerating to the desired speed and momentarily press and release the *"Set"* switch, then remove your foot from accelerator pedal. This sets the cruising speed and stores it in memory, thus maintaining speed automatically.

NOTE: Cruise control system will not accept speed settings, nor will the *"Resume"* switch operate below approximately 35 mph (55 km/h).

Increasing set speed

Vehicle speed setting may be increased by one of the following methods:

1. Press and hold the *"Resume"* switch until the desired speed is obtained. Releasing the *"Resume"* switch will set the new higher speed.

2. Depress accelerator pedal until the desired speed is obtained, then press and release the *"Set"* switch.

NOTE: When driving with cruise control in use, the speed may be increased for passing, etc., by depressing the accelerator in the usual manner. Once the foot is removed from the accelerator pedal, the cruise control will return to the previous set speed.

For vehicles equipped with a manual transmission, the cruise control will be deactivated by depressing clutch pedal, and activated again when pedal is released.

Decreasing set speed

Vehicle speed setting may be decreased by one of the following methods:

1. Press and hold the *"Set"* switch until the desired lower speed is obtained. Releasing the *"Set"* switch will set the new speed.

2. The cruise control can be disengaged without losing the speed memory by either of two methods:

a) Lightly apply the brakes

b) Momentarily press the *"Decel"* switch button.

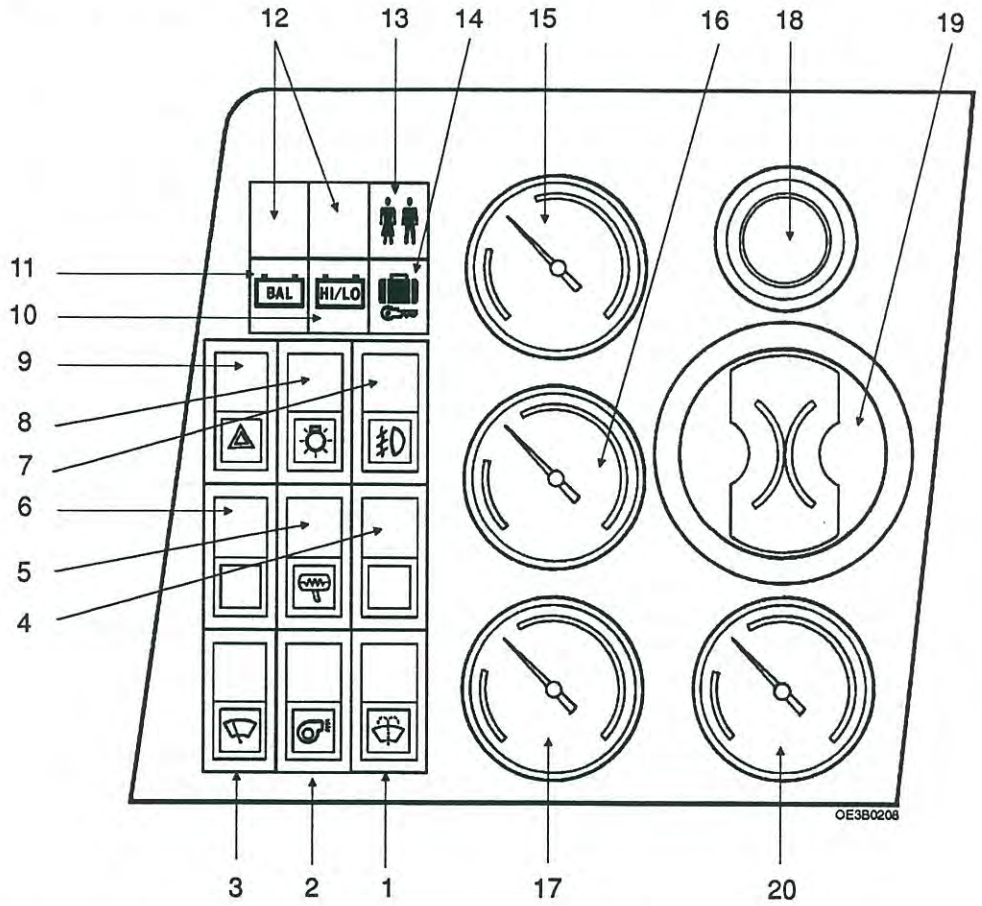
After either of these disengagements, you may return to the previously set speed by pressing and releasing the *"Resume"* switch, provided the speed is higher than 35 mph (55 km/h).

The cruise control is completely shut off and the speed memory is lost by turning off the *"Cruise"* rocker switch.

NOTE: If speed drops below 35 mph (55 km/h), the setting instructions must be repeated, because the cruise control is inoperative below this speed.

When the cruise control automatic operation is cancelled, any objectionable vehicle motion can be minimized by depressing accelerator lightly before disengaging cruise control.

L.H. DASHBOARD



1- Upper windshield washer switch

Push on rocker switch and hold in position to operate windshield washers. Wipers will be automatically activated and will turn off a few seconds after releasing the switch.

WARNING: In cold weathers, windshield should first be warmed up with defroster before using washers, in order to prevent icing and serious visibility impairment.

CAUTION: Do not operate washers when level is low to prevent damage to the pump mechanism.

2- Upper windshield defroster switch

Push on rocker switch to first position to operate the blower in low speed and push to second position to obtain the high speed.

3- Upper windshield wiper switch

Push on rocker switch to first position to operate the intermittent mode and push to second position to obtain a constant speed.

WARNING: Do not run wiper blades on a dry windshield as this may scratch it. Always loosen frozen blades on windshield before operating wipers to avoid damaging their mechanism.

4- Blank for additional switch

5- Exterior mirror heating switch

Push down rocker switch to heat both outside mirrors.

6- Blank for additional switch

7- Fog light switch

Push down rocker switch to turn on fog lights as well as tail and marker lights.

Before using fog lights, remove their plastic protective covers.

WARNING: Make sure engine is stopped and parking brake applied.

8- Exterior lighting switch

Push down rocker switch to turn on marker lights and push again to turn on headlights.

NOTE: Daytime running lights will be automatically cancelled when this switch is activated. For more details, refer to section *"Safety"* under heading *"Daytime running lights"*.

9- Hazard flasher switch

Push down rocker switch and all turn signal lights will flash simultaneously, as well as their dashboard indicator lights.

10- Batteries with a high or low voltage

Illuminates when battery voltage exceeds 30 volts or drops under 24 volts.

NOTE: According to the battery charge, this indicator light will normally turn on upon engine starting and remain on during a few seconds. This is caused by a normal voltage drop during starting.

11- Battery equalizers

Illuminates when battery voltage is not equalized.

NOTE: Before requesting any breakdown service, check that battery equalizer circuit breakers are reset. For their location, refer to heading *"Main breakers"* page 4 - 10.

Allow 15 minutes after taking these corrective measures on the battery equalizers.

12- Blanks for additional indicator lights

13- Lavatory door lock indicator light

Illuminates when the lavatory door is locked.

14- Baggage compartment door indicator light

Illuminates when one or several baggage compartment doors are unlocked.

15- Turbo boost pressure gauge

Indicates turbo boost vacuum in inches of Hg or pressure in psi. Reading depends on engine rpm and load conditions.

16- Oil pressure gauge

Indicates engine oil pressure. Normal reading should range between 50 and 70 psi (345 - 483 kPa) at cruising speed.

17- 24 volt voltmeter

Indicates electrical system voltage. Normal reading should be 27.5 volts with engine operating.

18- Adjustable ventilation louvers

See *"Adjustable louvers"* (page 2 - 34).

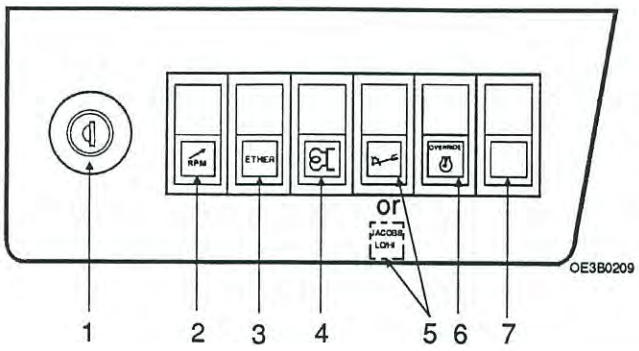
19- Pyrometer

Indicates left and right exhaust manifold temperature in hundreds of °F. At cruising speed, normal reading should vary between 500 and 1100 °F according to operating conditions of vehicle.

20- 12 volt voltmeter

Indicates electrical system voltage. Normal reading should range between 12 and 13.75 volts with engine operating.

L.H. LOWER CONTROL PANEL



Switches

1- Ignition

This switch has four positions:

"ACCESSORIES": Turn key counterclockwise; only the accessories are operative and key cannot be removed.

"OFF": No ignition and key can be removed.

"ON": Ignition is on and key cannot be removed.

"START": Turn key to this position to start engine, then release as soon as engine is started. Key will automatically return to *"ON"* position. Ignition key must be returned to *"OFF"* position before trying to restart.

WARNING: Do not engage starter for more than 15 seconds. Allow starter to cool before engaging starter again. This will prevent starter overheating and will allow the time delay relay to cool.

2- Fast idle

Push down rocker switch to engage fast idle, thus increasing engine speed to approximately 1100 rpm. Use this switch for extended stops.

NOTE: If parking brake is released and/or transmission is shifted with the engine running at fast idle, engine will reduce its speed to idle and maintain this rpm as long as parking brake is not applied and/or transmission is in neutral position.

If engine is stopped with the fast idle switch in the *"ON"* position, this control will be automatically cancelled when restarting the engine. The driver must depress, then reset the rocker switch to actuate fast idle again. Generally, fast idle should be reduced to low idle before shutting off engine.

3- Cold starting aid

Activates the cold starting device in engine compartment (refer to heading *"Cold starting aid"* page 4 - 4).

4- *"Espar"* preheating system

Push down rocker switch to turn on the preheating system. Timer can be operated.

CAUTION: The system should not operate for more than one hour before starting the engine as this could discharge batteries.

NOTE: The system will shut off when coolant temperature reaches 176 °F (80 °C), but indicator light will remain on to remind you to turn the switch off.

5- Transmission retarder or *"Jacobs"* engine brake

A) Transmission retarder

Push down rocker switch to the first position to actuate the hydraulic retarder of the transmission which operates when the accelerator pedal is released, then press to the second position to actuate retarder which will operate when the accelerator pedal is released and when brake pedal is depressed (see page 3 - 1).

WARNING: Never use retarder on a slippery road, as this additional braking could interfere with the ABS system. Consequently, retarder must remain shut off in favor of the service brake system; failure to do so could result in loss of vehicle control.

B) *"Jacobs"* engine brake

Push down rocker switch to the first position to actuate system to half engine brake and press to the second position for a full application of engine brake (see page 3 - 1).

NOTE: Engine brake is operative only when accelerator pedal is released, and when engine speed is over 900 rpm.

Each time the engine brake is in operation, the stoplights will automatically light up.

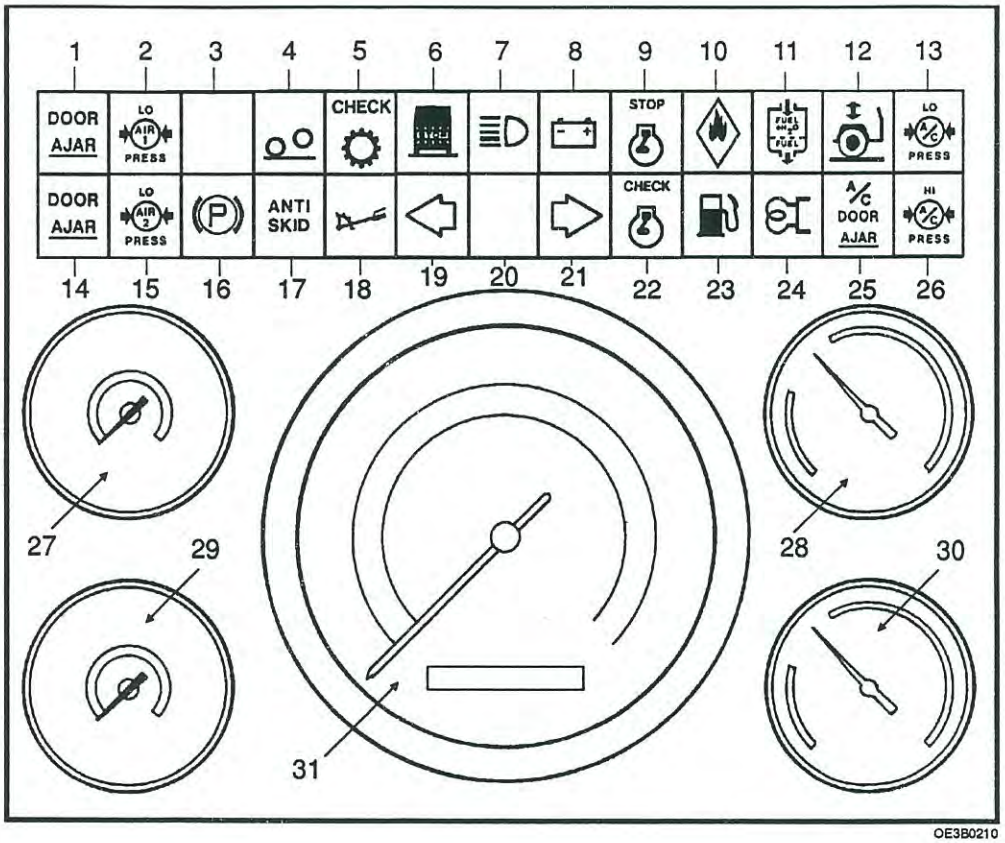
6- *"Stop Engine"* override

Push down rocker switch to cancel the emergency shutdown procedure during a 30 second period. One pulse is sufficient for each 30 second period and must be made before the end of the 30 second delay period (see *"Stop Engine"* page 2 - 15).

CAUTION: The "Stop Engine" override must be used only in emergency cases, such as to move vehicle out of traffic. Excessive use of this switch could cause serious damage to the engine.

7- Blank for additional switch

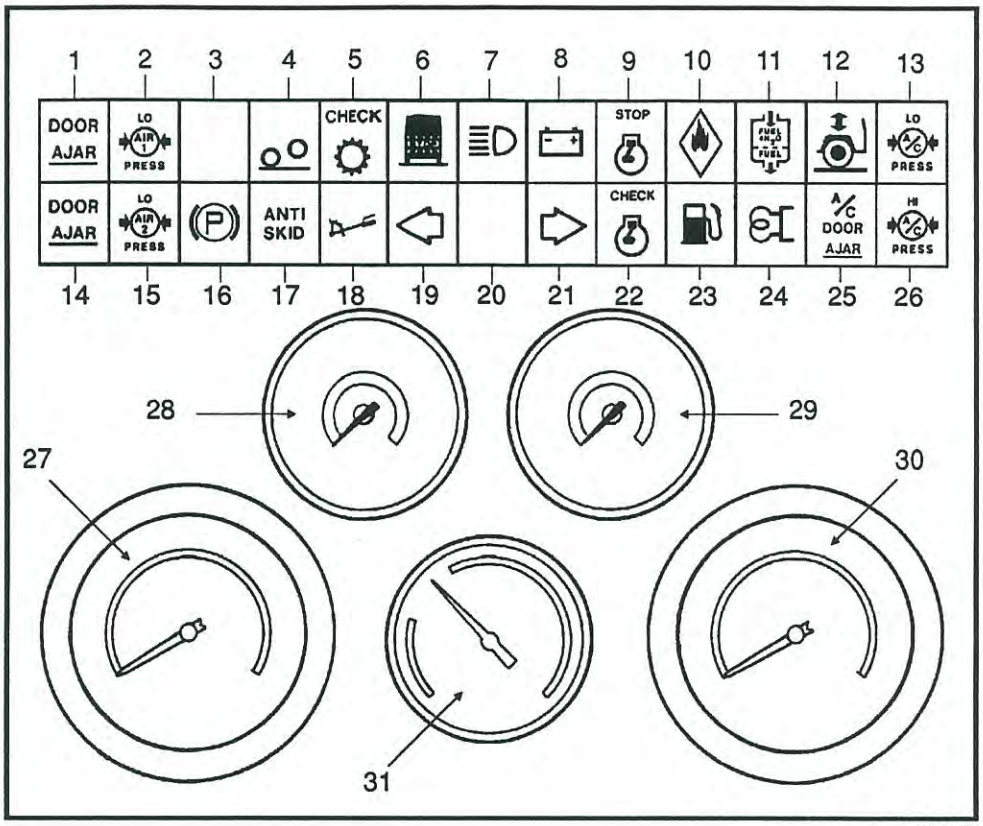
CENTRAL DASHBOARD (WITH TACHOGRAPH)



Indicator/warning lights and gauges

1- Engine compartment door ajar
2- Low primary air pressure
3- Blank for additional indicator/warning light
4- Tag axle raised or unloaded
5- Check transmission
6- Stoplights
7- High beams
8- Battery
9- Stop engine
10- Fire detectors
11- Water separator
12- Kneeling
13- Low A/C pressure
14- Baggage compartment door ajar
15- Low secondary air pressure
16- Parking brake
17- Antilock braking system
18- Transmission retarder
19- Left turn signal
20- Blank for additional indicator/warning light
21- Right turn signal
22- Check engine
23- Low fuel level
24- *"Espar"* preheating system
25- Heating-A/C compartment door ajar
26- High pressure heating-A/C
27- Primary air system pressure gauge
28- Secondary air system pressure gauge
29- Blank for additional gauge
30- Transmission oil temperature gauge
31- Tachograph

CENTRAL DASHBOARD (WITHOUT TACHOGRAPH)



Indicator/warning lights and gauges

1- Engine compartment door ajar
2- Low primary air pressure
3- Blank for additional indicator/warning light
4- Tag axle raised or unloaded
5- Check transmission
6- Stoplights
7- High beams
8- Battery
9- Stop engine
10- Fire detectors
11- Water separator
12- Kneeling
13- Low A/C pressure
14- Baggage compartment door ajar
15- Low secondary air pressure
16- Parking brake
17- Antilock braking system
18- Transmission retarder
19- Left turn signal
20- Blank for additional indicator/warning light
21- Right turn signal
22- Check engine
23- Low fuel level
24- *"Espar"* preheating system
25- Heating-A/C compartment door ajar
26- High pressure heating-A/C
27- Tachometer
28- Primary air system pressure gauge
29- Secondary air system pressure gauge
30- Speedometer
31- Transmission oil temperature gauge

CENTRAL DASHBOARD

Indicator/warning lights

1- Engine compartment door ajar

Lights when engine compartment door is ajar.

2- Low primary air pressure

Lights when primary system pressure is too low.

3- Blank for additional indicator/warning light

4- Tag axle raised or unloaded

Lights when tag axle is raised or when tag axle suspension air springs are unloaded. Moreover, a beep will sound to warn driver that axle is raised or that suspension air springs are unloaded.

5- Check transmission

As a light bulb check, this light illuminates with the ignition switch *"ON"*. After approximately two seconds, the light will turn off. If indicator turns on again, the *"ATEC"* system (Allison Transmission Electronic Control) has detected a problem. If the *"CHECK TRANS"* light turns on and subsequently, the *"DO NOT SHIFT"* light (on shift selector) turns out, there is a minor problem. If the problem disappears, the light will go out, but a trouble code will remain stored in the ECU (Electronic Control Unit) memory and may be read by setting the *"ATEC TEST"* switch to the *"ON"* position (see page 5 - 7).

NOTE: This indicator may also turn on when starting engine in extreme cold weather conditions (see page 4 - 5).

6- Stoplights

Lights when stoplights are activated.

7- High beams

Lights when headlight high beams are selected (see page 2 - 19).

8- Battery

Lights when alternator is not operating properly.

9- Stop engine

Lights when a major engine problem occurs. The engine power will automatically begin to decrease gradually and will be followed by a shutdown after 30 seconds. This 30 second delay period may be repeated using the *"Stop engine override switch"* on page 2 - 12.

NOTE: Once engine is stopped, it can not restart until malfunction is corrected.

As a light bulb and system check, this indicator will turn on with the ignition switch *"ON"*. The light will turn off after approximately five seconds.

10- Fire detectors

Lights when fire is detected in the engine compartment.

11- Water separator

Lights when water separator must be drained (see pages 4 - 7, 6 - 7).

12- Kneeling

Lights when kneeling system is operating (see page 3 - 2).

13- Low A/C pressure

Lights when A/C system pressure is too low. Compressor clutch is disengaged and fan shuts off.

NOTE: In cold weather, this indicator light may turn on; this is normal.

14- Baggage compartment door ajar

Lights when one or several baggage compartments is (are) ajar.

15- Low secondary air pressure

Lights when secondary air pressure is too low.

16- Parking brake

Lights when parking brake is applied (see page 2 - 19).

17- Antilock braking system

Lights until vehicle speed reaches 4 mph (7 km/h), and when the antilock system is not operating properly.

18- Transmission retarder

Lights when transmission retarder switch is set to the *"ON"* position (see page 2 - 12).

19- Left turn signal

Flashes when the left turn signal is selected with the multifunction lever.

20- Blank for additional indicator/warning light

21- Right turn signal

Flashes when the right turn signal is selected with the multifunction lever.

22- Check engine

Will light if a minor engine malfunction is sensed by the DDEC (Detroit Diesel Electronic Control) system. This light will remain illuminated until malfunction is corrected. Furthermore, this indicator will flash to indicate engine malfunction code when the *"DDEC - TEST"* switch is set to the *"ON"* position (see page 5 - 6).

NOTE: As a light bulb and system check, this indicator will turn on with the ignition switch *"ON"*. The light will turn off after approximately five seconds.

23- Low fuel level

Lights when approximately 12 US gallons (45 litres) remain in the tank. We recommend that you do not exceed a distance of 62 miles (100 km) after light has turned on. Fill vehicle as soon as possible.

24- *"Espar"* preheating system

Lights when the *"Espar"* preheating system is operating.

25- A/C-heating compartment door ajar

Lights when the A/C-heating compartment door is ajar.

26- High A/C-heating pressure

Lights when A/C-heating system pressure becomes too high. Compressor clutch will be disengaged, but compressor fan will remain activated.

Gauges

Primary air system pressure gauge

Indicates air pressure in the primary system. Normal reading should vary from 95 to 125 psi (655 - 860 kPa).

Secondary air system pressure gauge

Indicates air pressure in the secondary system. Normal reading should vary from 95 to 125 psi (655 - 860 kPa).

Transmission oil temperature gauge

Indicates temperature of transmission oil. Normal reading should vary between 160 and 250 °F (70 - 120 °C).

NOTE: Temperature may rise up to a maximum of 330 °F (166 °C) on vehicles equipped with a retarder, if the latter is operated for extended periods.

Tachometer

Indicates engine speed in hundreds of revolutions per minute (rpm) and serves as a guide for proper gear shifting. It also aids the driver in preventing excessive engine speeds when going down grades with engine serving as a brake. Maximum allowable engine rpm is 2450.

Speedometer

Indicates the vehicle speed. The odometer indicates the distance driven.

US models: miles

Canadian models: kilometers

NOTE: Dashboard gauges should not be used for mechanical adjustments.

TACHOGRAPH

This multipurpose tachograph includes:

Speedometer

Indicates vehicle speed in mph and km/h.

Odometer

Indicates the vehicle accumulated distance in miles or kilometers.

Tachometer

Indicates engine speed in hundreds of revolutions per minute (rpm).

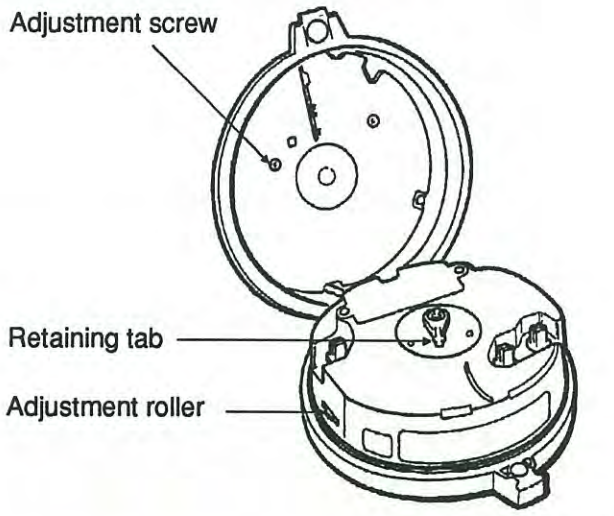
Clock

Operates even if the main battery disconnect switches are set to the *"OFF"* position.

Paper recording

The paper recording of speedometer and tachometer data is available in a 24-hour or 7-day period format.

To change card inside tachograph, open the tachograph cover using the key provided, lift the card retaining tab, and replace card with the mph or km/h side facing the tab. Replace tab and close cover.



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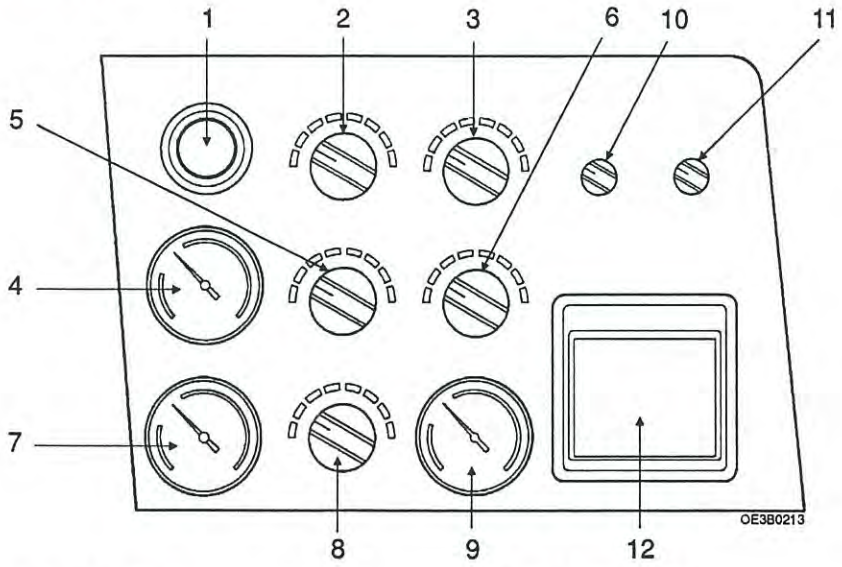
CAUTION: Do not run engine without card or with damaged card in tachograph as it may damage tachograph mechanism. Install a dummy plastic card (Prévost #59-0251) when vehicle has to be operated without a regular tachograph card. Replace card as required.

To set clock, open the tachograph cover using the key provided, and turn the adjustment roller on L.H. side of tachograph.

R.H. DASHBOARD



1- Adjustable ventilation louver

Refer to *"Adjustable louvers"* (page 2 - 34).

2- Driver's A/C - heating recirculation & fresh air control

Turn control clockwise to provide a maximum flow of fresh air. When outside temperature is very warm and maximum air conditioning is required or when outside temperature is very cold and maximum heating is required, turn control counterclockwise to shut off fresh air flow, thus allowing air recirculation inside vehicle. Select this position to drive vehicle in dusty roads and polluted areas to avoid infiltration of contaminated air inside vehicle.

3- Main windshield defroster control

This control is used to direct air flow in main windshield defroster or dash louvers or both together. Turn control clockwise to increase air flow in defroster, and counterclockwise to increase air flow in dash louvers. Turn control to center position to direct air flow simultaneously in defroster and dash louvers.

4- Engine coolant temperature gauge

Indicates engine coolant temperature. Normal reading should range between 170 and 195 °F (76 - 90 °C).

NOTE: Engine is not considered overheating until above 215 °F (102 °C).

5- Driver's A/C - heating temperature control

Regulates temperature for A/C - heating system in driver's section. Turn control clockwise to increase temperature, and counterclockwise to decrease it. At extreme clockwise position, full heat will be maintained.

6- Driver's A/C - heating ventilation speed control

Turn control clockwise to the first position fo activate fan, then turn clockwise again to set the desired speed.

7- Fuel level gauge

Indicates approximate quantity of fuel remaining in tank. It is not recommended to operate the vehicle when the reading is below 1/8 full.

NOTE: When there are approximately 12 U.S. gallons (45 litres) remaining in tank, the low fuel level indicator light illuminates on dashboard. Vehicle range is estimated at a maximum distance of 60 miles (100 kilometres) according to vehicle speed and load.

8- Passenger A/C - heating temperature control

Regulates temperature for *"A/C"* or *"heating"* mode in passenger section. Turn control clockwise to increase temperature, and counterclockwise to decrease it. A red LED located in center console under the inside temperature thermometer will light when the *"heating"* mode is operating, while *"A/C"* mode and the *"dehumidification"* function will be indicated by a green LED.

NOTE: To maintain ambient temperature, turn control until both LEDs light out.

The two LEDs may be illuminated simultaneously when heating and dehumidifying is required.

9- Differential oil temperature gauge

Indicates differential oil temperature. Normal reading should not exceed 250 °F (120 °C).

10- Brightness control

Adjust as required.

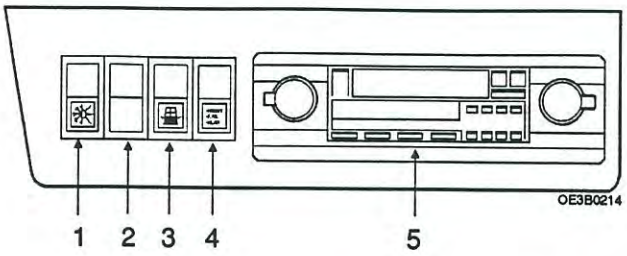
11- Contrast control

Adjust as required.

12- TV monitor (or parcel tray for vehicles not equipped with a back-up camera)

Monitor switches on automatically in reverse range.

R.H. LOWER CONTROL PANEL



1- Passenger A/C - heating switch

Push down rocker switch to activate main A/C - heating system. The ventilation system will operate automatically.

2- Blank for additional switch

3- Fresh air damper switch

Push down rocker switch to close partially the fresh air damper.

NOTE: When front door is open, the damper will close automatically independently of switch position.

4- Speaker selector switch

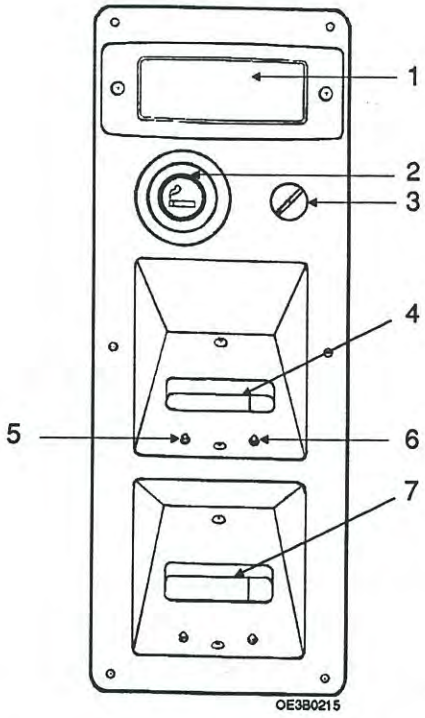
Push up rocker switch to operate the speakers in driver's section only. Push down rocker switch to operate the speakers in passenger section only. The central position operates driver's and passenger section speakers simultaneously.

5- AM/FM stereo cassette receiver

Includes AM/FM radio, cassette tape player and PA system. Instructions for proper utilization of the sound system are included in the technical publication box delivered with the vehicle.

NOTE: When video switch is activated, the passenger section speakers are not connected to the radio.

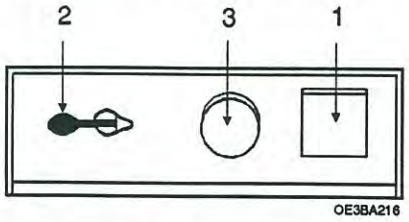
CENTER CONSOLE



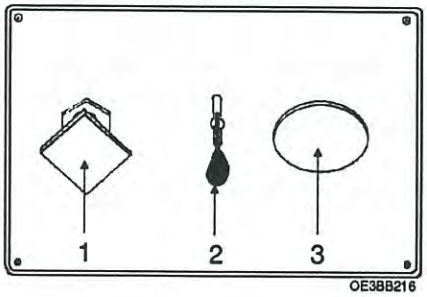
1- Ashtray (see page 2 - 31)
2- Cigarette lighter (see page 2 - 31)
3- PA system volume control
4- Inside temperature thermometer
5- Green LED for *"A/C"* mode
6- Red LED for *"heating"* mode
7- Outside temperature thermometer

R.H. LATERAL CONSOLE

With manual transmission



With automatic transmission



Control valves

1- Parking brake

2- Tag axle up or unloaded

3- Parking brake override

1- Parking brake

See *"Combination emergency and parking brakes"* under heading *"Brakes"* page 2 - 20).

2- Tag axle up or unloaded

The tag axle is raised or only its air springs are unloaded according to the valve position (see page 4 - 13).

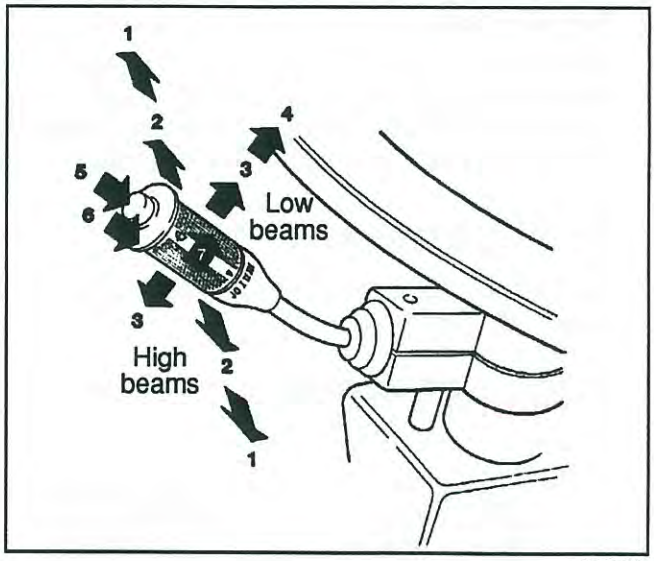
3- Parking brake override

If during normal operation, primary system air pressure drops below 40 psi (276 kPa), spring-loaded parking brakes will immediately be applied at full capacity on drive axle to stop vehicle.

Cause of pressure loss should be determined and corrected before proceeding.

However, vehicle may also be equipped with an optional parking brake release system which will allow driving the vehicle for a short period of time to a safe parking place. To operate, push and hold down the control knob located on R.H. lateral console while moving vehicle.

STEERING COLUMN CONTROLS



A. The multifunction lever is used to operate the following accessories:

1- Turn signal: Move the lever up to the second stop to signal a right turn, and down to the second stop to signal a left turn. When the turn is completed, the lever will automatically return to the horizontal position.

2- Lane change signal: Move the lever part way to the first stop, and hold it there. The lever will return to the horizontal position when it is released.

3- Headlight beam changer: High or low beams can be selected by respectively pushing the lever towards the dashboard or pulling it towards the driver.

4- Headlight flasher: High beams can be flashed momentarily by pulling the lever completely towards the driver and then releasing it.

5- Courtesy-type blinkers: Clearance lights can be turned on or off by pressing the button located at the lever tip.

6- Washer control: Push the external ring at the end of lever towards the steering column to activate windshield washers. When the ring is released, washers stop immediately but wipers will continue to run twice over to dry the windshield.

WARNING: In cold weather, windshield should first be warmed up with defroster before using washers, in order to prevent icing and serious visibility impairment.

CAUTION: Do not operate washers when windshield washer fluid level is insufficient to avoid damaging pump mechanism.

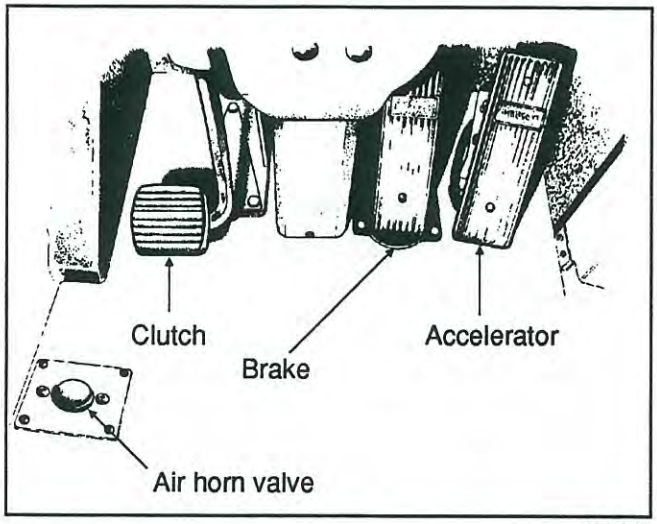
7- Windshield wipers: Turn lever forward to activate the two electrical synchronized arms; the first position corresponds to low speed and the second to high speed. Turn lever backward to activate intermittent mode.

CAUTION: Do not run wiper blades on dry windshields as this may scratch them. Always loosen frozen blades on windshield before operating wipers to avoid damaging their mechanism.

B. Electrical horn

Can be operated by pressing button at center of steering wheel (see page 3 - 4).

FOOT-OPERATED CONTROLS



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Air horn valve

Press on valve to operate air horn (see page 3 - 4).

Brakes

Service brakes

This vehicle is equipped with a dual braking system, the front brakes being independent of the rear brakes. This brake system becomes a modulated emergency system if a pressure drop occurs in the rear brake system.

Service brakes are applied by depressing the brake pedal, the rate of braking varying according to the gradual increase of pressure until the required rate of braking is obtained (see page 3 - 1).

When brake pedal is depressed, vehicle stoplights automatically turn on.

For safe brake effectiveness, vehicle air system pressure should reach at least 95 psi (655 kPa) in both primary and secondary circuits.

A warning light turns on and a buzzer sounds when air pressure in one of the primary or secondary circuits drops below 70 psi (483 kPa). Vehicle must then be stopped and cause of pressure loss must be corrected before further operation.

Any problem or malfunction in the brake system must be reported at once to the maintenance personnel.

WARNING: *"Fanning"* or *"pumping"* brake pedal is not recommended. This practice will not increase brake system effectiveness, but will instead waste air and thereby reduces brake effectiveness.

***"Riding"* the brake by resting foot on brake pedal when not braking can cause abnormally high brake temperature, damage and wear of components, and loss of brake efficiency.**

Combination emergency and parking brakes

In normal operation, if air pressure in both brake circuits drops below approximately 40 psi (276 kPa), spring-loaded emergency parking brakes will immediately be applied at full capacity to the drive axle wheels to stop vehicle. In an extreme condition, the emergency brakes might be applied quite rapidly.

Spring-loaded parking brakes are applied by pulling up the control valve knob on the R.H. lateral console.

They have not been designed to be used as service brakes. In normal driving conditions, control valve knob must be pushed all the way down.

NOTE: Parking brakes can supplement service brakes to stop the vehicle in an emergency condition only. The stopping distance will be considerably longer than with a normal brake application.

Before releasing parking brakes by pushing down control valve knob, pressure gauges should be checked to ensure that brake system air pressure has built up to a minimum of 95 psi (655 kPa).

WARNING: Always apply parking brake before leaving driver's seat.

NOTE: A beep will sound if ignition switch has been turned off without parking brake being applied. The same beep will sound if pressure is still applied on the service brake pedal.

Each time the parking brake is applied and ignition key is turned or left to the *"ON"* position, the stoplights automatically turn on.

Accelerator pedal

Controls engine rpm.

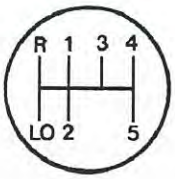
NOTE: Pedal will be inoperative when front door is opened or when the *"DDEC-TEST"* switch in front left service compartment is in the *"ON"* position.

Clutch pedal

Allows engagement and disengagement of manual transmission.

MANUAL TRANSMISSION

The manual transmission has 6 forward speeds, including creeper and one reverse. Shift lever to right of driver is used to select gears. It is equipped with a safety switch designed to prevent starter engagement if shift lever is not in neutral position.



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When shifting from neutral to first or in reverse gear, depress clutch pedal fully to activate clutch brake, thus easing shifting from neutral to a forward or reverse range.

CAUTION: Never fully depress clutch pedal with vehicle in motion as this may damage clutch brake mechanism.

Upshifting

Always start vehicle in motion with transmission in first gear, progressing to second, third, fourth and fifth. Do not skip gears. Do not shift to next higher gear until engine speed has reached 1900 rpm. Double-clutch method is recommended for shifting gears.

Downshifting

Double-clutch is also recommended for downshifting. Always change to lower gear to avoid engine lugging. Lower gears should be used for uphill or downhill driving, as well as operation on ice, snow or mud (minimum 1400 rpm).

Lower gears should be used when going down grade in order to make full use of engine compression. However, engine must never be allowed to operate at a higher speed than its maximum allowable speed (2450 rpm).

Under normal driving conditions, it is not always necessary to downshift through all gears. Standard downshift from fifth to first gear should be made after coach is brought to a complete stop.

CAUTION: The shift selector lever should always be left in neutral position for parking vehicle.

Setting coach in motion should always be done at lowest possible speed to prevent unnecessary clutch wear.

For mountain driving, before descending a long or steep grade, reduce speed and shift into lower gear. Use lower gear ranges to control vehicle speed and avoid prolonged or frequent brake applications which would cause overheating and reduce brake effectiveness.

Shifting into lower gears on slippery surfaces should be done with caution. Sudden engine braking could cause drive wheels to skid, with possible loss of control.

DOOR

Inside operation

The air-operated front door is automatically opened or closed by means of a switch located on the L.H. side control panel. Push down switch to open or close front door.

NOTE: In the closing mode, the door is provided with a safety reverse mechanism in case of obstruction.

Front door emergency opening

To drain air from system, turn counterclockwise control valve handle located over front door. Door can be opened by pushing it toward the outside.

Outside operation

The front door can be secured by two locks. Door must be unlocked to allow operation of the pneumatic opening mechanism. Outside opening of the front door may be performed by depressing a button located in the compartment over the right front wheel. Close the door by simply pushing the button to activate air-lock system, then use provided key to lock door from outside.

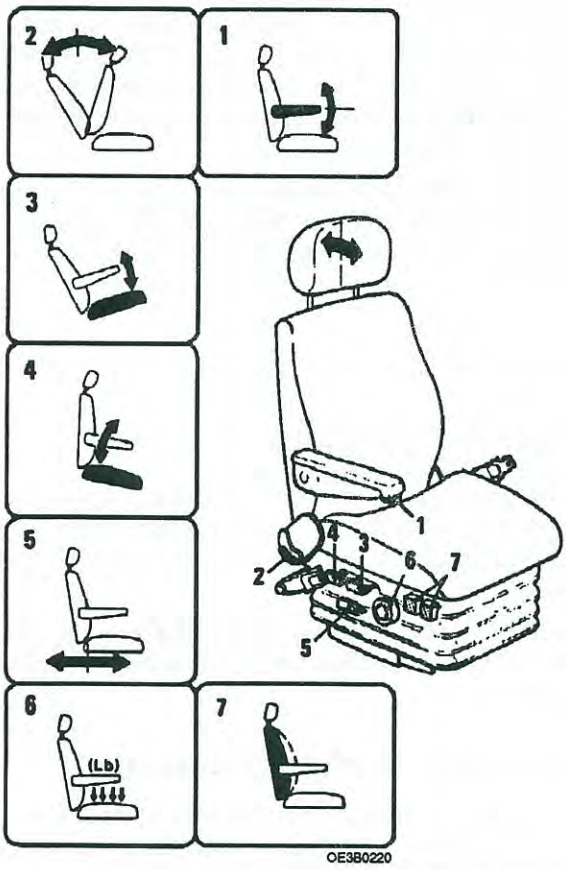
CAUTION: The door must have been previously unlocked to prevent damage to the door lock mechanism.

NOTE: When door is opened, the fresh air damper will close, stepwell lights and the *"Watch your step"* sign will turn on, and accelerator pedal is cancelled.

SEATS

Driver's seat

Only one type of driver's seat is available on this vehicle. The *"ISRI"* seat is offered in two models. The standard model has a mechanical suspension while the other one is equipped with air suspension. Both seats may be equipped with lumbar supports, heated cushions and adjustable armrests.



WARNING: Never adjust seat when driving vehicle as this could result in loss of vehicle control and cause injuries to the driver and passengers.

The *"ISRI"* can be adjusted to the most comfortable driving position according to the following instructions.

1. Turn control to adjust the desired height of the armrest.

NOTE: Do not apply pressure on armrest during its adjustment as this control will be more difficult to turn.

2. Lift lever to allow proper adjustment of the backrest angle.

3. Pull handle up, and push or pull on seat cushion to raise or lower the front section of the seat cushion.

4. Pull handle up, and push or pull on seat cushion to raise or lower the rear section of the seat cushion.

WARNING: Before proceeding with seat cushion adjustments, lower seat belt retractor to avoid pinching fingers between retractor and control knobs.

5. Pull handle up and slide seat forwards or backwards to adjust distance between driver and dashboard.

NOTE: This control may also be located at front of seat.

6. This control is used to adjust the seat suspension. Turn control clockwise to increase suspension resistance and counterclockwise to decrease.

NOTE: On an *"ISRI"* seat equipped with air suspension, the suspension is self-adjusting to the weight of the driver, thus deleting the suspension adjustment handwheel (6).

7. Push on upper section of rocker switches to inflate lumbar support bellows inside the seat backrest, and push on lower section of rocker switches to deflate bellows.

NOTE: Rear and front rocker switches are respectively for lower and upper lumbar support bellows.

Headrest

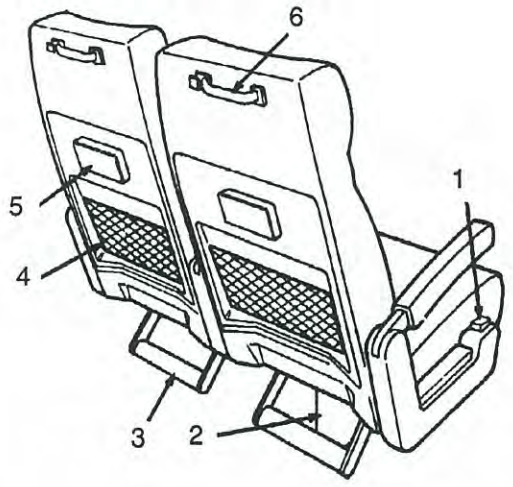
Tilt toward the front or the rear to position headrest horizontally.

Heated cushions

The *"ISRI"* seat may also be equipped with heated cushions operated by a switch on L.H. side control panel.

Passenger seat

All seats are track mounted to facilitate change in seating arrangements. Each seat is mounted on an oval aluminum pedestal to ease cleaning between pedestal and side wall of vehicle.



1- Backrest setting push button
2- Oval aluminum pedestal
3- Footrest
4- Newspaper holder
5- Ashtray
6- Grip handle

OE3B0221

Passenger seat backrest may be tilted and set conveniently by means of a push button on side of seat cushion. Depress and hold push button in position, then push backrest backward to the desired angle; the backrest will remain in the desired position when push button is released. Seat back adjustment mechanism is hydraulic and equipped with a pull-off spring.

A fold-down, spring-loaded type armrest is installed on the aisle side and lowers automatically. The return mechanism is installed in the armrest pivot. Between passenger seats, the same armrest type is installed but is not spring loaded, thus allowing the armrest to stay in a lifted position for passenger convenience. Another armrest is installed on the window side, but this one is fixed.

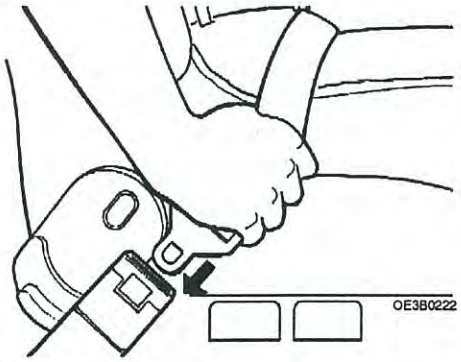
Passenger seat may be equipped with the following items: ashtray, tumbler holder, newspaper holder, grip handle and footrest.

Swivel seats

Vehicle may be equipped with two swivel seats at rear in the card table locations, in order to offer privacy to passengers. To operate swivel seats, remove both seat cushions and the four retaining wing screws. Pull seat towards aisle and rotate seat counterclockwise. Finally, align mounting holes and reinstall wing screws before replacing cushions. Instructions are affixed on seat frame under seat cushion.

Seat belt

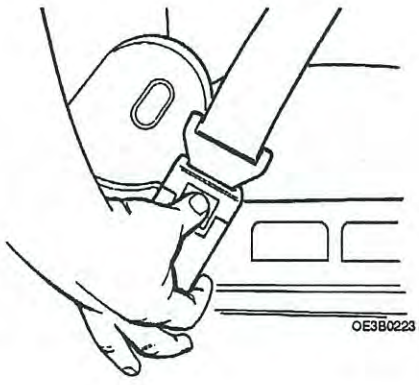
Driver's seat is equipped with a retractable seat belt as required by state and federal regulations. To fasten seat belt, pull latch plate slowly and insert it into the buckle until it clicks. No special adjustment is required as the reel device is self-adjusting. If seat belt operation becomes defective, report to maintenance personnel.



NOTE: The seat belt must be pulled out slowly and continuously, otherwise it will lock the reel before the latch plate reaches the buckle. If this happens, allow the belt to retract completely and repeat the procedure correctly.

WARNING: A snug fit with the lap belt positioned low on the hips is necessary to prevent the possibility of severe injuries in case of an accident. Also, belt should not be worn twisted; do not let belt or belt hardware become damaged by pinching it in seat mechanism. Do not wear belt over rigid or breakable objects in or on your clothing, such as eyeglasses, pens, keys, etc. as these may cause injuries.

CAUTION: Belt must not rub against sharp objects. Never bleach or dry clean safety belt.



To unfasten belt, press red button in center of buckle and allow belt to retract. If belt does not fully retract, pull it out and check for kinks or twists. Make sure that it remains untwisted as it retracts.

MIRRORS

Exterior mirrors

The vehicle is equipped with two exterior mirrors which are provided with an electric heating system to ensure a good visibility in extreme weather conditions. Integral thermostats are installed in both mirrors to avoid continual heating. Use the appropriate switch on the L.H. dashboard panel to activate the defroster system on both mirrors simultaneously.

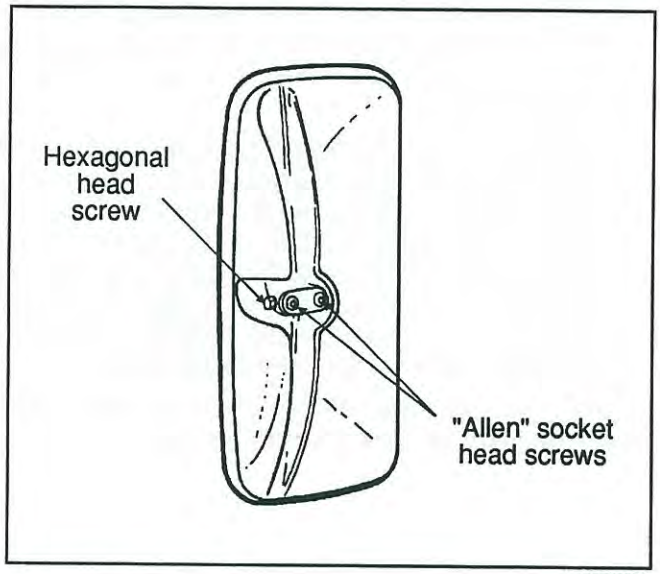
The mirrors can be electrically adjusted by means of the switch on the L.H. dahsboard control panel, or manually according to the following method.

To adjust horizontally, loosen the two *"Allen"* socket head screws at rear of mirror head. Adjust to desired angle, then tighten screws.

CAUTION: Do not overtighten.

To adjust vertically, loosen the hexagonal head screw at rear of mirror head. Position to desired angle, then tighten screw.

CAUTION: Do not overtighten.



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NOTE: Adjust exterior and interior mirrors before driving and after adjusting your seat to the proper driving position. It is important for safe driving that you have a good rear vision on each side of the vehicle.

CAUTION: Do not install a convex mirror on the heated mirror glass. This prevents even distribution of heat in the heated mirror and could cause the glass to break.

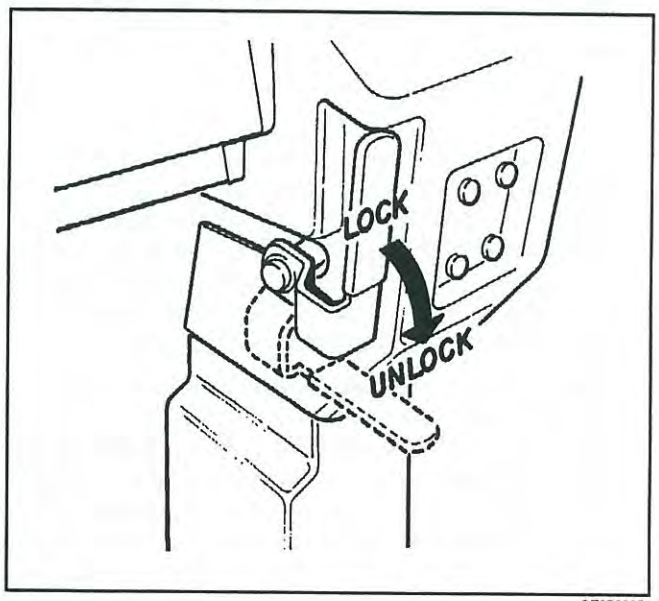
Interior mirrors

The driver's area is also equipped with two additional interior mirrors. The first mirror is located in the upper L.H. corner and is used to see outside the passenger R.H. window, i.e. a dead angle without a mirror. The other mirror is in the upper centre of coach and enables the driver to watch circulation in the aisle.

TILT STEERING WHEEL AND TELESCOPIC STEERING COLUMN

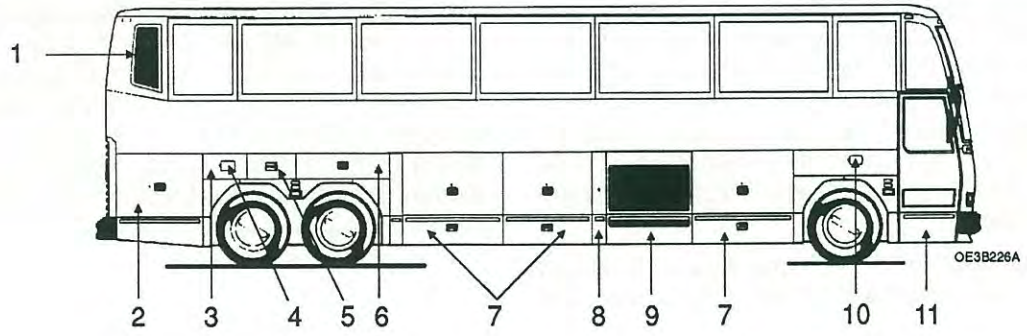
To unlock, use the handle located to the left of steering column. Pull handle down to permit a variation of 11 degrees in steering wheel angle, and a telescopic steering movement of two inches (5 cm). Push handle up to lock tilt and telescopic mechanism.

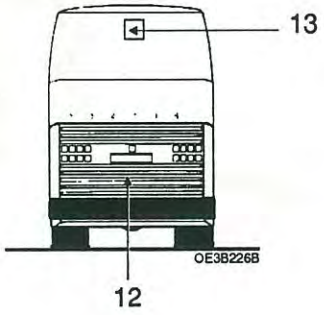
WARNING: Never try to adjust the mechanism while the vehicle is in motion. Steering may move unexpectedly and could cause sudden loss of vehicle control, thus resulting in personal injuries for you and your passengers.

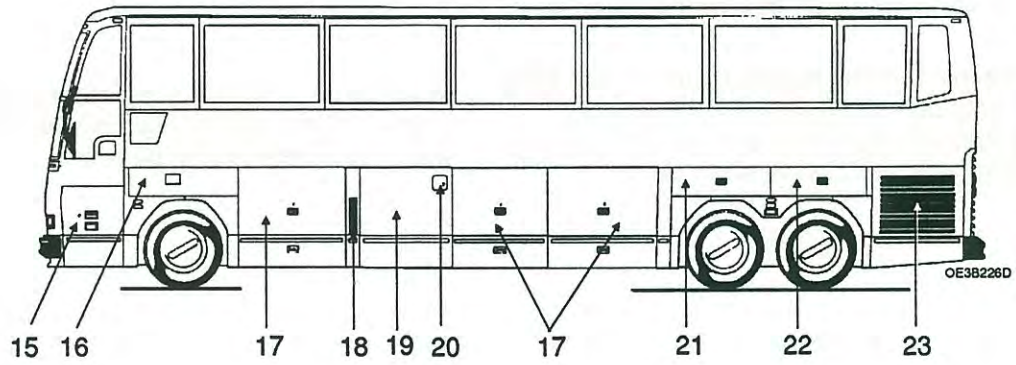


OE3B0225

EXTERIOR COMPARTMENTS





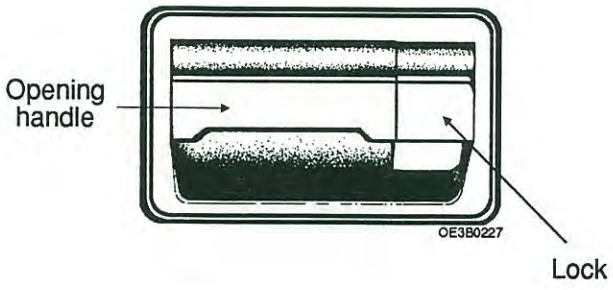


1- Engine air intake duct
2- Engine R.H. side door
3- Main junction feed and battery equalizer sliding support
4- Main battery disconnect switch door
5- Battery sliding compartment
6- Baggage compartment
7- Baggage compartment
8- Fuel tank filling door
9- Condenser compartment
10- Front door control switch door
11- Front door
12- Engine compartment
13- Retractable camera
14- Spare wheel compartment
15- Front service compartment
16- Front electric compartment
17- Baggage compartment
18- Fresh air inlet duct
19- A/C - heating compartment
20- Fuel tank filling door
21- Baggage compartment
22- Rear electric compartment
23- Radiator

BAGGAGE COMPARTMENTS

An optional central door lock system may be installed on the six large baggage compartments only. The switch is located on the L.H. side control panel. Push up rocker switch to unlock the doors and push down to lock. An indicator light will illuminate on L.H. dashboard if one or several baggage compartment doors are unlocked. Another indicator light on central dashboard is also provided to indicate one/or several baggage compartment door(s) ajar.

The exterior compartment doors may also be locked or unlocked from outside using the key provided (see page 2 - 1).

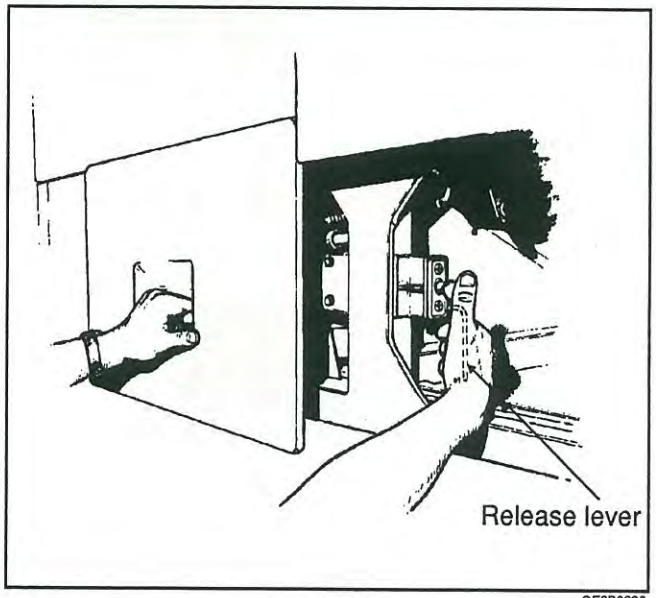


Open door by lifting handle; the opening action is assisted by gas cylinders which also hold the door in the open position.

NOTE: Keep in mind that doors #6 and 21 (see page 2 - 25) can only be locked or unlocked with the key. To prevent theft or vandalism, always lock baggage compartment doors before leaving vehicle.

BATTERY COMPARTMENT

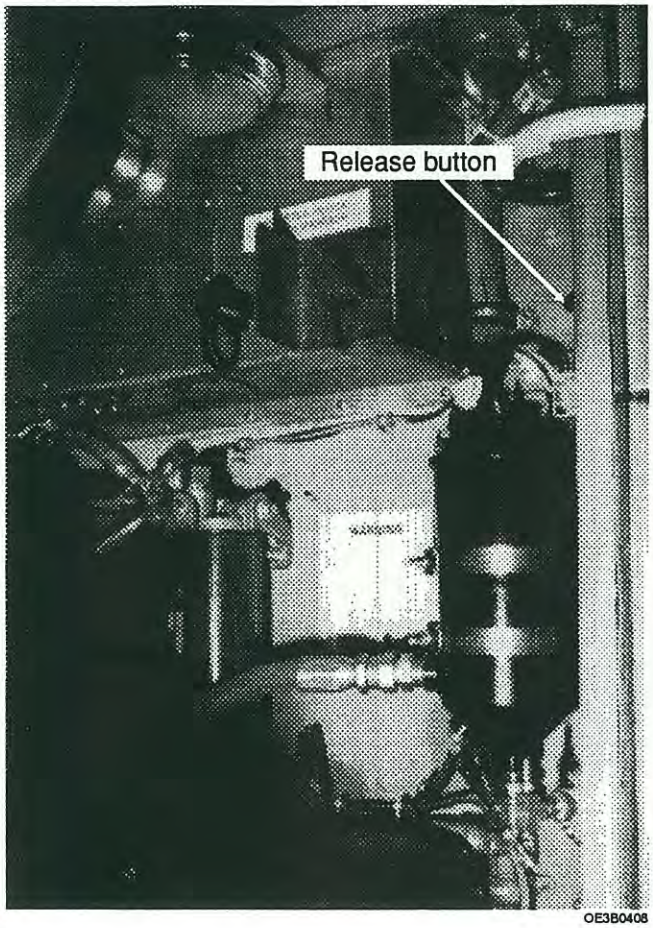
Four maintenance-free batteries are installed inside a small sliding compartment (#5) (see page 2 - 25) located on R.H. side of vehicle over the tag axle. This compartment is always locked. To gain access, open R.H. ski compartment (#6); pull and hold lever located at left of compartment, and with the other hand pull the battery sliding compartment outward. To close, push in the sliding compartment, and the door will lock automatically.



WARNING: Lead-acid batteries generate explosive gases. Keep sparks, flame and lighted cigarettes away from battery compartment.

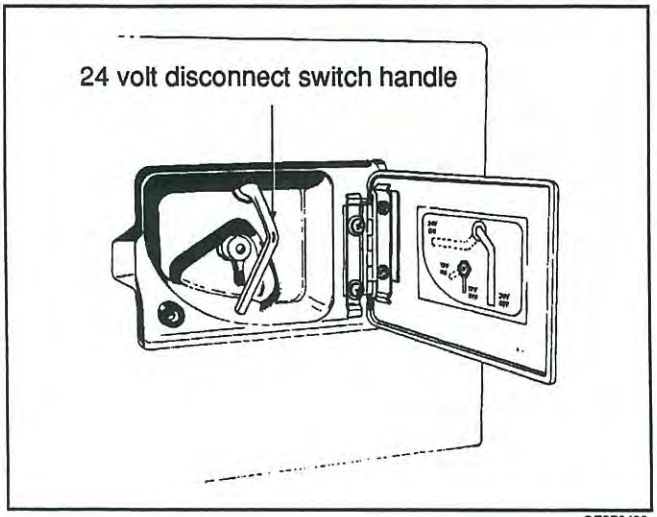
MAIN BREAKERS

To unlock the main power sliding support (#3) (see page 2 - 25), open the engine R.H. side door (#2), locate and pull release button on the common wall of these compartments.



OE3B0408

To gain access to the breaker support, open main disconnect switch door (#4), grab handle of the 24 volt disconnect switch, and pull support outward (see description of circuit breakers on page 4 - 10).



OE3B0409

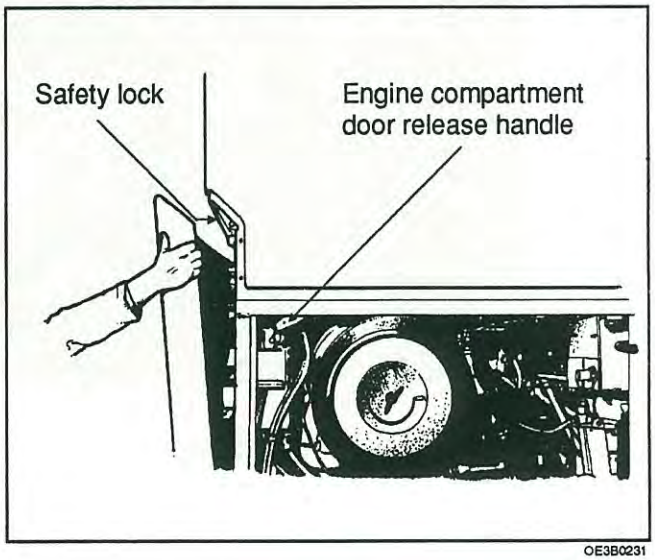
ENGINE COMPARTMENT

Access to the engine is possible through the engine R.H. side door (#2) (see page 2 - 25), or through the engine compartment door (#12). To open the latter, open engine R.H. side door and push upward the release handle. Place hand on upper R.H. side of engine compartment door and pull rearward; door will open automatically.

WARNING: Take care not to stick your fingers between door and frame.

To reduce injuries, do not stand at rear of vehicle when opening engine compartment door, since it opens automatically by means of the cylinder operation. Always use the safety lock to keep the door securely opened in case of any malfunction.

NOTE: An indicator light on central dashboard will illuminate if engine compartment door is ajar.



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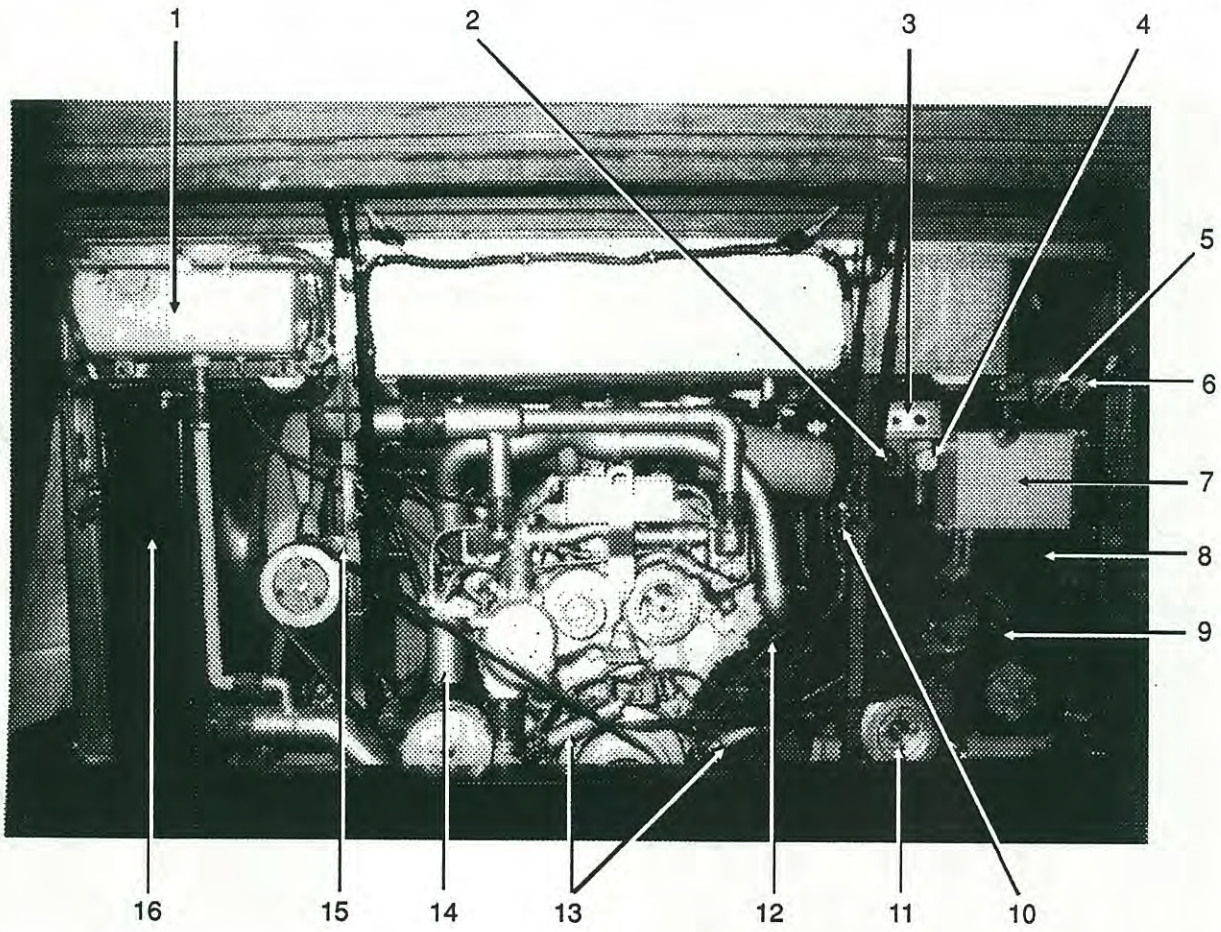
ENGINE COMPARTMENT

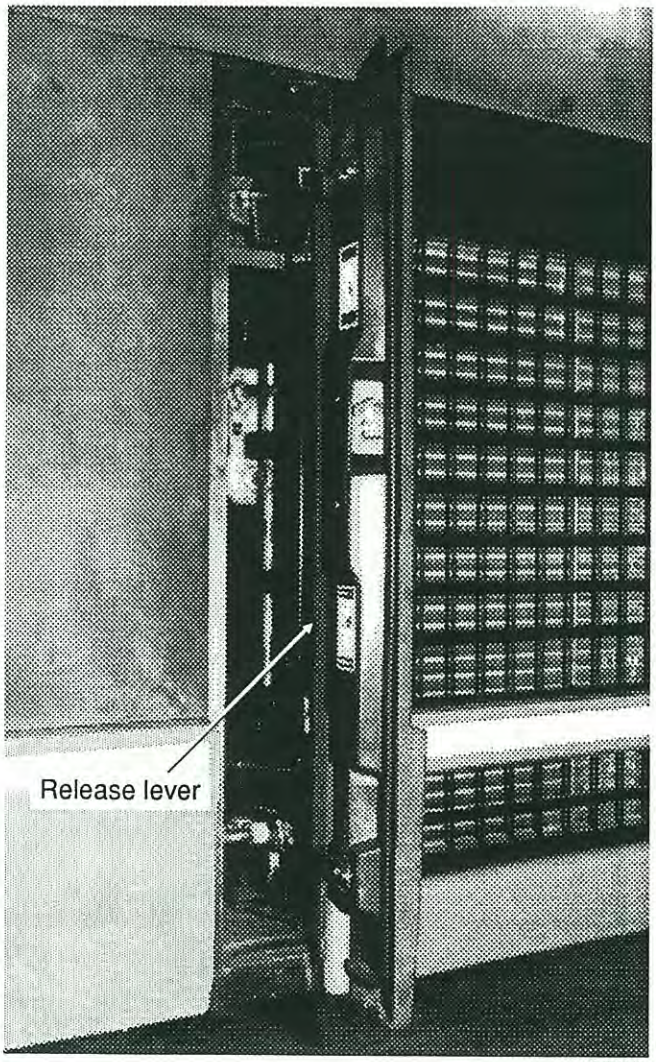


Component identification

1- Surge tank
2- Engine oil temperature indicator
3- Engine starter selector switch
4- Engine oil pressure gauge
5- Cleaning cabinet connector
6- Fresh water reservoir connector
7- Engine oil auxiliary tank
8- Air filter
9- A/C compressor
10- Belt tensioner pressure control valve
11- Variable-speed drive
12- Engine oil dipstick
13- Belt tensioners
14- Secondary fuel filter
15- Radiator fan gearbox
16- Radiator

OE3B0232

CONDENSER COMPARTMENT



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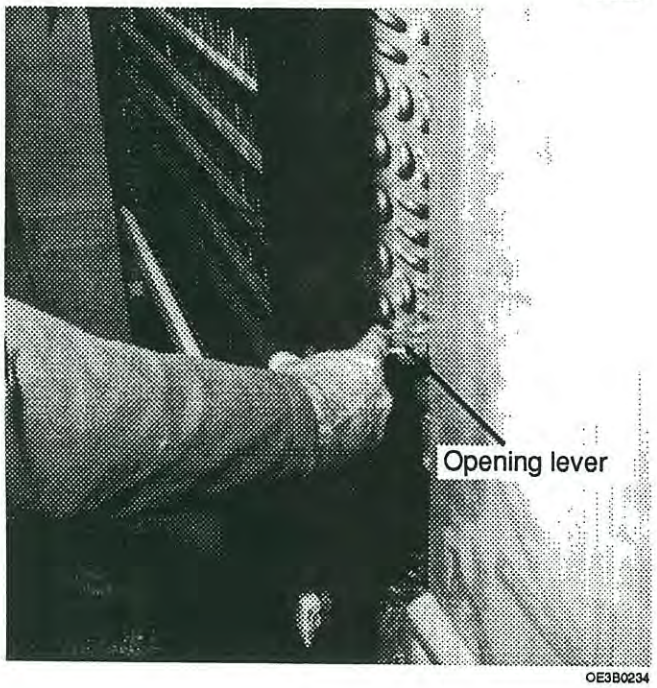


OE3B0234

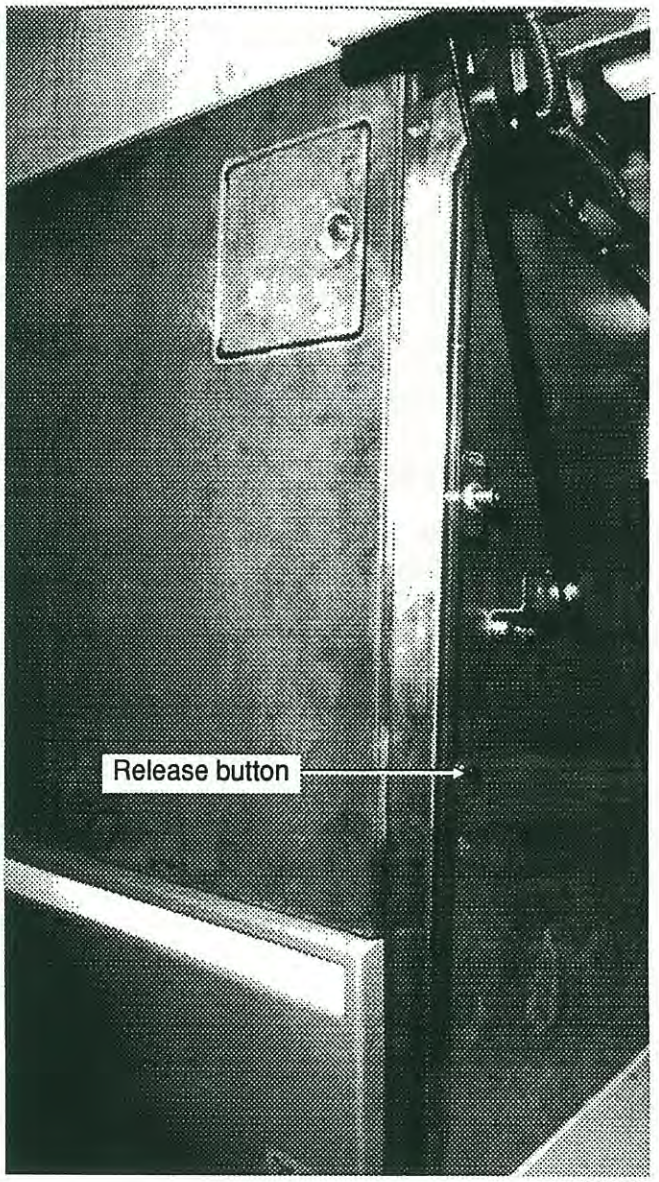
To gain access to the condenser compartment (#9) (see page 2 - 25), open fuel filling door (#8) using the key provided (see page 2 - 1). Pull release lever inside this compartment to open condenser compartment door partly. Push on condenser compartment door release lever to open.

CAUTION: When condenser compartment door is open, do not open or close the left baggage compartment door (#7), as it may block the fuel filling door.

NOTE: To close fuel filling door, return key to its initial position.

A/C AND HEATING COMPARTMENT

To unlock the A/C and heating compartment door (#19) (see page 2 - 25), open baggage compartment (#17) at right of the latter, pull the release button located on the common wall of these compartments

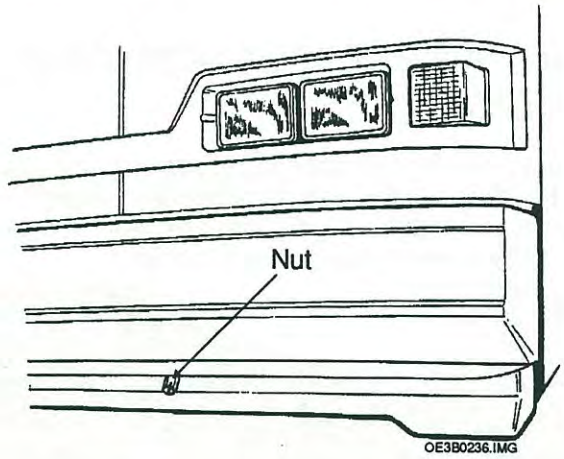


OE3B0235

SPARE WHEEL AND TIRE COMPARTMENT

The front bumper is of the *"reclining type"*. To gain access to the spare wheel and tire compartment, loosen nut at each extremity of bumper with the key retaining jack accessories, then push nuts upwards and the bumper can be inclined.

NOTE: Two persons are required to perform the above operation.



This compartment has not been designed for storage. Never leave any loose object in this area as it may interfere with steering linkage mechanism.

CAUTION: Check that the bumper is safely hooked in place, and that retaining nuts are firmly tightened after bumper compartment has been closed.

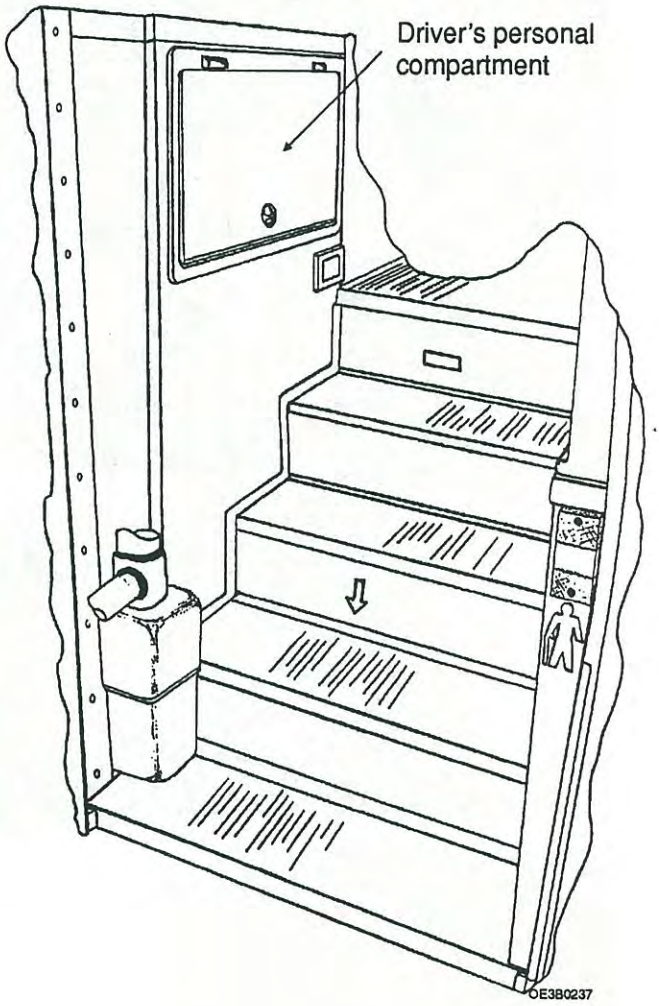
COMPARTMENT LIGHTING

Baggage, engine, ski, front left service, front and rear electric compartment lights are automatically turned on when appropriate compartment door is opened.

INTERIOR COMPARTMENTS

Driver's personal compartment

A locking compartment is mounted in the left side of the front stairway, and can be unlocked using the key provided (see page 2 - 1). The compartment should be used for the personal effects of the driver and/or hostess.



ACCESSORIES

Driver's accessories

Spare parts

A kit of spare parts is supplied with your vehicle. It includes bulbs, solenoids, circuit breakers, belts, etc... and is located in the first baggage compartment.

Front destination sign

Proceed as follows to operate.

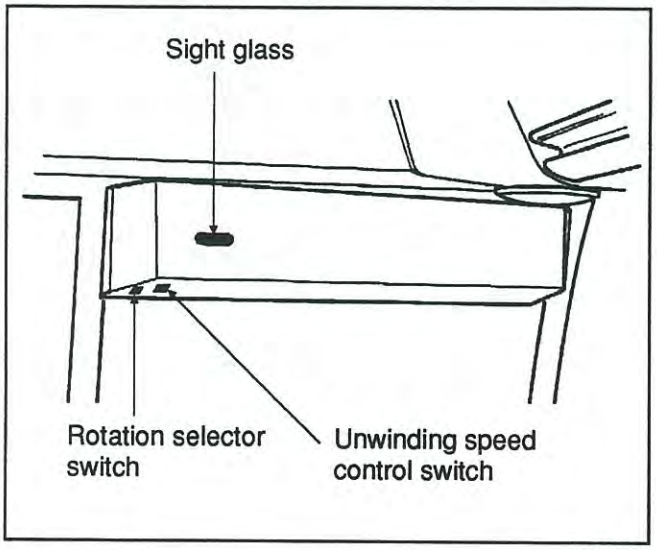
1. Select the appropriate rotation of destination sign using the rotation selector switch.

2. Select the destination sign unwinding speed by pushing the appropriate switch.

NOTE: Select the fast speed to search the appropriate destination, then center sign by using slow speed.

3. Select the appropriate destination through the sight glass.

4. The selected destination will be displayed when the corresponding destination matches with the arrow as seen through the sight glass.



OE3B0238

Driver's power window

The driver's area is provided with a power window, which is actuated by means of a switch on the L.H. side control panel.

Ashtray

Push slightly on side of ashtray to open it. Remove ashtray by pressing on inner tab.

WARNING: Never use the ashtray as a waste paper receptacle as it could cause fire.

Cigarette lighter

The cigarette lighter is located under the ashtray. Push in to activate, and it will spring back when ready to use. Replace lighter to initial (nonactivated) position. The socket of the cigarette lighter may also be used for 12 volt appliances with a maximum consumption of 130 watts, such as a flashlight, a small vacuum cleaner, etc. Make sure the socket will not be damaged by appliances equipped with unsuitable plugs.

NOTE: Cigarette lighter and socket remain functional even after the ignition key is removed.

Roadmap container

A small container is provided at the end of L.H. side control panel, and is used to store roadmaps. A light, located over the container, can be turned on by lifting the plastic cover.

Microphone outlets

Five microphone outlets for the PA system can be installed to the following locations:

- One outlet for the driver on the L.H. side control panel
- One outlet near the driver's right console
- Two outlets for the hostess on the modesty panels
- One outlet on the lavatory wall, at rear of the last row of seats.

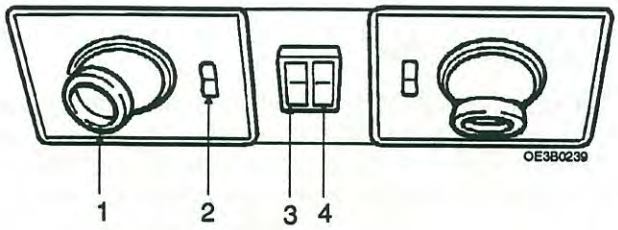
NOTE: The PA system is equipped with a stereo attenuator and a volume control which can be used when addressing to the passengers for a better comprehension.

Blind

A blind is installed on the L.H. side window of driver's section (see page 3 - 5).

Passenger accessories

Reading lamp



1. Reading lamp

Adjust to the desired angle.

2. Reading lamp switch

Press to turn reading lamp on or off.

3. Hostess signal switch

Push on rocker switch to activate chime in driver's area. A light is provided inside rocker switch to indicate passenger position to the hostess.

4. Driver's signal switch

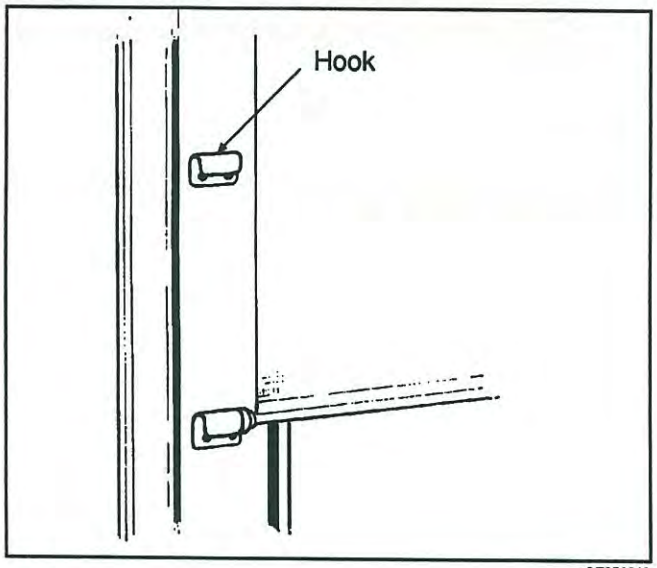
Push on switch to activate chime in driver's area, thus indicating that the passenger wants to get off at next stop.

Waste container

A waste container for passengers is located behind the last R.H. row of seats near the lavatory.

Blind

Each passenger window may be provided with a blind. Pull shade and lock in first or second hook as desired.

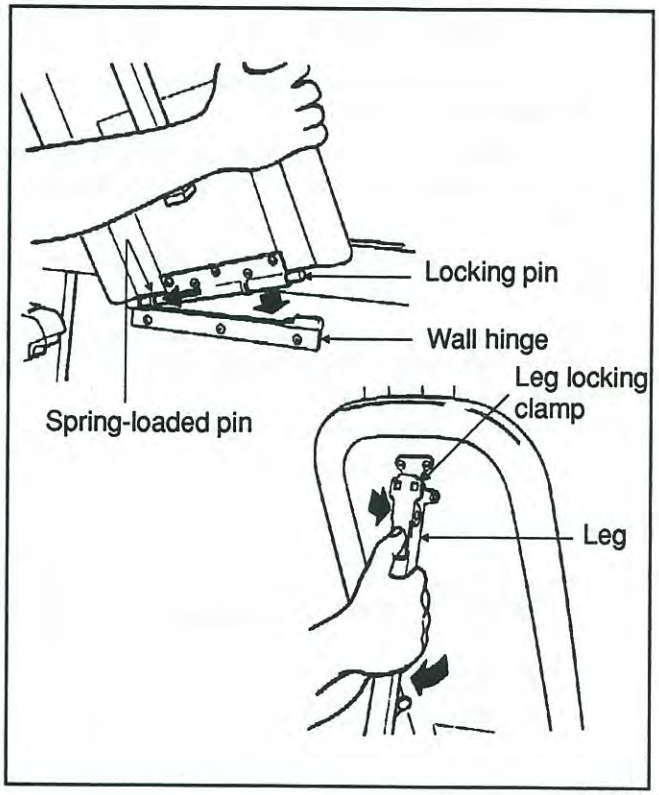


Card table

Two easy-to-install card tables are provided as standard equipment. They are stored in the parcel racks in their own protective envelopes.

To install card table, remove it from its protective envelope and hold at 45° with side wall. Card table spring-loaded pin should be inserted into the vehicle side wall hinge. Card table spring-loaded pin mechanism will automatically lock card table into side wall hinge.

When card table has been securely fastened to side wall hinge, leg can be brought down at right angle to open position by pushing down the leg locking clamp. Table is now set and ready to use.



Lavatory

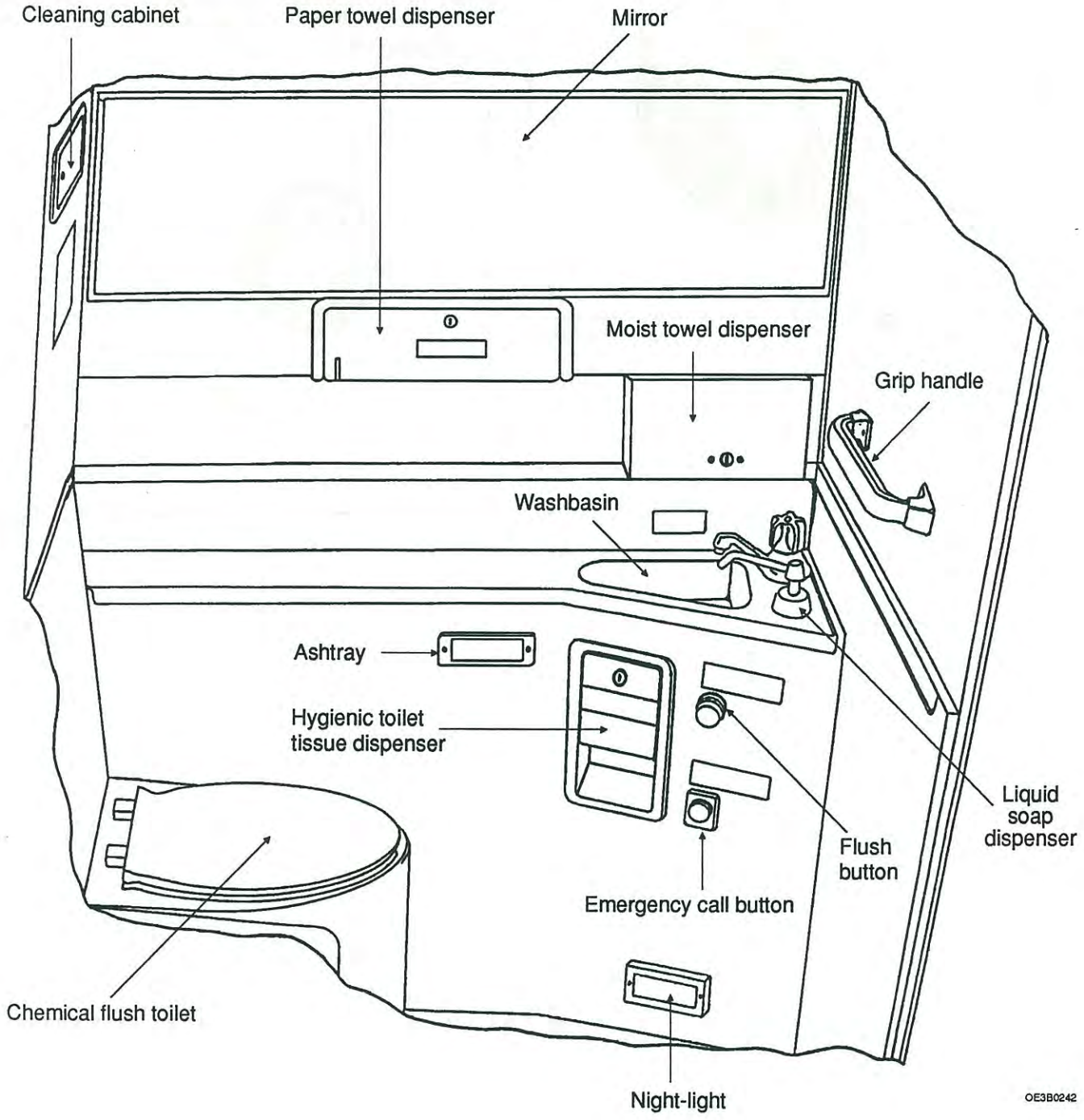
The lavatory is located in the rear R.H. corner of coach and is equipped with the following items: chemical flush toilet, washbasin, mirror, waste container, ashtray, hygienic toilet tissue, liquid soap dispenser, towel and moist towel dispensers, and a cleaning cabinet.

Locking the door from inside will illuminate outside signs which are mounted on the outer wall of lavatory, over the windshield, an indicator light on the L.H. dashboard, and the fluorescent in the lavatory. A night-light is always on when ignition switch is in the *"ON"* position.

In case of emergency, passenger can actuate a buzzer that will sound in driver's area. The button along with the instructions are affixed to the inner wall of lavatory.

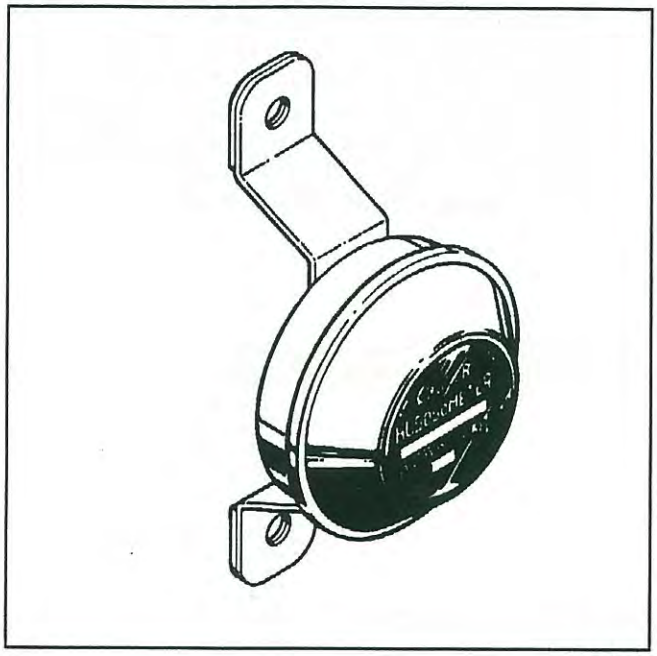
The lavatory has its own ventilation system that operates only when ignition switch is in the *"ON"* position.

The fresh water tank is provided with an immersion heater that operates on 110 - 120 volt AC. The switch is located in the front left service compartment under the driver's window, and the power source is the same as the one used for the fluorescent lighting and the engine block heater. For draining and filling reservoir, refer to section dealing with the maintenance.



HUBODOMETER

A wheel hubodometer is installed on the R.H. side of the drive axle. It indicates the total distance in miles or kilometers covered by the coach since leaving the factory, including road testing.



OE3B0243

ADJUSTABLE LOUVERS

This vehicle is provided with several adjustable louvers connected to the A/C and heating system. These can be adjusted manually so the heated or cooled air flow can be directed as desired. To obtain desired air flow, turn louver outer ring clockwise or counterclockwise.

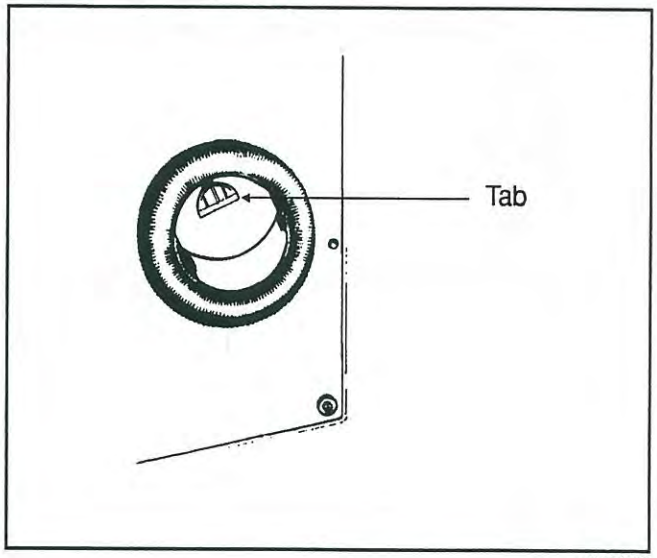
Louvers are located as follows:

One on each side of steering column

Two in dashboard

Two for the rear L.H. passenger seats

Moreover, two auxiliary louvers for the A/C and heating system are installed at the extremity of each A/C and heating duct at front of vehicle. Adjust flow and direction by pressing on upper fin tab.



OE3B0244

ENGINE BRAKE SYSTEM ("JACOBS")

The *"Jacobs"* brake is a diesel engine retarder that uses the engine itself to aid in slowing and controlling the vehicle. When activated, the *"Jacobs"* brake alters the operation of the engine's exhaust valves so that the engine works as a power-absorbing air compressor. This provides a retarding action to the wheels.

The engine brake is a vehicle-slowing device, not a vehicle-stopping device. It is not a substitute for the service braking system. The vehicle's service brakes must be used to bring the vehicle to a complete stop.

Effectiveness of the engine brake system will vary according to transmission range in use. The engine brake system is more effective in lower ranges and at higher engine speeds. IPD NOTE FROM fig 2-12

WARNING: When descending significant grades, use service brakes as little as possible. If engine does not slow vehicle to a safe speed, apply service brakes and shift to a lower range. Let the engine (and engine brake) retard the vehicle. Keep brakes cool and ready for emergency stopping.

NOTE: Each time the engine brake system is in operation, the stoplights will automatically light up.

TRANSMISSION RETARDER

A retarder is not a brake but a device that helps in reducing the speed of a vehicle. It enables an easier control of the vehicle, a safer driving, and a more economical operation. Retarder provides slowing power when it is most needed, as driving down windy mountain roads, in stop and go traffic, on crowded freeways.

The retarder is provided with a two-position switch. It will operate in first position by releasing accelerator pedal or in second position during a brake application. An extended use will raise the transmission oil temperature.

The retarder helps to reduce speed on grades without using the vehicle conventional braking system. This virtually eliminates brake overheating and reduces the risk of a runaway vehicle. A retarder greatly increases brake pads and disc service lifes, thus reducing brake maintenance costs.

NOTE: Each time the transmission retarder system is in operation, the stoplights will automatically light up.

ABS BRAKE (antilock braking system)

The purpose of the antilock braking system is to preserve the stability and steerability of a vehicle during braking, and to minimize its stopping distance whatever the road conditions.

On slippery roads and more generally in emergency situations, overbraking frequently induces wheel locking. Antilock braking system provides maximum braking performance while maintaining adequate steerability on slippery roads.

Also, on smooth or slippery surfaces, the stopping distance with locked wheels is greatly extended; on rough surfaces the problem is tire abrasion.

The basis of ABS is constant monitoring of the wheel behaviour during braking. Sensors on each wheel of axles 1 and 2 continually measure the wheel speed during braking and this information is transmitted to a four-channel electronic processor which senses when any wheel is about to lock. Modulating valves quickly adjust the brake pressure (up to 5 times per second) to prevent wheel locking. Each wheel is therefore controlled according to the grip available between its tire and the road.

In this way the vehicle is brought to a halt in the shortest possible time while remaining stable and under the control of the driver.

CAUTION: People following you may not be able to brake as fast as you on slippery roads; so where possible, give a prior warning by depressing lightly brake pedal several times before braking.

KNEELING SYSTEM

This system enables passengers to board or leave vehicle without any difficulty by lowering the front end. The operation of this system is very fast, as only 5 seconds to lower and 9 seconds to raise vehicle are required.

NOTE: This vehicle is equipped with an interlock system which will automatically apply the parking brake when the kneeling system is activated.

To operate, stop vehicle, set transmission to neutral position, then push down rocker switch located on the L.H. side control panel; the parking brake will automatically apply and a warning flasher will indicate lowering of front of vehicle.

To raise front of vehicle to its normal height, push up rocker switch. The front end will raise rapidly until the brake interlock and indicator light turn off. Release parking brake, and shift transmission to desired range.

NOTE: The kneeling system does not operate when vehicle speed is over 5 mph (8 km/h). Consequently, the driver can not operate inadvertently the kneeling system at high speed.

CAUTION: Avoid parking vehicle too close of sidewalk or other obstacle that could damage vehicle during kneeling.

EMERGENCY EXITS

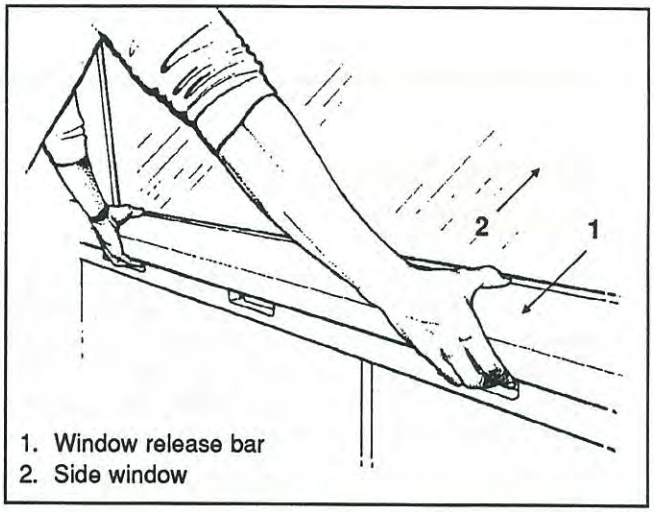
Side windows

Some side passenger windows can be opened from the inside for emergency escape. A decal indicating location of nearest emergency exit window is affixed at bottom of each side window, with the exception of the small front left window. The upper section of each side window is provided with two blue lights which are aimed to light decals; these lights are turned on by means of the general lighting switch on the L.H. side dashboard control panel.

To open window, slide fingers under the notches of window release bar, lift release bar, then push out window at bottom. Instruction decals are affixed to the release bar of each emergency exit window.

To close window, lift window release bar and pull window towards inside as illustrated on decal at bottom of window.

CAUTION: All emergency exits should be kept closed during normal operation to prevent damage. Windows should not be slammed closed to avoid impairment of emergency exit system.



1. Window release bar
2. Side window

OE3B0301

Emergency roof escape

The emergency escape hatch located in the roof at rear of vehicle is designed to be opened from inside by passengers. An emergency roof hatch located in front may be provided as an option. To open in the event of an emergency, push out ventilation hatch fully, then press black tab backward and push handle out still pressing black tab, in order to release emergency hatch catch. An instruction decal with complete operating instructions is affixed to the escape hatch.

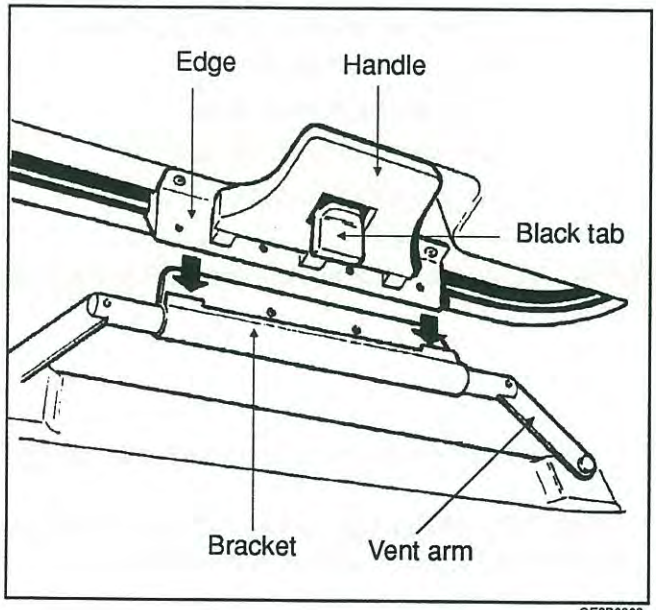
1. Emergency escape hatch
2. Instruction decal
3. Hatch handle
4. Black tab

OE3B0302

NOTE: Emergency roof escapes can be opened to provide ventilation in the event of ventilation blower motor failure by simply pushing them upward.

CAUTION: Beware of low overhead clearances if running with roof hatches open.

To relatch handle after use, vent arms must be pushed upright in *"full open vent"* position, then insert edge between the two sections of the bracket and pull handle in to lock hatch. Finally, pull hatch in to close, one side after the other.



OE3B0303

Emergency opening of front door from inside

In the event of possible malfunction of the front entrance door and air lock mechanism or of its internal components, use the emergency control located over the front door

SAFETY EQUIPMENT

First aid kit

A first aid kit has been installed in the first R.H. parcel rack.

Fire extinguishers

One extinguisher is located under the first R.H. seat, and another one under the first L.H. seat. An instruction decal is affixed to each one. Make sure that you know its operation in case of an emergency situation. A decal indication location of extinguishers is affixed to each window adjacent to the extinguishers.

Emergency warning reflectors

A kit of three (3) triangular reflectors is provided for emergency situations to warn other drivers. This device indicates an emergency situation by reflecting the light emanating from a light source. The three reflectors should be placed as illustrated on box cover. These reflectors comply with FMVSS 125 (Federal Motor Vehicle Safety Standards). This kit is located at right in the first R.H. side baggage compartment.

Jack/tools

The first R.H. side baggage compartment is also provided with a kit for jacking vehicle. Kit includes a 12.5 ton hydraulic jack and a wheel nut wrench.

ALARM SYSTEM

As an added protection to indicator lights, Prevost coaches are equipped with an audible alarm system which informs the driver of the operating conditions.

Indicator light	Audible alarm	Condition
Air primary	Buzzer	Low air pressure
Air secondary	Buzzer	Low air pressure
Do not shift	Buzzer	Inhibits shifting of transmission
N/A	Buzzer	Lavatory emergency button is activated
N/A	Chime	Button activated by passenger
Fire	Bell ringing	Fire in engine compartment
Front kneeling	Beep	Front kneeling position is selected
Tag axle	Beep	Tag axle raised or unloaded

NOTE: All alarm units are located in the front service compartment. The alarms for both primary and secondary low air pressure systems are produced by the same unit.

BACK-UP ALARM

The back-up alarm alerts pedestrians that the vehicle will be moving in reverse range. Driver should take extra precautions when backing up. If in doubt, ask someone to guide you. Alarm and camera will automatically operate when the reverse range is selected.

HORNS

Air horns

The air horns must be used only on highways. When the push-button valve located on the floor at the driver's left is activated, the valve releases air which sounds the horn.

Electric horn

Use the electric horn in cities and suburban areas. It is activated by a button located in the center of the steering wheel.

DAYTIME RUNNING LIGHTS

This system turns on automatically the low beams at a lower intensity as soon as engine is started and parking brake is released.

This system will be cancelled:

- when engine is stopped
- when parking brake is applied
- when the exterior lighting switch is turned to the second position.

WARNING: Never run vehicle at night with these lights only as they have a lesser intensity.

FOG LIGHTS

Optional halogen fog lights may have been installed to allow the driver a better visibility in foggy weather, or to improve the range of vision just ahead of the coach. They are also a useful *"active safety"* factor.

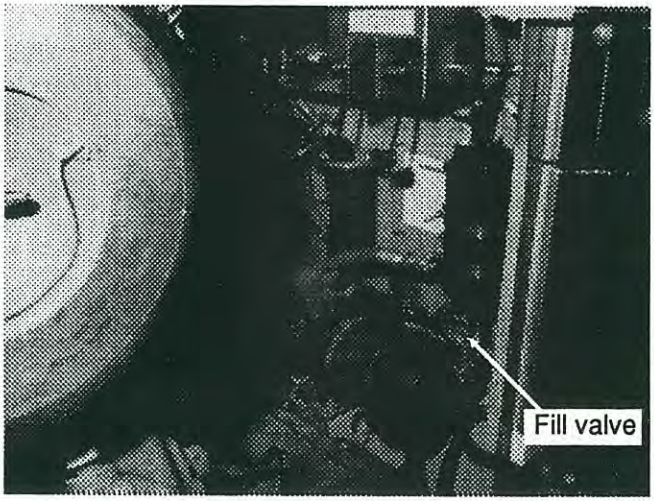
NOTE: Some states or provinces may restrict the use of these lights. Verify regulations governing each state or province before using fog lights.

DOCKING AND CORNERING LIGHTS

Four halogen lights are installed on vehicle, two standard at front on each side and two optional on rear sides. The front lights illuminate simultaneously with the directional lights and are designed primarily to increase lateral visibility during a turn. The rear lights illuminate automatically when reverse range is selected and increase visibility during reverse or docking procedure.

AIR SYSTEM EMERGENCY FILL VALVE

This vehicle is equipped with two air system emergency fill valves to supplement the air system when air pressure is low and engine cannot be operated. One of these valves is located inside the engine compartment near the R.H. access door hinge, while the other is located inside front service compartment.



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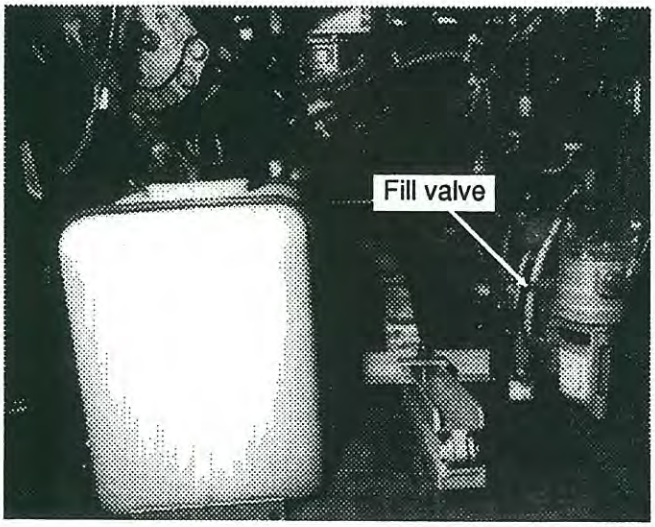
Engine compartment



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Front service compartment

These two air system emergency fill locations are fitted with the same valve stems as standard tires, and can be filled by any standard external air supply line. The valve mounted in engine compartment will supply air for all systems (brakes, suspension and accessories) while the service compartment fill valve will supply air for accessories only.

CAUTION: Air filled through these two points will pass through the standard air filtering system. Do not fill air through any other points, and never exceed 120 psi (827 kPa).

MUD FLAPS & SPLASH GUARDS

Mud flaps are installed behind each wheel of front and tag axles in order to minimize dirt on the lower panels of vehicle and to reduce stone projections on following vehicles. Splash guards may also have been installed behind each dual wheel of the drive axle in order to reduce stone projections on tag axle wheels.

SUN VISORS & BLINDS

Electrically-controlled sun visors and blinds are installed on both sides of windshield. Push up the appropriate rocker switch to raise the sun visor or push down to lower it to the desired position.

Moreover, an optional spring release-type blind is provided for the L.H. side driver's window to protect the driver from side glare. To operate, pull down blind by its hem to the appropriate position and release it; it will remain automatically in position. To lift, pull on the cord beside the blind.

MINOR DEFECTS & DRIVING HINTS

GENERAL INFORMATION

Starting engine from driver's compartment

Start or stop the engine according to the following instructions:

CAUTION: Before driving coach, read the entire section of this manual.

Starting engine

1. Make sure the starter selector switch in engine compartment is set to the *"NORMAL"* position, i.e. starting engine from front of vehicle, and that both battery disconnect switches are set to the *"ON"* position.

2. Make sure the parking brake control button is pulled all the way up, so that the spring-loaded parking brakes are applied.

3. Make sure transmission is in neutral.

4. Turn ignition key to *"START"* position, then release it as soon as engine starts.

NOTE: If engine does not start, ignition key must be returned to *"OFF"* position prior to restarting, otherwise key will not turn to *"START"* position.

CAUTION: Do not engage starter for more than 15 seconds at a time. If engine does not start within 15 seconds, release ignition key and allow starter to cool for one minute before engaging starter again. This will help to prevent starter overheating and will allow the time-delay relay to cool.

No pressure on accelerator pedal must be applied before starting. A pedal application will induce a fault information to the Electronic Control Unit, thus affecting the fuel system control.

If acccelerator pedal is depressed inadvertently, release it and wait approximately 30 seconds before resuming starting procedure.

Special precautions are necessary with turbocharged engines to avoid possible turbine damage. After starting, run the engine at low idle for two minutes to allow flowing of lubricant to the turbocharger. Afterwards, run at fast idle and check oil pressure before attempting to drive the vehicle.

Stopping engine

1. Apply parking brake then set transmission to neutral position.

2. Allow engine to run at idle for at least two minutes, then shut off engine. This will ensure that the turbine speed has dropped, and the engine exhaust gas temperature is down to approximately 300 °F (150 °C). If engine is equipped with pyrometers, temperature can be observed.

CAUTION: Do not shut the engine down directly from high rpm.

CAUTION: If vehicle is parked and left unattended for an extended period of time, both main battery disconnect switches (12 & 24 volts) should be set to the *"OFF"* position.

Starting engine from engine compartment

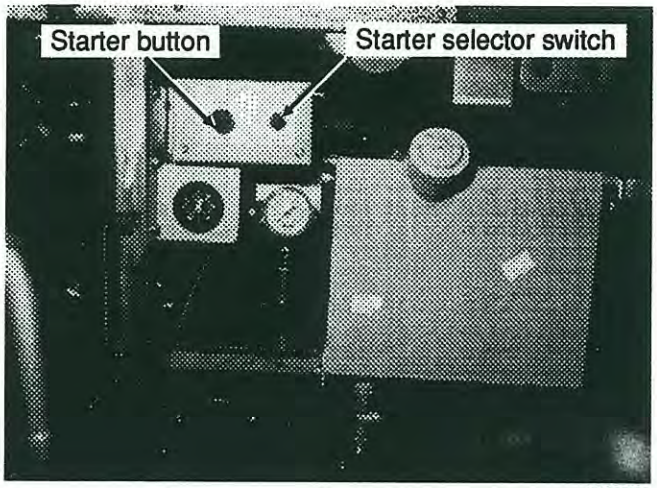
Switches for starting and stopping the engine from the engine compartment are mounted on a small box over the engine.

Starting engine

WARNING: Before attempting to start engine from engine compartment, make sure parking brake is applied and transmission is in neutral.

1. Make sure starter selector switch is set to the *"REAR START"* position and the battery main disconnect switches (12 & 24 volts) to the *"ON"* position.

2. Press starter push button switch and release as soon as engine starts.



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WARNING: Stay away from moving parts, and do not wear loose clothes.

CAUTION: Steps previously explained with respect to starter use from the driver's area also apply in this situation.

Stopping engine

Stop only by setting the starter selector switch to the *"OFF"* position.

DETROIT DIESEL ELECTRONIC CONTROL (DDEC) SYSTEM

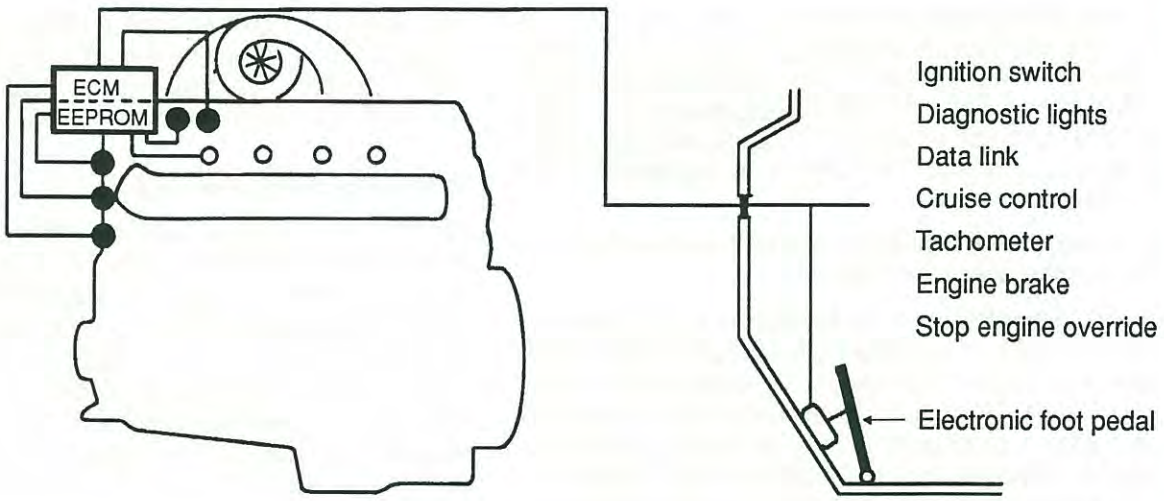
DDEC is an advanced technology electronic fuel injection and control system for Detroit Diesel engines. As an integral part of the engine, the DDEC system provides a number of performance features and driver benefits, including improved fuel economy and performance, reduced cold smoke, reduced maintenance and repair cost. These advantages are obtained by optimizing control of the critical engine functions which affect fuel economy, engine reliability and the performance of the injectors.

Its major components include an Electronic Control Module (ECM), Electronic Unit Injectors (EUI), electronic throttle pedal and sensors. The ECM is the brain of the DDEC system and is located over the engine between both cylinder heads. Within the ECM is the Electrically Erasable, Programmable, Read-Only Memory (EEPROM) that provides instructions for basic engine control functions such as rated speed and power, engine governing, cold start logic and diagnostics, plus an engine protection system.

The ECM continuously monitors and analyzes the DDEC system during engine operation with electronic sensors. The Electronic Unit Injectors (EUI) operate a similar principle to the mechanical unit injector system. However, a solenoid-operated control valve performs the injection timing and metering functions which make injector timing much simpler and more precise.

DDEC provides the capability to quickly diagnose system malfunctions by a self-diagnostic system; the self-diagnostic system monitors all engine sensors and electronic components and recognizes system faults and other engine-related problems by providing the technician with a diagnostic code. The DDEC system will illuminate the dashboard *"CHECK ENGINE"* and *"STOP ENGINE"* lights which are integral parts of the electronic diagnostic system. These lights are designed to indicate a problem and transmit a coded signal to the technician to locate the defective component. To ease troubleshooting and obtain pertinent data logged in the ECM (Electronic Control Module) memory, use a DDL reader (not supplied by manufacturer). Plug reader in receptacle of front service compartment near the 110-120 volt AC outlet. You can also set the *"DDEC-TEST"* switch to the *"ON"* position to service this electronic system (refer to "*DDEC Diagnostic Codes*" in the *"Technical Description"* section).

The major components of the DDEC system are as follows:



● Sensors

○ Electronic unit injectors

ECM - Electronic Control Module

EEPROM - Electrically Erasable, Programmable, Read-Only Memory

OE3B0402

ALLISON TRANSMISSION ELECTRONIC CONTROL (ATEC) (for automatic transmission with push button shift selector)

The ATEC system consists mainly of four elements: Electronic Control Unit (ECU), electronic throttle pedal, speed sensor, and shift selector. These components work together to electronically control the transmission functions. The throttle sensor, speed sensor, and shift selector transmit information to the ECU. The ECU processes this information and then sends signals to actuate specific solenoids located on the control valve body in the transmission. The action of the solenoids affects hydraulic circuits, which in turn control the upshifts, downshifts, and lock-up functions. In addition to controlling the operation of the transmission, the ATEC monitors the system for abnormal conditions.

When one of these conditions is detected, ATEC is programmed to automatically respond in a manner which is safe for the driver, the vehicle, and the transmission. To do this, ATEC turns on the *"CHECK TRANS"* light on the dashboard or turns on both, the *"CHECK TRANS"* and the *"DO NOT SHIFT"* lights in shift selector. The *"CHECK TRANS"* light is a part of the built-in electronic service diagnostic system. It serves as a problem indicator and flashes a coded signal to locate the malfunctioning component.

To enhance troubleshooting and to allow interrogation of the ECU (Electronic Control Unit) for valuable service information, a diagnostic analyser (not supplied by the manufacturer) can be used. To use it, plug the appropriate connector in the terminal located in the front service compartment near the 110-120 volt AC outlet. You can also set the *"ATEC-TEST"* switch to the *"ON"* position in order to service this electronic system (refer to the *"ATEC diagnostic codes"* in the *"Technical Description"* section).

AUTOMATIC TRANSMISSION

Importance of proper oil level

1. Maintaining the proper oil level is very important. The transmission oil is used to apply clutches and to lubricate and cool the components. If the oil level is too low, the result can be poor performance because clutches will not receive adequate oil supply. If the oil level is too high, overheating results from the oil being churned and aerated.

2. Always check the oil level at least twice to ensure that an accurate check is obtained.

3. Transmission input speed and oil temperature significantly affect the oil level. An increase in input speed lowers the oil level; an increase in oil temperature raises the oil level. Thus, the oil level must always be checked with engine running at idle (approximately 600 rpm), parking brake applied, and transmission in neutral. A final check of the oil level must be made when the transmission reaches normal operating temperature (160 - 250 °F; 70 - 120 °C).

Fill pipe protection

When adding oil or checking oil level, dirt or foreign material must not be allowed to enter the filler tube. Before removing the dipstick, clean around the end of the filler tube. Refer to heading *"Oil level verification"* in *"Care & Maintenance"* section.

Lock-up clutch

Engagement and release of the lock-up clutch occur automatically and should not be mistaken for range shifts. If you are a *"shift counter"*, it will be helpful to know when lock-up can occur. The lock-up engages after the load is rolling and the torque demand is low. Engagement of the lock-up clutch provides direct drive from engine to transmission. When the speed sensor senses a reduction in speed, the ECU will direct the lock-up shift valve to release the lock-up clutch, according to the programmed shift schedule. Release of lock-up clutch provides a torque converter drive from engine to transmission.

MANUAL TRANSMISSION

Importance of proper oil level

Do not overfill transmission. Overfilling can result in oil overheating and breakdown of its properties and cause deposits which will hinder the proper operation of the transmission. However, if oil level is too low, gears will be insufficiently lubricated.

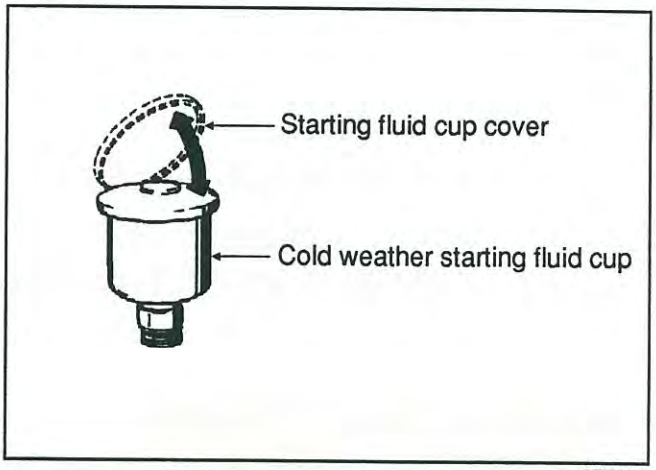
COLD WEATHER STARTING

Cold starting aid (ether)

The vehicle is equipped with an ether cold starting aid designed to ease engine starting when temperature is below 35 °F (2 °C). Two types of cold starting aid are available: manually operated and electrically operated.

Manually-operated type

On vehicles equipped with a manually-operated cold starting aid, the starting fluid cup is located on top of the air intake duct. To use cold weather starting fluid, lift cover of the starting fluid cup, insert one 7 cc capsule, shut cover tightly, and then start engine from engine compartment according to procedure outlined under heading *"General Information"*. Be sure to remove empty capsule before inserting a new one.



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CAUTION: This practice should be performed only when absolutely necessary. If required, we recommend that the starting fluid be used only in 7 cc capsule form, one at the time. Excessive use of fluid could result in serious engine damage.

WARNING: FIRE HAZARD - Starting fluid used in the capsules is highly flammable, toxic, and possesses sleep-inducing properties. Do not smoke while using or handling capsules, and keep away from flame or high temperatures. Avoid inhaling fumes produced by starting fluid.

Electrically-operated type

On vehicles equipped with an electrically-operated cold starting aid, the control rocker switch is located near the ignition switch on the L.H. lower switch panel. This switch is provided with a locking mechanism to avoid accidental use when engine is running. To activate the ether starting aid, proceed as follows:

1. Prior to cranking engine, slide down lock tab while pressing rocker switch for 3 seconds to fill solenoid valve.
2. Release switch to discharge shot.
3. Allow 3 seconds for shot to discharge.
4. Start engine, use additional shots if necessary to keep engine running.

CAUTION: This practice should be performed only when absolutely necessary. Excessive use of fluid could result in serious engine damage.

Engine block heater

The vehicle may be equipped with an engine immersion-type electric block heater to assist cold weather starting. Open the front left service compartment, and connect the female plug of an electrical extension cord to the 110-120 volt AC male outlet, then set the appropriate switch to the *"ON"* position. The extension cord must be plugged into a 110-120 V AC power source only. The engine block heater should be used whenever the vehicle is parked for an extended period of time in cold weather and a suitable power source is available.

CAUTION: Use only a 110-120 V AC power source. Extension cord must be of the grounded type (three prongs) and have a minimum rated capacity of 15 amps. Be sure to disconnect cord before starting and/or moving the vehicle and close compartment door.

Engine warm-up

After starting the engine, run it at low idle for two (2) minutes to allow flowing of lubricant to the turbocharger, then increase speed to fast idle for warm-up period by using *"FAST IDLE"* switch located on L.H. lower switch panel. Run the engine at fast idle and no load for about five (5) minutes to allow it to warm-up before applying a load. Parking brakes should be kept applied throughout warm-up. Gauges and indicator lights should be monitored to check that all conditions are normal. If an abnormal condition should develop, stop engine immediately and have condition corrected.

WARNING: Never let the engine run in an enclosed, non- ventilated area. Exhaust fumes from the engine contain dangerous gases which can be fatal if inhaled.

NOTE: The engine will come up to normal operating temperature shortly after you start driving; if possible, avoid going to full throttle until engine coolant temperature reaches 140 °F (60 °C).

Transmission warm-up

ATEC automatic transmission

When temperature is below -20 °F (-29 °C), the *"DO NOT SHIFT"* and *"CHECK TRANS"* will stay *"ON"* after the engine is started. The transmission will stay in neutral, regardless of the gear range selected until it warms past -20 °F (-29 °C). At that point, the *"DO NOT SHIFT"* light will turn off and the transmission will operate only in first gear or reverse. When the *"CHECK TRANS"* light goes out at 20 °F (-7 °C), the transmission is warm enough to safely operate in all gear ranges.

Automatic transmission without ATEC system

Even though the automatic transmission without the ATEC system is not provided with a protection system inhibiting any gear range selection in cold weather, it is recommended to warm up transmission before selecting a range (see heading *"ATEC automatic transmission"*).

Preheating system

The auxiliary preheating system is used for preheating and retaining the heat of water-cooled engines. It can be used before starting the engine to ease its starting and to provide immediate inside heat upon operation of the heating system. It can also be used with engine running to maintain coolant heat and maintain the set temperature inside vehicle.

The heater operates independently of the vehicle engine. It is connected to the cooling and heating circuits, the fuel system and the electrical system of the vehicle.

Switching on the heater

The pilot lamp turns on when the heater is switched on. Combustion air flows in to flush out the combustion chamber, and the water circulation pump is put into operation. The fuel metering pump conveys fuel in precise doses to the combustion chamber, where fuel and combustion air form a combustible mixture which is ignited by the glow plug.

Once the flame sensor has signalled to the control unit that combustion has taken place correctly, the glow-spark plug and ignition coil are switched off.

The hot combustion gases are diverted at the end of the flame pipe, then pass through the indirect heating surfaces of the heat exchanger and transmit their heat to the water passing through the heat exchanger.

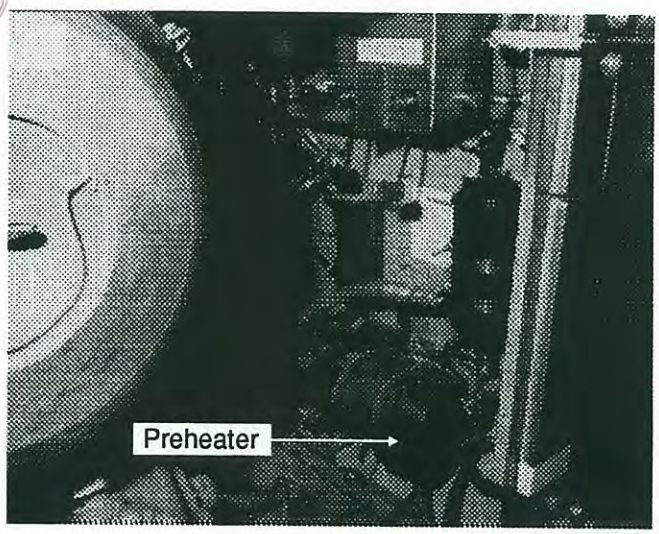
The heater is thermostatically controlled, and operates intermittently, i.e. the switched-on times of the burner vary depending on the heat requirement. The water temperature depends on the setting of the built-in water thermostat.

The water circulation pump remains in operation as long as the heater is operating - even in the regulation intervals and during the delayed cutout of the switched-off heater. The pump can also be operated independently of the heater by means of an appropriate circuit. The heater can be switched on at any time, i.e. during the delayed cutout period too. Ignition takes place once this delay time is over.

Switching off the heater

When the heater is switched off, the fuel supply is interrupted. The flame goes out, and at the same time a delayed cutout of some 2.5 minutes begins. The combustion air still flowing flushes the remaining combustion gases out of the chamber and cools off the hot parts on the exhaust side of the heat exchanger, while the water circulation pump still running transmits the heat present in the heat exchanger, thus preventing local overheats. Once the delayed cutout time is over, both the combustion air blower and the water circulation pump switch off automatically.

A cutout will take place in case of any failure of the preheater.



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JUMP STARTING

Whenever it becomes necessary to start the engine while batteries are discharged, use another power source of the same voltage (24 volt DC), negative grounded and proper jumper cables.

WARNING: Procedures other than those below could cause injury or damage from battery acid spray, explosion, or charging system overload.

Never connect to the negative post of the discharged battery.

Never allow the two vehicles or the jumper cable clamps to touch each other.

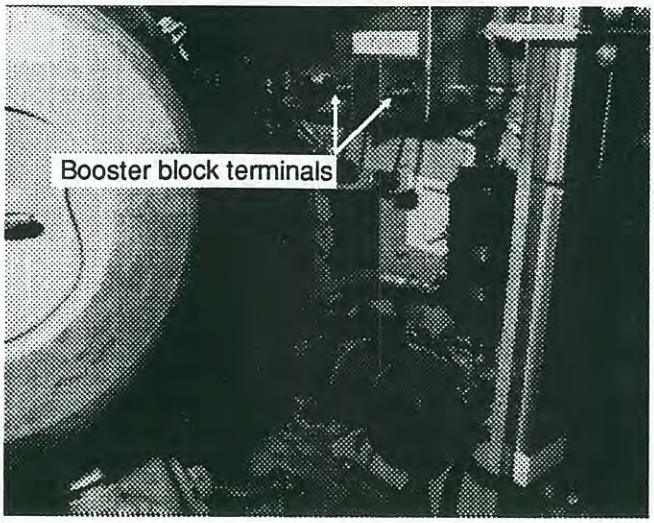
Never attempt to jump start a vehicle if the discharged battery fluid is frozen or if the battery fluid level is low, as the battery may rupture or explode.

Do not jump start vehicles equipped with maintenance-free batteries if the test indicator is light yellow.

Turn off all lights, heaters and other electrical accessories. Make sure the parking brake is applied and the transmission is set to *"NEUTRAL"* before attempting to jump start the engine.

Wear eye protection and remove rings, watches with metal bands and other metal jewelry.

To charge batteries by means of the booster block terminals, the 24 volt main disconnect switch must be to the *"ON"* position.



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1. Remove the protective caps from the booster block terminals, located in right side of engine compartment. Access is possible through the R.H. side engine compartment door.

2. Connect one end of the red jumper cable to the positive (+) post of the booster power source.

3. Connect the other end of the red jumper cable to the positive (+) terminal of booster block.

4. Connect one end of the black jumper cable to the negative (-) post of the booster power source.

5. Connect the other end of the black jumper cable to the negative (-) terminal of booster block.

6. Start the engine in the vehicle that is providing the jump start. Let the engine run for a few minutes, then start the engine in the vehicle that has the discharged batteries.

7. To remove the cables, perform the above procedure in reverse order, then replace the protective caps on booster block terminals.

NOTE: Jumper cables must withstand 500 cranking amperes. If cable length is 20 feet (6 m) or less, use 2/0 (AWG) gauge wires. If cable length is between 20-30 feet (6-9 m), use 3/0 (AWG) gauge wires.

DAILY INSPECTION

With engine stopped

General

Check vehicle general condition and visually inspect for loose bolts and nuts. Verify all exterior lighting.

Tires and wheels

All tires should be checked, including the spare tire. Check all wheels for loose nuts. On both models, aluminum alloy and steel wheel nuts should be tightened to a torque of 450-500 ft•lbs (610-680 N•m).

Leaks

Check thoroughly under coach and in compartments. Report any leak to service personnel.

Doors

Make sure that all exterior doors and windows are closed.

Tools and spares

Check for wheel nut wrench, door keys, spare belts, reflectors and jack.

Air system

Open drain cocks on air and accessory tanks to purge water, then close (see page 6 - 6).

Water separator

Loosen bleed screw to purge separator; tighten screw (see page 6 - 7).

Coolant level

The cooling system is completely filled when the coolant (cold) becomes visible in the filler neck of the surge tank. If topping-up is necessary, fill the system with the same mixture ratio already used in the system (50-50). Refer to the *"Maintenance Manual"* for more details.

WARNING: Hot engine coolant is under pressure. Allow engine to cool before checking coolant level.

Wheel bearings

Check oil level in sight glass (see page 6 - 6).

CAUTION: During a fuel stop, especially if a brake job has been performed a short time ago, apply hand on wheel bearing cover and check for overheating.

Washer reservoir

Check that it is full. To prevent the windshield washer fluid from freezing during the winter, use antifreeze windshield washer.

Engine oil

Check oil level; refill directly into engine or from reserve tank (see page 6 - 3).

NOTE: Coach must be on level ground.

Manual transmission

Check oil level (see page 6 - 4).

Power steering oil tank

Check oil level (see page 6 - 5).

Belts

Check for worn belts.

Belt tensioners

Visually check belt tension and tensioner shaft length (see page 6 - 8).

Extinguishers

Ensure that first aid kit is in place and that fire extinguishers are in working order (see page 6 - 7).

Seats

Make sure all seats and seat cushions are firmly attached.

Emergency exits

Check that emergency exits can be easily opened.

Lavatory

Inspect for cleanliness, supply of paper, towels and water.

Driver's compartment

Adjust mirrors and seat.

With engine running

Leaks

Inspect around vehicle and listen for any air leak.

Turbocharger

Look for any leaks or unusual sounds coming from the turbo compressor.

Automatic transmission

Check oil level (see page 6 - 4).

Gauges and buzzers

Gauges should be in normal position, indicator lights and buzzers off.

Fuel level

Be sure level is sufficient.

Service brakes

Check for pressure build-up. With engine stopped and no brake applied, loss should not exceed 3 psi/min. (21 kPa/min.). Make a full brake application; loss should not exceed 7 psi (48 kPa).

Parking and emergency brakes

With air pressure above 65 psi (448 kPa), lower presssure with brake pedal applications, check that buzzer works and that control button lifts up. Wait until air pressure exceeds 95 psi (655 kPa) before releasing parking brakes.

RECOMMENDATIONS

- Make sure the basic principles of operation of the vehicle are understood.

- Maintain the vehicle in good running condition.

- Do not drive vehicle with an extremely low fuel level. Unlike a gasoline engine, if a diesel engine runs out of fuel it will not simply restart after fuel is added to the tank. Air must be bled from the engine fuel line. Refer to the *"Maintenance Manual"* for more details.

- Allow engine to run at slow idle for at least 2 minutes before turning it off.

- Engine should always be at idle speed when shifting from neutral to reverse or forward range.

- Automatic transmission shift pattern does not include a park position. Parking brake must therefore be applied to hold vehicle when it is unattended. Gearshift should then be in neutral position. If engine is stopped without applying the parking brake, a warning buzzer will sound until the parking brake is applied and your foot is removed from the brake pedal.

- Perform procedures as detailed in this manual.

- Unless otherwise specified, engine should be turned *"OFF"* for all lubrication and maintenance procedures.

- Do not attempt to push-start or pull-start the vehicle.

- Do not tow vehicle without first removing the drive axle shafts or disconnecting the propeller shaft. Internal lubrication of the automatic transmission is inadequate when the vehicle is towed.

- Chemical fire extinguishers are located under the first L.H. and R.H. seats. In case of fire, get everyone out of the vehicle, then think of your own danger before attempting to fight the fire.

- When driving on ice or snow, any acceleration or deceleration should be done gradually.

NOTE: Normal operation as well as some emergencies or abnormal conditions are covered in this manual. Any malfunction interfering with satisfactory operation should be corrected immediately, particularly when safety may be involved.

HEATING, VENTILATION AND AIR CONDITIONING

The coach interior is pressurized by its A/C - heating system. Air flow and controls divide the vehicle in two interrelated zones:

- Driver's area with defroster

- Passengers' section

Keep in mind that vehicle interior should always be slightly pressurized to prevent dust and moisture from entering vehicle.

Each zone has its own fresh air, returning air and discharge air ducting. The passengers' section is also provided with a fan in the lavatory which serves in the first place to eliminate odors and secondly, to heat or cool the lavatory with vehicle ambient air. It also acts as the main exhaust for the whole vehicle.

WARNING: Excessive high temperature in driver's zone could induce drowsiness, affecting driver's ability to operate the coach safely.

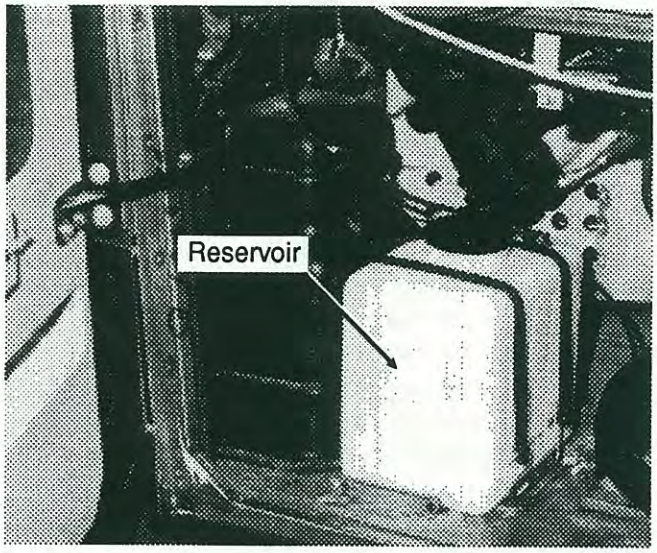
NOTE: To operate air conditioning system when coach is stationary, engine should run at fast idle. During operation of air conditioning system, windows should be kept closed and door not left open longer than necessary.

In order to prevent battery discharge, A/C & heating systems will not operate if vehicle charging system is not working properly.

While the A/C system is running, make sure the vehicle is parked at least 4' (1,5 m) from other vehicles to allow sufficient air flow through the condenser core.

WINDSHIELD WASHER RESERVOIR

The windshield washer reservoir is located in front left service compartment. This reservoir has a capacity of 5 U.S. gallons (19 liters) and is provided with a spin-on type cover. Reservoir supply should be checked regularly.



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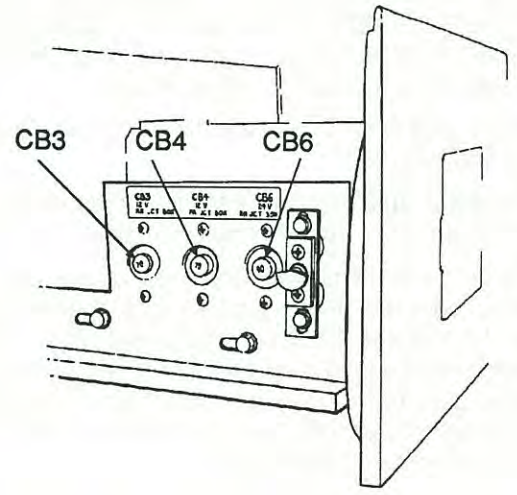
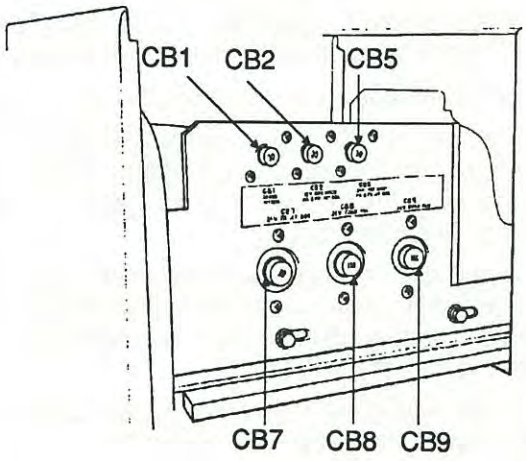
Spray jets are mounted under windshield wiper arms. The reservoir fluid is forced by an electric pump through rubber tubes into spray jets and onto windshield.

Each upper and lower washers have their own control and pump connected to the same reservoir.

MAIN BREAKERS

The nine (9) main breakers are mounted on the inner sides of the main power junction sliding support located next to the engine R.H. side access door, and are identified as follows:





CB1 Sound system feed 30 amps - 12 volts
CB2 Front and rear junction box feed 30 amps - 12 volts
CB3 Rear junction box feed 70 amps - 12 volts
CB4 Front junction box feed 70 amps - 12 volts
CB5 Front and rear junction box feed 30 amps - 24 volts
CB6 Rear junction box feed 90 amps - 24 volts
CB7 Front junction box feed 90 amps - 24 volts
CB8 Evaporator fan motor feed 150 amps - 24 volts
CB9 Condenser fan motor feed 150 amps - 24 volts

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OE3B0407

Moreover, two battery equalizers have been installed facing each other inside sliding support. Each is provided with a breaker on its front.

TIRES

Tire pressure

The condition and pressure of the tires can greatly affect both useful tire life and road safety.

NOTE: The recommended tire inflation pressures are given in the *"Technical Description"* section. Moreover, cold tire inflation pressures are stamped on the Department of Transports certification plate affixed at rear of driver's seat.

At regular intervals, verify the tire pressures. Use an accurate tire pressure gauge when checking inflation pressures. Never exceed the recommended maximum tire inflation pressure.

Cold tire inflation pressure means: When a vehicle has not been driven for at least three hours or less than 1 mile (1,6 km).

WARNING: Incorrect tire pressures cause increased tire wear and adversely affect road holding of the vehicle, leading to loss of vehicle control.

NOTE: Always include the spare tire during a pressure verification.

Changing wheels

Tire failure is a rare event these days. In case of a flat tire, move vehicle to the side of the road, at a safe distance and apply the parking brake. Remember to switch *"ON"* the hazard flashers and to set up the triangular reflectors at an adequate distance to warn other vehicles, according to the highway code regulations.

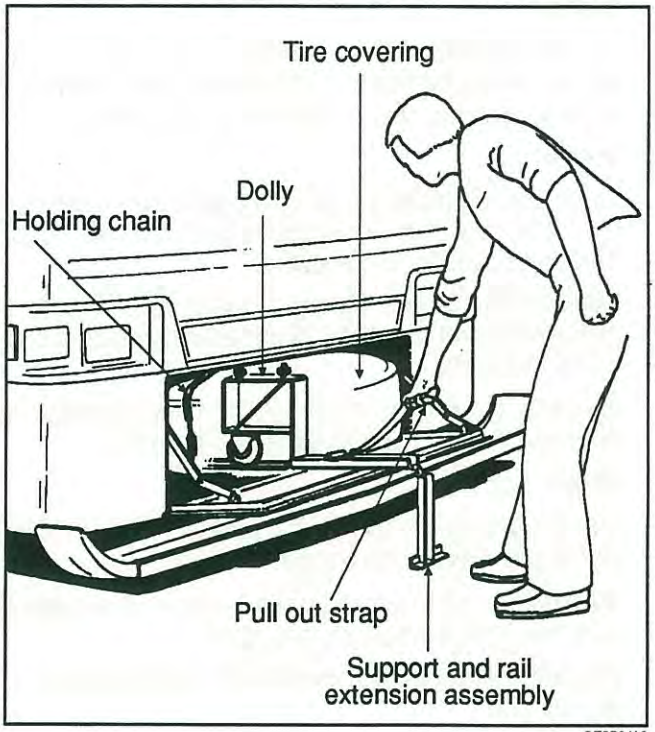
Spare wheel and tire are stored in a compartment directly behind the reclining front bumper. The access is obtained by unscrewing the nut located at each extremity below the bumper, then by pushing them upwards. Lower bumper slowly as it is quite heavy.

NOTE: It is recommended that two persons perform the above operation.

WARNING: This compartment has not been designed for storage. Never leave any loose object in this area as it may interfere with the steering linkage mechanism.

Removing spare wheel and tire from compartment

To pull out spare wheel and tire, open reclining bumper according to previous instructions. Loosen turn buckle of the holding chain to release the wheel and dolly assembly. Open the front left service compartment, unscrew the wing nut retaining the support and rail extension assembly, then take out the assembly. Fix it by matching its two holes to the corresponding mounting pins located in front center of spare tire compartment. Pull out spare wheel using the strap as illustrated. Remove tire covering, then separate spare wheel and tire from its dolly by unscrewing the two mounting nuts.



OE3B0410

CAUTION: Check that bumper is safely hooked in place, and that retaining nuts are firmly tightened after bumper compartment has been closed.

NOTE: Reinstall support and rail extension assembly, then secure tire with holding chain before moving vehicle.

Jack and wheel nut wrench are stored at right in the first R.H. side baggage compartment.

Check the inflation pressure of the spare tire periodically to keep it ready for use. Inflate spare tire to the pressure of the tire which has the highest pressure on the vehicle.

Check periodically that spare tire attachment is tightly held in order to prevent tire from moving inside compartment.

Procedure

Step 1

Stop engine, apply parking brake, take jack and wrench out of the right front baggage compartment, then pull out the spare wheel and tire.

Step 2

- Wheel with cover

Remove cover before proceeding with step 3.

- Wheel with hub cap

Remove cap with the appropriate wrench before proceeding with step 3.

Step 3

Loosen all wheel nuts (counterclockwise on the R.H. side and clockwise on the L.H. side) about one turn with the wrench provided. Do not yet remove the nuts.

Step 4

There are five jacking points on each side: three under the body, and two under the axles (refer to heading *"Jacking points"* in this section).

WARNING: Before changing a wheel, be sure the ground is level and firm. If necessary, place a board under the jack.

Jacking from any other point may damage the vehicle or may result in personal injuries.

Step 5

Use the hydraulic jack to raise vehicle. Raise vehicle to the required height to change the wheel.

WARNING: Do not raise the vehicle until you are sure the jack is securely engaged.

Passengers must not remain in vehicle when it is jacked up.

Step 6

Fully unscrew the wheel nuts and remove wheel. Place the spare wheel, replace nuts and tighten them slightly in a crisscross sequence before lowering the vehicle.

Step 7

To lower vehicle, unscrew the hydraulic valve on the jack slowly, till tire touches ground.

Step 8

Tighten the nuts firmly in a crisscross sequence with the wrench to the appropriate torque.

NOTE: The appropriate tightening torque of the nuts should be 450-500 ft•lbs (610-680 N•m). This torque can be obtained with the wrench by any person of average strength. If in doubt about the correct tightness of the wheel nuts, have it checked with a torque wrench.

Step 9

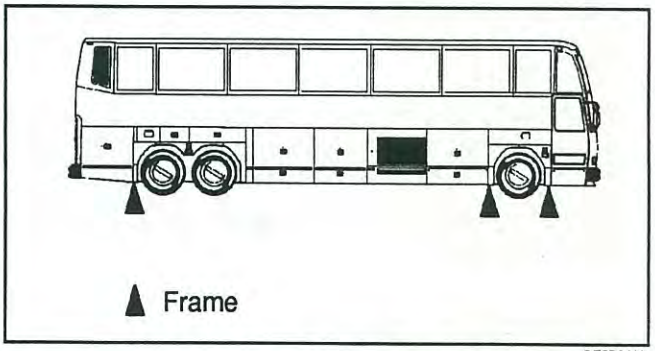
Fully lower the vehicle and remove jack. Correct the air pressure of the spare tire according to the cold tire inflation pressures stampered on the plate at rear of the driver's seat.

Step 10

Securely store damaged wheel in spare tire and wheel compartment, and have the flat tire repaired and the wheel rebalanced as soon as possible.

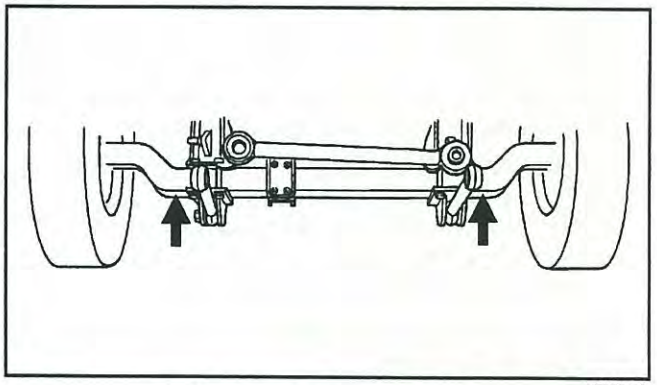
JACKING POINTS

The vehicle is provided with five jacking points on each side; three under the frame and two under the axles. Refer to the following illustrations for details.



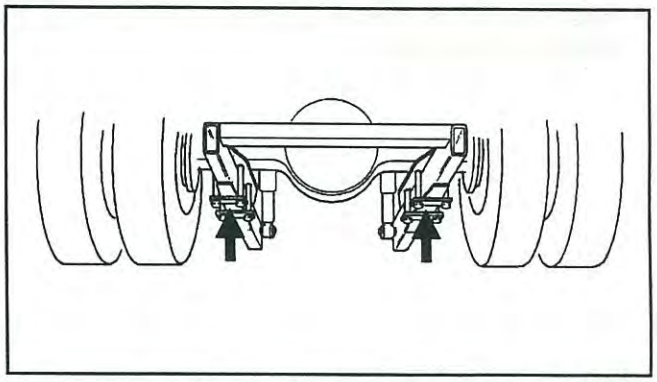
OE3B0411

Jacking points on frame



OE3B0413

Jacking points on front axle

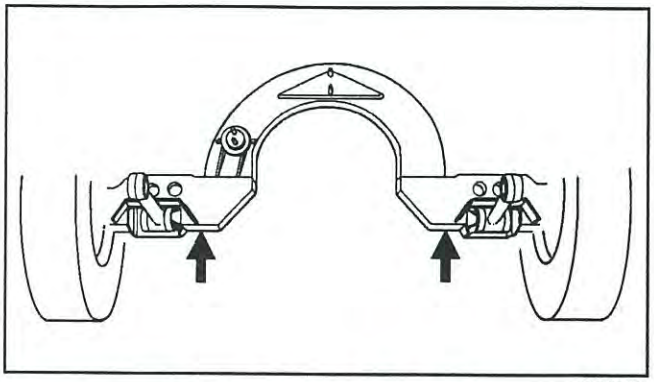


OE3B0414

Jacking points on drive axle

CAUTION: The jacking points on tag axle must be used only for lifting this axle.

CAUTION: Always raise or unload tag axle before lifting vehicle to prevent damage to suspension components.



OE3B0412

Jacking points on tag axle

Different kind of hydraulic jacks can be employed, but remember that only these jacking points must be used. Moreover, according to the vehicle weight distribution per axle, jacks must support the following capacities:

Front axle: 13,000 lbs (5 900 kg)

Drive axle: 25,000 lbs (11 365 kg)

TOWING

Two tow eyes are provided under each bumper. Towing should be done from these points only by means of a solid link tow bar and a safety chain. This recommended method prevents damaging the vehicle. If required, connect an auxiliary air supply to the vehicle to allow actuating of the vehicle brakes. For vehicles equipped with an automatic transmission, the engine cannot be started by pushing or towing vehicle.

WARNING: Never allow passengers to ride in a towed vehicle for any reason whatsoever.

CAUTION: Internal lubrication of the transmission is inadequate when the vehicle is towed. Disconnect the propeller shaft or remove the axle shafts before towing to avoid possibility of damaging transmission.

NOTE: When the propeller or axle shafts are reinstalled, ensure the nuts are tightened to the appropriate torques and the axle shafts are properly installed (R.H. & L.H.) and/or the propeller shaft is properly phased.

RETRACTABLE TAG AXLE

Operation of the tag axle is controlled by a valve located on the right lateral console. The valve can be flipped to eiher one of the two positions, *"Wheels up"* or *"Wheels down"*. Axle will automatically be raised or lowered by air pressure according to valve position (see fig. page 2 - 19).

Tag axle service brakes operate only when axle is down. Never lower tag axle while vehicle is moving. When tag axle is up, the corresponding indicator light will illuminate, and a beep will sound to remind you that axle is up. Tag axle can be raised in tight maneuvering areas as in a parking lot or to help in turning a short corner, thus shortening the wheelbase and allowing tighter turning. Raising tag axle transfers extra weight and additional traction to the drive wheels on a slippery surface.

CAUTION: Always raise tag axle before lifting vehicle to prevent damage to suspension components.

After either of the above uses, vehicle must be stopped, then tag axle must be lowered before resuming normal driving.

TAG AXLE UNLOADED

This standard system allows to unload the tag axle air springs, without raising axle. This system is controlled by the same valve that applies to the retractable tag axle, and is used for the above special situations. However, operator must heed the same recommendations that apply to the retractable axle.

TECHNICAL DESCRIPTION

DIMENSIONS

Overall length (over bumpers)	40' (12 192 mm)
Overall width	102" (2 591 mm)
Overall heigth (over closed roof hatches)	12' (3 658 mm)
Wheelbase (center of front axle to center of drive axle)	280" (7 112 mm)
Floor height from ground	63" (1 600 mm)
Ground clearance	11" (280 mm)
Headroom	77" (1 956 mm)
Aisle width	14" (355 mm)
Step height from ground	14" (355 mm)
Height of other steps	7" (178 mm)
Entrance door opening width	26" (660 mm)
Front overhang	69.5" (1 765 mm)
Rear overhang	82.5" (2 096 mm)
Front track	85.67" (2 176 mm)
Drive track	75.6" (1 920 mm)
Rear track	81" (2 057 mm)
Turning circle radius (exterior front corner)	43' (13 106 mm)

WEIGHTS

Curb weight (for vehicle equipped with a manual transmission and a 6-cylinder engine)	30,080 lbs (13 642 kg)
Gross vehicle weight rating	42,690 lbs (19 364 kg)

Gross axle weight rating (G.A.W.R.)

- front axle	13,000 lbs (5 900 kg)
- drive axle	25,000 lbs (11 365 kg)
- tag axle	10,000 lbs (4 536 kg)

The Gross Vehicle Weight Rating (G.V.W.R.) and the Gross Axle Weight Rating (G.A.W.R.) for front, drive and tag axles are listed on a certification plate located on the panel at the rear R.H. side of driver's seat.

STORAGE VOLUME

Exterior baggage compartments:	420 ft^3 / 11,9 m^3
Parcel racks:	80 ft^3 / 2,3 m^3

SEATS

Seating capacity: (1) 48 passengers
(2) 46 passengers
(3) 50 passengers
(4) 52 passengers

(1) including two card tables (std)
(2) including two card tables and an optional galley
(3) including one card table
(4) including one card table without lavatory

NOTE: Several seating layouts may be achieved through a combination of available equipment with the addition or removal of some items as passenger's seats, card table, galley, lavatory.

CAPACITIES

Engine oil

- Crankcase	23 to 25 US qts / 22 to 24 litres
- Filter	2 US qts / 2 litres
- Cooler	1.5 US qts / 1,4 litres
- Reserve tank	10 US qts / 9,45 litres

Fuel reservoir

235 US gal / 890 litres (legal capacity equal to 95% of volume)

Differential oil

22.6 US qts / 21.4 litres

Cooling system

24 US gal / 91 litres

Transmission

- Automatic transmission (does not include external circuits)

  30 US qts / 28,4 litres

- Manual transmission

  20.5 US qts / 19 litres

Power steering reservoir

9.6 US qts / 9,1 litres

Windshield washer reservoir

5 US gal / 19 litres

FUEL TYPE

Specification ASTM D-975

Recommended grade: 1-D

Acceptable grade: 2-D

WHEELS AND TIRES

Type:	315/80R 22.5
	1200 R 22.5
	12.75 R 22.5
Steel wheels:	8.25 x 22.5
Aluminium-forged wheels:	8.25 x 22.5

Recommended tire inflation pressure (cold)

- front axle	110 lb/po^2 / 760 kPa
- drive axle	95 lb/po^2 / 655 kPa
- tag axle	85 lb/po^2 / 585 kPa

CAUTION: Each tire should have a minimum capacity of 7,200 lbs (3 273 kg) at 120 psi (825 kPa).

NOTE: It is recommended that vehicle be equipped with the same type of tires.

BELTS

Radiator fan drive (transfer)

Make:	Gates
Model:	3A-94
Qty:	1

Radiator fan drive with thermostatic option

Make:	Gates
Model:	3A-92
Qty:	1

A/C system compressor (without variable-speed drive)

Make:	Gates
Model:	CX 96
Qty:	2

A/C system compressor (with variable-speed drive)

Make:	Linnig
Model:	LR1-BG7
Qty:	1

Variable-speed drive (crankshaft)

Make:	Gates
Model:	CX 75
Qty:	1

TRANSMISSION

Automatic (with and without ATEC system)

Lockup clutch

Output retarder (ATEC only)

Five-speed automatic transmission

Gear	Ratio
1st	3.69
2nd	2.00
3rd	1.58
4th	1.25
5th	1.00
Rev.	9.65
Converter	1.81

Manual

Six-speed manual transmission

Gear	Ratio
L	8.53
1st	4.87
2nd	3.00
3rd	1.90
4th	1.33
5th	1.00
Rev.	8.53

DRIVE AXLE

Ratio	3.58 : 1 (std)
	3.73 : 1 (opt)

ALIGNMENT

Front axle

- Toe in	1/8 ± 1/32" (3 ± 0,8 mm)
- Caster	+3° (+2 1/2 to +4 3/4° accepted)
- Camber (R.H.)	- 1/8 ± 7/16°
- Camber (L.H.)	+3/8 ± 7/16°

Tag axle

- Toe in	0 ± 3/32" (0 ± 2,4 mm)

BRAKES

Dual system plus parking brake

Disc brakes on front and tag axles

30-36 drum-type spring brakes on drive axle

Two-cylinder, engine gear-driven, water-cooled and engine oil lubricated air compressor

Air dryer

Nylon color-coded air lines

ABS system on all axles with dashboard warning light (opt)

Automatic slack adjuster

STEERING

Tilt steering wheel and telescopic steering column

Hydraulic-assisted steering gear

SUSPENSION

Kneeling system (opt)

1100 air springs (eight per vehicle)

Dual action shock absorbers

Levelling valves

Sway bar on front axle

Sway bar on tag axle upon special request

ELECTRICAL SYSTEM

24 volt system

12 volt exterior lighting

270 amp, self-rectified, gear-driven, oil-cooled *"Delco"* alternator lubricated by engine circuit

Four 12 volt, maintenance-free batteries with a 1160 cold cranking amp capacity

12 volt system provided with two battery equalizers

Two weatherproof junction boxes

Manual reset circuit breakers

12 volt and 24 volt manual disconnect switches

SOUND SYSTEM

Twelve Hi-Fi speakers in passengers' section (std)

Two Hi-Fi speakers in driver's area (opt)

"Blaupunkt" deluxe AM/FM cassette (opt)

PA system with volume control (std)

Microphone outlets (one std)

VIDEO SYSTEM (opt)

TV converter ("Starcom 7V") with remote control

"Panasonic" videocassette player

- Model: VHS ag-1000B with remote control

TV monitors mounted under parcel racks

- Model: ST-1001

OIL SPECIFICATIONS

Engine

Heavy-duty engine oil SAE-40 meeting MIL-L-2104D specification. Certain engine operating conditions may require exceptions to this recommendation. They are as follows:

1. For continuous high temperature operation (over 100 °F (38 °C) ambient or 200 °F (93 °C) coolant out), the use of a SAE grade 50 lubricant is recommended.

2. At ambient temperatures below freezing where starting aids are not available or at very cold temperatures (0 °F (-18 °C) to -25 °F (-32 °F)), the use of multiviscosity grade 15W-40 or monograde SAE-30 lubricants will improve startability.

Transmission

Automatic

Fill transmission with *"Dexron"* or *"Dexron II"* fluid.

Manual

Same as engine oil

Differential

Multigrade lubricants are recommended for use in the drive axle. These lubricants perform well over broad temperature ranges, providing good gear and bearing protection in a variety of climates. Two categories of lubricants may be used according to the climate in which vehicle is operated.

SAE 85W-140 (above 10 °F (-12 °C))

SAE 75W-90 (below 10 °F (-12 °C))

Fan gearbox

General purpose gear SAE-90 grade lubricant is recommended for the fan gearbox.

Power steering reservoir

Fill reservoir with *"Dexron"* or *"Dexron II"* fluid.

Wheel bearings

SAE-90 oil is recommended for the front and tag axle wheel bearings. Drive axle wheel bearings are lubricated by the differential oil.

Clutch master cylinder

This reservoir must be filled with DOT 3 heavy-duty brake fluid.

HEATING AND AIR CONDITIONING SYSTEM

Driver's system

Air conditioning capacity:	2 tons
Refrigerant:	Freon R-12
Heating capacity:	37,000 Btu/hr

Central system

Air conditioning capacity:	7.5 tons
Refrigerant:	Freon R-12
Heating capacity:	152,000 Btu/hr

Modulated A/C and ventilation speed

Two axial fans

- Make: Leroy Somer
- Model: TAP 12
- Voltage: 27.5
- Amperage: 23
- Speed: 1950 rpm
- P: 0.57 hp

Two blowers

One blower motor

- Model: Prevost
- Type: T 19
- Compound winding
- Speed: 1750 rpm
- P: 1.5 kW
- Voltage: 27.5
- Maximum amperage: 69

Temperature control

Six output stage *"Honeywell Energy Management"* microprocessor

Digital remote thermometers for inside and outside temperatures, mounted on central console in driver's area

Rheostatic thermostat setting and telltale

Manual fresh air control

Humidistat set to 30%

Compressor

Belt-driven magnetic clutch

Vario-drive

Number of cylinders:	6
Operating speed:	400 to 2,200 rpm
	(rated speed: 1,750 rpm)
Minimum speed for lubrication:	400 rpm
Oil capacity:	1.13 US gal (4,3 litres)
Approved oils:	Calumet R030
	Dupont Zephron 150
	Sun Oil Co. Suniso 3GS and 4GS
	Texaco WF1 132

ANTILOCK BRAKING SYSTEM (ABS)

Components: Electronic Control Module (ECM)
Solenoid control valves
Sensors
Clamping bushes
Wiring harnesses

Electronic control module technical data

Voltage:	24 ± 6 volts
Thermal operating range:	-40 to 167 °F (-40 to 75 °C)

Protection system for sealed multi-pin plug according to DIN 40050

Electrical connection is made through a 35 pin plug

Maintenance: none

Solenoid control valve technical data

Voltage:	24 (+4.8, -2.4) volts
Current:	DC
Rated current:	1.65 amps

Protection system according to DIN 40050

Maximum service pressure:	10 bars (145 psi)
Thermal operating range:	-40 to 176 °F (-40 to 80 °C)
Electrical connector:	894 601 010 2

Installation: Maximum pipe length between solenoid control valve and brake cylinder is 5' (1,5 m); pipe diameter is 3/8" (10 mm) venting downward at an angle of 15° on the vertical plane.

Maintenance: none

Sensor technical data

Two-core screened cable:	AWG 18 (1 mm^2)
Force needed to tear out lead:	11.2 lbs (50 N)
Force needed to pull off shrink-fitted tube:	11.2 lbs (50 N)

Protection system according to DIN 40050

Thermal operating range:	-40 to 176 °F (-40 to 80 °C)

PREHEATING SYSTEM TECHNICAL DATA

EBERSPÄCHER (ESPAR)

Heater:	Model D12W
Heating capacity:	12 kW
Heating output:	40,000 Btu/hr
Fuel type:	Same as engine
Fuel consumption:	1.75 U.S. qts (1,65 litres) / hour
Rated voltage:	24 ± 4 volts
Electric power consumption:	55 watts

WEBASTO

0.44 gal.

MODEL DBW202

23.3 kW

80,000 BTU/h

same as engine

0.8 U.S. gallon 3 litres/hour

24 ± 4 VOLTS

120 WATTS

ALAIN\ÉFMX05.WP5

DDEC II DIAGNOSTIC CODES

To read codes:

Use a diagnostic data reader (not furnished by the manufacturer) or set the "DDEC TEST" switch to the "ON" position. This switch is located in the upper section of front left service compartment. This latter method will illuminate the "Check engine" light located in dashboard, in a series of flashes separated by a pause. A code "43" consists of four flashes, followed by a short pause, then three flashes in quick succession.

Error Code #	Description	Error Code #	Description
11	Power Take-Off Sensor Lo Volt	38	Fuel Prs Sensor Lo Volt
12	Power Take-Off Sensor Hi Volt	41	Timing Reference Sensor
13	Coolant Sensor Lo Volt	42	Synchronous Ref Sensor
14	Eng Temp Sensor Hi Volt	43	Low Coolant Level
15	Eng Temp Sensor Lo Volt	44	Engine Overtemperature
16	Coolant Sensor Hi Volt	45	Low Oil Pressure
21	Throttle Pos Sensor Hi Volt	46	Low Battery Voltage
22	Throttle Pos Sensor Lo Volt	47	Hi Fuel Pressure
23	Fuel Temp Sensor Hi Volt	48	Lo Fuel Pressure
24	Fuel Temp Sensor Lo Volt	51	EEPROM Error
25	No Codes	52	ECM - A/D Fail
26	Power Control Enabled	53	EEPROM Memory Failure
31	Fault On Auxiliary Output	54	Vehicle Speed Sensor
32	ECM Backup System Fail	55	Proprietory Comm. Link
33	Turbo Bst Sensor Hi Volt	56	ECM - A/D Fail
34	Turbo Bst Sensor Lo Volt	58	Cruise Ctl Switches
35	Oil Prs Sensor Hi Volt	61-68	Inj Response Time Long
36	Oil Prs Sensor Lo Volt	71-78	Inj Response Time Short
37	Fuel Prs Sensor Hi Volt	85	Engine Overspeed

DDEC: Detroit Diesel Electronic Control

ECM: Electronic Control Module

EEPROM: Electrically Erasable Programmable Read-Only Memory

ATEC DIAGNOSTIC CODES

To read codes:

Use a diagnostic data reader (not furnished by the manufacturer) or set the "ATEC TEST" switch to the "ON" position. This switch is located in the upper section of front left service compartment. This latter method will illuminate the "Check Trans" light in dashboard, in a series of flashes separated by a pause. A code "12" consists of one flash, followed by a short pause, then two flashes in quick succession.

Diagnostic codes and system response for 6/700 series Allison Transmission Electronic Control

Code	Description	"DO NOT SHIFT" Light	Transmission Response	Clearing the "CHECK TRANS"
12	Low fluid pressure/level	OFF	Inhibits high gear	Next valid lube pressure/level
13	Low input voltage: in neutral	ON	Hold in neutral	Acceptable volts
	in range	OFF	May not shift	Not turned on
14	Forward pressure switch	OFF	Normal operation	Next valid signal
15	Reverse pressure switch	OFF	Normal operation	Next valid signal
21	Throttle sensor, in error zone	OFF	Full throttle assumed	ECU power OFF/ON
22	Speed sensor	ON	Drop LU & hold in gear	ECU power OFF/ON
23	Shift selector (primary)	OFF	Hold in last range	Next valid range
24	Fluid temperature:			
	cold below -25 °F (-32 °C) No Code	ON	Hold in neutral	Temp above -25 °F (-32 °C)
	cool -25 to 20 °F (-32 to -7 °C) No Code	OFF	Inhibits upshifts	Not turned on
	hot above 270 °F (132 °C)	OFF	Inhibits high gear	Temp below 270 °F (132 °C)
31	Shift selector (secondary)	OFF	Hold in last range	Next valid range
32	Wrong direction signal	OFF	Shift to neutral	Select neutral
33	Temp. sensor, in error zone	OFF	Normal operation	Next valid temp
34	PROM check	ON	Drop LU & hold in gear	ECU power OFF/ON
41	J solenoid (neutral) on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified ouput rpm*	ON	Drop LU & hold in gear	ECU power OFF/ON
42	F solenoid (fwd/rev) on test			
	Below specified ouput rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON	Drop LU & hold in gear	ECU power OFF/ON
43	D solenoid on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON	Drop LU & hold in gear	ECU power OFF/ON
44	C solenoid on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON	Drop LU & hold in gear	ECU power OFF/ON

Code	Description	"DO NOT SHIFT" Light	Transmission Response	Clearing the "CHECK TRANS"
45	B solenoid on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON	Drop LU & hold in gear	ECU power OFF/ON
46	A solenoid on test			
	Below specified output rpm*	OFF	May not shift	ECU power OFF/ON
	Above specified output rpm*	ON	Drop LU & hold in gear	ECU power OFF/ON
51	G solenoid (lockup)	OFF	Possible loss of lockup	Valid signal
52	E solenoid (trim boost)	OFF	Possible full trim boost	Valid signal
53	H solenoid (neutral)			
	On test	OFF	May not shift	ECU power OFF/ON
	Off test	ON	Drop LU & hold in gear	ECU power OFF/ON
54	A,B,C,D,F & J solenoids off test	ON	Drop LU & hold in gear	ECU power OFF/ON
66	Bi-directional comm. link	ON	No modulation of shifts	Valid BDCL signal
69	Electronic control unit test	ON	Drop LU & hold in gear	ECU power OFF/ON

Notes:

1) For all errors, the "CHECK TRANS" light will illuminate immediately.

2) Except for Codes "22 and 69", lockup clutch will not be dropped until the retarder or compression brake (if used) shuts off.

3) Engine restart will usually turn ECU power OFF/ON.

*** Speed specified by transmission.**

LIGHT BULB DATA

APPLICATION	PREVOST PART NO.	TRADE OR SAE NUMBER	WATTS OR CANDLE POWER	VOLTS	QTY
EXTERIOR LIGHTING					
Hi-beam	56-1198	H4651	50 W	12	2
Lo-beam	56-1199	H4656	35 W	12	2
Docking & cornering	56-1882	H3 (Osram)	55 W	12	4
Fog	56-1882	H3 (Osram)	55 W	12	2
License plate (sealed)	93-0266	---	---	12	2
Side directional	56-1917	1893	2 cp	12	12
Side marker	56-1917	1893	2 cp	12	12
Identification	56-2059	194	2 cp	12	6
Clearance	56-2059	194	2 cp	12	8
Front directional (hazard & marker)	56-1899	1157 NA	32/6 cp	12	2
Rear directional	56-1880	Hella	21 W	12	4
Stop	56-1880	Hella	21 W	12	4
Back-up	56-1880	Hella	21 W	12	4
Center stop	56-1880	Hella	21 W	12	1
Tail	56-1881	Hella	10 W	12	4
Kneeling indicator	56-1166	464	3 cp	24	1
Exterior compartment (except engine)	56-0135	623	6 cp	24	34
Engine compartment	56-0135 93-0266	623 ---	6 cp ---	24 12	4 4
INTERIOR LIGHTING					
Check engine	56-2048	E-9 (Norma)	2 W	12	1
Stop engine	56-2048	E-9 (Norma)	2 W	12	1
Flasher indicator	56-2048	E-9 (Norma)	2 W	12	2
Other indicator - 1/unit	56-2049	(Osram)	2 W	24	AR
Speedometer	56-0145	1829	1 cp	24	2
Tachometer	56-0145	1829	1 cp	24	2
Turbo boost	56-1167	3899 (Osram)	3 W	24	1
Tachograph	56-1006	1-405-804	1.2 cp	24	3
Other instrument - 1/unit	56-0144	1820	1.6 cp	24	AR
Step	56-0135	623	6 cp	24	3
Lavatory	56-0135	623	6 cp	24	1
Parcel rack	56-0144	1820	1.6 cp	24	15
Driver's area	56-1553	Hella	10 W	24	4
"Emergency exit" decal	56-0601	456	2 cp	24	20
"Lavatory occupied"	56-0144	1820	1.6 cp	24	2
"Watch your step"	56-0144	1820	1.6 cp	24	2
Aisle	56-0141	1251	3 cp	24	6
Switch - 1/unit	56-1123	2741 (Osram)	1 W	24	AR
Reading	56-2033	961-4940	8 W	24	AR
Fluorescent	83-0102	F15T8 CW	15 W	---	22
Lavatory fluorescent	83-0102	F15T8 CW	15 W	---	2
Destination sign fluorescent	83-0120	F30T8 CW4	20 W	---	1
Parcel rack front neon	83-0108	PL7	7 W	---	16
R.H. lateral console	56-0623	313	3.5 cp	24	2
Shift selector (ATEC)	56-1930	16005999	---	12	8
Shift selector (NON ATEC)	56-0134	356	3.5 cp	24	1

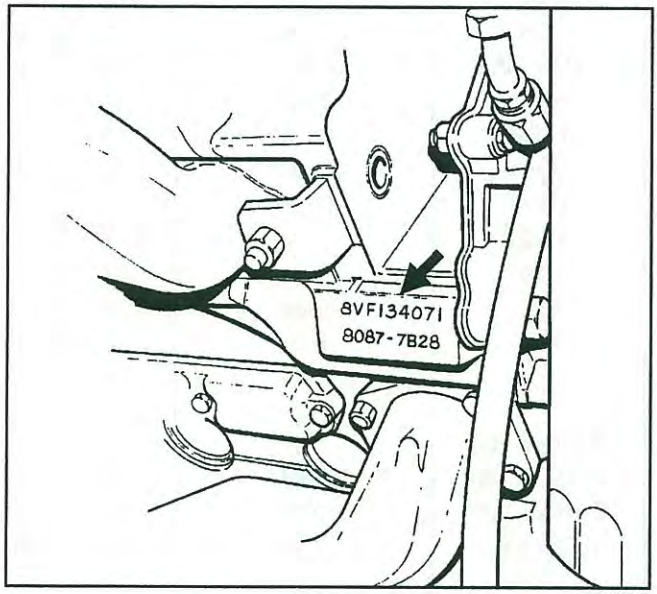
DATA PLATES AND CERTIFICATIONS

Data plates

The main components of vehicle such as engine, transmission, axles and chassis are identified by different serial numbers. It may be necessary to locate these numbers for warranty purposes.

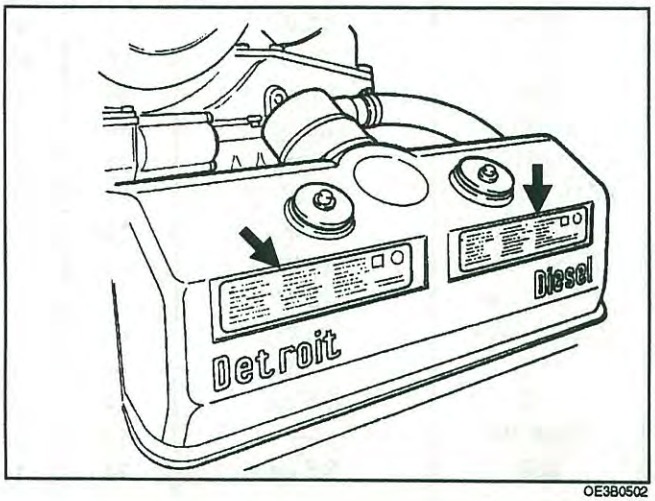
Engine

The engine number is stamped on the cylinder block under the exhaust manifold (oil filter side) close to the water pump.



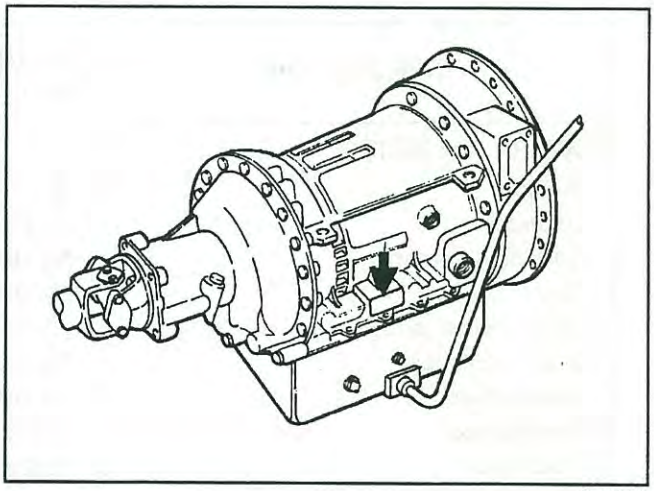
OE3B0501

In addition, two option plates made of laminated paper are located on the rocker cover (starter side). Contents of the option plates include the engine serial and model numbers and a list of the optional equipment on the engine. The information is primarily for use when ordering replacement parts.



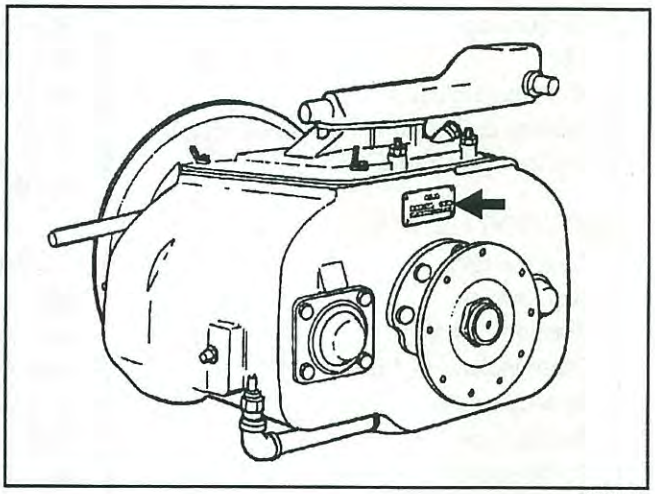
OE3B0502

Automatic transmission



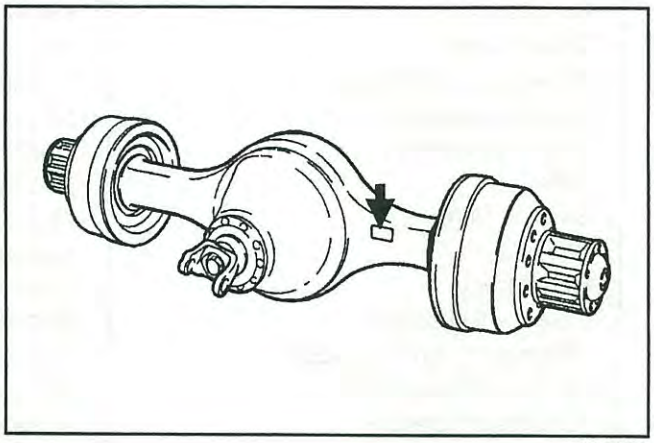
OE3B0503

Manual transmission



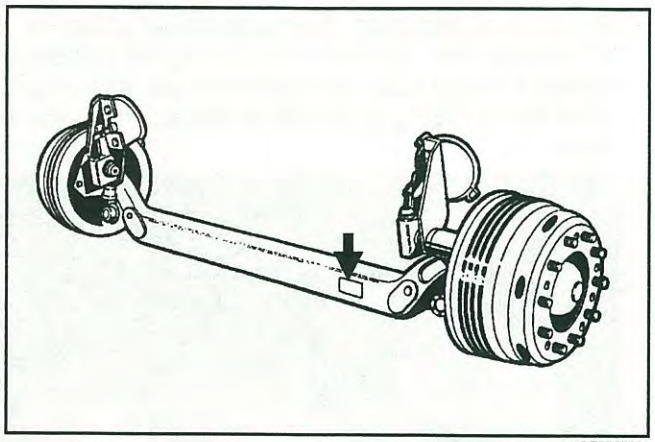
OE3B0504

Drive axle



OE3B0505

Front axle

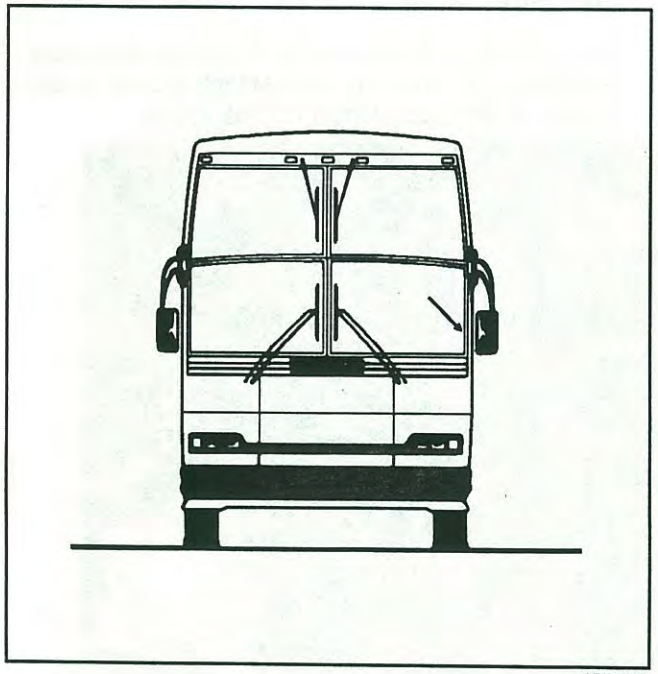


OE3B0506

Vehicle identification number (VIN)

The vehicle identification number is stamped on a plate located on a windshield frame pillar (driver's side), so that it is visible from the outside. It is extremely important to give the correct vehicle identification number when ordering replacement parts. Use of this number will prevent delay and errors in obtaining the correct material.

NOTE: We strongly recommend that you take note of this serial number and supply it to your insurance company. It may be useful.



OE3B226C

Coach final record

This is a complete and detailed record of all data pertaining to the assembly of the vehicle. This information sheet is included in the technical publication box delivered with the new vehicle and should be filed in the owner's office where it will be readily available for references.

Safety certification

All the components on this vehicle meet the government requirements:

- Material and parts conform to ASTM and/or SAE standards in effect at time of manufacturing.

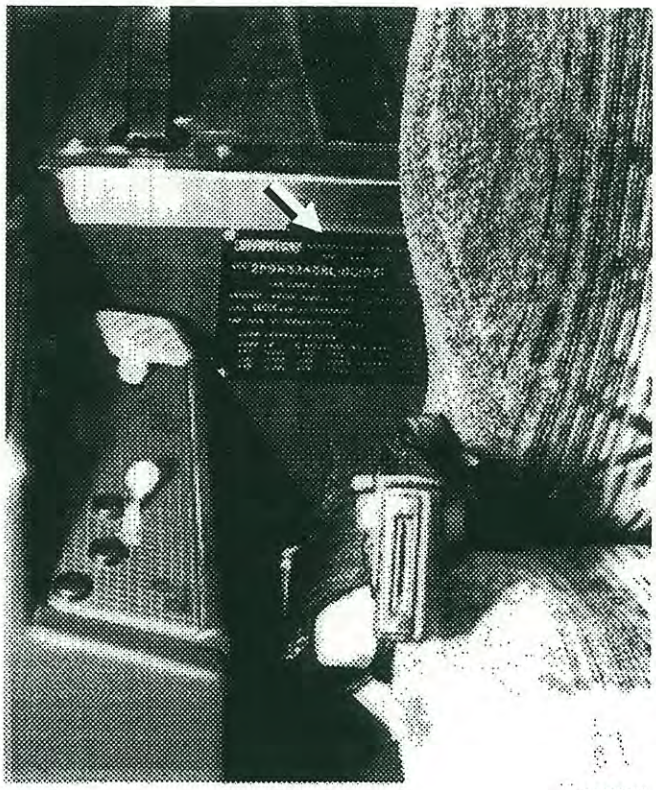
- All factory-installed interior materials meet F.M.V.S.S. 302 on fire resistance.

- Certified according to Provincial, State and Federal Safety standards (Can. & US) B.M.C.S.S., F.M.V.S.S., C.M.V.S.S.

Other certification labels are affixed to the specific components on the vehicle.

DOT certification label

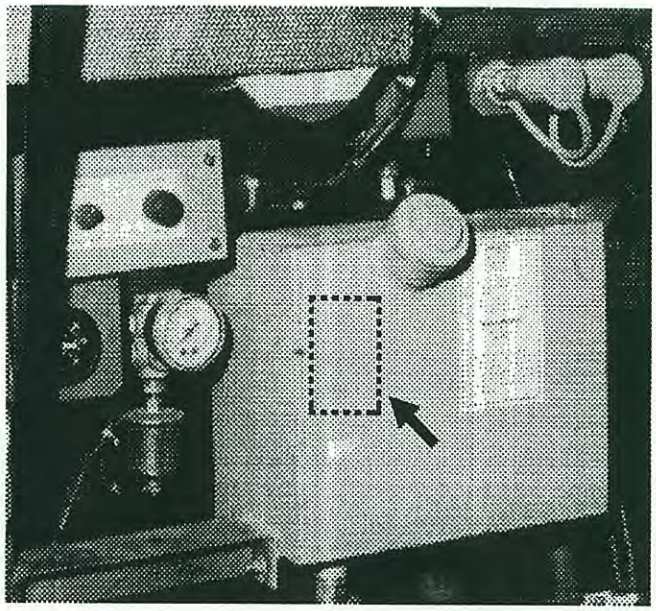
This is your assurance that your new vehicle complies with all applicable Federal Motor Vehicle Safety Standards which were in effect at the time the vehicle was manufactured. This label is affixed to the panel behind the driver's seat on the R.H. side.



OE3B0508

E.P.A. engine label

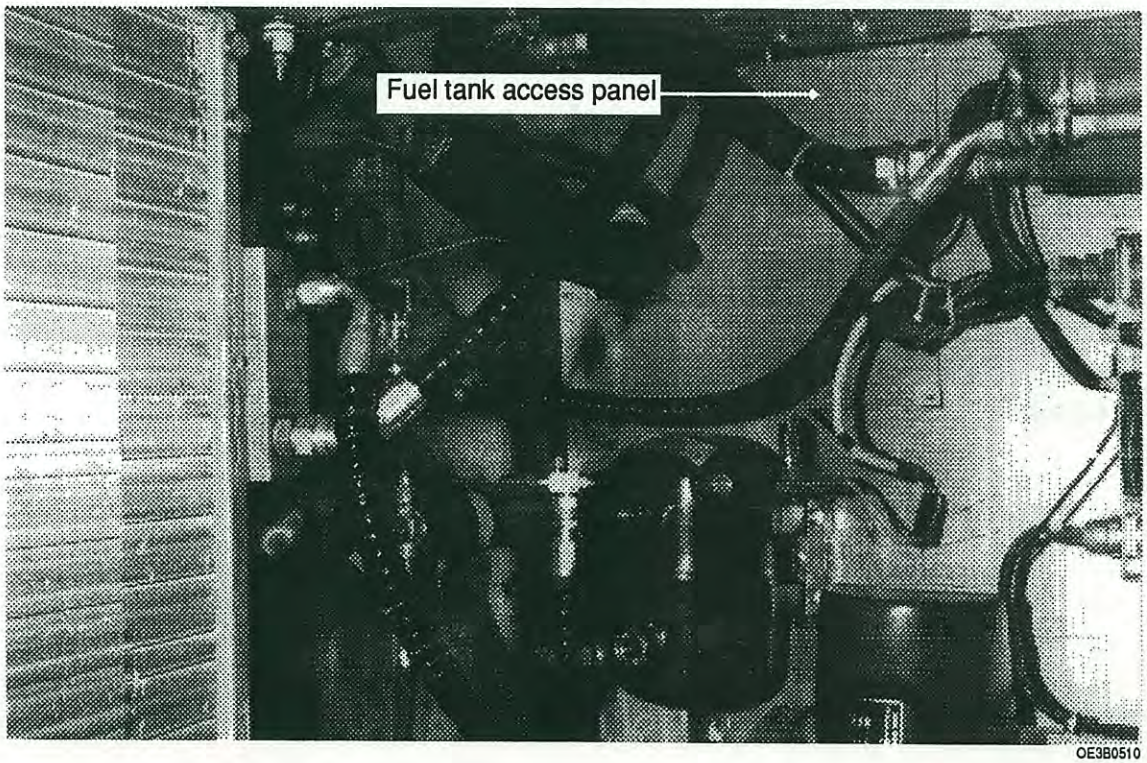
The exhaust emission certification label affixed on the oil reserve tank certifies that the engine conforms to federal and any state exhaust emission regulations. It gives the operating conditions at which certification was made.



OE3B0509

Fuel tank label

The fuel tank label is affixed on R.H. side of fuel tank. To read this label, unscrew the fuel tank access panel nuts located at left in condenser compartment.



OE3B0510

CARE AND MAINTENANCE

INTERIOR CLEANING

The importance of keeping the interior of your coach clean and spotless is a passenger-generating incentive, obvious to most operators.

However, a vehicle in regular and extended use is an easy target for deliberate and involuntary staining and marking by passengers.

The following sections deal with stain and mark removal on the exterior body of the coach, as well as remedies for cleaning the interior compartment that may help coach operators.

NOTE: Most of the cleaning products that are mentioned may be available through a cleaning specialist representative. It is not recommended that you treat new fabrics with any stain protector. Prompt and correct cleaning will remove most stains. *Incorrect treatment will only increase the damage. In questionable cases, always seek expert advice.* Information is true and acurate and is given to the best of our knowledge; however, all recommendations or suggestions are made with reserve since the conditions of application are beyond our control.

Seat upholstery

Normal cleaning

Beat the fabric with a blunt object such as a wooden paint mixer and clean the dust, dirt and grit, with a vacuum cleaner equipped with an upholstery nozzle. Clean as often as possible. The fabric is so designed to retain dirt and grit hidden inside its structure, thus presenting a clean seat to user. Grit will cause abrasion of the fabric and reduce the seat upholstery life. The upholstery nozzle should always be moved with the grain of the fabric.

Removal of stains, liquids and other marks

Do not use soap, soap powder, ammonia, bleach, and especially soda, or any product containing these ingredients. Serious damage could occur to either the dyestuffs or to the wool in the fabric. The two general methods of cleaning wool plush are:

Method 1

Apply a noninflammable solvent (Trichlorethylene) with a clean, white absorbent rag. Clean small areas by working from the outer edge towards the center of the stain. Blot frequently with a dry cloth to avoid rings.

WARNING: Open windows and doors to provide adequate ventilation.

Method 2

Moisten the stain with a solution of household detergent and lukewarm water. ***Do not soak***. Rub stain with a damp cloth, rinsing cloth between each treatment.

CAUTION: Do not use soap, soap powder, ammonia, soda, bleach or any product containing such ingredients.

Beverage stains

Use method 1. If stain persists, try methylated spirits.

Alcoholic liquids

Moisten with water followed by method 2.

Burns

Scrape blackened area with a knife and treat with method 2. Extensive burns require expert attention.

Cosmetics

Use method 1 followed by method 2.

Ink

Use method 2. If brown stain remains, treat as rust.

Blood stains

Use method 2.

Urine

Use method 2.

Vomit

Use method 2.

Copying ink - ballpoint ink

Treat with methylated spirits, blotting frequently to avoid ink spreading. Use cleaning method 2 to complete the treatment.

Marking ink (felt-tip pens)

Treat with Methyl Ethyl Ketone (M.E.K.) followed by method 2.

Oil, grease & paint

Remove surplus substance with a knife or spoon, then treat with method 1 followed by method 2. If stains should reappear, repeat cleaning process.

Rust

Use method 2 followed by an application of a warm solution of oxalic acid. Complete treatment with water.

Tar

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

Chewing gum

Soften with cyclohexanone and scrape off carefully with a knife.

Plastic and vinyl

Use a clean, damp cloth or sponge to keep this 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 luster and pliability.

Windows

To clean inside surface of the windows, use one part of vinegar diluted with ten parts of water.

Stainless steel

Use a stainless steel cleaner available at any automotive washing and cleaning specialist (or order Prevost part #68-0356) and follow manufacturer's instructions.

Formica

Normal maintenance consists in wiping surfaces with a damp cloth and detergent. Generally, remove spillage at once to minimize any permanent stain.

To remove stains, first try cleaning the affected area with a household detergent, methylated spirits or mineral turps. If the stain is still present, use a mild abrasive and water solution.

Carpet

The carpet will wear well, if you vacuum-clean often in order to avoid dust and dirt to penetrate into its fibers.

Rubber components

Should be treated only with pure water or glycerin.

EXTERIOR CLEANING

The vehicle paint is very durable, but must be protected from losing its luster due to exterior conditions. 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 the paint surface.

Close the fresh air dampers using the switch located on R.H. side lower control panel, and install all keyhole protectors to prevent water penetration. Always wash and wax the vehicle in indirect sunlight.

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

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 for the paint.

Do not use any solution that can damage the body paint.

Do not aim the water jet directly in the fresh air inlet dampers to avoid water penetration.

If the water jet is under high presure, avoid aiming the jet directly on condenser and radiator doors as the fins of cores may be damaged.

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 wheel housings, 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. 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 a cloth soaked with a special paint cleaner. If you do not have a tar or oil remover, you may use turpentine. After applying a cleaner, always wash with a lukewarm soap water solution and apply a new coat of wax.

Insects

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

Tree sap

Do not allow tree sap or bird droppings to harden on the paint. Remove with a lukewarm soap water 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 water solution or an alcohol-based cleaning agent. If a chamois is used for polishing the glass, it should exclusively be used for that purpose.

Wiper blades

Always loosen frozen wiper blades from glass as they may tear otherwise. Remove all wiper blades periodically and clean them thoroughly with an alcohol-based cleaning solution. Use a sponge or soft cloth and wipe lengthwise.

OIL LEVEL VERIFICATION

Engine

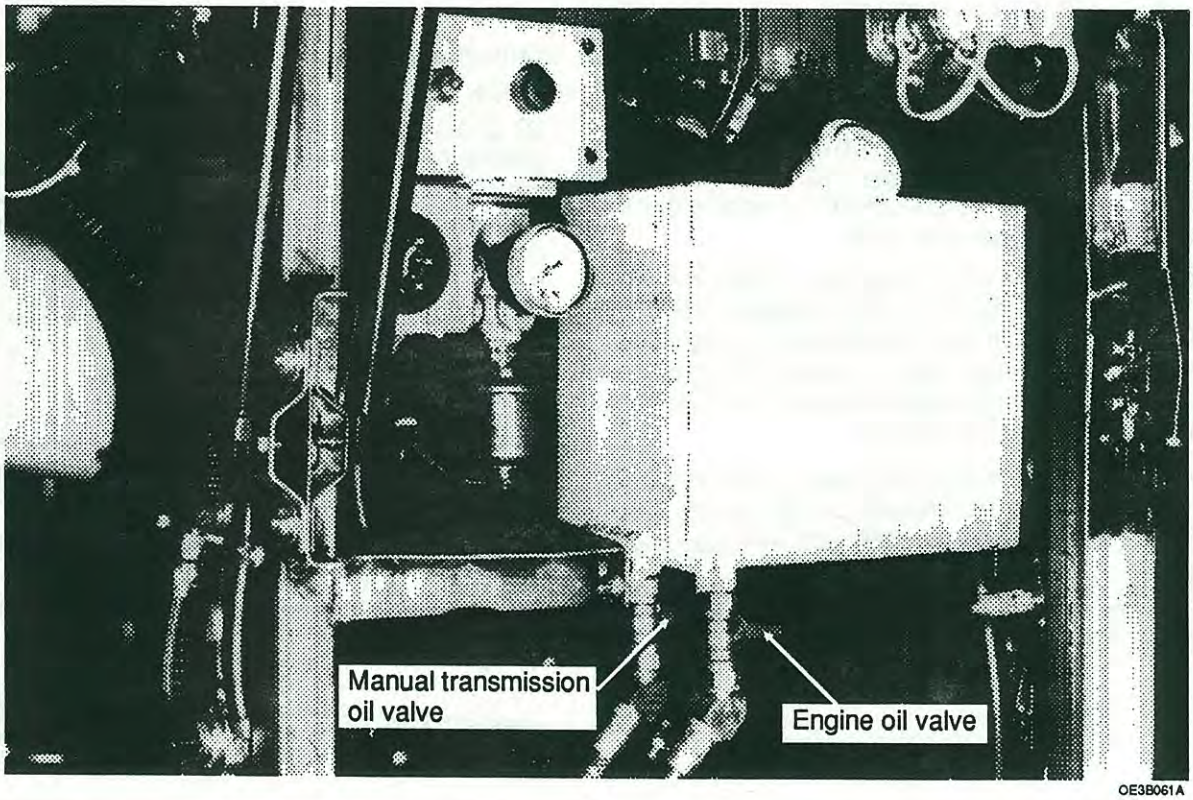
Check engine oil level daily or before each trip; if required, add oil to bring level to the appropriate mark on dipstick. Ideally, check engine oil level when oil is warm with vehicle on a level surface, as for instance during every fuel filling. First, stop engine and wait at least 10 minutes for the oil to drain back into the oil pan. Then, pull out the dipstick, wipe clean and reinsert the dipstick fully down for an accurate reading. Pull out the dipstick again and check the oil level on the dipstick.

Maintain oil level between the two marks on the dipstick, and never allow it to drop below the "L" mark. If required, add oil by opening the oil reserve tank drain valve, observe oil quantity through tank sight glass, then check engine oil level again on dipstick. No advantage is gained by having oil level above the "F" mark. Do not forget to close oil reserve tank valve once the desired oil level is reached.

OE3B0601

NOTE: The oil level dipstick and oil reserve tank locations are illustrated in figure of page 2 - 28.

NOTE: For vehicles equipped with a manual transmission, the engine oil fill valve is the one nearest to the engine compartment rear door.



OE3B061A

Manual transmission

Check oil level when engine is stopped and cold. Open engine compartment R.H. access door, and check level on dipstick located at right of engine near transmission. Maintain level to the *"FULL"* mark on dipstick.

Refill

The vehicle is equipped with an oil reserve tank in engine compartment. This tank is also used for the engine oil (see page 6 - 3). Proceed as follows to refill transmission:

1. Open valve under oil tank which is the most remote from the engine compartment rear door.

2. Allow oil to discharge in transmission until *"FULL"* mark on dipstick is reached, then close valve. Check oil reserve tank level through the sight glass located on its side.

CAUTION: Do not overfill transmission. Overfilling may result in oil breakdown due to excessive heat, and sludge deposits impairing proper operation of transmission. Overflow of oil escapes through seals and may cause clutch troubles.

NOTE: Clean end of fill tube before removing dipstick to prevent dirt and foreign matter from contaminating oil.

Automatic transmission

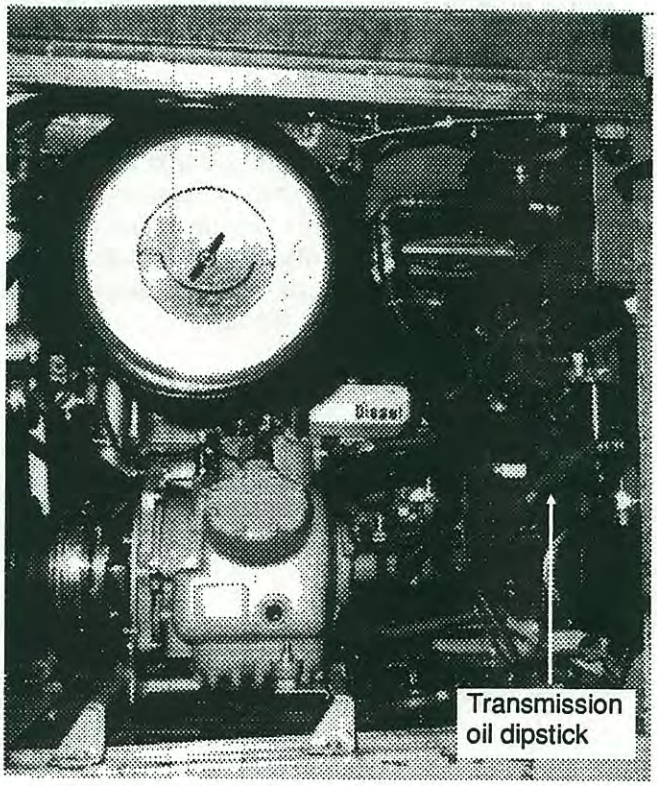
Two checks must be made to ensure proper oil level in the transmission. A *"COLD CHECK"* must be made when the transmission oil temperature ranges between 60 and 140 °F (16 - 60 °C). This check is required to ensure that there is a sufficient quantity of oil to operate transmission safely until a hot check can be made. Perform a *"HOT CHECK"* when the transmission oil reaches its normal operating temperature (160 - 250 °F; 70 - 120 °C). This check is required to ensure that the oil is at the proper operating level.

Park the vehicle on a level surface. Apply the parking brake and operate the engine between 1000 and 1200 rpm for approximately one minute to purge air from the system. Allow engine to idle, then fill clutch cavities and circuits by shifting the transmission into "Drive" and then *"Reverse"*. Shift to *"Neutral"*.

The automatic transmission oil level dipstick is located near the engine and transmission junction, and is accessible through the engine compartment R.H. side door.

WARNING: Do not wear loose clothings and stay away from rotating parts during oil verification. Personal injury could occur.

NOTE: Clean end of fill tube before removing dipstick. Dirt and foreign matter should not be allowed to enter the oil system since this could cause valves to stick, thus resulting in undue wear of transmission parts or clogged passages. To remove the disptick, unscrew the cap approximately three turns, and pull out the dipstick.

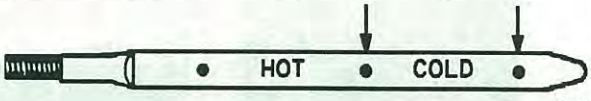


OE3B0602

Cold check

Run the engine until the oil temperature ranges between 60 and 140 °F (16 - 60 °C). With the engine idling, parking brake applied and transmission in neutral, wipe the disptick clean and check the oil level. If the oil level registers in the *"COLD RUN"* band, the quantity of oil in the transmission is sufficient to operate the vehicle until transmission normal operating temperature (160 - 250 °F; 70 - 120 °C) is reached. If the oil level registers on or below the bottom line of the *"COLD RUN"* band, add oil to bring the level within the band. If the oil level registers above the *"COLD RUN"* band, drain oil to bring the level within the band. Afterwards, operate the vehicle and make a *"HOT CHECK"* when normal operating temperature is reached.

CAUTION: The oil level rises as oil temperature increases. Do no fill above the *"COLD RUN"* band before the transmission reaches its normal operating temperature.



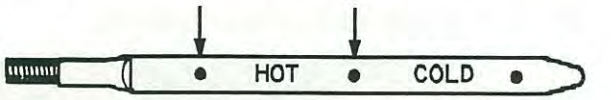
OE3B0603

Hot check

Be sure the oil temperature ranges between 160 and 250 °F (70 - 120 °C). With the engine idling, shift transmission from forward to reverse as mentioned previously, then shift transmission in *"Neutral"* and apply parking brake. Remove dipstick from fill tube and check oil level. If the oil level registers on or under the *"HOT RUN"* bottom line, add the required amount of oil to bring the oil level to the middle of the *"HOT RUN"* band. Approximately one (1) quart (0,9 liter) of oil is required to raise the oil level from the bottom line of the *"HOT RUN"* band to the middle of the *"HOT RUN"* band.

After replacing dipstick, turn handle several turns clockwise to tighten the rubber seal.

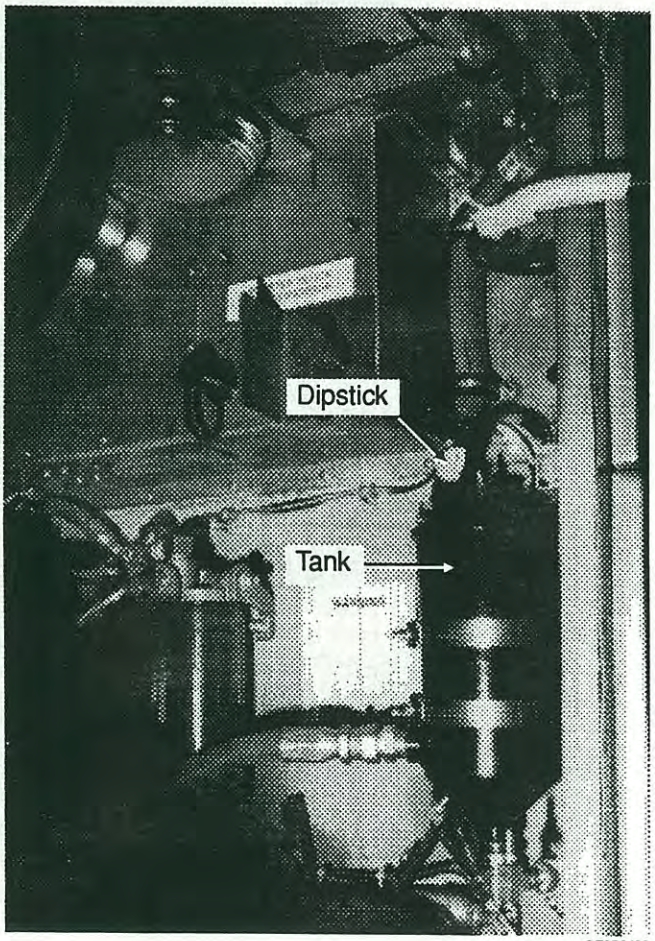
CAUTION: Never overfill transmission as it may cause overheating and other troubles.



OE3B0604

Power steering

The coach is equipped with an integrated power steering system, and its hydraulic fluid tank is located in the engine compartment.



OE3B0408

Oil level check procedure

1. Stop engine and open engine compartment R.H. side door.
2. Unscrew and remove the dipstick located on top of tank and wipe with a clean rag.
3. Insert dipstick in tank, then remove it again to check level.
4. Adjust level to *"FULL"* mark, using *"Dexron"* or *"Dexron II"* fluid.
5. Replace and tighten the dipstick.

Radiator fan gearbox

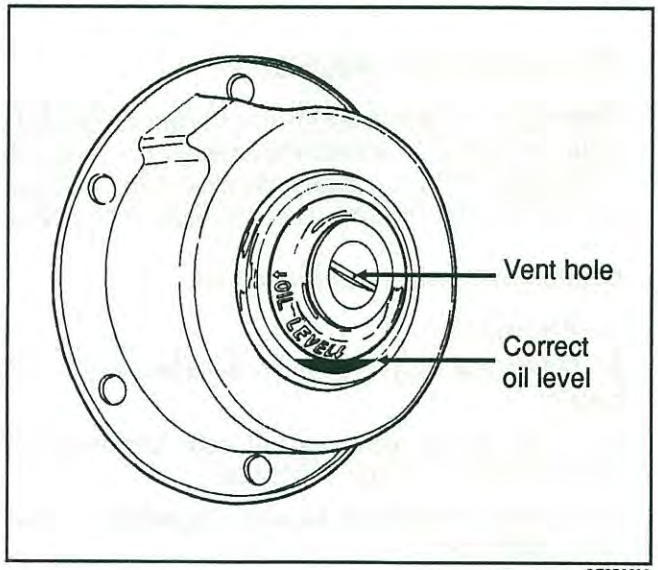
The radiator fan is belt driven from the engine crankshaft pulley through a drive shaft and a gearbox. The gearbox is equipped with a knurled dipstick, fitted on top of gearbox to verify oil level. Refer to figure in page 2 - 28.

Gearbox oil level check procedure

1. Stop engine.
2. Set battery main disconnect switches to the *"OFF"* position.
3. Open engine compartment door and set engine starter switch to the *"OFF"* position.
4. Remove the dipstick located on gearbox and wipe with a clean cloth.
5. Reinsert dipstick, then remove it again to check level.
6. Adjust level to the upper notch on dispstick using SAE 90 general purpose lubricant.
7. Reset engine control box and battery main disconnect switches to the *"ON"* position, then close engine compartment door.

Wheel bearings

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, that is incorporated to the plastic lense 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.



OE3B0606

CAUTION: Wheel bearing oil fill cap is provided with a very small vent hole in its center. Insert occasionally a small tip to avoid hole restriction, as it prevents overpressure in bearing housing.

Clutch pedal master cylinder

The fluid must be at level of the reservoir seam, which is located under the dashboard near the clutch pedal.

COOLANT LEVEL VERIFICATION

The cooling system is completely filled when the coolant (cold) is visible in the surge tank sight glass (see page 2 - 28) . If topping-up is necessary, fill the system with the same mixture ratio already used in the system (50-50).

WARNING: Hot engine coolant is under pressure. Allow engine to cool before checking coolant level.

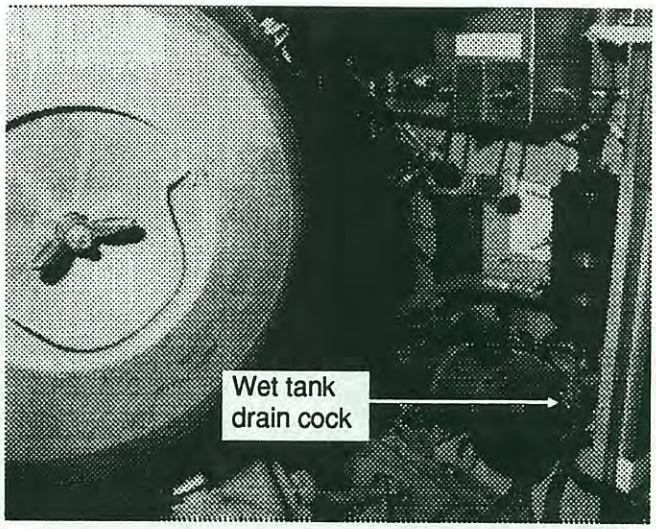
AIR TANKS

Your vehicle may be provided with six air tanks; the accessory tank and the wet tank must be purged daily before operating vehicle. The other tanks, primary, secondary, kneeling system (optional) and parking brake override (optional) must be purged each time oil is changed (10,000 miles (16 000 km) maximum intervals).

The accessory tank drain cock is accessible from the front service compartment, and an additional drain cock for the wet tank is installed in engine compartment and is accessible from the engine compartment R.H. side door. The other tanks, as well as the wet tank, are provided each with a drain cock underneath.

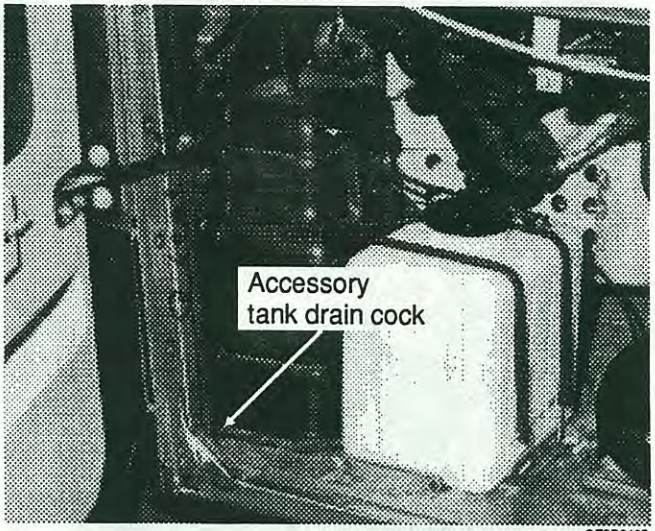
Locate tanks according to the figure in the *"Lubrification and service check point chart"* in the *"Maintenance Manual"*.

Turn cock counterclockwise to drain tanks.



OE3B0404

Engine compartment

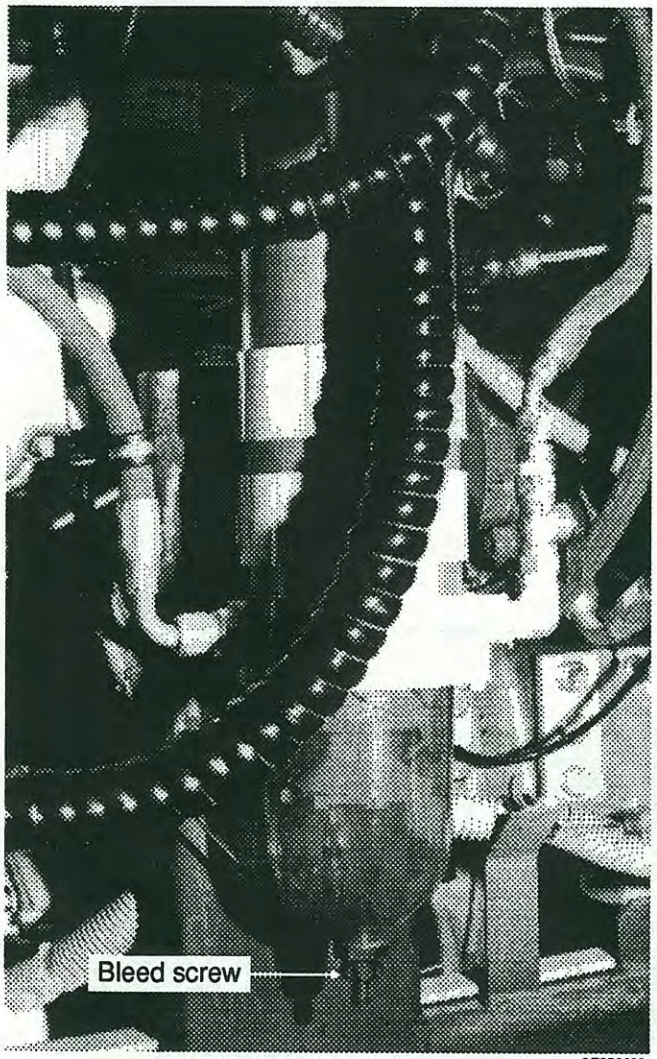


OE3B0405

Front service compartment

WATER SEPARATOR

A water separator is installed in engine compartment close to the starter, to prevent water infiltration in engine fuel system. It should be drained periodically, or when the water separator indicator lamp lights in dashboard. Loosen bleed screw below separator a quarter of a turn to drain.



OE3B0609

FIRE EXTINGUISHERS

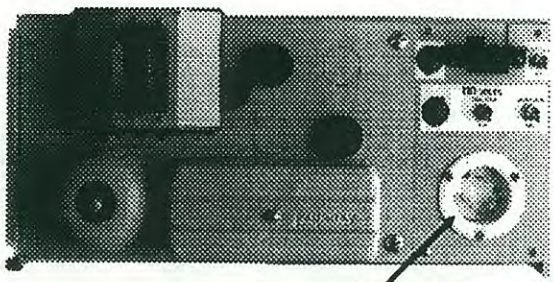
In order that fire extinguishers operate adequately in emergency situations, it is strongly recommended to inspect all units monthly.

- 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 extinguisher clean
- Note inspection date

110-120 VOLT IN-STATION CONNECTOR

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

Receptacle for in-station connector is located in front left service compartment. This power source is divided into three different circuits: the block heater engine circuit, the fresh water tank heater circuit, and the in-station lighting circuit. Use the appropriate switch to activate the proper circuit.



OE3B0610

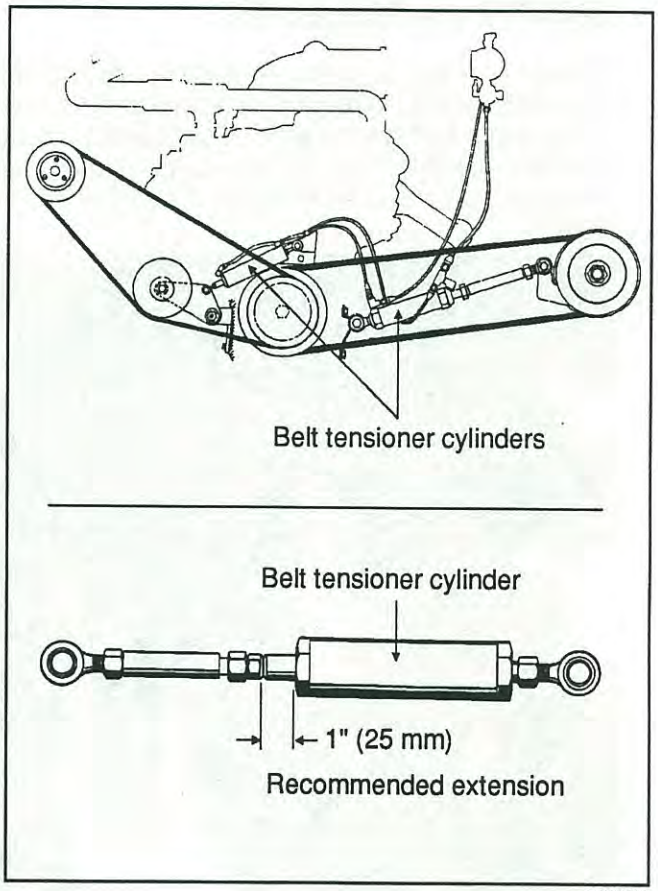
110-120 volt connector

BELT TENSIONERS

Radiator transfer fan and air conditioning compressor are driven by V-belts equipped with an air-operated tensioner, which should be adjusted as outlined hereafter.

Belt tension is provided by an air cylinder regulated at 75 psi (517 kPa); both cylinders can be adjusted by a pressure regulating valve located on the structure post at left of the oil reserve tank in engine compartment. For proper operation of the cylinder, adjust the rod to provide a 1" (25 mm) extension as shown.

For belt replacement, air pressure must be released from belt tensioners by means of the two-way valve. This valve is manually operated and shuts air to the pressure regulating valve. Before handling, operator should make sure that all engine stopping safety precautions have been observed.



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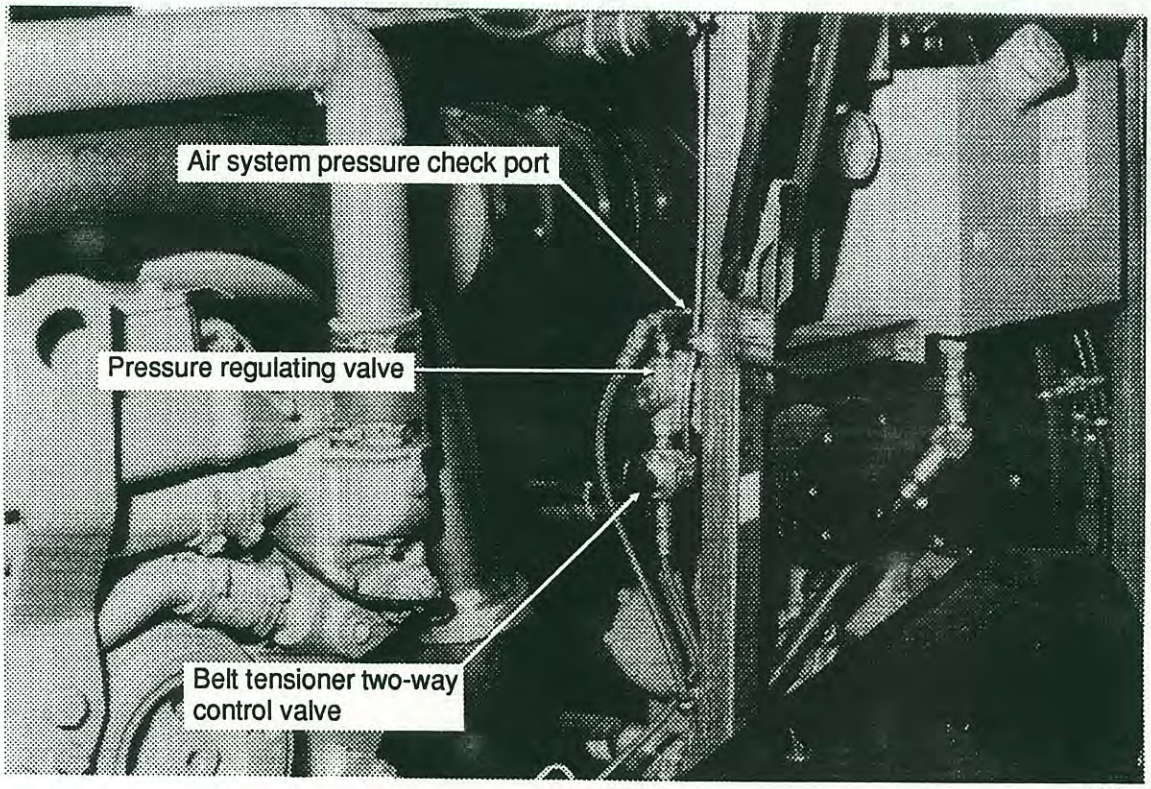
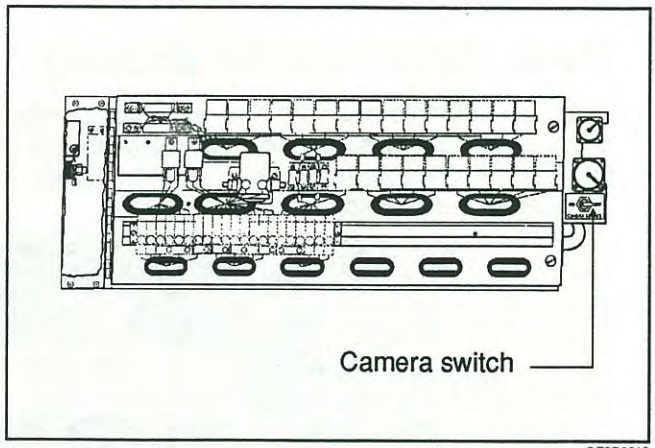
OE3B0611



OE3B0612

BACK-UP CAMERA

A back-up camera with a TV monitor may be provided as optional equipment. When the driver selects the reverse range, the camera and TV monitor will automatically switch on, thus allowing driver to view behind vehicle. The monitor will switch off as soon as the reverse range has been released. This camera is retractable and is visible from the outside only when it is functioning. A switch located in the rear electric compartment enables the extension of the camera for cleaning purposes.



OE3B0613

To clean the camera protective glass, set the switch to the *"ON"* position. Spray with soapy water and wipe with a clean dry rag or a wiper blade.

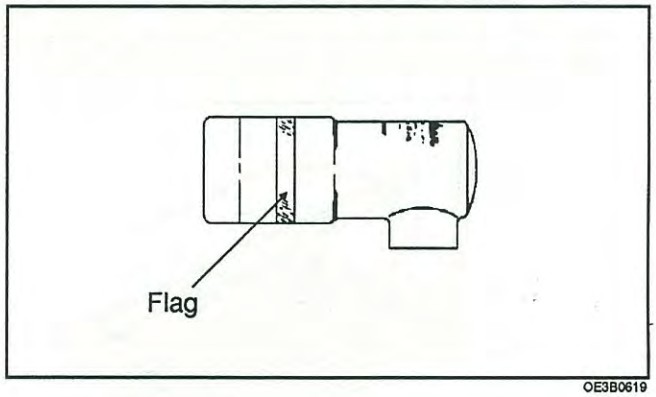
WARNING: Do not clean the camera protective glass while transmission is in reverse range as severe injuries may occur. Engine must be shut off and parking brake applied.

CAUTION: Do not clean the camera protective glass with only a dry rag as this may scratch glass.

AIR FILTER RESTRICTION INDICATOR

A resettable restriction indicator, mounted on the engine air intake near the turbocharger in engine compartment, monitors the level of vacuum between the air filter and engine, in order to detect and indicate an abnormal increase in vacuum due to a dirt-laden and therefore restricted element.

When red flag locks in full view, air filter element must be replaced and indicator reset by pressing on it.



OE3B0619

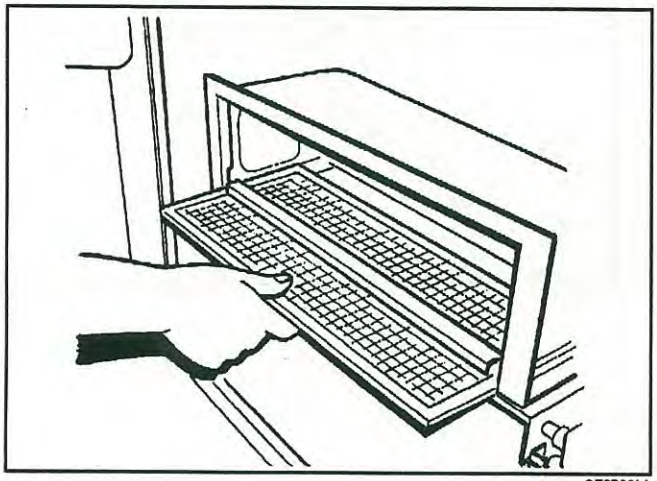
HEATING AND AIR CONDITIONING

A/C and heating system air filters

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

Driver's system

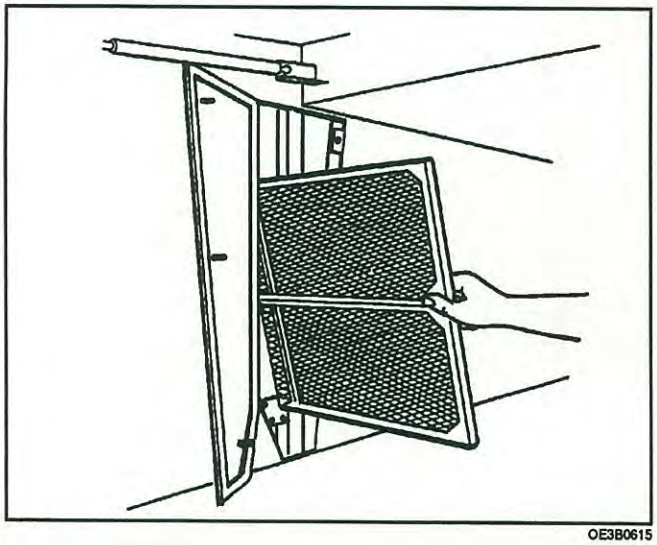
The air filter is located under dashboard. To gain access, pull both catches at each end of access panel located over entrance door steps, remove panel then filter.



OE3B0614

Passengers' section system

Two access panels, located in the first and second baggage compartments, allow access to the evaporator air filter. Open panels by unscrewing 1/4 of a turn the three screws of either panel. Remove, clean and replace filter.



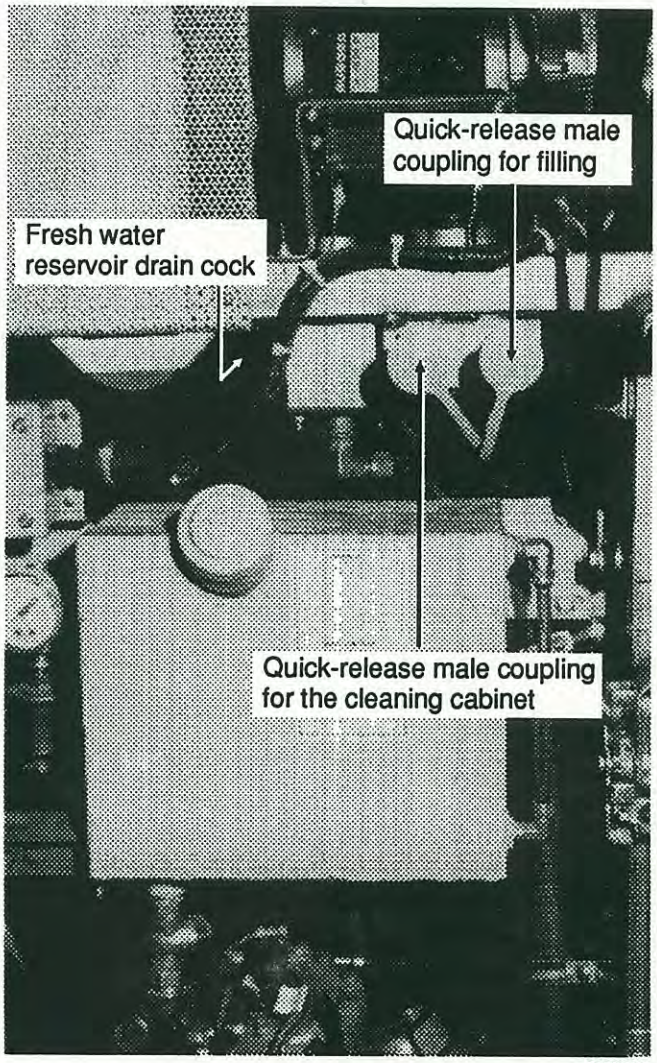
OE3B0615

LAVATORY MAINTENANCE

Draining and filling lavatory tanks should ideally be done by maintenance and service personnel. Draining instructions included in this section must be used in case of an emergency, such as engine or heating system failure in freezing weather where fresh water tank must be drained to prevent freezing, unless an appropriate power source is available nearby to connect the heating element (see *"110-120 volt in-station connector"* page 6 - 7). The driver should supervise the servicing of his coach when away from home.

Fresh water reservoir draining

The fresh water reservoir can be drained by opening the drain valve located at rear of quick-release male couplings in engine compartment. Do not forget to close valve when drainage is completed.



OE3B0616

Service valves

Fresh water reservoir filling

Plug the fresh water supply connector in the *"Hansen"* quick-release male connector located over the engine oil reserve tank. Fill the reservoir until the overflow tube leaking at rear of coach signals that the reservoir is full.

WARNING: Never refill fresh water reservoir with antifreeze.

CAUTION: Under cold weather conditions, unless the fresh water reservoir heater is operating, water should not be left in reservoir as it might freeze and damage both reservoir and connecting lines.

Sump tank draining

In order to drain tank, remove circular cap by unscrewing a few turns the handle on the sump tank. Pull slide valve T-handle of the drain hose located under the tank. Flush clean the tank, and especially around pump cage.

NOTE: Do not unscrew completely the circular cap handle to avoid falling of mounting plate inside tank.

It is against the law to dump sump tank contents on the ground.

CAUTION: Servicing of lavatory tanks should be done in suitably-equipped outlets. After emergency drainage, lavatory should again be serviced by maintenance personnel.

Sump tank filling

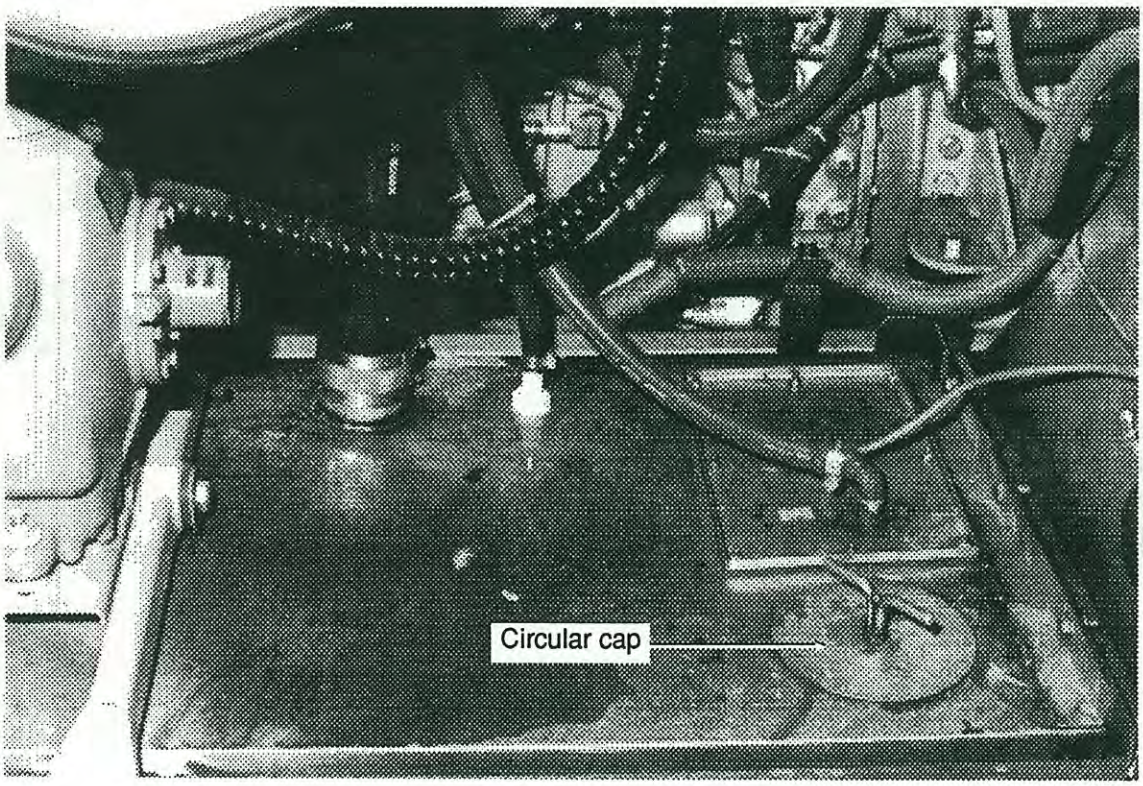
Remove the circular cap by unscrewing a few turns the handle over the sump tank. Fill the tank with 2 gallons (9 liters) of an antifreeze solution, then add an equal quantity of water.

CAUTION: Do not overfill lavatory tank.

Fresh water flowing through the lavatory washbasin drain will flow in sump tank, thus diluting the antifreeze solution. Proper maintenance of sump tank will prevent its freezing.

Cleaning cabinet

The cleaning cabinet is located over the toilet and contains a hose to clean the lavatory. To use the hose, connect the fresh water connector in the *"Hansen"* quick-release coupling located over the engine oil reserve tank (see service valve figure on page 6 - 10).



Sump tank

FLEXIBLE HOSE MAINTENANCE

The performances of engine and equipment are greatly related to the ability of flexible hoses to supply lubricating oil, air, coolant, and fuel oil. Maintenance of hoses is an important step to ensure efficient, economical, and safe operation of the engine and related equipment.

Pre-starting inspection

Check hoses daily as part of the 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 any 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, brittled, 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 hose assemblies should always be at least equal to the O.E.M. equipment.

LUBRICATION

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

FIRST SERVICE ON NEW VEHICLE

Engine oil

Since engine break-in is done in factory, no preliminary oil change has to be done. Oil and filter change should be done every 10,000 miles (16 000 km).

Differential oil

Factory-filled oil in differential on new vehicle should be drained and refilled after 1,000 miles (1 600 km) and no more than 3,000 miles (5 000 km) of initial operation. Consequently, drain according to the break-in period, then every year or 50,000 miles (80 000 km).

Automatic transmission oil filter

Replace cartridge after 5,000 miles (8 000 km), and then every 25,000 miles (40 000 km).

Coolant system strainer

The coolant strainer is designed to recover the soldering residues trapped inside the coolant lines during their initial assembly; perform initial cleaning once vehicle has run approximately 3,000 miles (5 000 km), then every 50,000 miles (80 000 km).

NOTE: If additional soldering has been performed on any point of coolant piping, clean coolant system strainer as outlined on new vehicle (3,000 miles (5 000 km)).

OWNER ASSISTANCE

If you need assistance, proceed as follows:

1. Refer to the "SERVICE CENTER DIRECTORY" supplied with your vehicle.
2. Discuss the matter with the nearest PREVOST CAR INC. distribution center service department personnel.
3. If your problem remains unsolved, contact your nearest PREVOST CAR INC. service representative at the following numbers:

WESTERN USA

(310) 325-6643

(800) 421-9958

CANADA

(418) 883-3391

Customer service

EASTERN USA

(201) 933-3900

(800) 223-0830 (United States only)

- Should you still not be satisfied, feel free to contact the SERVICE MANAGER at PREVOST CAR INC. (418) 883-3391.

WE WILL BE PLEASED TO HELP YOU!

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Fax: (708) 640-1878

SERVICE LITERATURE

Additional copies of the following service literature are available on request and at low cost. These will be helpful to your mechanic and driver.

- **Maintenance Manual**
- **Operator's Manual**
- **Parts Manual**
- **Service Center Directory**

To order the desired manual(s), please contact your local distributor or write to:

PRÉVOST CAR INC.
ATT.: TECHNICAL PUBLICATIONS DEPARTMENT
Sainte-Claire, Québec
Canada
G0R 2V0

Specify the complete vehicle serial number. Allow 30 days for delivery.

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