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## FOREWORD

The H3-41 and H3-45 are the current generation of motorcoaches produced by Prevost Car Incorporated. Prevost Car Incorporated is committed to the continuous improvement of coach quality, reliability, durability and safety. With innovative features, the H3 series coach was designed with passenger and driver safety and comfort in mind.

This manual contains information available at the time of publication. Because optional equipment is covered in this manual, some of the optional equipment described may not apply to your coach. If in doubt, refer to the technical documentation package provided with the coach.

Driver's controls and instruments incorporate advanced technology for enhanced driving ease and security. This manual describes the main features, instruments and controls, and servicing requirements for both standard and optional equipment. Read this manual carefully to take advantage of the coach's advanced features and to insure optimum safety and passenger comfort.

Keep this manual with the coach at all times. Make sure this manual is kept with the coach when ownership is transferred. Please notify Prevost Car Incorporated soon after any change of address or transfer of ownership. This will ensure we provide prompt and reliable coach service to all coach operators. Use the appropriate card at the end of this manual.

Warnings, cautions and notes are used throughout this manual to emphasize important points when necessary.

- **WARNINGS** call attention to instructions which must be precisely followed to avoid injury to persons.

- **CAUTIONS** call attention to instructions which must be followed to avoid damage to equipment.

- **NOTES** provide supplemental information and call attention to instructions which make the job easier.

The service life of the coach depends on the kind of attention it receives. Pay close attention to the warnings, cautions and notes. Read the various notices and instructions posted throughout the coach and attached to equipment.

Since continuous improvement is a primary focus at Prevost Car Incorporated, we reserve the right to make changes anytime, without notice, and without incurring any obligation.

Before reproducing or copying this manual, in whole or in part, written consent must be obtained from Prevost Car Incorporated.



## SAFETY

### SAFETY PRECAUTIONS

To ensure safe and reliable operation, take note of the safety precautions as follows:

- a) Operation and maintenance of the coach must be performed only by qualified personnel.
- b) Use caution when embarking and disembarking passengers.
- c) Always pay attention to pedestrians passing in front and behind the coach. Always yield to pedestrians at pedestrian walkways.
- d) Inspect the coach before operating.
- e) Make sure good visibility is maintained at all times. Keep windshields clean and free of obstructions.
- f) Make sure all doors are closed and secure before operating the coach. Before driving, conduct a walkaround inspection to check for security of all baggage compartment doors and equipment access doors.
- g) Adjust the driver's seat so that all controls can be reached easily.
- h) Always wear the safety belt when driving.
- i) Check the instrument panel frequently. Do not operate the coach when dials or indicators are not in the normal operating condition.
- j) Switch from high beams to low beams when meeting or following other vehicles within 500 feet (150 meters).
- k) Do not drive over obstacles on the road. Empty cartons, piles of leaves, and snowdrifts could conceal hidden dangers that could damage the coach suspension and underbody.
- l) When turning or changing lanes, signal your intention well in advance.
- m) When approaching to make a right turn, reduce the space between the coach and the curb to make sure another vehicle cannot pass on the right. Since the coach makes wide turns, allow enough space to make safe turns.
- n) Never leave the coach unattended with the engine running, or with the key in the ignition. Turn off the engine, remove keys and apply the parking brake before leaving the coach.
- o) The service life of the coach depends on the kind of maintenance it receives. Always record any problems and report them immediately to maintenance personnel.
- p) Shut-off the engine before fueling, adding oil or performing maintenance or servicing tasks, unless stated otherwise.
- q) Do not run the engine or HVAC system with access doors left open. Close compartment doors before operating any equipment.
- r) Do not remove the surge tank filler cap or the cooling system pressure cap when the engine is hot. Let the engine cool down before removing filler caps.
- s) Fuel is highly flammable and explosive. Do not smoke when refueling. Keep away from open flames or sparks.

- t) Do not attempt to push- or pull-start a coach equipped with an automatic transmission. To avoid damaging gears or bearings in manual transmission-equipped coaches, do not push-, pull- or roll-start in first or reverse gears.
- u) For additional information about safe driving practices, contact the local department of motor vehicles authority.

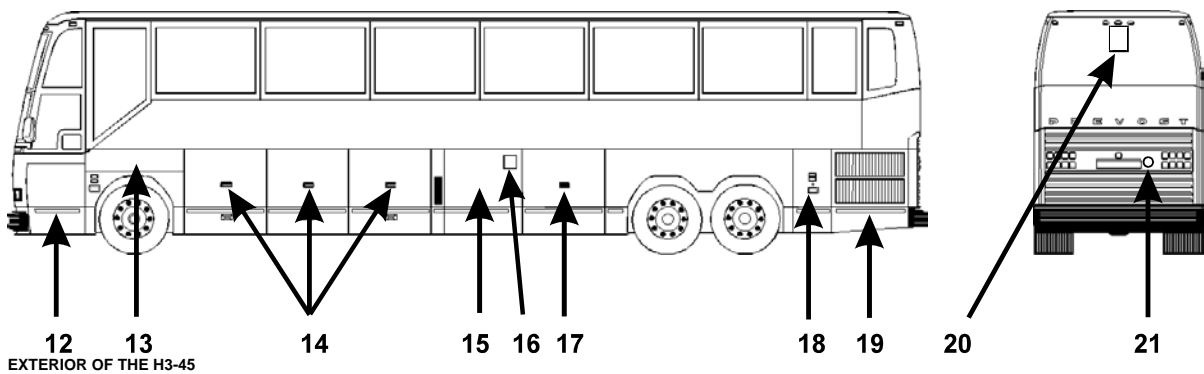
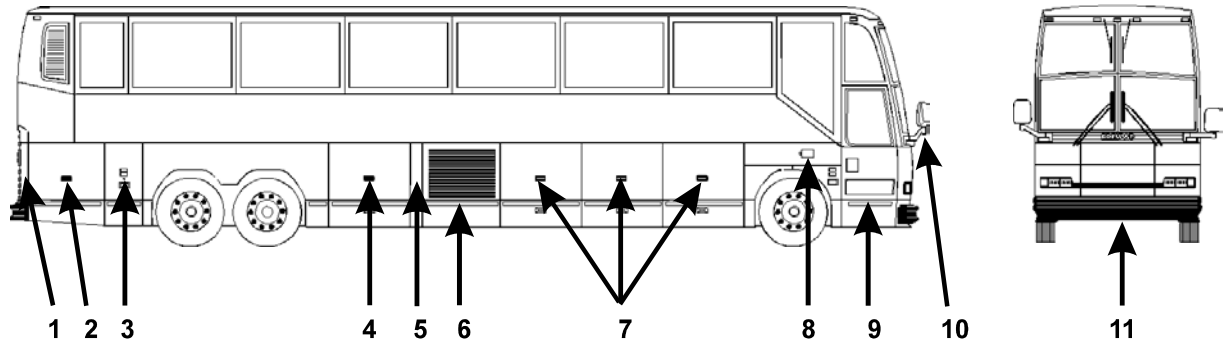
## **DEFENSIVE DRIVING**

- a) To keep the coach from drifting across lanes during highway driving, always look over the horizon on the road ahead.
- b) Don't stare at the road ahead. Keep your eyes moving. Check all mirrors and dashboard instruments frequently.
- c) Establish eye-to-eye contact with other drivers and with pedestrians. Use headlights, high-beams and low-beams, turn signals and horn as needed.
- d) For city driving, allow a four to six second travel interval between the coach and the vehicle ahead. Increase this travel interval to six to eight seconds for highway driving. Use increased travel interval for night driving and in bad weather.
- e) Adjust your speed according to the road conditions, traffic and visibility. Never exceed the posted speed limits.
- f) Reduce your speed if another vehicle is following too close behind to let the vehicle pass.
- g) Be prepared to stop when approaching an intersection. The stopping distance of the coach increases with the weight and speed of the coach.
- h) For additional information about defensive driving practices, contact the local department of motor vehicles authority.

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## EXTERIOR OF COACH



EXTERIOR OF THE H3-45

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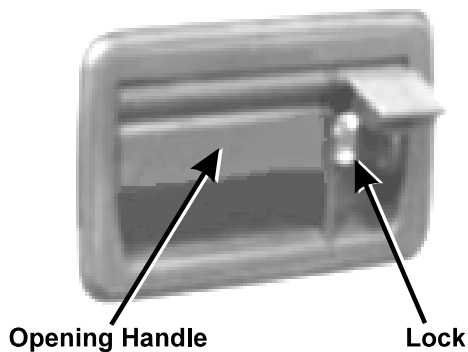
**ENGINE COMPARTMENT****Engine Compartment R.H. Side Door**

Provides access to the following:

- Engine compartment rear door release lever
- Fuel filter/water separator (if applicable)
- Power steering fluid reservoir
- Wet (main) air tank drain valve
- External air supply fill valve
- Sump tank filler cap
- A/C Compressor

This door can be locked/unlocked using the exterior compartment key. Lift up the protector cover to gain access to the lock. Pull up the door handle to release the latch, then pull the door open. To keep the door open, engage the safety catch on top of the door. Release the safety catch before closing the door.

The lighting in the engine compartment turns on automatically when the door is opened. If the compartment door is open, an indicator light will illuminate on the central dashboard.



DOOR HANDLE

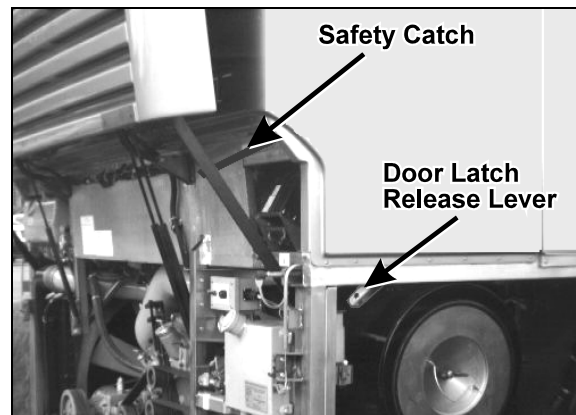
OEH3B110

**WARNING:** DO NOT RUN THE ENGINE WHEN THE COMPARTMENT DOOR IS OPEN. CLOSE ENGINE COMPARTMENT DOOR BEFORE STARTING ENGINE.

**Engine Compartment Rear Door**

Provides access to the following:

- Engine starting selector
- Cold weather starting fluid cup
- Engine coolant surge tank
- Air cleaner restriction indicator
- Engine oil dipstick
- Engine oil reserve tank
- Automatic transmission oil dipstick
- Cleaning cabinet connector
- Fresh water reservoir connector



DOOR LATCH RELEASE LEVER

OEH3B112

The door latch release lever is located in the upper rear section of the engine compartment R.H. side door. Push up release lever, then place hand on the upper right of the rear door and pull rearward. The door will open automatically.

Always engage the safety catch when the compartment door is open. Release the catch before closing the door.

The lighting in the engine compartment turns on automatically when the door is opened. If the door is open, an indicator light will illuminate on the central dashboard.

**WARNING:** *PRESSURIZED CYLINDERS ASSIST THE REAR ENGINE DOOR OPENING. TO AVOID INJURY WHEN OPENING IT, DO NOT STAND AT THE REAR OF THE COACH. STAND CLEAR WHEN OPENING THE REAR DOOR.*

**WARNING:** *DO NOT RUN ENGINE WHEN THE COMPARTMENT DOOR IS OPEN. CLOSE THE ENGINE COMPARTMENT DOOR BEFORE STARTING THE ENGINE.*

### MAIN POWER COMPARTMENT

Provides access to the following:

- Battery voltage equalizer
- Battery voltage equalizer monitor
- 12 volt batteries
- Main breakers for the 12 volt and 24 volt electrical systems
- Main power cut-off relay
- Booster posts

This door can be locked/unlocked using the exterior compartment key. Turn the key in the lock to remove.

The lighting in the compartment turns on automatically when the door is opened. If the door is open, an indicator light will illuminate on the central dashboard.

### BAGGAGE COMPARTMENTS

The baggage compartment doors can be locked/unlocked using the exterior compartment key. Lift up the cover to gain access to the lock. Pull up door handle to release the latch, then pull the door open. Refer to the illustration under "Engine Compartment R.H. Side Door" in this section. Pressurized cylinders assist the opening and closing of the doors and hold the doors open.

The lighting in the compartment turns on automatically when the compartment door is opened. If the door is open, an indicator light will illuminate on the central dashboard.

**WARNING:** *TO AVOID INJURY, KEEP HANDS CLEAR OF DOOR EDGE AND DOOR FRAME WHEN CLOSING.*

**NOTE:** *To prevent theft and vandalism, always lock the baggage compartment doors before leaving the coach unattended.*

**NOTE:** *The baggage compartment doors can be locked/unlocked from the driver's position by an optional central locking system on the L.H. control panel. Refer to "Controls & Instruments" section.*

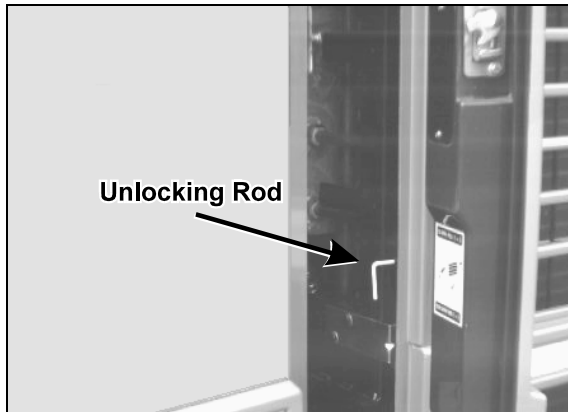
### FUEL FILLER DOORS

Both fuel filler doors can be locked/unlocked using the exterior compartment key. Turn the key in the lock to remove.

**NOTE:** *The L.H. side door lock must be in the unlocked position before closing.*

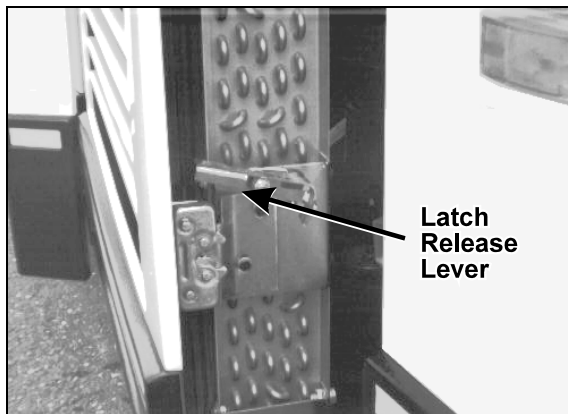
**AIR-CONDITIONING CONDENSER**

Pull the unlocking rod, located behind the R.H. side fuel filler door, to partly open the condenser door. Push down the release lever, accessible through the opening, to open the door.



R.H. SIDE FUEL FILLER DOOR

OEH3B114



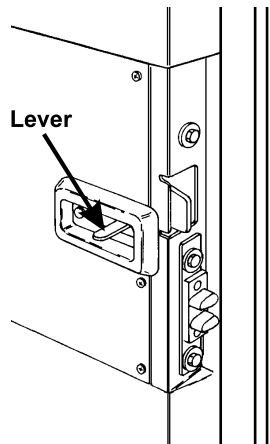
CONDENSER DOOR

OEH3B116

**CAUTION:** DO NOT OPEN OR CLOSE THE ADJACENT BAGGAGE COMPARTMENT DOOR WHEN THE CONDENSER AND FUEL FILLER DOOR IS OPEN.

**ENTRANCE DOOR**

The entrance door can be locked/unlocked with the exterior compartment key. It can be locked/unlocked from the inside by a spring-return lever on the door.



SPRING-RETURN LEVER

OEH3B118

**Outside Operating Switch**

The door must be unlocked before using the outside operating switch. Opening and closing the door is controlled by a 3-position toggle switch located behind the access panel at the left of the entrance door. Push and hold switch forward to open the door and rearward to close it.

**Inside Operating Switch**

Opening and closing the door is controlled by a 3-position rocker switch located on the R.H. dashboard. Press and hold the switch to the right to open the door and to the left to close it. Refer to "Controls & Instruments" section.

**Door Emergency Opening**

Refer to "Emergency safety features" section.

## REAR-VIEW MIRRORS

The coach is equipped with flat-type and convex-type rear-view mirrors. Convex mirrors give a wide angle view. Objects viewed in convex-type rear-view mirrors appear smaller and are actually closer than they appear.

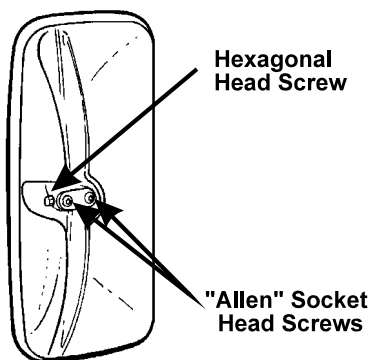
To provide good visibility in cold weather, the mirrors are equipped with heating elements that are activated by a rocker switch located on the L.H. dashboard. Refer to "Controls & Instruments" section. Thermostats are used to prevent continuous operation of the heating elements.

**CAUTION:** DO NOT ATTACH STICK-ON TYPE CONVEX MIRROR ACCESSORIES TO THE HEATED MIRROR GLASS. THIS COULD IMPEDE UNIFORM HEAT DISTRIBUTION ON THE MIRROR SURFACE WHICH COULD BREAK THE MIRROR.

### Adjustment

Adjust the side-view mirrors until the side of the coach is visible. Adjust the flat-type mirror until the highway is in full view.

#### Manually Adjusted Mirror



MIRRORS ADJUSTMENT SCREWS OEH3B120

**HORIZONTAL ADJUSTMENT:** Loosen the two Allen screws at the rear of the mirror body. Adjust the mirror to the desired angle, then tighten the screws.

**VERTICAL ADJUSTMENT:** Loosen the hexagonal head screw at the rear of the mirror body. Adjust the mirror to the desired angle, then tighten screw.

**CAUTION:** DO NOT OVER TIGHTEN THE SCREWS. TIGHTEN UNTIL SNUG.

#### Electrically Adjusted Mirror

Electrically-adjusted mirrors are adjusted by the outside mirror control located on the L.H. control panel. Refer to "Controls & Instruments" section.

Manual adjustment is also possible. Grip the mirror body and adjust to the desired angle.

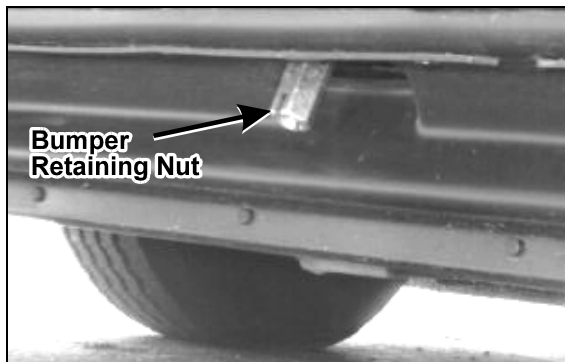
**NOTE:** To adjust mirror horizontally, loosen two allen screws at the rear of the mirror body. Adjust the mirror to the desired angle, then tighten screws.

## RECLINING BUMPER COMPARTMENT

The spare wheel and tire assembly is stored in the reclining bumper compartment.

**WARNING:** THIS COMPARTMENT IS NOT DESIGNED FOR STORAGE. NEVER STORE LOOSE OBJECTS IN THIS COMPARTMENT SINCE THEY CAN INTERFERE WITH THE STEERING LINKAGE MECHANISM.

To access the reclining bumper compartment, loosen the two retaining nuts located under the front bumper about 10 turns using the wheel nut wrench. Push the nuts upward and tilt the front bumper forward.



FRONT BUMPER

OEH3B124

**WARNING:** SINCE THE BUMPER IS HEAVY, TWO PEOPLE ARE REQUIRED TO TILT THE BUMPER FORWARD.

To fully lower the bumper, disconnect the safety hook on the retaining chain on the R.H. side of the bumper.

When closing the bumper compartment, make sure to connect the safety hook. Make sure that the bumper is securely installed and both nuts are tightened.

## FRONT SERVICE COMPARTMENT

Provides access to the following:

- Alarm junction box
- In-station lighting connector
- Entrance door emergency opening valve
- Windshield washer reservoir
- Accessory air tank drain valve
- External air supply fill valve
- Spare tire support and rail extension assembly

The front service compartment door can be locked/unlocked with the exterior compartment key. Lift protector cover to access the lock. Pull up door handle to release the latch then pull the door open. Refer to the illustration in "Engine Compartment R.H. Side door" section.

The lighting in the front service compartment turns on automatically when the door is opened.

## FRONT ELECTRIC COMPARTMENT

This compartment encloses the front junction box.

The front electric compartment door can be locked/unlocked using the exterior compartment key. Lift protector cover to gain access to the lock. Pull up door handle to release the latch, then pull the door open. Refer to the illustration in the "Engine Compartment R.H. Side Door" section. Pressurized cylinders assist the opening and closing of the door and also hold the door open.

The compartment lighting turns on automatically when the door is opened. If the compartment door is ajar, a telltale light will illuminate on the central dashboard.

**WARNING:** TO AVOID INJURY, KEEP HANDS CLEAR OF DOOR EDGE AND DOOR FRAME WHEN CLOSING.

## HVAC COMPARTMENT

The HVAC (Heating, Ventilating and Air-Conditioning) humidistat control is found in this compartment.

The compartment door release latch is located on the left side of the baggage compartment and to the right of the HVAC compartment door. Pull the release latch then pull the HVAC compartment door open.



HVAC COMPARTMENT ACCESS

OEH3B126

## REAR ELECTRIC COMPARTMENT

Provides access to the following:

- Rear junction box
- Electronic Control Unit (ECU)
- Vehicle Interface Module (VIM)
- Water heater system

The rear electric compartment door can be locked/unlocked using the exterior compartment key. Turn the key in the compartment door lock to remove.

The lighting in the compartment turns on automatically when the door is opened. If the door is open, an indicator light on the central dashboard will illuminate.

## RETRACTABLE BACK-UP CAMERA

An optional back-up camera is available which provides the driver with visual assistance when backing-up. The back-up camera is mounted in a retractable housing. The camera is automatically activated when the transmission is put in reverse gear and the ignition switch is "ON". The TV monitor is mounted on the top of the dashboard. Refer to "Controls & Instruments" section.

**NOTE:** A switch located in the rear electric compartment is used to retract the back-up camera for cleaning.

## 110-120 VOLT CONNECTOR

This connector is used with a 110-120 volt supply. It is connected to the engine block heater and the optional fresh water tank heater. Refer to "Care and Maintenance" section.



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## INTERIOR OF COACH

### DRIVER'S AREA

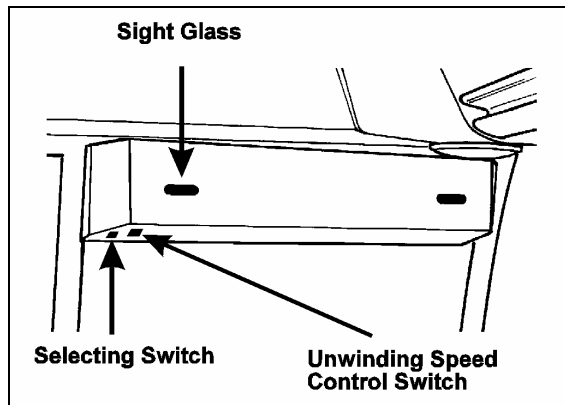
#### Entrance Door

Open and close the entrance door using the 3-position rocker switch located on the R.H. dashboard. In an emergency, an opening valve is also provided to open the door. Refer to "Emergency safety features" section.

#### Destination Sign

Turn the optional destination sign lighting on and off using the rocker switch located on the L.H. control panel. Refer to "Controls & Instruments" section.

Depress the selector switch until the desired destination appears in the sight glass and is aligned with the arrow.



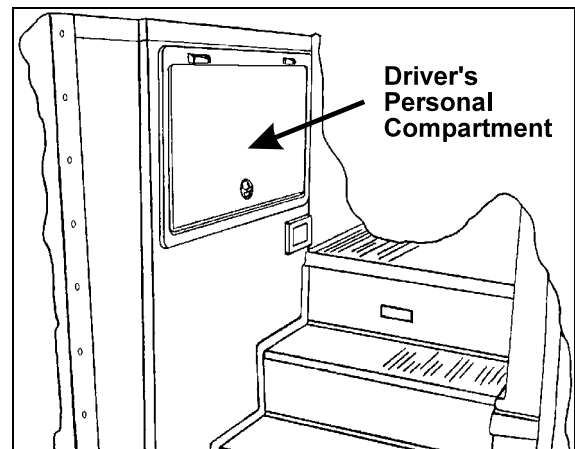
DESTINATION SIGN UNIT

OEH3B210

**NOTE:** Use the selector switch to change the speed of the destination sign. Use high speed to search for the desired destination and slow speed to align the arrow in the sight glass.

#### Driver's Personal Compartment

The driver's personal compartment is located to the left of the stairway when entering the coach. The compartment can be locked/unlocked using the appropriate key.



COMPARTMENT DOOR

OEH3B212

#### Road Map Compartment

The road map compartment is located at the rear of the L.H. control panel. Keep road maps stored in this compartment. Refer to "Controls & Instruments" section.

#### Tumbler Holder

A wall-mounted tumbler holder is located to the left of the driver's seat. Refer to "Controls & Instruments" section under "L.H. Control Panel".

#### Ashtray

To open the ashtray, push slightly on side. Remove ashtray by pressing on the inner tab.

**WARNING:** TO PREVENT FIRE, NEVER PUT PAPER OR PLASTIC WRAPPERS IN THE ASHTRAY. EMPTY ASHTRAY OFTEN.

### Cigarette Lighter

The cigarette lighter is located below the ashtray. Push lighter in to activate. When ready to use, it will spring out automatically. Replace lighter in, nonactivated position. The cigarette lighter socket can be used to power 12 volt appliances (e.g., flashlight, vacuum cleaner). The maximum power consumption for appliances plugged in this socket is 130 watts. Make sure the appliances are equipped with suitable plugs that will not damage the socket.

**NOTE:** The cigarette lighter can be used after the ignition key has been removed.

### Adjustable HVAC Registers

The HVAC system has adjustable registers to control air flow. One is located on the L.H. dashboard, one on the R.H. dashboard (refer to "Controls & Instruments" section) and two behind the steering column. Adjust the direction of air flow by moving the air nozzle in its ball socket. Rotate the nozzle to adjust the air flow volume from maximum flow, to shut-off.

Two additional air outlets are installed on the HVAC ducting system. The air flow can be regulated by pressing the marked fin. The flow can be shut-off or increased for maximum ventilation. The L.H. side air outlet can be rotated to direct air flow.

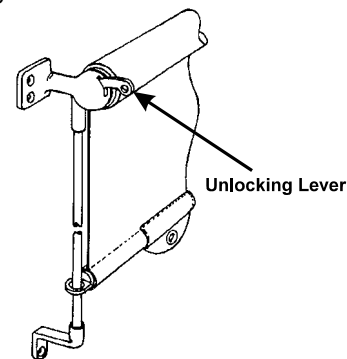
### Driver's Power Window

The driver's area is equipped with a power window. The power window is controlled by using the rocker switch located on the L.H. side control panel. Refer to "Controls & Instruments" section.

### Sun Visors (Blinds)

Raising and lowering of the front blinds is controlled by a 3-position rocker switch located on the L.H. control panel. Refer to "Controls & Instruments" section.

The driver is protected from side glare by a spring-release type blind on the left window. The optional plexiglass partition, located behind the driver, may also be equipped with the same blind. Pull down and release the blind in the desired position. To raise the blind, depress the unlocking lever.



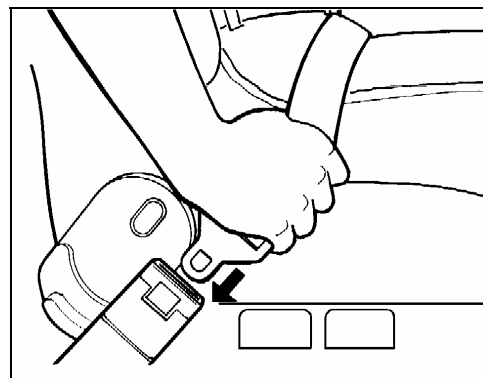
DRIVER'S LEFT WINDOW BLIND OE3B214

### Inside Mirrors

Two mirrors are located in the driver's area. The left overhead mirror provides visibility in the critical area on the R.H. side of the coach. Adjust the left overhead mirror to see through the front passenger windows. The central mirror allows the driver to see passengers in the aisle.

### Safety Belt

The driver's seat and the optional tour guide seat are equipped with retractable safety belts. To fasten safety belt, pull latch plate slowly and insert it into the buckle until it locks (clicks). The inertia reel is self-adjusting. Manual adjustment is not required.



**FASTENING SAFETY BELT**

OEH3B222

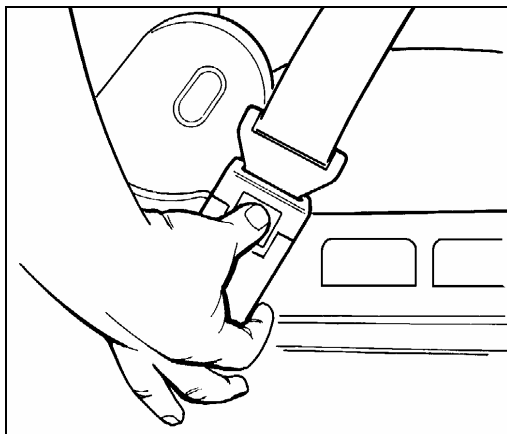
Immediately report problems with safety belts to maintenance personnel.

**NOTE:** The safety belt must be pulled out slowly and steadily, otherwise the inertia reel will lock before the latch plate reaches the buckle. If the inertia reel locks, let the belt retract completely before trying again.

**WARNING:** TO PREVENT SERIOUS INJURY DURING SUDDEN BRAKING OR ACCIDENTS, MAKE SURE THE LAP BELT IS SNUG AND POSITIONED LOW ON THE HIPS. MAKE SURE THE BELT IS NOT TWISTED. CHECK THE BELT AND BELT HARDWARE. IT SHOULD BE FREE OF DAMAGE CAUSED BY THE SEAT MECHANISM. REPORT PROBLEMS WITH SAFETY BELTS TO MAINTENANCE PERSONNEL.

**CAUTION:** DO NOT LET THE BELT RUB AGAINST EDGES. DO NOT BLEACH OR DRY CLEAN.

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



UNFASTENING SAFETY BELT

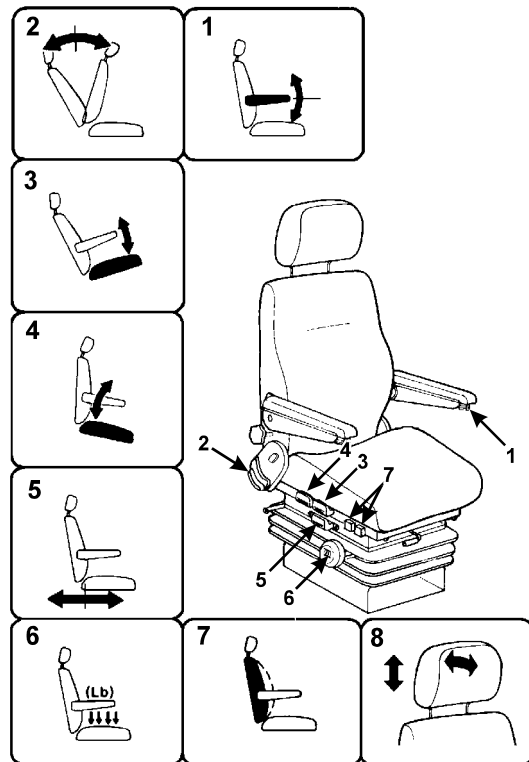
OEH3B218

**Driver's Seat**

The coach is equipped with a ISRI seat which is offered in three models. The standard model (model 6000) has mechanical suspension. The optional models (models 6500 and 6801) are equipped with air suspension. All seat models come equipped with safety belts. Adjustable armrests and lumbar supports are also available.

**WARNING:** THE DRIVER'S SEAT MUST BE ADJUSTED WITHIN EASY REACH OF CONTROLS. NEVER ADJUST THE SEAT WHILE THE COACH IS MOVING.

**WARNING:** ALWAYS WEAR SAFETY BELT. MAKE SURE THE SEAT IS ADJUSTED AND SAFETY BELT FASTENED BEFORE DRIVING.



DRIVER'S SEAT ADJUSTMENT

OEH3B220

## **Driver's Seat Adjustment**

### **1 - ARMREST**

The driver's seat can be equipped with two folding armrests that can be raised or lowered for convenience.

To adjust the armrest to a lower position, turn the control knob counter-clockwise without applying pressure on the armrest, then push the armrest down. Repeat procedure until armrest is at desired position. To adjust to a higher position, lift armrest until at desired height then turn control knob clockwise until it stops.

### **2 - BACKREST**

Lift lever then adjust backrest to desired angle.

### **3 - TILT (front)**

To lower or raise the seat's front section, pull handle up, and push or pull the seat cushion.

### **4 - TILT (rear)**

To lower or raise the seat's rear section, pull handle up, and push or pull the seat cushion.

**WARNING:** TO AVOID PINCHING FINGERS BETWEEN THE RETRACTOR AND CONTROL KNOBS, MOVE SAFETY BELT RETRACTOR BEFORE ADJUSTING SEAT ANGLE.

### **(3 - 4) - UP AND DOWN**

Pull both handles up to adjust height of the seat cushion.

### **5 - FORE-AND-AFT**

To adjust distance between driver and dashboard, pull handle up and slide the seat forward or backward.

**NOTE:** Fore-and-aft seat adjustment control can also be located at the front of the seat.

## **6 - SUSPENSION**

For maximum mechanical suspension performance, rotate handwheel until your body weight (pounds) is selected on the indicator. The seat suspension resistance can be changed to suit the driver. Turn handwheel clockwise to increase suspension resistance and counter-clockwise to decrease resistance.

**NOTE:** Air suspension seats self-adjust to the driver's weight. There is no handwheel suspension adjustment.

## **7 - LUMBAR SUPPORT**

To inflate the upper lumbar support bellows, depress the front rocker switch upward. To deflate it, depress the rocker switch downward. Follow the same procedure to inflate and deflate the lower bellows using the rear rocker switch.

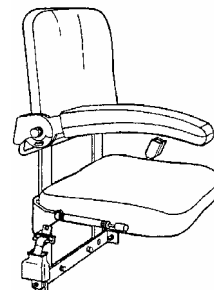
## **8 - HEADREST**

The headrest can be adjusted forward or rearward, and vertically adjusted 2 inches (50 mm) by raising or lowering it.

**WARNING:** FOR THE BEST PROTECTION, POSITION THE HEADREST BEHIND YOUR HEAD AND NOT BEHIND YOUR NECK.

## **Tour Guide Seat**

The optional folding tour guide seat is equipped with a retractable arm rest and safety belt. The seat can be folded up for convenience when embarking and disembarking passengers.



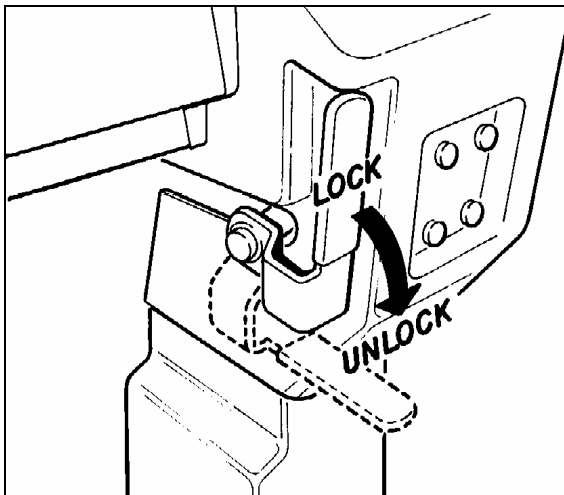
TOUR GUIDE SEAT OEH3B222

**WARNING:** MAKE SURE SAFETY BELT IS FASTENED BEFORE TRAVELLING.

The tour guide seat can be removed and stored in the driver's personal compartment. To remove the seat from the stairwell wall, unscrew and remove the two anchoring pins and washers at the bottom of the seat assembly. Raise and unhook the seat assembly.

### Tilt Steering Wheel and Telescopic Steering Column

To unlock tilt and telescopic mechanism, pull down handle located to the left of the steering column. The steering wheel can be tilted 11 degrees and telescopically extended or retracted 2 inches (5 cm). Push handle up to lock tilt and telescopic mechanism.



TILT AND TELESCOPIC MECHANISM

OEH3B224

**WARNING:** TO AVOID LOSING CONTROL OF THE COACH, NEVER ADJUST THE TILT AND TELESCOPIC MECHANISM WHILE DRIVING. MAKE STEERING WHEEL ADJUSTMENTS WHEN THE COACH IS STOPPED AND PARKING BRAKE ENGAGED.

### Microphone Jacks

Five microphone jacks for the PA system are available in the following locations:

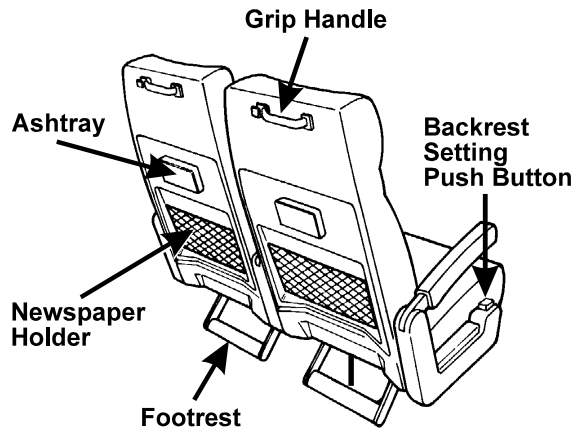
- One jack is located on the L.H. side control panel
- One jack near the driver's right console
- Two outlets for the tour guide on the modesty panels
- One outlet on the lavatory wall, at the rear of the last row of seats

**NOTE:** The PA system is equipped with a stereo attenuator and a volume control.

**PASSENGER SECTION**

**Passenger Seats**

Passenger seats may be equipped with grip handles, ashtrays, newspaper holders, and footrests.



PASSENGERS SEATS EQUIPMENT

OEH3B226

All seats are track-mounted so that the seating configuration can be changed. Each seat is mounted on oval aluminum pedestals to make it easier to clean between the pedestal and side wall.

Passenger seat backrests can be tilted by using the push-button located on the side of the seat cushion. Depress and hold push-button, then adjust backrest to the desired angle. Release push-button to lock backrest in position. The hydraulic seat back adjustment mechanism is equipped with a pull-off spring.

One folding armrest is installed on the aisle side of the passenger seat and is spring-loaded to lower automatically. The other folding armrest is located between the two seats and can be raised for passenger convenience. A fixed armrest is installed on the window side of the seat.

**Swivel Seats**

The coach is equipped with two sets of swivel seats to allow installation of card tables. The swivel seat can be rotated for passenger privacy. To rotate seats, unscrew the wing nut from under

each seat cushion then remove cushions. Remove the four wing screws, pull seats toward the aisle and rotate the seat counter-clockwise. Align mounting holes, secure with wing screws and install seat cushions.

**NOTE:** Instructions for making swivel seat adjustments are affixed on the rear frame under the seat cushion.

**Exits**

Three windows on each side of the coach, along with the ventilation hatch(es), can be opened from inside for emergency escape. Refer to "Emergency Safety Features" section.

**Ventilation Hatch**

A ventilation hatch is installed in the ceiling at the rear of the coach. A second, optional hatch can be installed in the ceiling at the front of the coach. To open the hatch, push up with both hands and pull down to close. The ventilation hatch can be completely removed for emergency escapes. Refer to "Emergency Safety Features" section.

**WARNING:** BE AWARE OF COACH OVERHEAD CLEARANCE WHEN TRAVELLING UNDER OVERPASSES WITH THE VENTILATION HATCH(ES) OPEN. CHECK FOR MAXIMUM CLEARANCE DISTANCE.

**Adjustable HVAC Registers**

The HVAC system includes two adjustable registers to control air flow for the rear L.H. passenger seats. Air flow can be directed by adjusting the ball-socket nozzle. To adjust air flow volume, rotate the nozzle. Air flow can be increased to full-open and decreased to shut-off.

**Video System**

An optional video cassette player can be installed in the first or second front left parcel rack. The remote control is located on the L.H. control panel. The power switch located on the same panel activates the TV monitors, TV converter

and video cassette player. Refer to "Controls & Instruments" section.

### Parcel Rack

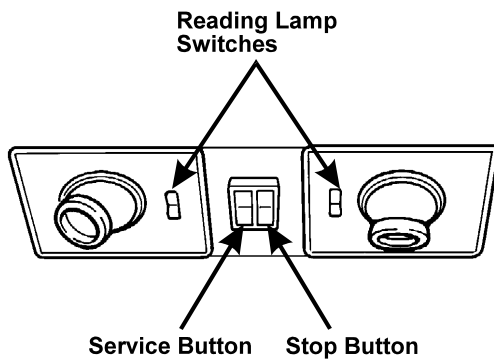
Passenger carry on baggage is stored in overhead compartments on each side of the coach. A first aid kit is located in the first front R.H. parcel rack. An optional video cassette player can be installed in the first or second front L.H. parcel rack.

To open the closed-type parcel racks, pull the door handle up to release the latch, then lift the door open. A pressurized cylinder mechanically assists door opening and also holds the door open.

**NOTE:** An optional lock can be installed on the first front R.H. parcel rack door.

### Stop/Service Chime

The chime system is activated by a rocker switch located on the L.H. control panel. Refer to "Controls & Instruments" section.



STOP/SERVICE BUTTONS & READING LAMP SWITCH OEH3B228

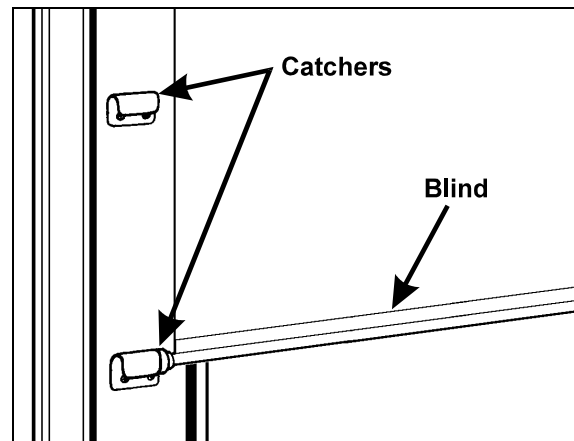
The passenger stop (disembarkation) push-button and service push-buttons are located underneath the parcel racks. Pressing the stop button will inform the driver that a passenger wants to disembark. Pressing the service push-buttons will cause it to illuminate indicating the location of the passenger requesting service.

### Reading Lamp

Reading lamps are mounted underneath the parcel racks and are controlled by two different switches. Depressing the rocker switch located on the L.H. control panel (refer to "Controls & Instruments" section) will activate the reading lamp circuit and allow passenger control of reading lamps using the appropriate rocker switch. See illustration under "Stop/Service Chime". The light intensity of the reading lamp can be adjusted according to the passenger's requirements.

### Sun Visor (Blind)

Passenger windows can be equipped with optional spring release-type blinds. Pull the sun visor down and hook onto the first or second catch.



SUN VISOR MECHANISM OEH3B230

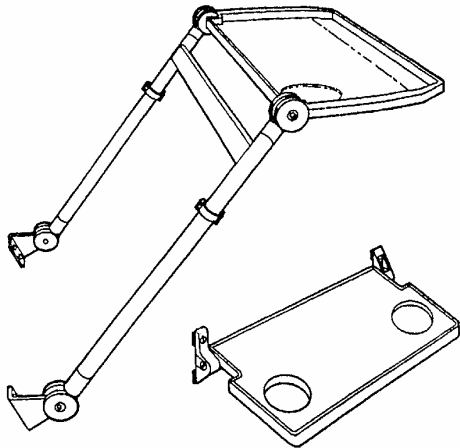
### Tumbler Holder

Optional wall-mounted tumbler holders can be installed in the passenger area and are similar to the type located in the driver's area. Refer to "Controls & Instruments" section under "L.H. Control Panel".

**NOTE:** Two optional tray models (refer to heading "Folding Trays"), as well as the tray installed in each modesty panel, are equipped with tumbler holders.

## Folding Trays

Two optional folding tray models can be installed in the coach.



## Waste Container

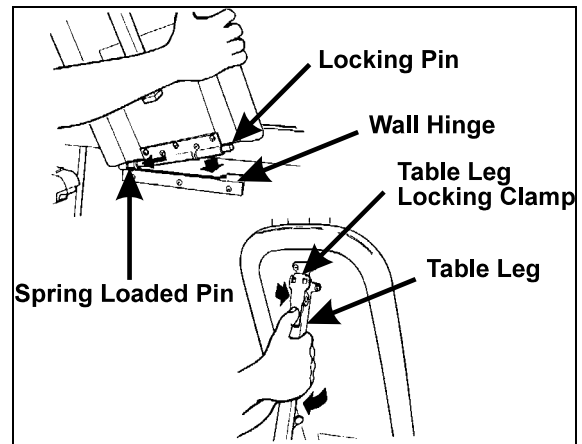
The waste container is located on the lavatory wall, and is accessible through an opening on each side of the wall. A small door, located on the aisle side, gives access to the waste container for cleaning.

## FACILITIES

### Card Tables

Two card tables are provided as standard equipment and are used in the passenger swivel seat configuration. The card tables are stored in the parcel racks in separate stowage bags.

To install the card table, hold it at 45° (degrees) to the side wall. Insert the spring-loaded pin then the locking pin into the hinge. Push on the locking clamp to release the leg. Unfold the leg until the clamp locks it in position.



CARD TABLE INSTALLATION

OEH3B234

### "Quick-Lounge" System

"Quick-Lounge" is a quick-fit modular system providing luxurious seating accommodations for passengers.

The optional 'quick-lounge' system occupies the same space as the paired seating configuration it replaces. The existing seat spacing remains unchanged.

### Galley

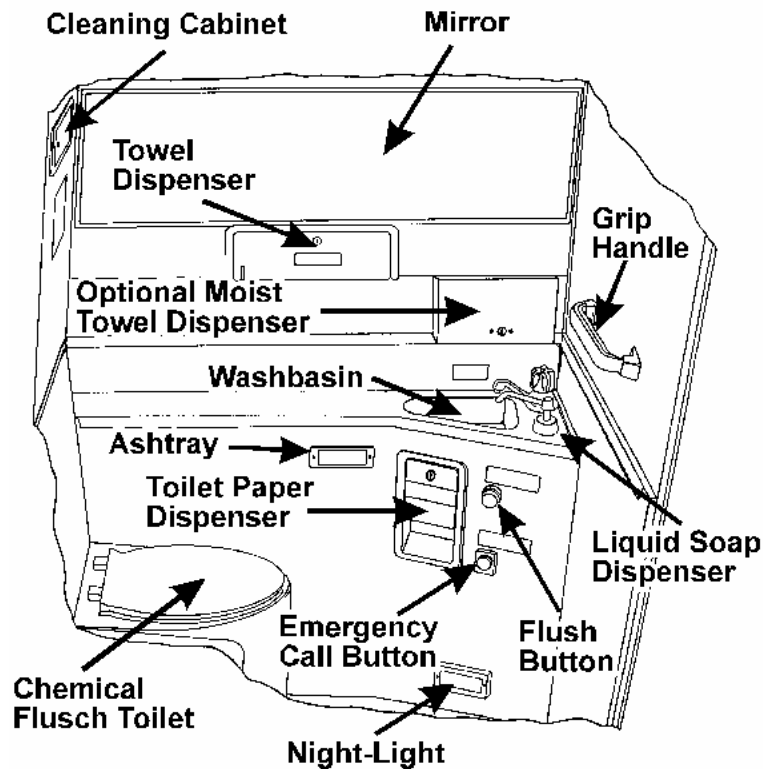
The optional mini-chef galley can include features such as a microwave oven and refrigerator to accommodate hot/cold food and beverage service.

The galley's electrical power circuit is activated by a rocker switch located on the L.H. control panel. Refer to "Controls & Instruments" section.



## Lavatory

The lavatory is located in the rear R.H. corner of the coach. It is equipped with a chemical flush toilet, bathroom tissue dispenser, wash-basin, towel dispenser, waste container, mirror, ashtray, and a cleaning cabinet. A liquid soap dispenser and moist towel dispenser are optional.



LAVATORY EQUIPMENT

OE3B240

Locking the lavatory door from the inside will illuminate a fluorescent light in the lavatory and two outside signs to indicate occupation. One OCCUPIED sign is located on the outer wall of the lavatory and the other OCCUPIED sign is located over the windshield. An indicator light on the L.H. dashboard will illuminate to inform the driver when the lavatory is occupied. A night-light is permanently lit in the lavatory when the ignition switch is in the ON position.

If emergency assistance is required, the person in the lavatory can sound a buzzer in the driver's area. The service push-button, with operating instructions, are located on the inner wall of the lavatory.

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

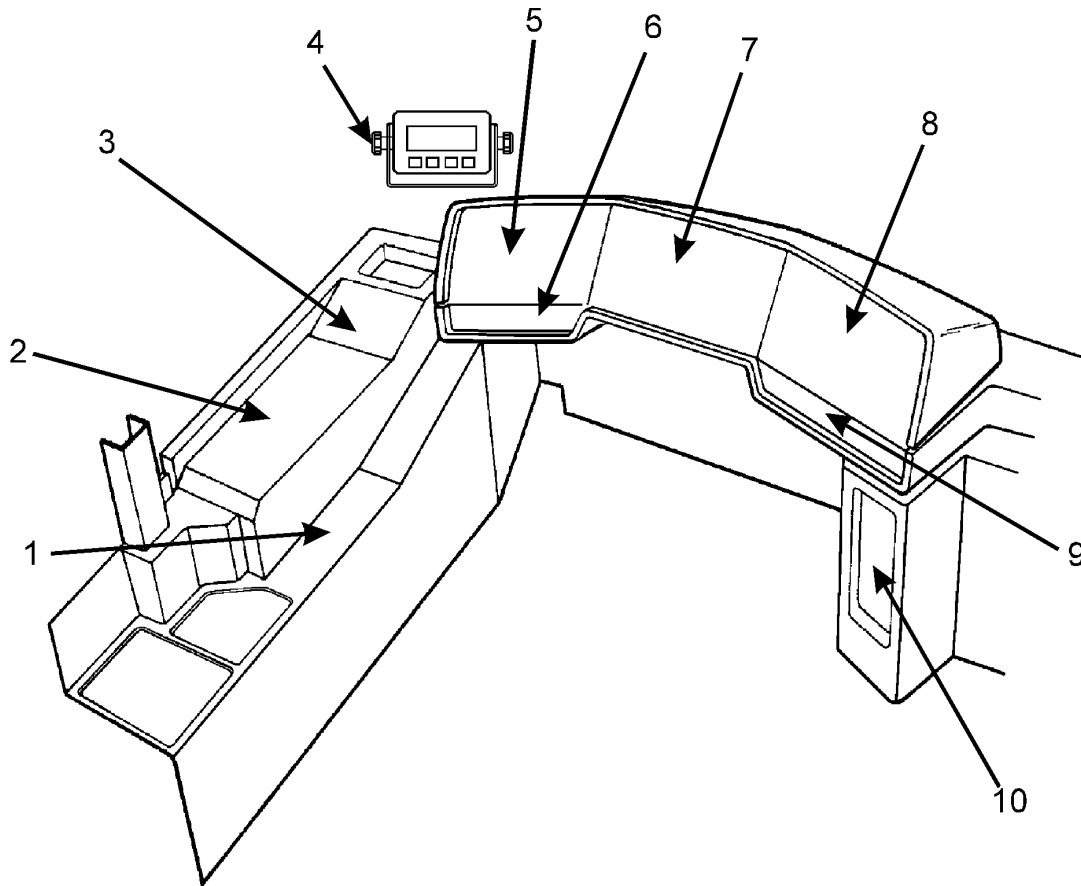
The fresh water tank is equipped with an immersion heater that operates from the in-station connector and is powered with a 110-120 volt supply. Refer to "Exterior of coach" section. For sump tank draining and filling procedures, refer to "Care and Maintenance" section.



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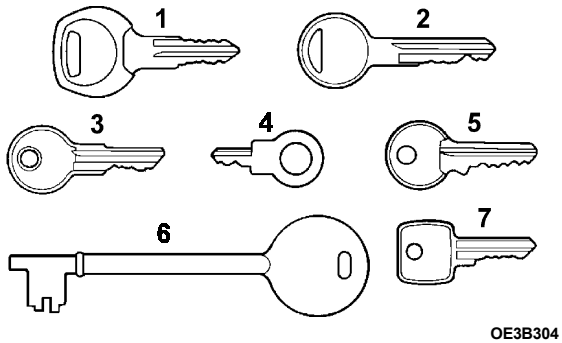
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## KEYS

Depending on the optional equipment installed, the following keys are available.



### 1 - Entrance Door/Exterior Compartment Key

Used to lock/unlock the entrance door, and any exterior compartment door.

**NOTE:** If the coach is equipped with the central locking system on the L.H. control panel, the eight baggage compartment doors can be remotely locked/unlocked from the control panel.

### 2 - Driver's Personal Compartment Key

Used to lock/unlock the driver's personal compartment, located at the left of the stairway when entering the coach.

### 3 - Ignition Key

Used to turn on the electrical power in the coach and to start the engine.

### 4 - Tachograph Key

Used to open the tachograph cover for card replacement.

### 5 - Video System Compartment Key

Used to lock/unlock the video system compartment, located either in the first or second front left parcel racks.

### 6 - Lavatory Door Key

Used to lock/unlock the lavatory door or to prohibit access when necessary.

### 7 - Key for Towel Dispenser, Toilet Paper Dispenser and Cleaning Cabinet

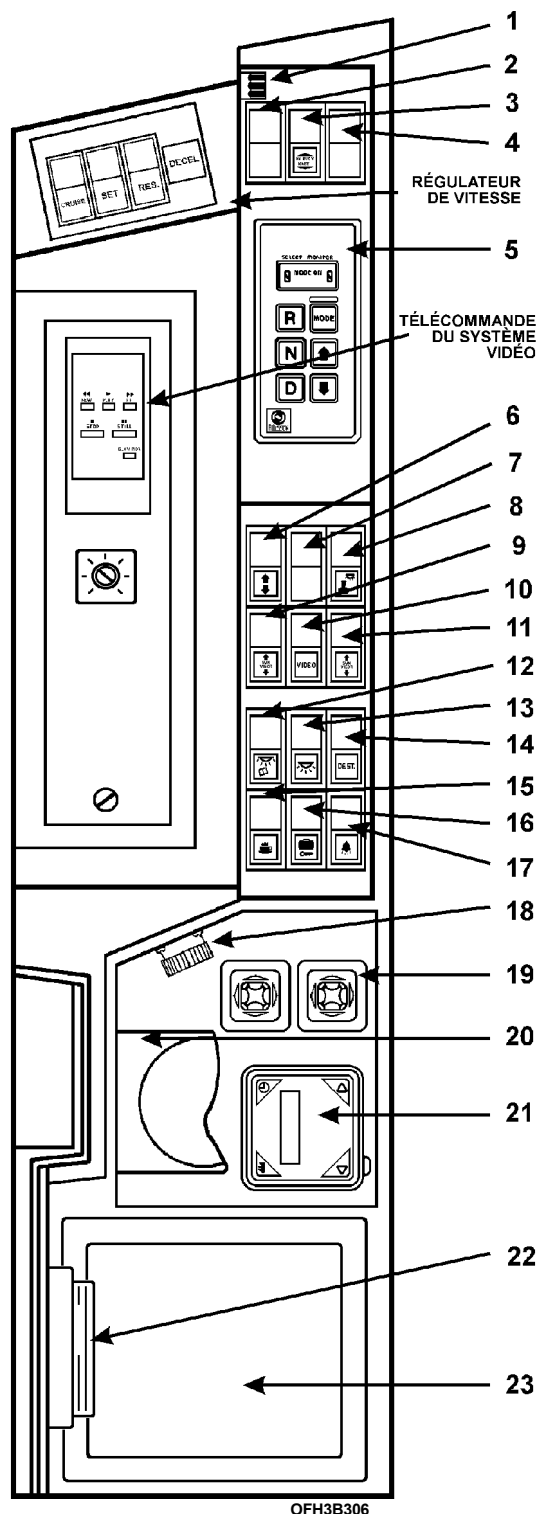
Used to gain access to the towel dispenser for refilling or to access the hose inside the lavatory cleaning cabinet. Key is identified by: LF#92201 - England.

**NOTE:** A different key is used for the optional moist towel dispenser.

**NOTE:** For added security:

- A) Keep a record of the key numbers in a safe place. Do not keep the record in the coach. Keep on your person.
- B) Keep a duplicate of each key in a safe place in case of loss or theft.

L.H. CONTROL PANEL



1 - Control and Instrument Lighting Dimmer

Turn dimmer knob clockwise to brighten controls and instruments, and counter-clockwise to dim.

2 - Left Blank for Additional Switch

3 - Kneeling/Hi-Buoy Control Switch

Momentarily depress the rocker switch rearward to lower the front end of the coach 4 inches (100 mm), and forward to return the coach to normal driving height. Refer to "Other Features" section.

Depress and hold rocker switch forward to raise the front end of the coach 4 inches (100 mm). Release the rocker switch to return the coach to the normal driving height. Refer to "Other features" section.

4 - Left Blank for Additional Switch

5 - Automatic Transmission  
World Transmission (WT) Shift Selector

The push-button transmission shift selector has six (6) push-buttons and a digital display. The six push-buttons are identified as "R", "N", "D", "▲" (up arrow), "▼" (down arrow), and "MODE".

Preselected downshifts and upshifts are made by pressing the "▲" (up arrow) and "▼" (down arrow) push-buttons after selecting the forward drive (D) position.

The neutral (N) position push-button has a raised lip so that it can be selected by touch.

The digital display on the shift selector displays the selected range on the left side and the actual transmission range (monitored) on the right side.

A MODE ON indicator is located between the selected range and the monitored range digits. It indicates the following:

- 1) During normal transmission operation, it indicates that the driver has pressed the MODE push-button to select ECONOMY mode. Refer to the MODE push-button description for more information.

- 2) In the diagnostic display mode, the MODE ON indicates an active fault condition. Refer to the "Technical Information" section for a list of diagnostic codes.

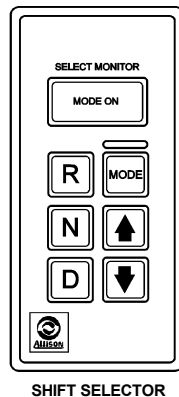
The shift selector will sound a tone to draw attention to the displayed diagnostic code at the same time the DO NOT SHIFT light is illuminated.

The shift selector key pad is illuminated for night driving.

The light intensity of the display and shift selector keypad is controlled by the control and instrument lighting dimmer (1).

**Shift Selector Operation**

When a shift selector push-button is pressed, a "beep" will sound and the keypad illuminates up indicating that the transmission is switching to the selected range.



SHIFT SELECTOR

The function of each push-button on the shift selector keypad is as follows:

**Reverse (R)**

Press the reverse (R) push-button to back-up the coach. Make sure the coach is at a complete stop before shifting from drive (D) to reverse (R), or from reverse (R) to drive (D). A back-up alarm will sound when reverse (R) is selected.

**Neutral (N)**

Make sure the parking brake is applied before starting the engine, whenever checking coach accessories, and for extended idling periods.

The WT shift selector automatically returns the transmission to neutral (N) when the key in the ignition switch is turned to the START position or to the OFF position.

**WARNING:** APPLY THE PARKING BRAKE BEFORE LEAVING THE DRIVER'S SEAT.

**CAUTION:** DO NOT LET THE DETROIT DIESEL ENGINE RUN AT LOW IDLE (550 RPM) FOR LONG. FOR EXTENDED IDLING, RUN AT FAST IDLE (1,000 RPM).

**Drive (D)**

Press the drive (D) push-button for normal driving conditions. The highest forward gear will appear on the SELECT display and the transmission will shift to the starting gear as indicated on the MONITOR display.

**NOTE:** If a coach equipped with a WT shift selector drives over slick roads, the Electronic Control Unit (ECU) will command converter operation (disconnect lock-up) and inhibit downshifts for a preset period or until normal wheel speed has been restored.

**"▲" (Upshift) and "▼" (Downshift)**

Press the "▲" Upshift and "▼" Downshift push-button to shift to a higher range (if not in Drive [D]) or a lower range (if not in "1"). Press once to change the range selected by one range. If held continuously, the range selected continues to change up or down until the push-button is released or until the highest or lowest possible range of gears is selected.

To display oil level codes, press both the Upshift "▲" and Downshift "▼" once. For information about oil level codes, refer to the "Technical Information" section under "Oil Level Sensor (OLS) Codes". To display the diagnostic codes, press both the Upshift "▲" and Downshift "▼" push-buttons twice and at the same time. For information about diagnostic codes, refer to the

"Technical Information" section under "World Transmission (WT) Diagnostic Codes".

### **"MODE"**

In normal operation, press the MODE push-button once to activate the ECONOMY mode that has been programmed into the ECU. The ECONOMY mode consists of a shift schedule to shift the transmission at lower RPM's to increase fuel economy. ECONOMY mode is recommended for highway travel on a flat grade. When a function is selected, the mode status will be indicated on the digital display by illuminating MODE ON.

For information on the diagnostic display mode, refer to the "Technical Information" section under "World Transmission (WT) Diagnostic Codes".

### **6 - Driver's Left Window Control Switch**

Depress the rocker switch rearward to lower the window, and forward to raise it.

### **7 - Left Blank for Additional Switch**

### **8 - Driver's Area Lighting Switch**

Depress the rocker switch to illuminate the two ceiling lights in the driver's area. These lights are frequently used at night when passengers are boarding or leaving the coach.

### **9 - Left "SUN VISOR" Control Switch**

Depress the rocker switch rearward to lower the left front sun visor (blind), and forward to raise it.

### **10 - "VIDEO" System Power Switch**

Depress the rocker switch to turn on the TV monitors, the TV converter and the video cassette player.

**NOTE:** *When both the radio and the video systems are on, the speakers in the passenger area will be connected to the video system, while the speakers in the driver's area will be connected to the radio.*

### **11 - Right "SUN VISOR" Control Switch**

Depress the rocker switch rearward to lower the right front sun visor (blind), and forward to raise it.

### **12 - Reading Lamp Power Switch**

Depressing the driver's rocker switch will power the reading lamp circuit to enable passengers to operate their personal reading lamps. See "Interior of coach" section.

### **13 - Interior Lighting Switch**

Depress the rocker switch to the first position to illuminate the aisle dome lights and to the second position to illuminate both the fluorescent lights and the aisle dome lights.

The aisle dome lights are located on the side of the parcel racks, and the fluorescent lights are located below the parcel racks.

**CAUTION:** *TURN OFF THE AISLE DOME LIGHTS AND FLUORESCENT LIGHTS WHEN THE ENGINE IS STOPPED TO AVOID RUNNING-DOWN THE BATTERIES.*

### **14 - Destination Sign Lighting Switch**

Depress the rocker switch to illuminate the optional destination sign. Refer to "Interior of coach" section.

### **15 - Galley Power Switch**

Depress the rocker switch to power the galley electrical circuit.

### **16 - Baggage Compartment Door Central Locking System (Option)**

Depress the rocker switch rearward to lock the eight baggage compartment doors, and forward to unlock.



**NOTE:** The central locking system will operate only on baggage compartment doors that have been locked with the key beforehand.

**17 - Stop/Service Chime Power Switch**

Depressing the driver's rocker switch will power the chime system to allow passenger operation of both the stop (disembarkation) button and the service button. Refer to "Interior of coach" section.

**18 - Diagnostic Data Reader Receptacle**

To facilitate troubleshooting of the DDEC, WT and ABS systems, and to obtain data logged in the ECM (Electronic Control Module) memory, a Diagnostic Data Reader (DDR) (not supplied) can be connected through the DDR receptacle. A user's manual is supplied with the optional DDR.

**19 - Outside Mirror Remote Control**

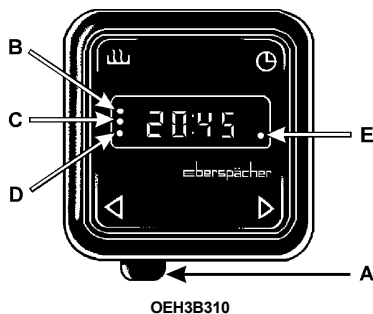
Select the mirror to be adjusted by turning the pointer knob to the left or right. Adjust the mirror to the desired position by moving the knob. Refer to "Exterior of coach" section.

**NOTE:** When the convex-type rear-view mirrors are adjustable, there is two knobs on the panel. Each knob is used to adjust rear-view mirrors on one side of the coach.

**20 - Tumbler Holder**

Lower the cover (bottom support) then raise the retaining ring to hold it securely in place.

**21 - Water Heater Timer**



Used to program the start time of the water heater.

**CAUTION:** DO NOT TURN ON THE PREHEATING SYSTEM MORE THAN ONE HOUR BEFORE STARTING THE ENGINE TO AVOID RUNNING-DOWN THE BATTERIES.

**Present Time Display**

Pull lever "A" forward\*.

**Time Setting**

Hold lever "A" forward and press "◀" or "▶" **Erreur! Les arguments du commutateur ne sont pas spécifiés.** at the same time, to retard or advance time .

**Heating Start-Up**

(Possible regardless of preselection)

Press "⏏" to display available heating time in minutes. Operating indicator light "E" flashes.

**Heating Start-Up (Continuous Operation)**

Pull lever "A" forward and press "⏏" at the same time.

**Heating Shut-off**

Press "⏏" to activate the automatic delay to allow cooling.

**Preselection of Heating Start Time**

Can preselect 3 start times.

**Display of Preselected Times**

Used to turn on the heater automatically at preselected start times.

Display start times as follows:

1st memory: Press "⌚" once; heating is set for the 1st start time\*\*; "B" illuminates.

2nd memory: Press "⌚" twice; heating is set for the 2nd start time\*\*; "C" illuminates.

3rd memory: Press "⌚" three times; heating is set for the 3rd start time\*\*; "D" illuminates.

NEUTRAL POSITION: Press "⌚" once again; no display or display of present time\*; no preselected start time.

**Setting Start Times\*\***

Set start times as follows:

**1.**

1st memory: Momentarily press "⌚" ; "B" illuminates.

2nd memory: Momentarily press "⌚" ; "C" illuminates.

3rd memory: Momentarily press "⌚" ; "D" illuminates.

2. Set start time by pressing "◀" or "▶" **Erreur! Les arguments du commutateur ne sont pas spécifiés."**

NEUTRAL POSITION: Press "⌚" once again ; no display or display of present time\*, preset start times still in memory.

\* Eventually continuous display of present time with the ignition key in ON position.

\*\* Display of water heater start time turns off after approximately 20 seconds, or switches to the present time.

**WARNING:** THE PREHEATING SYSTEM USES THE SAME FUEL AS THE ENGINE. DO NOT OPERATE IN A BUILDING OR WHILE REFUELLING. OPERATE IN A WELL-VENTILATED AREA.

**IN CASE OF PREHEATING SYSTEM MALFUNCTION:**

1. Place heater switch to OFF position; then to ON position.
2. Check main circuit breaker and overheating switch.
3. Report problem to maintenance personnel.

**22 - Lamp**

Pivot the lamp cover upward to illuminate the road map compartment, and pivot downward to extinguish light.

**23 - Road Map Compartment**

Used to store road maps.

**VIDEO SYSTEM REMOTE CONTROL**

Depressing the VIDEO system power switch located on the L.H. control panel will activate the TV monitors, the TV converter and the video cassette player.

**NOTE:** When both the radio and video system are on, the speakers in the passenger area will be connected to the video system, while the speakers in the driver's area will be connected to the radio.

The remote control power cord must be connected to the video cassette player as shown in figure 1.

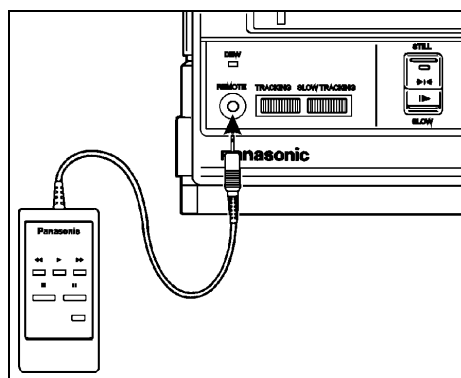
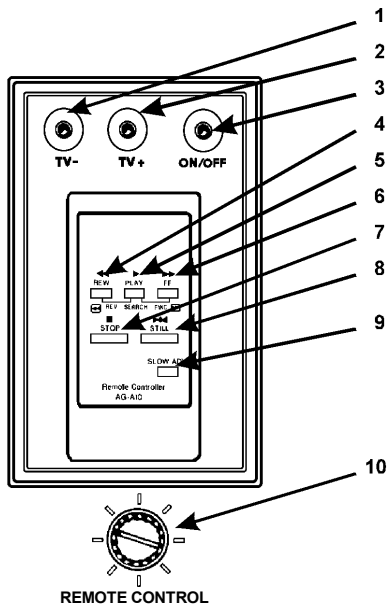


FIGURE 1

OEH3B312



REMOTE CONTROL

OEH3B314

**NOTE:** The operation of the video cassette player without the remote control is explained in the user's manual located in the video system compartment. Refer to "Interior of coach" section.

**1 - Channel Down Button (TV-)**

Press and release to select the next lower channel. Press and hold to scan lower channels.

**2 - Channel Up Button (TV+)**

Press and release to select the next higher channel. Press and hold to scan higher channels.

**3 - TV Converter Button (ON/OFF)**

Press to turn on TV converter; press again to turn off. When the TV converter is turned off, the video cassette player is selected automatically.

**4 - Rewind Button (REW)**

Press to rewind the video tape. When a video tape is playing, press and hold to engage the reverse search mode.

**5 - "PLAY" Button**

Press to play the video tape.

**6 - Fast-Forward Button (FF)**

Press to fast-forward the video tape. Press and hold to engage the forward search mode.

**7 - "STOP" Button**

Press to stop video tape play.

**8 - "STILL" Button**

Press to view a still picture. Press again to return to regular play.

**9 - Slow Advance Button**

If noise appears while viewing the still picture, press to clear noise.

**10 - Volume**

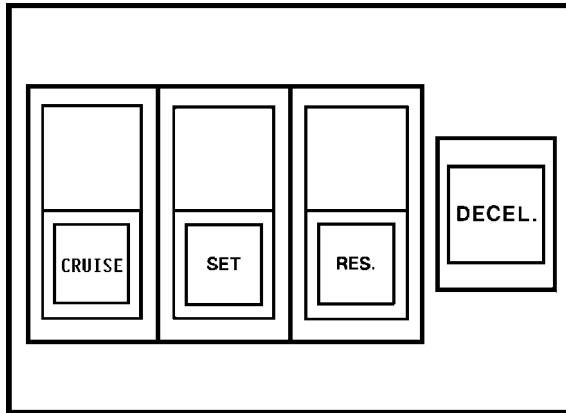
Turn knob clockwise to increase volume; counter-clockwise to decrease volume.

**MUTE**

Press and release "TV+" and "TV-" simultaneously for 3 seconds to turn sound off. Repeat to turn sound on.

## CRUISE CONTROL

The cruise control is part of the DDEC III control that will maintain a set speed when the coach is travelling above 35 mph (55 km/h).



CRUISE CONTROL SWITCHES

OEH3B316

**WARNING:** DO NOT USE THE CRUISE CONTROL WHEN DRIVING SPEED MUST BE CONSTANTLY ADJUSTED, SUCH AS IN HEAVY TRAFFIC OR ON WINDING, ICY, SNOW-COVERED, OR SLIPPERY ROADS, OR ON GRAVEL ROADS.

**WARNING:** DO NOT PUT THE TRANSMISSION IN THE NEUTRAL (N) POSITION WHILE DRIVING WITH CRUISE CONTROL. THIS WILL CAUSE THE ENGINE TO OVER-SPEED AND MAY RESULT IN A LOSS OF DRIVING CONTROL.

### Setting Coach Speed

Depress the CRUISE rocker switch and accelerate the coach to the desired cruising speed. Depress and release the SET switch; then remove foot from the accelerator pedal. This will set the coach cruise speed and store it in memory.

**NOTE:** The cruise control and RES (resume) switch do not operate at speeds below 35 mph (55 km/h).

### Increasing Set Speed

The coach cruise speed setting can be increased by one of the following methods:

A) WITH THE ACCELERATOR PEDAL AND "SET" SWITCH

Accelerate the coach using the accelerator pedal until the desired cruising speed is reached; then depress and release the SET switch.

**NOTE:** When driving with cruise control, the coach can still be accelerated by depressing the accelerator pedal in the usual manner. Once the accelerator pedal is released, the coach will return to the previously set cruising speed.

B) WITH "RES" SWITCH

Depress and hold the RES (resume) switch until the desired cruising speed is reached. When the RES switch is released, the new cruising speed will be stored in the cruise control memory. The RES switch does not operate at speeds below 35 mph (55 km/h).

### Decreasing Set Speed

The coach cruise speed setting can be decreased by one of the following methods:

A) WITH "SET" SWITCH

Depress and hold the SET switch until the desired cruising speed is reached. When the SET switch is released, the new cruising speed will be stored in the cruise control memory.

B) WITH BRAKE PEDAL OR "DECEL" SWITCH

The cruise control can be disengaged without losing the preset cruise speed by either of the following methods:

1 - Slightly apply the service brake.

**NOTE:** For coaches equipped with a manual transmission, the cruise control may be disengaged by depressing the clutch pedal, and reengaged by releasing the clutch pedal.

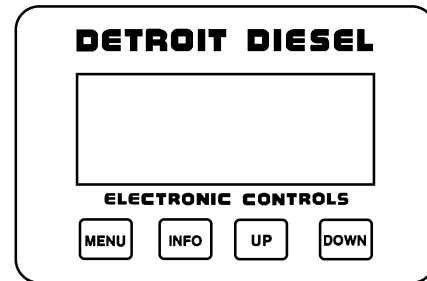
2 - Depress and release the DECEL switch.

After disengaging the cruise control, you can return to the preset cruising speed by pressing and releasing the **RES** switch providing that the coach speed is above 35 mph (55 km/h).

**NOTE:** To avoid sudden coach hesitation, depress the accelerator pedal lightly before disengaging the cruise control.

**NOTE:** When the **CRUISE** rocker switch is turned off, the cruise control is completely shut-off and the cruise speed setting is cleared from the cruise control memory.

## DETROIT DIESEL PRODRIVER™



OEH3B318

**NOTE:** Refer to the ProDriver™ Operating Manual (6SE701) for a description of how to set-up and operate the ProDriver™ display. Refer to "Other features" section for more information about the Prodriver.

### BUTTON FUNCTIONS

**MENU** - Displays main menu screen or previous menu.

**INFO** - Displays selected menu option; saves new data.

**UP/DOWN** - Moves selection arrow up and down, or moves from screen to screen when multiple screens are available.

### BUTTON COMBINATIONS

Press **UP** and **DOWN** at the same time to store an Incident Record.

### SPECIAL BUTTON FUNCTIONS

Alternate labels are displayed along the bottom of the screen directly over each button when the buttons are used to perform special functions.

### DISPLAY SCREENS

#### IDLE TIME:

Automatically displayed when the engine is idling. Shows idle time for current leg of the trip and as a percentage of the engine running time. A bar graph shows the percentage of the time compared to the fleet goal.

**FUEL ECONOMY:**

Automatically displayed when the coach is moving. Provides a digital display of the average fuel economy for current leg of the trip and as a bar graph, with the fleet goal centered on the screen. Instantaneous fuel economy is shown as a series of arrows. UP arrows show an improving leg average; DOWN arrows show a decreasing average. The number of arrows indicates the amount of change.

**WARNING SCREENS:**

Speeding, over-revving, excessive idling and oil change screens will be displayed until acknowledged by the driver by pressing any button or until the condition ceases. The display will return to the screen previously shown.

**ALERT SCREENS:**

Shown if an engine warning condition exists. The alert screen is displayed until acknowledged by the driver by pressing any button.

DISPLAY SCREEN MENUS ARE AVAILABLE ONLY WHEN THE COACH IS STATIONARY. THE DISPLAY MAY BE VIEWED WITH THE IGNITION OFF BY PRESSING **MENU**.

TO EDIT THE MAIN MENU AT IDLE:

IDLE SCREEN, **MENU** = MAIN MENU,  
**MENU** = IDLE SCREEN.

TO REVIEW LEG SUMMARY INFORMATION AT IDLE:

IDLE SCREEN, **INFO** = SUMMARY 1,  
**INFO** = SUMMARY 2, **INFO** = IDLE SCREEN.

TO REVIEW TRIP SUMMARY INFORMATION AT IDLE:

IDLE SCREEN, **MENU**, → TRIP SUMMARY,  
**INFO** = view trip summary page 1,  
**INFO** or **DOWN** = view trip summary page 2.  
Continue to press **INFO** or **DOWN** to view all the trip summary pages. **MENU** = Main Menu, or  
**MENU**, **MENU** = idle screen.

TO REVIEW LEG SUMMARY INFO WHILE IN MOTION:

ECONOMY SCREEN, **INFO** = SUMMARY 1,  
**INFO** = SUMMARY 2, **INFO** = ECONOMY SCREEN.

**DISPLAY BRIGHTNESS:**

Temporary display brightness adjustments can be made while in the Fuel Economy, Idle or Leg Summary screens by pressing **UP** or **DOWN**. The normal setting returns the next time the engine is started.

**ENTERING DRIVER ID:**

From the Main Menu screen, →Configuration **INFO**, →Driver ID **INFO**. Press **UP** to increment the selected digit. Press **DOWN** to select the next digit to the right. Press **INFO** to save the completed entry or press **MENU** to exit without saving changes.

**TV MONITOR (BACK-UP CAMERA)**

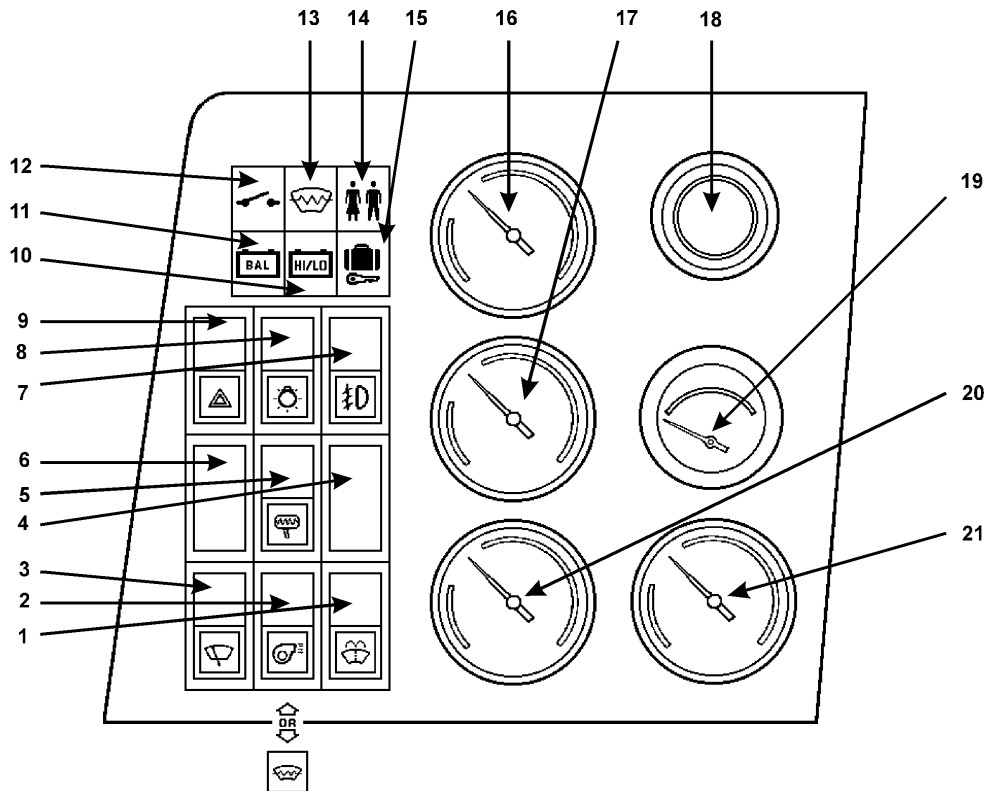
An optional back-up camera is available which provides the driver with visual assistance when backing-up.

The TV monitor is mounted on the top of the dashboard.

The monitor switches on automatically when the transmission is put in the reverse (R) range.

**NOTE:** A switch located in the rear electric compartment is used to retract the back-up camera for cleaning.

L.H. DASHBOARD



OEH3B222

**1 - Upper Windshield Washer Switch**

Depress and hold the rocker switch to operate the upper windshield washers. The upper wipers will come on automatically and will shut-off a few seconds after releasing the rocker switch.

**NOTE:** The lower windshield washers are operated by the multifunction lever. Refer to "Steering Column" in this section.

**WARNING:** IN COLD WEATHER, WARM-UP THE WINDSHIELD FIRST WITH THE DEFROSTER TO PREVENT ICING AND REDUCED VISIBILITY.

**CAUTION:** TO AVOID DAMAGING THE PUMP MECHANISM, DO NOT OPERATE THE WINDSHIELD WASHER WHEN THE FLUID LEVEL IS LOW.

**2 - Upper Windshield Defroster Switch**

The coach may be equipped with either of the following systems:

A) UPPER WINDSHIELD DEFROSTER

Depress the rocker switch to the first position to operate the defroster blower at low speed. Depress switch to the second position for high speed.

B) HEATED UPPER WINDSHIELD

Momentarily depress the rocker switch to turn on the heating element and clear frost, fog or thin ice from both sides of the upper windshield. The heater will automatically turn off after 10 minutes.

**3 - Upper Windshield Wiper Switch**

Depress the wiper rocker switch to the first position for intermittent wiping, and to the second position for continuous wiping.

**NOTE:** The lower windshield wipers are operated by using the multifunction lever. Refer to "Steering Column" section.

**WARNING:** TO AVOID DAMAGING THE WIPER BLADES OR SCRATCHING THE WINDSHIELD, DO NOT OPERATE WIPERS WHEN WINDSHIELD IS DRY. LOOSEN FROZEN BLADES ON WINDSHIELD BEFORE OPERATING.

**4 - Left Blank for Additional Switch****5 - Outside Mirror Heat Switch**

Depress the rocker switch to operate the heating elements to clear frost, fog or thin ice from the rear-view mirrors.

**6 - Left Blank for Additional Switch****7 - Fog Light Switch**

Remove fog light protective covers. Depress the rocker switch to turn on the fog lights, clearance lights and marker lights. Refer to "Other Features" section.

**WARNING:** BEFORE REMOVING THE FOG LIGHT PROTECTIVE COVERS, TURN OFF THE ENGINE AND APPLY THE PARKING BRAKES.

**8 - Exterior Lighting Switch**

Depress the rocker switch to the first position to turn on the clearance and marker lights. Depress the rocker switch to the second position to turn on both the clearance and marker lights and the headlights. The controls and instrument light will illuminate.

**NOTE:** Daytime running lights will be automatically cancelled when the exterior lighting switch is depressed. Refer to "Other Features" section.

**9 - Hazard Warning Flasher Switch**

Depress the rocker switch to make all turn signal lights flash at the same time. The corresponding dashboard indicator lights will flash when the hazard warning flashers are on.

**10 - High/Low Battery Voltage Indicators**

Illuminates when the battery voltage exceeds 30 volts or drops below 24 volts.

**NOTE:** The high/low battery voltage indicator will illuminate for a few seconds after the engine is started because of the voltage drop when the starter is engaged.

**11 - Battery Equalizer Indicator**

Illuminates when the battery voltage is not equalized.

**NOTE:** If the battery equalizer indicator illuminates, make sure that the battery equalizer circuit breakers are reset before requesting breakdown assistance. Wait 15 minutes after setting breakers to allow batteries to equalize. The breakers are located in the main power compartment.

**12 - Electrical Systems Indicator**

Illuminates when the ignition switch is OFF and the 12-volt and 24-volt electrical systems are activated by depressing the battery master switch located on the L.H. lower control panel.

**13 - Heated Upper Windshield Indicator**

Illuminates when the upper windshield heating element is on. Refer to "Upper Windshield Defroster Switch" section.



**14 - Lavatory Door Lock Indicator**

Illuminates when the lavatory door is locked.

**15 - Baggage Compartment Door Lock Indicator**

Illuminates when at least one baggage compartment door is unlocked.

**16 - Turbo Boost Pressure Gauge**

Indicates turbo boost gauge (inches of mercury [Hg]) or pressure (psi). The reading reflects engine speed and load conditions.

**17 - Engine Oil Pressure Gauge**

Indicates engine oil pressure. The normal reading should be between 50 and 70 psi (345 - 480 kPa) at 55 mph (90 km/h).

**18 - Adjustable HVAC Registers**

Refer to "Interior of coach" section.

**19 - Pyrometer**

Indicates exhaust manifold temperature in hundreds of degrees Fahrenheit (°F x 100). At 55 mph (90 km/h) the normal reading should be between 500°F and 1,100 °F (260°C and 590°C) depending on the operating conditions.

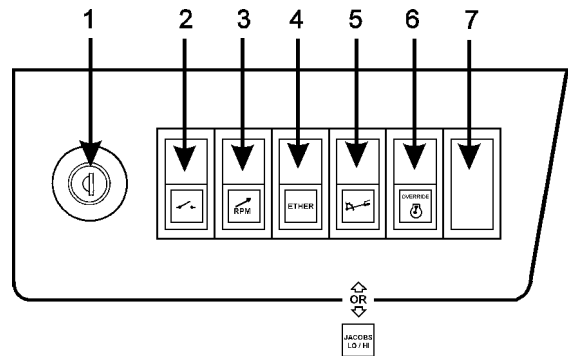
**20 - Voltmeter (12-Volt System)**

Indicates the condition of the 12-volt electrical system. With the engine running, the normal reading should be between 12.8 and 14.2 volts.

**21 - Voltmeter (24-Volt System)**

Indicates the condition of the 24-volt electrical system. With the engine running, the normal reading should be between 26.5 and 28.0 volts.

**L.H. LOWER CONTROL PANEL**



OEH3B324

**1 - Ignition Switch**

**NOTE:** The coach may be equipped with a keyless ignition.

The ignition switch has four positions:

- ACCESSORIES

To operate the accessories only, turn the ignition key counter-clockwise. The key cannot be removed in this position.

- OFF

In OFF position, ignition cannot take place. The key can be removed in this position.

- ON

To place ignition switch to ON, turn the key clockwise to the first position. The key cannot be removed in this position.

- START

Turn the key clockwise to the second position and release as soon as the engine starts. The key will return to the ON position. If the engine did not start, return the ignition key to the OFF position before trying to restart the engine.

**CAUTION:** TO AVOID OVERHEATING THE STARTER, DO NOT ENGAGE THE STARTER FOR MORE THAN 15 SECONDS AT A TIME. ALLOW THE STARTER TO COOL BEFORE TRYING TO RESTART THE ENGINE.

**2 - Battery Master Switch**

Both the 12-volt and 24-volt systems are activated by the master switch located on the L.H. lower control panel. An indicator light on the L.H. dashboard will illuminate when the ignition key is in the OFF position.

**CAUTION:** WHEN PARKING THE COACH OVERNIGHT, OR FOR AN EXTENDED PERIOD OF TIME, PLACE THE BATTERY MASTER SWITCH TO THE OFF POSITION.

**NOTE:** When the battery master switch is placed in the OFF position, all electrical equipment connected to the batteries is cut-off, with the exception of the battery equalizers and monitor, World Transmission (WT) Electronic Control Unit (ECU) memory, Vehicle Interface Module (VIM), preheating system, tachograph, and refrigerator power supply.

**3 - Fast Idle Switch**

For extended idling periods, run the engine at fast idle. Depress the rocker switch to engage fast idle. This increases the engine speed to approximately 1,000 rpm.

**NOTE:** If the parking brake is released and/or the transmission is engaged with the engine running at fast idle, the engine will return to low idle and remain there as long as the parking brake is not applied and/or transmission is not placed in neutral (N).

**CAUTION:** REDUCE THE ENGINE TO LOW IDLE BEFORE SHUTTING THE ENGINE OFF.

**NOTE:** If the engine is stopped during fast idle, it will not return to fast idle when the engine is restarted. The driver must depress then reset the rocker switch to activate fast idle after restarting the engine.

**4 - ETHER Start Control Switch**

Activates the engine cold starting aid. Refer to "Starting and Stopping Procedures" section.

**5 - Jacobs Engine Brake/Output Retarder Control**

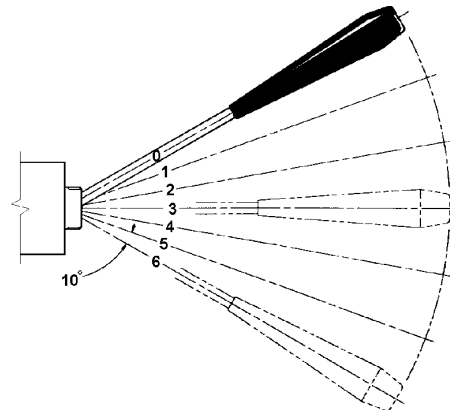
JACOBS ENGINE BRAKE:

Place the rocker switch to the first position to activate 2/3 engine braking, and to the second position for full engine braking. Refer to "Other Features" section.

**WARNING:** ONLY USE ENGINE BRAKING ON DRY ROADS. NEVER APPLY THE ENGINE BRAKES ON SLIPPERY ROADS. CONTROL OF COACH MAY BE LOST.

**NOTE:** Jacobs engine brake operates only when the accelerator pedal is released, and when the engine speed is over 750 rpm. The stoplights will automatically go on when engine braking is engaged.

TRANSMISSION OUTPUT RETARDER:



RETARDER HAND LEVER

OEH3B326

The output retarder can be operated two ways:

- When the accelerator pedal is released ; proceed as follows:

Depress the rocker switch to activate the transmission hydraulic output retarder and move the output retarder lever clockwise from the first to the sixth position. The efficiency for each position is as follows:

Position	Efficiency
Initial	0%
1st	16%
2nd	33%
3rd	49%
4th	71%
5th	89%
6th	100%

**NOTE:** The output retarder lever is located on the right side of the steering column.

- When the accelerator pedal is released and the brake pedal is applied; proceed as follows:

Depress the rocker switch to activate the hydraulic output retarder. Leave the output retarder lever in the initial position. The harder the brake pedal is applied, the more the output retarder is applied.

Refer to "Other Features" section.

**NOTE:** For coaches equipped with the Antilock Braking System (ABS), if the wheels start to lock-up on slippery roads, the output retarder automatically will become deactivated until the wheels roll freely.

## **6 - Stop Engine "OVERRIDE" or DDEC Diagnostic Request Switch**

### **STOP ENGINE "OVERRIDE"**

Momentarily depress the rocker switch to override the engine emergency shut-down during a 30 second period. This procedure can be repeated, provided that it is done before the end of the current 30 second period. Refer to "Stop Engine Indicator" on the central dashboard.

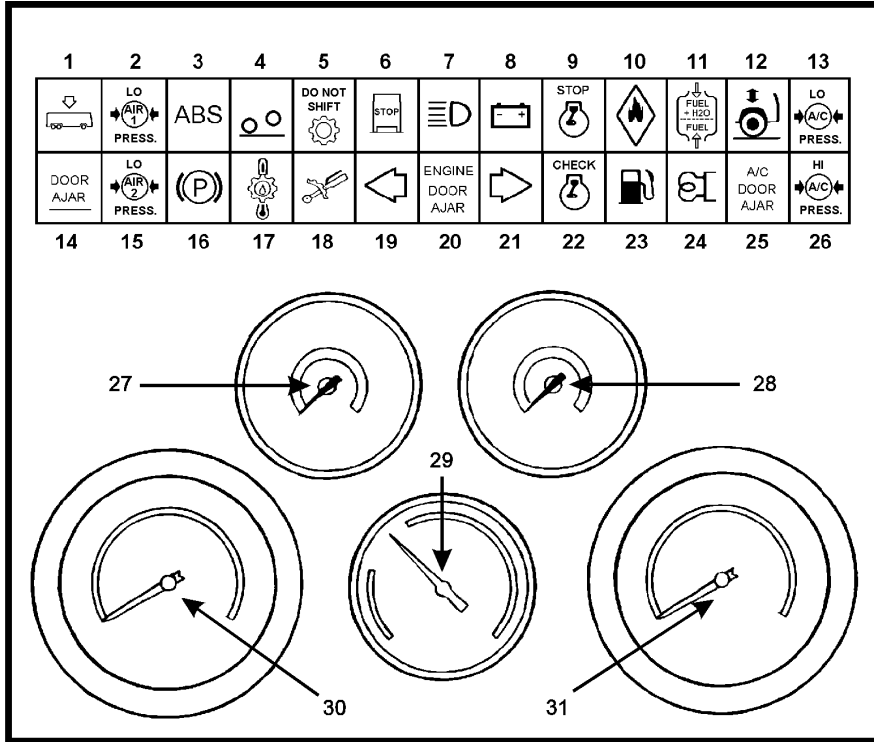
**CAUTION:** THE STOP ENGINE "OVERRIDE" MUST BE USED ONLY IN EMERGENCY SITUATIONS, SUCH AS MOVING THE COACH OUT OF TRAFFIC. EXCESSIVE USE COULD CAUSE SEVERE ENGINE DAMAGE.

### **DDEC DIAGNOSTIC REQUEST SWITCH**

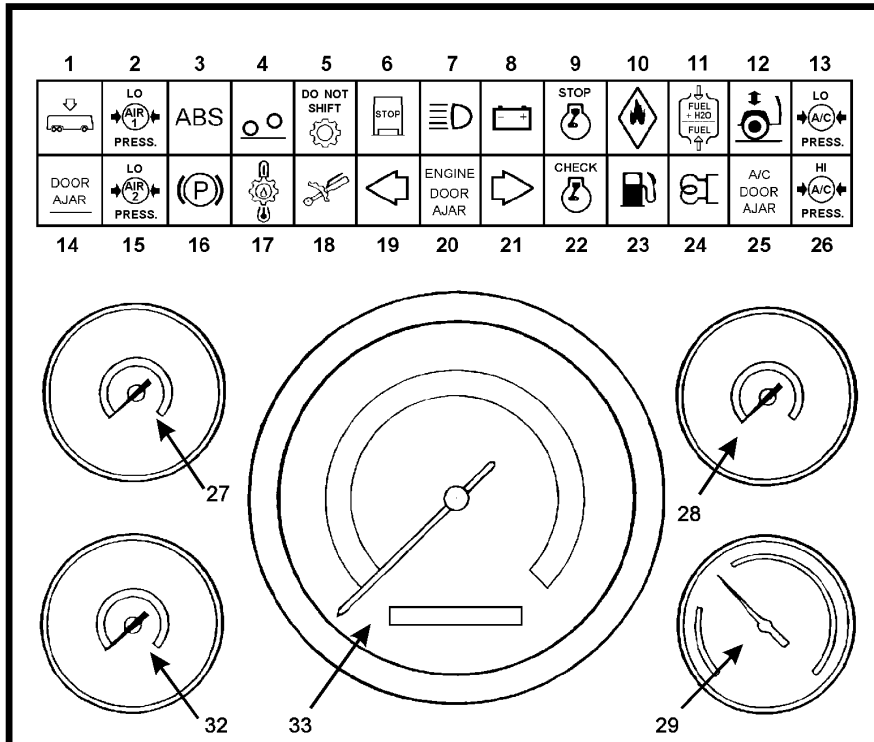
With the engine idling, or with the engine shut-off, and with the ignition ON, momentarily depress the rocker switch. Active codes will be flashed on the stop engine indicator, followed by the flashing of inactive codes on the check engine indicator. Refer to "Central Dashboard" in this section. Codes will continue to flash until the stop engine OVERRIDE switch is momentarily depressed. Refer to "Other Features" section.

### **7 - Left blank for Additional Switch**

### CENTRAL DASHBOARD



### CENTRAL DASHBOARD WITH TACHOGRAPH



OEH3B330

## **Indicator Lights**

### **1 - Low-Buoy Indicator**

Illuminates during Lo-Buoy operation. The control valve is located on the R.H. lateral console.

### **2 - Low Air Pressure Indicator (Primary System)**

Illuminates when the primary air system pressure drops below 66 psi (455 kPa).

### **3 - Anti-Lock Braking System (ABS) Indicator**

Illuminates when the ABS is not available or when the ABS is malfunctioning. Since the ABS system does not operate under 4 mph (7 km/h), the indicator will remain illuminated until the coach reaches that speed. Refer to "Other Features" section.

### **4 - Retracted Tag Axle Indicator (optional)**

Illuminates when the tag axle is retracted. When the tag axle is retracted, an alarm will sound to warn the driver. The control valve is located on the R.H. lateral console.

### **5 - DO NOT SHIFT Transmission Indicator**

Illuminates briefly when the ignition is switched ON as a light test. The indicator light should go out after two seconds.

When the DO NOT SHIFT indicator is illuminated, and the shift selector emits 8 seconds of short beeps, this means that the ECU is restricting transmission shifting because of special or abnormal conditions detected by the ECU. The SELECT digit on the display will be blank.

If this happens, drive the coach to the next available service station to receive assistance. The ECU will not respond to shift selector requests since operating limitations are being placed on the transmission (i.e., upshifts and downshifts may be restricted). Direction

changes and shifts to and from neutral (N) will not occur.

Any time the DO NOT SHIFT light has been illuminated, the ECU will register a diagnostic code. It may be identified on the display or using a diagnostic tool. Refer to "Technical Information" section under "World Transmission (WT) Diagnostic Codes".

**NOTE:** *The DO NOT SHIFT transmission indicator may also illuminate when starting the engine in extreme cold weather. Refer to "Starting and Stopping Procedures" section under "World Transmission (WT) Warm-up".*

### **6 - Stoplight Indicator**

Illuminates when service brakes are applied.

### **7 - High Beam Indicator**

Illuminates when high beams are selected. High and low beams are selected by operating the multifunction lever. Refer to "Steering Column" section.

### **8 - Charge System Indicator**

Illuminates when the alternator is not charging the batteries.

### **9 - STOP Engine Indicator**

Illuminates when the ignition switch is ON, as a light bulb and DDEC system check. The indicator should go off after five seconds.

If the indicator remains illuminated after five seconds, or comes on sometime after starting the engine, the DDEC system has detected a major problem. When a problem is detected, the engine power will automatically begin to decrease gradually, followed by a shut-down after 30 seconds.

The engine emergency shutdown may be bypassed by using the engine stop OVERRIDE switch on the L.H. lower control panel.

**NOTE:** Once the engine is stopped, it cannot be restarted until the problem has been corrected. A diagnostic code will be stored in memory. The STOP engine indicator can be used to identify the problem. Refer to "Technical Information" section under "DDEC III Diagnostic Codes".

#### **10 - Fire Indicator (Engine Compartment)**

Illuminates if a fire is detected in the engine compartment.

**NOTE:** For fire extinguisher locations, refer to "Emergency Safety Features" section.

#### **11 - Fuel/Water Separator Indicator**

Illuminates when accumulated water in the fuel filter/water separator needs to be drained. Refer to "Care and Maintenance" section.

#### **12 - Kneeling/Hi-Buoy Indicator**

Illuminates during Kneeling or Hi-Buoy operation. The control switch is located on the L.H. control panel.

#### **13 - Low Air Conditioning (A/C) Pressure Indicator**

Illuminates when the A/C system pressure is too low. If the A/C pressure is too low, the compressor clutch is disengaged and the fan is deactivated.

**NOTE:** In cold weather, the low A/C pressure indicator may light up. This is not an abnormal condition.

#### **14 - Baggage Compartment DOOR AJAR Indicator**

Illuminates when at least one baggage compartment door is open.

#### **15 - Low Air Pressure Indicator (Secondary System)**

Illuminates when the secondary air system pressure drops below 66 psi (455 kPa).

#### **16 - Emergency/Parking Brake Indicator**

Illuminates when the emergency/parking brake is applied. The control valve is located on the R.H. lateral console.

#### **17 - High Temperature Retarder Oil Indicator**

Illuminates when the transmission oil temperature is too high. Disengage the retarder to allow the oil temperature to cool down.

#### **18 - Output Retarder Indicator**

Illuminates when the transmission hydraulic output retarder is operating. The control switch is located on the L.H. lower control panel.

#### **19 - Left Turn Signal Indicator**

Flashes when the left turn signals are turned on. Right and left turn signals are selected by operating the multifunction lever. Refer to "Steering Column" heading, in this section.

#### **20 - ENGINE DOOR AJAR Indicator**

Illuminates when one or both engine compartment doors are open.

#### **21 - Right Turn Signal Indicator**

Flashes when the right turn signals are activated. Right and left turn signals are selected by operating the multifunction lever. Refer to "Steering Column" section.

#### **22 - CHECK ENGINE Indicator**

Illuminates when the ignition switch is ON as a light bulb check. The light should turn off after five seconds. If the indicator remains on after five seconds, or comes on sometime after starting the engine, the Detroit Diesel Electronic Control (DDEC) system has detected a minor problem. The indicator will remain on until the malfunction has been corrected. A diagnostic code will be stored in the memory, and the indicator can be used to identify the problem. Refer to the "Technical Information" section, under "DDEC III Diagnostic Codes".

**23 - Low Fuel Level Indicator**

Illuminates when approximately 12 US gallons (45 litres) of fuel remain in the tank. After the light comes on, the remaining fuel will provide less than 60 miles (100 km) of travel. Do not exceed this distance. Refuel as soon as possible.

**24 - Preheating System Indicator**

Illuminates when the water heater is operating. Refer to "Other Features" section.

**25 - A/C-Heating Compartment Door Ajar Indicator**

Illuminates when the A/C-heating compartment door is open.

**26 - High A/C Pressure Indicator**

Illuminates when the A/C system pressure is too high. If the A/C pressure is too high, the compressor clutch is disengaged, but the fan remains activated.

**Instruments**

**NOTE:** Do not refer to dashboard instruments during adjustment procedures. Use calibrated gauges.

**27 - Air Pressure Gauge (Primary System)**

Indicates the primary air system pressure. The normal operating pressure is from 95 to 125 psi (655 to 860 kPa).

**28 - Air Pressure Gauge (Secondary System)**

Indicates the secondary air system pressure. The normal operating pressure is from 95 to 125 psi (655 to 860 kPa).

**29 - Transmission Oil Temperature Gauge**

Indicates the operating temperature of the transmission oil. The normal reading should be between 160°F to 250 °F (70°C to 120 °C).

**NOTE:** For coaches equipped with a transmission retarder, the transmission oil temperature may rise to a maximum of 330°F (165°C) if operated for extended periods.

**30 - Tachometer**

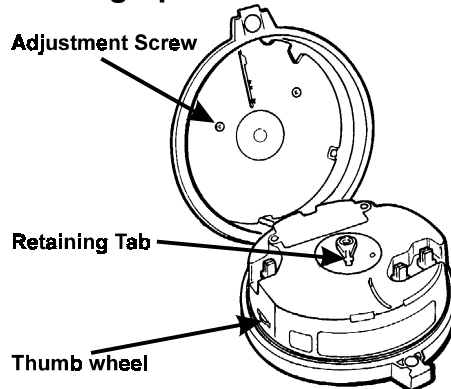
Indicates the operating speed of the engine in hundreds of revolutions per minute (rpm x 100).

The tachometer serves as a guide for gear shifting, and helps to prevent engine overspeeding when driving downhill with the Jacobs engine brake operating. The maximum allowable engine speed is 2,450 rpm.

**31 - Speedometer**

Indicates the coach speed in miles per hour (mph) and kilometres per hour (km/h).

The odometer registers the distance travelled in miles (US model) or kilometres.

**32 - Left blank for additional gauge****33 - Tachograph**

OEH3B332

**CAUTION:** THE TACHOGRAPH IS FACTORY PROGRAMMED. DO NOT CHANGE DIP-SWITCH POSITIONS.

**Speedometer**

Indicates coach speed in miles per hour (mph - US model) or kilometres per hour (km/h).

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The speed-warning light, located in the lower section of the dial, is set by the adjusting screw located in the left half of the tachograph body. The speed at which the warning occurs is displayed in a small window.

### **Odometer**

The odometer registers the distance travelled either in miles (US model) or kilometres.

### **Tachometer**

Indicates the operating speed of the engine in hundreds of revolutions per minute (rpm x 100). The tachometer serves as a guide for gear shifting, and helps prevent engine overspeeding when going downhill with the Jacobs engine brake operating. The maximum allowable engine speed is 2,450 rpm.

### **Clock**

The clock operates continuously, even if the main battery disconnect switches are set to the OFF position. To set the clock, open the tachograph cover using the key provided, and set the time using the thumb wheel on the L.H. side of the tachograph.

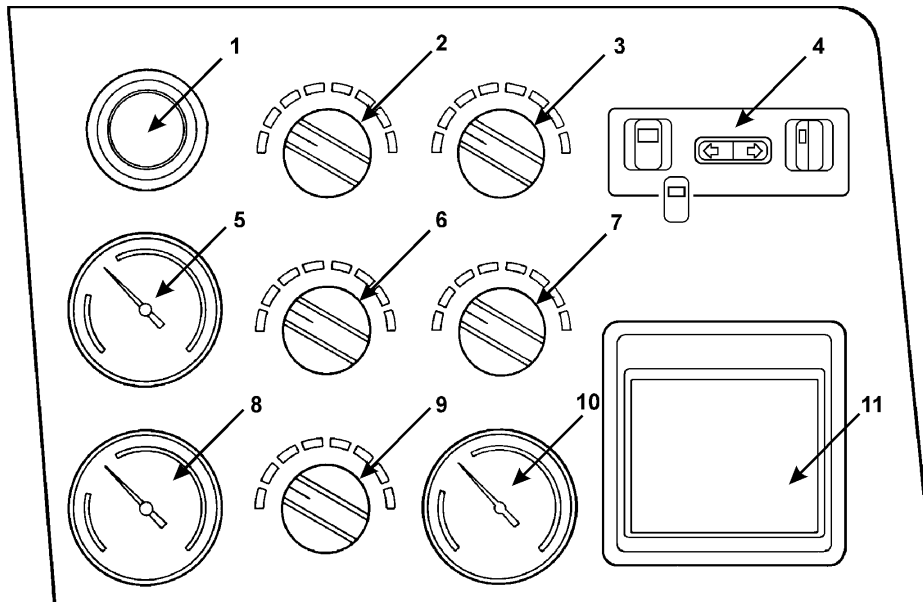
### **Diagram Chart**

The diagram chart recording speedometer and tachometer data covers a 24-hour period. Open the tachograph cover using the key provided, then install/exchange the diagram chart with the MPH or KM/H side facing up. Make sure the chart is correctly positioned on the drive boss before closing the cover.

**CAUTION:** TO PREVENT DAMAGE TO THE MECHANISM, DO NOT RUN THE ENGINE WITHOUT A DIAGRAM CHART OR WITH A DAMAGED ONE INSTALLED IN THE TACHOGRAPH. INSTALL A DUMMY PLASTIC CARD (PREVOST PART NO. 59-0251) IF THE COACH IS OPERATED WITHOUT A DIAGRAM CHART.



R.H. DASHBOARD



OEH3B334

**1 - Adjustable HVAC Register**

Refer to "Interior of coach" section.

**2 - Driver's A/C - Heating Recirculation and Fresh Air Control**

Turn control clockwise to provide maximum fresh air flow. When the outside temperature is very warm and maximum air conditioning is required, or when the outside temperature is very cold and maximum heating is required, turn the control counter-clockwise to shut-off the fresh air flow. This allows air recirculation inside the coach. To prevent contaminated air from coming inside the coach, select the full counter-clockwise position when driving the coach on dusty roads and in polluted areas.

**3 - Main Windshield Defroster Control**

Used to direct air flow into the main windshield defroster or dash louvres or both. Turn control clockwise to increase air flow in the defroster, and counter-clockwise to increase air flow in the dash louvres. Place the control in the center

position to direct air flow to both the defroster and the dash louvres.

**4 - Front Door Opening Control**

Press and hold the right or left rocker switch to open or close the front door.

**5 - Engine Coolant Temperature Gauge**

Indicates engine coolant temperature. The normal operating temperature is from 170°F to 195°F (76°C to 90°C).

**CAUTION:** THE ENGINE WILL OVERHEAT IF THE ENGINE COOLANT TEMPERATURE RISES ABOVE 215°F (102°C). PULL TO THE SIDE OF THE ROAD IF THE ENGINE OVERHEATS AND LET ENGINE COOL DOWN.

**6 - Driver's A/C - Heating Temperature Control**

Used to adjust the temperature for A/C - heating system in the driver's area. Turn control clockwise to increase temperature, and counter-clockwise to decrease temperature. Full heat will be supplied with the control at the extreme clockwise position.

**7 - Driver's A/C - Heating Ventilation Speed Control**

Turn control clockwise to the first position to activate the fan at the lowest setting. Turn the control successively clockwise for higher fan speed settings.

**8 - Fuel Level Gauge**

Indicates approximate quantity of fuel remaining in the fuel tank. The coach should not be operated when the reading is below 1/8 full.

**NOTE:** *The low fuel level indicator light illuminates on the dashboard when there is approximately 12 US gallons (45 litres) remaining in the tank. Depending on the coach speed and load, the maximum range when the indicator turns on is approximately 60 miles (100 km).*

**9 - Passenger A/C - Heating Temperature Control**

Used to adjust the temperature for "A/C" or "heating" mode in the passenger area. Turn the control clockwise to increase the temperature, and counter-clockwise to decrease the temperature. A red **LED** located in the lower console, below the inside temperature thermometer, will illuminate when the "heating" mode is operating. A green **LED** will illuminate when the "A/C" and the "dehumidification" modes are operating.

**NOTE:** *The red and green LED's will both illuminate to indicate that temperature and humidity adjustment is required.*

**NOTE:** *To maintain ambient temperature, adjust control until both LED's go out.*

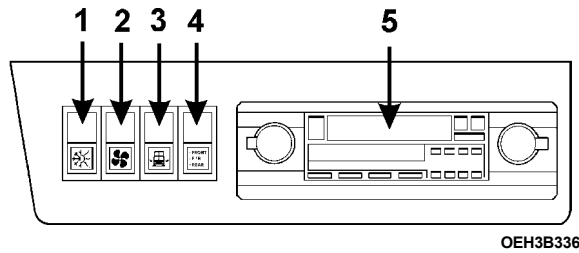
**10 - Differential Oil Temperature Gauge**

Indicates differential oil temperature. The normal operating temperature is below 250°F (120°C).

**CAUTION:** *THE DIFFERENTIAL OVERHEATS WHEN THE DIFFERENTIAL OIL TEMPERATURE RISES ABOVE 250°F (120°C).*

**11 - Parcel Tray**

**R.H. LOWER CONTROL PANEL**



OEH3B336

**1 - Passenger A/C - Heating Switch**

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

**2 - Ventilation System**

Push down rocker switch to activate the ventilation system.

**3 - Fresh Air Damper Switch**

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

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

**4 - Speaker Selector Switch**

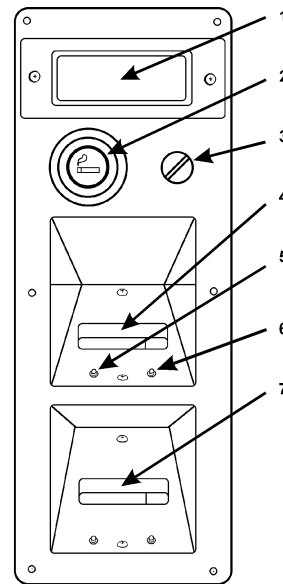
Push up rocker switch to operate the speakers in the driver's area only. Push down the rocker switch to operate the speakers in the passenger area only. Place the rocker switch in the central position to operate the speakers in both areas.

**5 - Removable AM/FM Stereo Cassette Receiver with CD Changer Remote Control**

The system may include a removable AM/FM radio, cassette tape player, CD changer remote control, electronic anti-theft code system and PA system. Operating instructions are provided in the system user's manual, which is included with the technical publication package supplied with the coach.

**NOTE:** When the video switch is activated, the passenger area speakers are disconnected from the radio.

**LOWER CONSOLE**



OEH3B338

**1 - Ashtray**

Refer to "Interior of coach" section.

**2 - Cigarette Lighter**

Refer to "Interior of coach" section.

**3 - PA System Volume Control**

Refer to "Interior of coach" section under "Microphone Outlets".

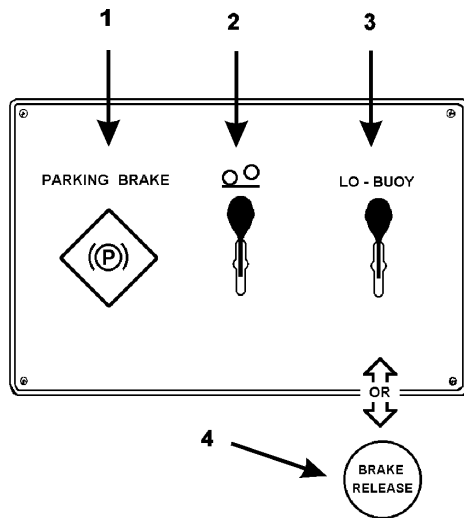
**4 - Inside Temperature Thermometer**

**5 - Green LED for "A/C" Mode**

**6 - Red LED for "Heating" Mode**

**7 - Outside Temperature Thermometer**

**R.H. LATERAL CONSOLE**



OEH3B340

**Control Valves**

**1 - Parking Brake**

Spring-loaded parking brakes are applied by pulling up the control valve knob on the R.H. lateral console. Refer to "Combination Emergency and Parking Brakes" in this section.

**2 - Tag Axle Up or Unloaded (Optional)**

Depending on the valve position, the tag axle is raised or lowered. Refer to "Other Features" section.

**3 - Low-Buoy**

The coach can be equipped with a Low-Buoy option. This feature can be used to lower the coach by about 4 inches (100 mm) depending on the valve position. Refer to "Other Features" section.

**4 - Parking Brake Override**

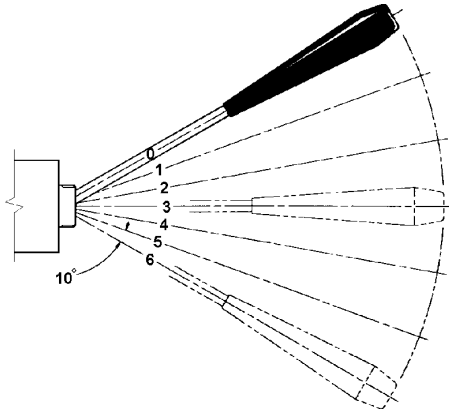
If the primary system air pressure drops below 40 psi (276 kPa) during normal operation, the spring-loaded parking brakes will be immediately applied at full capacity on the drive axle to stop the coach.

If this occurs, determine and correct the cause of the pressure loss before proceeding.

The coach may be equipped with an optional parking brake release system that can be used to override the parking brakes so that the coach can be driven for a short distance to a safe parking area. To operate the optional parking brake release, push and hold down the control knob located on the R.H. lateral console while driving.

**STEERING COLUMN CONTROLS**

**Transmission Output Retarder**



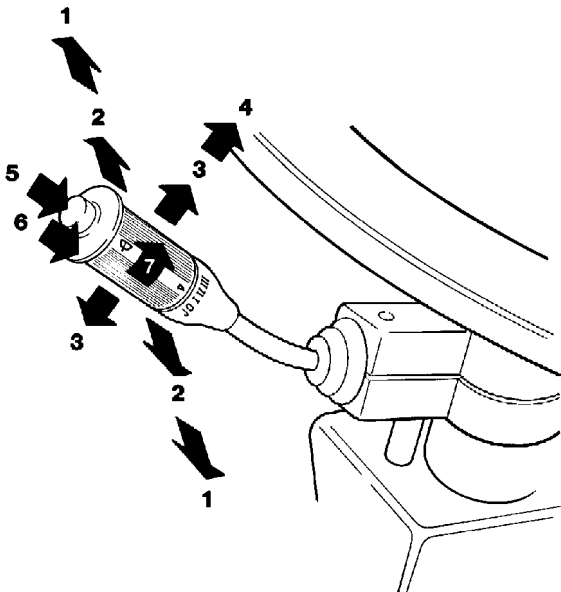
RETARDER HAND LEVER

OEH3B346

Refer to "L.H. Lower control panel" in this section.

**Multifunction Lever**

The multifunction lever is used to operate the following:



MULTIFUNCTION LEVER

OEH3B346

**1 - Turn Signal**

Move the lever up to the second detent position to signal a right turn, and down to the second detent position to signal a left turn. When the turn is completed, the lever automatically returns to the horizontal position.

**2 - Lane Change Signal**

Move the lever part way to the first detent position and hold. The lever returns to the "OFF" position when released.

**3 - Headlight Beam Changer**

Select high beams by pushing the lever toward the dash. Select low beams by pulling the lever rearward.

**4 - Headlight Flasher**

To flash high beams, pull the lever completely rearward, then release.

**5 - Courtesy-Type Blinkers**

Clearance and parking lights can be turned on or off by pressing the button located on the lever tip.

**6 - Washer Control**

Push the external ring at the end of the lever toward the steering column to activate the windshield washers. When the external ring is released, the washers will stop immediately but the wipers will continue to wipe two more times to dry the windshield.

**WARNING:** BEFORE USING THE WINDSHIELD WASHER IN COLD WEATHER, HEAT THE WINDSHIELD WITH THE DEFROSTER TO PREVENT ICING AND TO PREVENT REDUCED VISIBILITY.

**CAUTION:** TO AVOID DAMAGING THE PUMP MECHANISM, DO NOT USE THE WINDSHIELD WASHER WHEN THE WASHER FLUID LEVEL IS LOW.

## 7 - Windshield Wipers

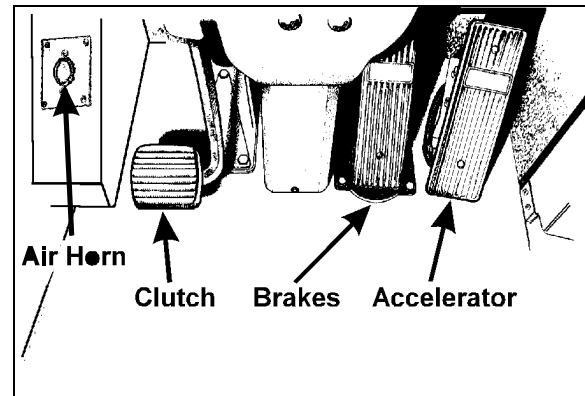
Turn the lever forward to activate both windshield wipers. The first position operates the wipers at low speed and the second position operates the wipers at high speed. Turning the lever rearward will operate the wipers in the intermittent mode.

**CAUTION:** TO AVOID SCRATCHING THE WINDSHIELD, DO NOT OPERATE THE WIPERS WHEN THE WINDSHIELD IS DRY. TO AVOID DAMAGING THE WIPER MOTOR, LOOSEN WIPER BLADES THAT MAY BE FROZEN TO THE WINDSHIELD BEFORE OPERATING THE WIPERS.

## Electric Horn

Use the electric horn in cities and built-up areas. Use the air horns only on the highway. The horn is activated by pressing the button located in the center of the steering wheel.

## FOOT-OPERATED CONTROLS



FOOT-OPERATED CONTROLS

OEH3B348

## Air Horns

Use the air horns only on the highway. Air is released and the horn is activated when the push-button valve located on the floor at the driver's left foot is depressed.

## Brakes

### Service Brakes

The coach is equipped with a dual braking system. The front brakes operate independently from the drive and tag brakes. The dual braking 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. Braking increases with the amount of pressure applied to the foot pedal. Refer to "Other Features" section under "ABS Brake (Antilock Braking System)". When the brake pedal is depressed, the brake lights turn on automatically.

For safe and effective braking, the air system pressure should reach at least 95 psi (655 kPa) in both the primary and secondary circuits.

A warning light will illuminate and a buzzer will sound when the air pressure in either the primary or secondary circuits drops below 70 psi (483 kPa). If this occurs, stop the coach, determine and correct the cause of the pressure loss before proceeding.

**WARNING:** IMMEDIATELY REPORT ANY BRAKE SYSTEM PROBLEM TO MAINTENANCE SERVICE PERSONNEL.

**WARNING:** DO NOT "FAN" OR "PUMP" THE BRAKE PEDAL. THIS PRACTICE DOES NOT INCREASE BRAKE SYSTEM EFFECTIVENESS, BUT RATHER REDUCES SYSTEM AIR PRESSURE CAUSING REDUCED BRAKING EFFECTIVENESS.

**CAUTION:** "RIDING" THE BRAKE BY RESTING THE FOOT ON THE BRAKE PEDAL WHEN NOT BRAKING CAN CAUSE ABNORMALLY HIGH BRAKE TEMPERATURE, CAN DAMAGE AND CAUSE PREMATURE WEAR OF BRAKE COMPONENTS, AND REDUCE BRAKE EFFECTIVENESS.

**Combination Emergency and Parking Brakes**

Refer to "Other Features" section under "Combination Emergency and Parking Brakes".

**Accelerator Pedal**

Controls engine RPM.

**NOTE:** The accelerator pedal will not operate when the front door is open.

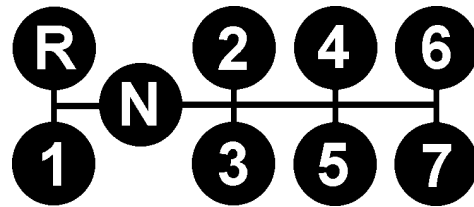
**Clutch Pedal**

Used to engage and disengage the manual transmission.

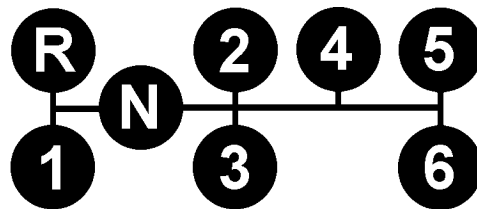
**MANUAL TRANSMISSION  
6- OR 7- SPEED**

The manual transmission has 6 or 7 forward speeds (including creeper) and one reverse.

**NOTE:** A Spicer PS145-7A, 7-speed transmission, is specified with the 12.7 liter, series-60, 400-horsepower engine and a PS130-6B, 6-speed, is specified with the optional 11.1 liter, 325-horsepower engine.



7-SPEED SHIFTING PATTERN



6-SPEED SHIFTING PATTERN

OEH3B350

The transmission shift lever located to the right of the driver's seat is used to select gears. The coach is equipped with a safety switch to prevent accidental starter engagement if the shift lever is not in the neutral position.

When shifting from neutral to first or reverse gear, depress the clutch pedal fully to activate the clutch brake. This makes it easier to shift from neutral to forward or reverse.

**CAUTION:** TO AVOID DAMAGING THE CLUTCH BRAKE MECHANISM, DO NOT FULLY DEPRESS THE CLUTCH PEDAL WHEN THE COACH IS IN MOTION.

## **Upshifting**

Always start moving the coach forward with the transmission in first gear, then shift to second, third, fourth, fifth, sixth and seventh gears (if applicable). Do not skip gears. Do not shift to the next higher gear until the engine speed has reached 1,900 rpm. Double clutching is recommended for shifting gears.

## **Downshifting**

Double-clutching is also recommended for downshifting. Always change to a lower gear to avoid engine lugging. Use lower gears when driving uphill or downhill, and when driving on ice, snow or mud (minimum 1,400 rpm).

Use lower gears when driving downhill to make full use of engine compression. Never let the engine operate above 2,450 rpm.

Under normal driving conditions, it is not always necessary to downshift through all gears. Downshift from seventh to first gear after bringing the coach to a complete stop.

**CAUTION:** NEVER LET THE ENGINE OPERATE ABOVE 2,450 RPM.

**CAUTION:** ALWAYS LEAVE THE SHIFT SELECTOR IN NEUTRAL WHEN THE COACH IS PARKED.

**CAUTION:** TO PREVENT PREMATURE CLUTCH WEAR, ALWAYS START DRIVING THE COACH WITH THE TRANSMISSION IN FIRST GEAR.

**CAUTION:** BEFORE ASCENDING OR DESCENDING A LONG OR STEEP GRADE, REDUCE SPEED AND SHIFT INTO A LOWER GEAR. USE LOWER GEARS TO CONTROL SPEED AND AVOID PROLONGED OR FREQUENT BRAKING WHICH WILL RESULT IN BRAKE OVERHEATING AND REDUCE BRAKING EFFECTIVENESS. TO REDUCE BRAKE WEAR, USE THE JACOBS ENGINE BRAKE WHEN DESCENDING A STEEP GRADE.

**WARNING:** SHIFTING INTO LOWER GEARS ON SLIPPERY SURFACES SHOULD BE DONE WITH CAUTION. SUDDEN ENGINE COMPRESSION BRAKING COULD CAUSE DRIVE WHEELS TO LOCK-UP, AND MAY RESULT





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## OTHER FEATURES

### **DETROIT DIESEL ELECTRONIC CONTROL (DDEC) SYSTEM**

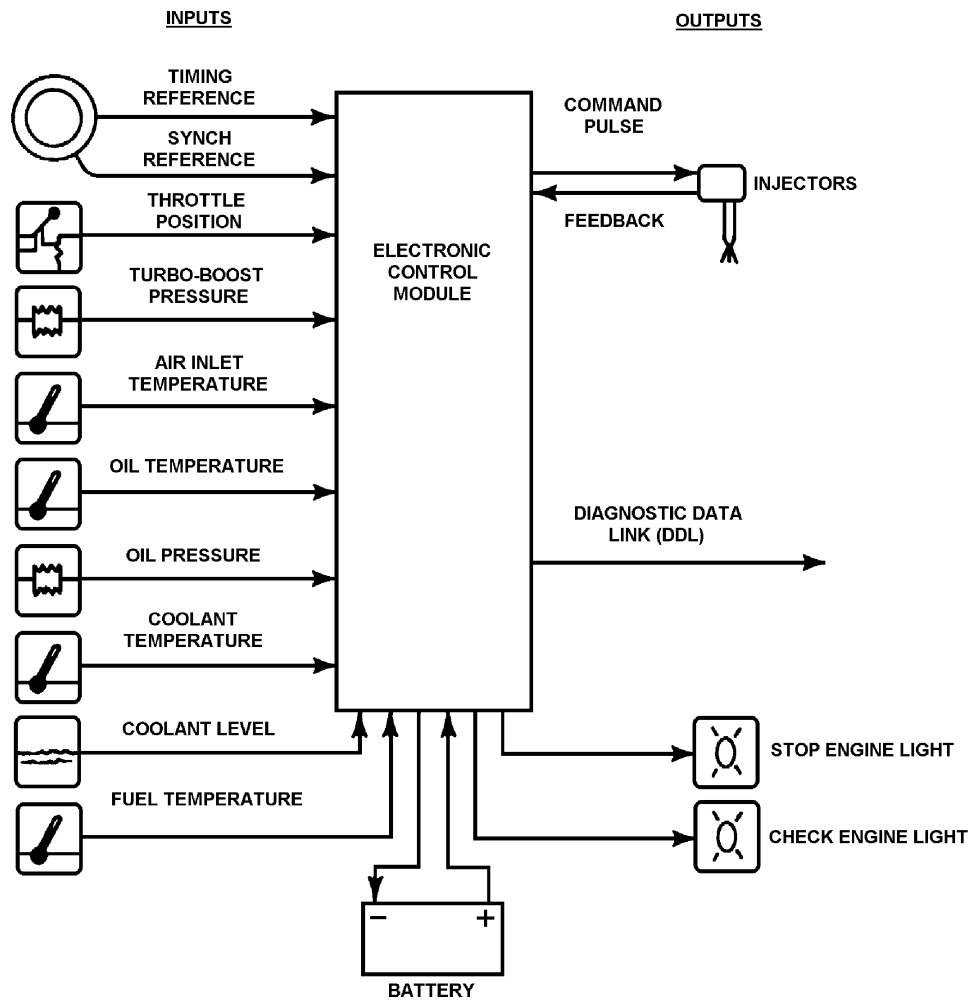
DDEC is an advanced-technology electronic fuel injection and control system for Detroit Diesel engines. As an integral part of the engine, the DDEC system provides a number of performance features and driver benefits; including, improved fuel economy and performance, reduced cold smoke, and reduced maintenance 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, which provides central processing and control of the DDEC system, contains the following:

- A microprocessor that continuously monitors and analyzes the engine's performance using sensors during engine operations.
- Flash Random Access Memory (FRAM) that stores ECM runtime software, which contains engine control instructions.
- 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, and an engine protection system.

The Electronic Unit Injectors (EUI) operate on a principle similar 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 of quickly diagnosing system malfunctions with 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 indicators 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 facilitate troubleshooting and obtain pertinent data logged in the ECM (Electronic Control Module) memory, a Diagnostic Data Reader (DDR) can be used (not supplied by manufacturer). Plug the DDR into the receptacle on the bottom of the side panel of the L.H. control panel. You can also momentarily depress the stop engine OVERRIDE switch on the L.H. lower control panel (refer to the "Controls & Instruments" section). Active and inactive codes will flash respectively the STOP ENGINE and the CHECK ENGINE indicators. Refer to "Technical Information" section under "DDEC III Diagnostic Codes".



SHEMATIC DIAGRAM OF DDEC III SYSTEM OEH3B402

## DETROIT DIESEL DATA HUB

Detroit Diesel Corporation has introduced DDEC III, the third generation of its electronic engine control system. The advanced electronic hardware and control software that has been utilized in DDEC III has significant capabilities beyond what is required to efficiently manage the engine. This capability has been utilized to create a family of products called Data Hub. Refer to "Controls & Instruments" section. Data Hub is a data acquisition and analysis system that is designed to provide the users of DDEC equipped engines with a tool for achieving improved performance and reduced operating costs.

There are several levels of capability available with Data Hub. This is accomplished by combining sophisticated software with the DDEC ECM or additional on-board hardware.

### Data Hub Software

There are two versions of Data Hub software which provide different levels of capability. Both versions are designed with user-friendly screens and menus. Operation is intuitive and may be accomplished with minimum training. On-line HELP is also available to assist in the operation of each command.

### **Trip Record ACcess (TRAC) Data Extraction System Software**

TRAC is a PC-based software package that extracts operational data stored in the Engine Electronic Control Module (ECM). The extracted data can be used to automate fleet record keeping or analyzed to evaluate fleet performance in key areas; such as, miles driven, fuel consumed, engine hours, idle/PTO time, etc. Fault codes and ECM set-up parameters can also be reviewed to aid in troubleshooting, when necessary.

TRAC is designed for use with all Detroit Diesel engines that are equipped with the DDEC II and new DDEC III ECM. In addition, it may be used to extract stored data from other ECMs that are SAE.TCM J1708 compatible. Once the data has been extracted from the ECM, PC-based tools such as spreadsheets or databases can be utilized to organize the data for effective management reporting and decision-making.

The TRAC system consists of: PC software and manual, TRAC translator PC interface, data extraction cable and diagnostic connector adapter.

### **Advanced Data Hub Analysis Software**

The "Advanced Data Hub analysis software" is a full-featured "smart system" that handles the collection, analysis and reporting of operational data generated by all versions of the Data Hub system. The software is designed reduce the user's time spent on data analysis. The powerful analysis and reporting capabilities of the software provide the user with an overview of the fleet status which either demonstrates that performance is within guidelines or suggests necessary corrective action. This results in a minimum time expenditure for the fleet manager.

The "Executive Summary" reduces next performance to a number of trends or benchmarks chosen by the user. Trends are based on both comparisons to like periods from previous years and recent performance periods. This approach isolates seasonal variation while providing the informational basis for tactical decisions. Examples of trend data include items; such as, miles, engine hours, fuel used, idle time,

cruise time, diagnostic message frequency, etc. Both absolute and percentage values are presented. The "Executive Summary" approach eliminates the need to review a large number of detailed reports on a daily basis to determine the level of performance, which represents a significant advancement over most of the "trip recorders" currently available. Data from the "Executive Summary" may also be exported to other applications for combination with data from other areas of the business.

For a more detailed review of next performance, the "Exception Reporting" capability of the software may be utilized. The user identifies types of data and performance exception limits for each. The software then screens data gathered over a selected time period and highlights "exceptions" for the user. Typically, the exceptions result in corrective action or a more detailed analysis to determine the reason for the exception.

Data may also be presented in a greater level of detail by utilizing the "Summary Reporting" capability of the software. This allows the user to review specific types of data, which are selected from a list of available types, organized by vehicle or driver (requires Data Hub hardware). The time period covered by the summary is also user-selectable. This feature is commonly used to provide periodic informational reports to fleet managers. The user-selectable nature of the data contain only the data of interest for a specific manager.

Finally, the software provides a "User Interactive" capability which allows the user to rapidly sort through increasing levels of detail from the computer keyboard. This feature is very useful in investigating the occurrence of specific events. Data generated by the Data Hub system may also be easily exported to other applications for additional processing, which allows users to integrate the data into mainframe-based programs.

## **Data Hub Hardware**

The Data Hub hardware consists of a range of products that the user can select to configure a system that will meet their needs without requiring investment in unwanted features. Conversely, this modular approach allows the user to easily add capabilities at a later date if requirements change. All Data Hub hardware has a wide input voltage range, which allows it to be powered directly by sources of up to 24 volts.

## **DDEC III ELECTRONIC CONTROL MODULE (ECM)**

The simplest implementation of Data Hub does not require the addition of any hardware to the vehicle. Instead, basic Data Hub features built into the DDEC III ECM are utilized. The ECM stores data such as miles, fuel used, idle time, PTO time, idle fuel, cruise time and cruise fuel on a life-to-date, trip and daily basis. Daily recording is limited to a maximum of two days.

Selected parameters, such as oil pressure, are measured periodically under specified conditions. The measurements are analyzed over long time periods, which allows the system to detect degradation in performance and warn the user prior to component failure.

The average life of up to ten components may be specified in terms of miles, fuel used, time, engine RPM and engine hours. The ECM tracks the specified factors and automatically alerts the user when the average lifetime of the component has been used. An event log is also stored which indicates the vehicle status (e.g., off, idle, in motion) at 15 minute intervals.

Data stored in the DDEC III ECM is extracted by connecting a cable from a PC to the vehicle's diagnostic connector via an RP1202 adaptor module. Data extraction takes about 20 seconds.

## **Data Logger**

A Data Logger may be added to the system to expand the recording capability available from the ECM. A range of memory capacities is planned with up to a maximum of 640K possible. This will allow expansion of daily recording to several

months. Additional features are also available when a Data Logger is included in the system.

The Data Logger adds an Event Log, which details the date and time of various trip events (e.g., trip legs and stops, speeding and idling events, diagnostic messages). Detailed alert recording documents 13 engine parameter values for 1 minute prior to the occurrence of selected diagnostic messages to aid in troubleshooting. This is especially useful for diagnosing intermittent conditions. Detailed incident recording stores speed, RPM, brake, cruise and throttle status at 1 second intervals for a continuous 3 minute period for use in incident reconstruction.

The Data Logger receives its data via the SAE J1708 data link. This provides the ability to monitor and record data provided by any J1708 compatible device, such as a non-DDEC ECM, an electronic transmission, anti-lock brakes (ABS) or smart sensors. A battery-backed clock/calendar is also included to provide accurate reference points for recorded data. The current date and time may also be requested via J1708 for use by other devices.

The Data Logger has enhanced interface capability, which allows it to operate the Driver Data Display and provides compatibility with a variety of data extraction options. There is also a digital output channel that may be used to drive an audible or visual signalling device. It is designed for installation in a moisture-protected environment.

## **ProDriver(TM)**

Prodriver (TM) is a dashboard-mounted graphic device that displays and records operational data transmitted by the Detroit Diesel Electronic Controls (DDEC) and other electronically controlled engines on the SAE J1708 diagnostic data link. ProDriver utilizes a vacuum fluorescent (VF) display for wide viewing angles and excellent visibility in all ambient light conditions. It provides automated intensity control of the VF display, based on the dashboard instrument panel lights for improved driver convenience.

Prodriver has many driver friendly features designed to provide instantaneous feedback to the driver. This enables the driver to understand the effect of actions on engine and vehicle

performance. There are two display screens automatically shown, which offer real-time feedback based on the vehicle activity. When in motion, the "Fuel Economy" screen displays fuel economy achieved versus the fleet's target. When stopped, "Idle Percentage" time versus fleet's target is indicated. Should an alert message be sent out by the ECM, the driver will be shown what is wrong and how the engine power will change.

Additional data available from ProDriver includes:

- Instantaneous and average fuel economy
- Trip time, miles, fuel used, fuel economy, average speed
- Driving time, percentage, miles, fuel used, fuel economy
- Idle time, fuel and percentage
- Cruise time, percentage, miles, fuel used, fuel economy
- Top gear time, percentage, miles, fuel used, fuel economy
- VSG (previously PTO) time, fuel used and percentage
- Overspeed time and percentage for two speed thresholds
- Over-rev time and percentage
- Maximum vehicle speed and RPM
- Coasting time and percentage
- Automated oil change interval tracking
- Hard braking incident records
- Driver initiated incident records
- Stop and check engine code logs

ProDriver has many additional features and benefits. ProDriver can be combined with other members of Data Hub line of products from Detroit Diesel. This combination presents a powerful vehicle information management system

and advanced communication business solutions for fleet operators.

### **Wireless Data Collection Systems**

The basic method of extracting data from the Data Hub System is by connecting a cable to the J1708 or RS232 high speed data connections provided with the system.

Significant automation and convenience can be achieved by utilizing one of the several wireless data collection techniques that are supported by Data Hub. A broad range of approaches is available to provide an option that will meet the user's specific needs.

Smart Card technology is available for partial data extraction from the Data Logger by adding a Smart Card Interface module to the Data Hub system. Current limitations in card memory capacity will restrict the user to gathering only selected data with the card. The credit card-sized device has been recently introduced for fuel purchase authorization and driver communication on a nationwide basis, with a system of 1,500 truck stops equipped with Smart Card interfaces.

Several long range communication systems are currently available that are routinely used by trucking companies for driver communication and vehicle location. These systems rely on various technologies (e.g., cellular, radio, satellite). The Data Logger may be interfaced with these existing systems for partial data extraction. Complete extraction is not recommended due to the cost of the communication time.

The use of Data Hub is described in the instruction manual furnished with each tool.



## **WORLD TRANSMISSION (WT) ELECTRONIC CONTROLS (For Automatic Transmission with Push-Button Shift Selector)**

The World Transmission (WT) electronic controls comprises four major elements: Electronic Control Unit (ECU), Throttle Position Sensor (TPS), speed sensors, and shift selector. Refer to "Controls & Instruments" section. These components work together to electronically control the transmission functions. The throttle sensor, speed sensors, 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 WT electronic controls monitor the system for abnormal conditions.

When one of these conditions is detected, WT electronic control system is programmed to automatically respond in a manner which is safe for the driver, the vehicle, and the transmission. The WT electronic control system turns on the DO NOT SHIFT light on the central dashboard which serves as a fault indicator.

To enhance troubleshooting, and to allow interrogation of the ECU (Electronic Control Unit) for valuable service information, the shift selector display or a diagnostic tool (not supplied) by the manufacturer) can be used. For information about reading and interpreting diagnostic codes, refer to "Technical Information" section under "World Transmission (WT) Diagnostic Codes".

## **JACOBS ENGINE BRAKE**

The Jacobs engine brake is a diesel engine retarder that uses engine compression to aid in slowing and controlling the coach. When activated, (refer to "Controls & Instruments" section) 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-slowng device, not a vehicle-stopping device. It is not a substitute for the service braking system. The coach's service brakes must be used to bring the coach to a complete stop.

Effectiveness of the engine brake system will vary according to the transmission range in use. The engine brake system is more effective in lower ranges and at higher engine speeds.

**WARNING:** *WHEN DESCENDING SIGNIFICANT GRADES, USE SERVICE BRAKES AS LITTLE AS POSSIBLE. IF ENGINE DOES NOT SLOW COACH TO A SAFE SPEED, APPLY SERVICE BRAKES AND SHIFT TO A LOWER RANGE. LET THE ENGINE (AND ENGINE BRAKE) SLOW THE COACH. KEEP BRAKES COOL AND READY FOR EMERGENCY STOPPING.*

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

## **TRANSMISSION RETARDER**

A retarder is not a brake but a device that helps to reduce the speed of a vehicle. It improves vehicle control, increases driving safety, and permits more economical operation. The retarder provides slowing power when it is most needed; such as, when descending mountain roads, in stop-and-go traffic, and on crowded freeways.

The retarder is provided with a switch on the L.H. lower control panel and a lever on the directional column (refer to "Controls & Instruments" section). It will operate two different ways: when the accelerator pedal is released; or, when the accelerator pedal is released and the break pedal is depressed - depending if the lever is used. Extended use will raise the transmission oil temperature.

The retarder helps to reduce speed on grades without using the vehicle conventional service braking system. This virtually eliminates brake overheating and reduces the risk of a runaway vehicle. A retarder greatly increases the service life of brake pads and discs resulting in reduced brake maintenance costs.

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

**NOTE:** *For coaches equipped with the Antilock Braking System (ABS), if the wheels start to lock-up on slippery roads, the output retarder automatically will become deactivated until the wheels roll freely.*

## **ABS BRAKE (Anti-lock Braking System)**

The purpose of the anti-lock braking system is to maintain vehicle stability and control during braking, and to minimize the stopping distance regardless of road conditions.

On slippery roads, and more generally in emergency situations, over-braking frequently induces wheel locking. An anti-lock braking system provides maximum braking performance while maintaining adequate control 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 wheel parameters 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 the tire and road surface.

In this way, the coach is brought to a stop in the shortest possible time while remaining stable and under the driver's control.

**CAUTION:** *VEHICLES BEHIND ABS-EQUIPPED COACHES MAY NOT BE ABLE TO BRAKE AS FAST ON SLIPPERY ROADS. WHENEVER POSSIBLE, WARN OTHER DRIVERS BY DEPRESSING THE BRAKE PEDAL LIGHTLY SEVERAL TIMES BEFORE BRAKING.*

## **KNEELING SYSTEM**

This system enables passengers to get on and off the coach without any difficulty by lowering the front end. The system operates rapidly; taking only 5 seconds to lower and 9 seconds to raise.

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

To operate, stop the coach, set the transmission to neutral(N), then push down the rocker switch located on the L.H. side control panel. (Refer to "Controls & Instruments" section). The parking brake will be automatically applied and a warning flasher will indicate that the front of the coach is being lowered.

To raise the front of the coach to its normal height, push up the rocker switch. The front end will rapidly raise up. Release the parking brake, and shift transmission to the desired range.

**CAUTION:** *AVOID PARKING THE COACH TOO CLOSE TO THE SIDEWALK OR OTHER OBSTACLES THAT COULD DAMAGE THE COACH DURING KNEELING.*

**NOTE:** *The kneeling system does not operate when the coach is travelling over 5 mph (8 km/h). Consequently, the driver cannot inadvertently operate the kneeling system at higher speeds.*

## **HIGH-BUOY**

The coach can be equipped with a front Hi-Buoy or full Hi-Buoy. The front Hi-Buoy system has the same functions as front kneeling. It enables passengers to get on or off the coach easily by raising the front end about 4 inches (100 mm). The front Hi-Buoy is combined with front kneeling to increase flexibility of the system. Refer to "Controls & Instruments" section.

The full Hi-Buoy system raises the coach about 4 inches (100 mm). It can be used to enable passengers to get on or off the coach easily, and to safely travel roads with high obstacles. Refer to "Controls & Instruments" section.

**NOTE:** *The Hi-Buoy system does not operate when the coach is travelling over 5 mph (8 km/h). Consequently, the driver cannot inadvertently operate the Hi-Buoy system at higher speed.*

## **LOW-BUOY**

This system lowers the coach about 4 inches (100 mm). It enables the coach to drive through underpasses where the height is less than 12 feet (3.7 m).

Operation of the Low-Buoy is controlled by a valve located on the right lateral console. The valve can be switched to either LOW-BUOY or NORMAL positions. The coach will be automatically lowered. A warning light on the central dashboard will indicate that the coach is being lowered. Refer to "Controls & Instruments" section.

**CAUTION:** *AVOID PARKING THE COACH TOO CLOSE TO THE SIDEWALK OR OTHER OBSTACLES THAT COULD DAMAGE THE COACH DURING THE OPERATION OF THE LOW-BUOY.*

**NOTE:** *The Low-Buoy system does not operate when the coach is travelling over 5 mph (8 km/h). Consequently, the driver cannot inadvertently operate the Low-Buoy system at higher speeds.*

## **RETRACTABLE TAG AXLE**

Operation of the tag axle is controlled by a valve located on the right lateral console. The valve can be switched to either the WHEELS UP or WHEELS DOWN position. The axle will be automatically raised or lowered by air pressure according to the valve position. Refer to "Controls & Instruments" section.

The tag axle service brakes and parking brakes operate only when the tag axle is in the WHEELS DOWN position. Never lower the tag axle while the coach is moving. When the tag axle is in the WHEELS UP position, the corresponding indicator light will illuminate, and a beep will sound to alert the driver to the tag axle position. The tag axle can be raised in tight manoeuvring areas like in a parking lot or to make it easier to turn a short corner. The tag axle shortens the wheelbase and allows tighter turning. Raising the tag axle transfers extra weight and additional traction to the drive wheel providing improved control on slippery roads.

**CAUTION:** *ALWAYS RAISE THE TAG AXLE BEFORE RAISING THE COACH TO PREVENT DAMAGE TO THE SUSPENSION.*

**CAUTION:** *NEVER LOWER THE TAG AXLE WHILE COACH IS MOVING.*

## **TAG LOAD RELEASE SYSTEM (TLR)**

This standard system allows automatic unloading of the tag axle air springs, without raising the axle, whenever coach speed drops to less than 8 mph (13 km/h) and steer angle exceeds 22.5° (1 1/4 turns of the steering wheel). The system transfer automatically the tag axle load to the drive axle. It reduces tag wheel shearing to convey shorter turning radius for tighter cornering and remarkable agility in close-quarter manoeuvring, whether backing up or moving forward.

## **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 facilitate starting and to provide rapid operation of the interior heating system. It can also be used during engine running to maintain coolant heat and to maintain the interior heating temperature. Refer to "Controls & Instruments" section under "Water Heater Timer" of the "L.H. Control Panel".

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

### **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 begins operating. The fuel metering pump delivers fuel in precise amounts 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, the glow plug and ignition coil are switched off.

The hot combustion gas is diverted at the end of the flame pipe. The hot gas is then forced through the indirect heating surfaces of the heat exchanger. The heat exchanger transfers the heat to the water passing through the heat exchanger.

The heater is thermostatically controlled and operates intermittently (i.e., the switched-on time of the burner varies depending on the heat requirement). The water temperature is controlled by the setting of the built-in water thermostat.

The water circulation pump remains in operation as long as the heater is operating; even during the regulated intervals and during the delayed cut-out 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 cut-out period). Ignition takes place after the delayed cut-out time expires.

## Switching Off the Heater

The fuel supply is interrupted when the heater is switched "off". This causes the flame to go out, and at the same time a delayed cut-out of 2.5 minutes begins. The circulating combustion air flushes the remaining combustion gases out of the chamber and cools off the heated parts on the exhaust side of the heat exchanger. The water circulation pump continues to transfer the latent heat present in the heat exchanger, thus preventing hot spots. Once the delayed cut-out time expires, both the combustion air blower and the water circulation pump switch-off automatically. A cut-out will automatically take place in case of preheater failure.

## HEATING, VENTILATION AND AIR CONDITIONING

The coach interior is pressurized by an A/C - heating system. Refer to "Controls & Instruments" section. Air flow and controls divide the coach into two areas:

- Driver area with defroster
- Passenger area

Pressurization of the coach interior helps to prevent dust and moisture from entering.

Each area is fed fresh air and has a separate return air and discharge air duct. The passenger's area also has a fan in the lavatory to circulate fresh air and for heating and cooling. The lavatory fan serves as the main air exhaust for the coach.

**WARNING:** DO NOT LET TEMPERATURE IN THE DRIVER'S AREA RISE ABOVE 72°F (22°C). WARM TEMPERATURES MAY CAUSE DROWSINESS AND AFFECT ALERTNESS WHILE DRIVING. KEEP TEMPERATURE BETWEEN 68°F TO 72°F (20°C TO 22°C).

**NOTE:** To operate the air conditioning system when the coach is stationary, run engine at fast idle. When the A/C system is running, keep windows and door closed.

To prevent battery run-down, the A/C and heating systems will not operate if the charging system is not working properly.

When the A/C system is running, park the coach at least 4 feet (1,5 m) from other vehicles or buildings to allow sufficient air flow through the condenser core.

## SAFETY LIGHTS

### Daytime Running Lights

The low beams come on automatically at reduced intensity when the engine is started and the parking brake is released. This daytime running light system provides added safety by making the travelling coach visible to other drivers.

The lights are not used when:

- Engine is stopped
- Parking brake is applied
- The exterior lighting switch is turned to the second position.

**WARNING:** DO NOT DRIVE AT NIGHT WITH THE DAYTIME RUNNING LIGHTS. FOR NIGHT DRIVING, TURN ON THE HEADLIGHTS BY DEPRESSING THE EXTERIOR LIGHTING ROCKER SWITCH TO THE SECOND POSITION. THE DAYTIME RUNNING LIGHTS DO NOT PROVIDE SUFFICIENT ILLUMINATION FOR SAFE DRIVING AT NIGHT.

### Fog Lights

Optional halogen fog lights may have been installed (refer to "Controls & Instruments" section). Fog lights provide better visibility in fog and precipitation, and improve the visibility immediately in front of the coach. They also provide added safety.

**NOTE:** Some states or provinces may restrict the use of fog lights. Verify local state or provincial regulations before using.

### Docking and Cornering Lights

The coach may be equipped with up to four halogen docking and cornering lights. Two lights are installed at the front of the coach, on each side as standard equipment. Two optional lights can be installed on each side at the rear of the coach. The front lights illuminate at the same time as the turn signal flashers to increase lateral visibility while turning. The rear lights illuminate automatically when the reverse (R) range is selected to increase visibility while backing-up or docking the coach.

## COMPARTMENT LIGHTING

Baggage, engine, front left service, main power compartment, front and rear electric compartment lights are automatically turned on when the compartment door is opened. An indicator light on the central dashboard will illuminate when a compartment door is open.

## BACK-UP ALARM

The back-up alarm alerts pedestrians and other drivers when the coach is being backed-up. Take extra precautions whenever backing-up. If necessary, use a guide to provide direction when backing-up. Both the alarm and optional camera are automatically activated when the transmission is put in the reverse (R) range.

## HUBODOMETER

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



OEH3B404

## **MUD FLAPS AND SPLASH GUARDS**

Mud flaps are installed behind each front wheel and the tag axles. Mud flaps minimize dirt on the lower panels of the coach and prevent stones and debris from being thrown at vehicles travelling behind the coach. Splash guards may be installed behind each dual wheel of the drive axle to prevent stone projectiles from being thrown at the tag axle wheels.

## **SPARE PARTS KIT**

The coach is equipped with a spare parts kit. The kit contains parts such as bulbs, circuit breakers, belts etc. The spare parts kit is stored in the first baggage compartment.

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## STARTING AND STOPPING PROCEDURES

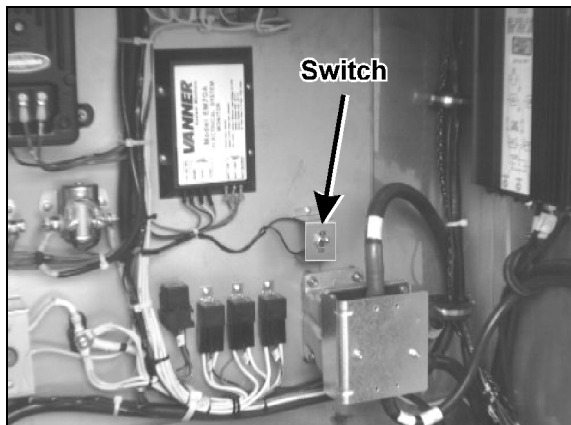
### STARTING ENGINE FROM DRIVER'S COMPARTMENT

Start or stop the engine as follows:

#### Starting Engine

Start engine as follows:

1. Set the master switch located in the main power compartment to the ON position.



MASTER SWITCH IN MAIN POWER COMPARTMENT OEH3B502

2. Make sure the starter selector switch located in the engine compartment is set to the NORMAL position. When starting the engine from the front of the coach, set the battery master switch located on the L.H. lower control panel to the ON position. Refer to "Controls/Instruments" section.
3. Apply the spring-loaded parking brakes by pulling the parking brake control button all the way up.
4. Place transmission in neutral.
5. Turn key in ignition to START position. Release after starting.

**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 LET STARTER COOL FOR ONE MINUTE BEFORE ATTEMPTING TO RESTART.

**CAUTION:** DO NOT PRESS ACCELERATOR PEDAL BEFORE STARTING. THIS COULD RESULT IN AN ELECTRONIC CONTROL UNIT FAULT AND DEGRADE THE FUEL SYSTEM CONTROL.

**CAUTION:** 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 LUBRICATING OIL TO REACH THE TURBOCHARGER. THEN RUN THE ENGINE AT FAST IDLE. LET OIL PRESSURE REACH NORMAL OPERATING RANGE BEFORE DRIVING.

**NOTE:** If engine does not start, return key to OFF position before attempting to restart.

**NOTE:** If the accelerator pedal is depressed before starting, release and wait 30 seconds before attempting to restart.

#### Stopping Engine

Stop engine as follows:

1. Apply parking brake then place transmission in neutral (N).
2. Allow engine to idle for at least two minutes before shutting-off engine. This insures that the turbine speed drops, and allows time for the engine exhaust gas temperature to drop to 300°F (150°C).
3. Turn key in ignition switch to OFF position.

## STARTING AND STOPPING PROCEDURES

**CAUTION:** DO NOT SHUT-OFF ENGINE WHEN RUNNING ABOVE IDLE.

**CAUTION:** SET THE BATTERY MASTER SWITCH TO THE "OFF" POSITION AFTER PARKING AND WHEN LEFT UNATTENDED FOR AN EXTENDED PERIOD OF TIME. REFER TO "CONTROLS/INSTRUMENTS" SECTION.

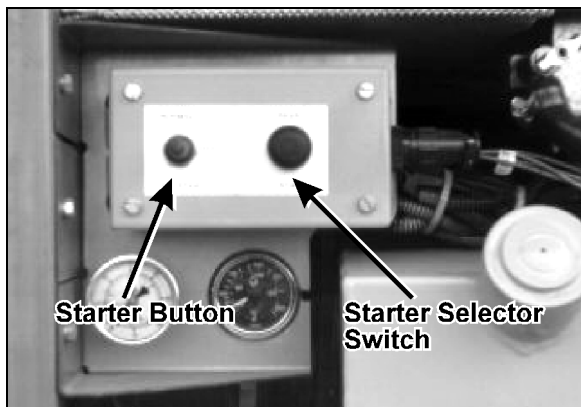
### STARTING ENGINE FROM ENGINE COMPARTMENT

Switches to start and stop the engine from inside the engine compartment are mounted on a small box above the engine.

#### Starting Engine

**WARNING:** APPLY PARKING BRAKE AND PLACE TRANSMISSION IN NEUTRAL (N) BEFORE STARTING ENGINE FROM INSIDE ENGINE COMPARTMENT.

1. Set the master switch located in the main power compartment to the ON position.
2. Set the starter selector switch to the REAR START position. Set the battery master switch located on the L.H. lower control panel to the ON position. Refer to "Control/Instruments" section.
3. Press starter push-button switch. Release push-button after starting.



REAR STARTING

OEH3B504

**WARNING:** DO NOT WEAR LOOSE CLOTHING WHEN WORKING NEAR ENGINE. STAND CLEAR OF ROTATING COMPONENTS.

**CAUTION:** REFER TO CAUTIONS IN "STARTING ENGINE FROM DRIVERS COMPARTMENT" IN THIS SECTION.

### Stopping Engine

To stop engine, set the starter selector switch to the OFF position.

**CAUTION:** DO NOT STOP ENGINE BY ANY OTHER METHOD.

### COLD WEATHER STARTING

#### Cold Starting Aid (Ether)

The coach is equipped with an ether cold starting aid to facilitate cold-weather starts when the temperature is below 35°F (2°C). A control rocker switch is located on the L.H. lower switch panel near the ignition switch. The rocker switch has a locking mechanism to avoid accidental use when the engine is running. To activate the ether starting aid, proceed as follows:

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

**CAUTION:** USE THE COLD STARTING AID ONLY WHEN ABSOLUTELY NECESSARY. EXCESSIVE USE OF STARTER FLUID COULD RESULT IN SERIOUS ENGINE DAMAGE.

## ENGINE BLOCK HEATER

The coach may be equipped with an engine immersion-type electric block heater to assist cold weather starting. The 110-120 VAC power connector is located on the engine compartment rear door. Connect the female plug of an extension cord to the 110-120 VAC male outlet. Plug the extension cord into a 110-120 VAC power source only. Use the engine block heater whenever the coach is parked for an extended period of time in cold weather and when a 110-120 VAC power source is available.

**CAUTION:** USE ONLY A 110-120 VAC POWER SOURCE. USE ONLY GROUNDED (THREE PRONGS) EXTENSION CORDS WITH A MINIMUM RATED CAPACITY OF 15 AMPS. DISCONNECT THE EXTENSION CORD BEFORE STARTING. BEFORE DRIVING, MAKE SURE THE EXTENSION CORD IS DISCONNECTED AND THE ENGINE COMPARTMENT DOOR IS CLOSED.

## ENGINE WARM-UP

After starting the engine, keep the parking brake apply and let the engine run at low idle for two minutes to allow lubricating oil to reach the turbocharger. Increase engine speed to fast idle, using the FAST IDLE switch located on the L.H. lower switch panel, for five minutes without loading the engine. Monitor the gauges and indicator lights to make sure all conditions are normal. If an abnormal condition is observed, stop the engine immediately and have the condition corrected.

**WARNING:** NEVER LET THE ENGINE RUN IN AN ENCLOSED, NON-VENTILATED AREA. ENGINE EXHAUST FUMES CONTAIN DANGEROUS GASES WHICH CAN BE FATAL IF INHALED. TO WARM-UP THE ENGINE, OPEN STATION DOORS OR MOVE THE COACH OUTSIDE.

**NOTE:** The engine will reach normal operating temperature shortly after driving. Avoid driving with full throttle until engine coolant temperature reaches 140°F (60°C).

## WORLD TRANSMISSION (WT) WARM-UP

When the transmission temperature falls below -20°F (-29°C), the DO NOT SHIFT indicator illuminates after the engine is started. In this case, the transmission will be locked in neutral (N) until the transmission temperature rises above -20°F (-29°C) and the DO NOT SHIFT indicator light goes out. The transmission will only operate in first or reverse gears until it reaches the normal operating temperature.

## JUMP STARTING

In order to avoid damage to solid-state electrical components, it is important that jumper (booster) cables are used correctly, and only in emergencies. To jump start, use another 24 volt DC, negative grounded, power source. Use only jumper cables rated at 500 cranking amperes.

**NOTE:** To charge batteries using the booster block terminals, the main power switches must be turned on.

**WARNING:** INJURY, EXPLOSION, BATTERY ACID DAMAGE, OR CHARGING SYSTEM OVERLOAD MAY RESULT IF THESE JUMP STARTING PROCEDURES ARE NOT PRECISELY FOLLOWED.

**WARNING:** WEAR EYE PROTECTION AND REMOVE RINGS, METAL JEWELRY, AND WATCHES WITH METAL BANDS.

**CAUTION:** NEVER CONNECT THE JUMPER CABLE TO THE NEGATIVE TERMINAL POST OF THE RUN-DOWN BATTERY.

**WARNING:** THE GASES GIVEN OFF BY BATTERIES WHILE JUMP STARTING ARE EXPLOSIVE. DO NOT SMOKE NEAR BATTERIES.

**CAUTION:** DO NOT LET THE TWO VEHICLES TOUCH. KEEP A WALK-THROUGH DISTANCE BETWEEN THE TWO VEHICLES. MAKE SURE POSITIVE (RED) AND NEGATIVE (BLACK) JUMPER CABLE CLIPS DO NOT TOUCH.

**CAUTION:** THE BATTERY COULD RUPTURE OR EXPLODE IF JUMP STARTED

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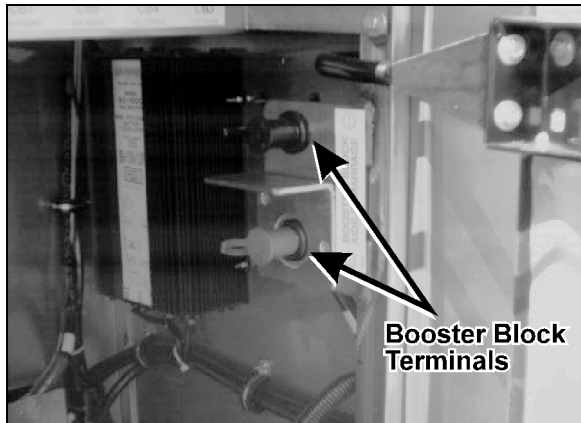
## STARTING AND STOPPING PROCEDURES

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WHEN THE RUN-DOWN BATTERY FLUID IS FROZEN, OR IF THE BATTERY FLUID LEVEL IS LOW. CHECK CONDITION OF RUN-DOWN BATTERY BEFORE ATTEMPTING TO JUMP START.

**CAUTION:** DO NOT JUMP START IF A MAINTENANCE-FREE BATTERY HAS A YELLOW TEST INDICATOR. HAVE THE BATTERY REPLACED.

**CAUTION:** BEFORE ATTEMPTING TO JUMP START, MAKE SURE THE PARKING BRAKE IS APPLIED AND THE TRANSMISSION IS IN NEUTRAL (N). TURN OFF ALL LIGHTS, HEATERS AND OTHER ELECTRICAL ACCESSORIES.



MAIN POWER COMPARTMENT

OEH3B508

To jump start, proceed as follows:

1. Remove the protective caps from the booster block terminals located in the main power compartment.
2. Connect one end of the red jumper cable to the positive (+) post of the booster power source. If the good battery is in another vehicle, that vehicle's engine must be shut-off before connecting.
3. Connect the other end of the same red jumper cable to the positive (+) terminal on the booster block.
4. Connect one end of the black jumper cable to the negative (-) post on the booster power source.
5. Connect the other end of the same black jumper cable to the negative (-) terminal on the booster block.
6. If the good battery is in another vehicle, start that vehicle's engine. Let the engine run for a few minutes, then start the coach with the run-down battery.
7. Disconnect the jumper cables in reverse order given in steps 2 through 5.
8. Install protective caps on the booster block terminals.

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

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## EMERGENCY SAFETY FEATURES

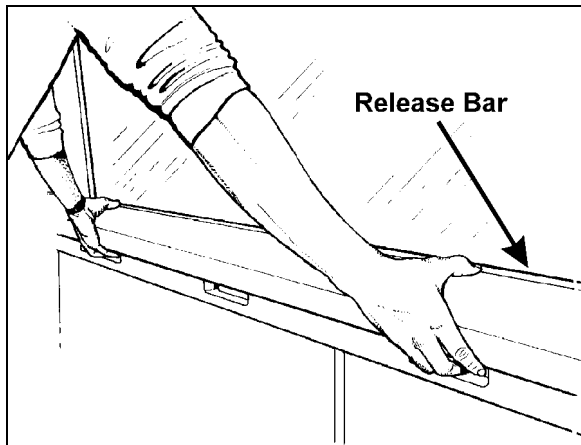
### EMERGENCY EXITS

#### Side Windows

Some side passenger windows can be opened from the inside for emergency escape. A decal located on the bottom of each passenger window indicates the emergency exit location, with the exception of the small front left window. Two blue lights installed in the upper section of the side windows illuminate the emergency exit decals. Emergency exit decal lighting is operated by the general lighting switch located on the L.H. side dashboard control panel.

To open a side window emergency exit, slide fingers under the notches on the window release bar. Lift the window release bar and push the window out from the bottom. Opening instruction decals are located on the release bar of each emergency exit window.

To close an emergency exit side window, lift the release bar and pull the window in as illustrated on the decal at the bottom of the window.



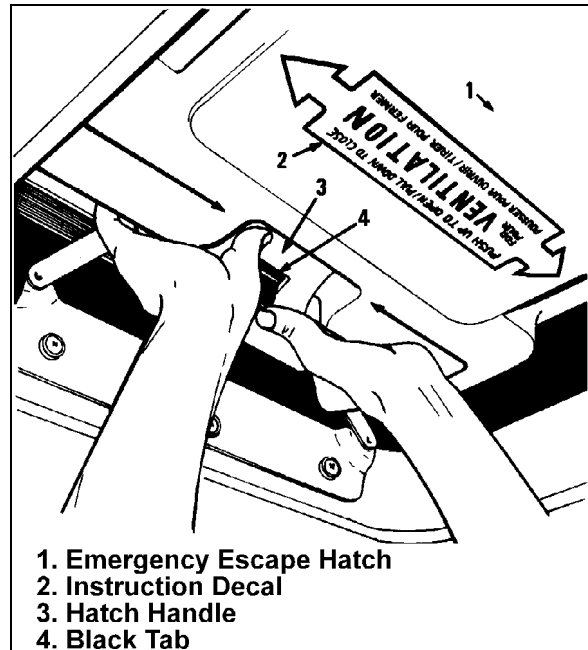
EMERGENCY EXIT WINDOW OPENING

OEH3B602

**CAUTION:** TO PREVENT DAMAGE, KEEP THE EMERGENCY EXIT WINDOWS CLOSED DURING NORMAL OPERATION. TO AVOID DAMAGING THE EMERGENCY EXIT SYSTEM, DO NOT SLAM WINDOWS SHUT.

### EMERGENCY ROOF ESCAPE

An emergency escape hatch is located in the roof at the rear of the coach, and is designed to be opened by passengers. An optional emergency roof hatch is located at the front of the coach. In case of emergency, push out the ventilation hatch completely. To release emergency hatch catch, pull black tab rearward while pushing handle out. An instruction decal with complete operating instructions is located on the escape hatch.



EMERGENCY ROOF ESCAPE OPENING

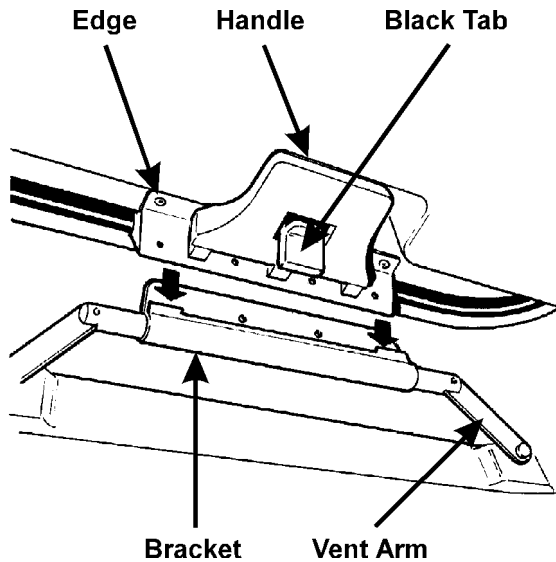
OEH3B604

**NOTE:** In the event of ventilation blower motor failure, the emergency roof escape can be opened by pushing the hatch upward.

**CAUTION:** BE AWARE OF COACH OVERHEAD CLEARANCE WHEN DRIVING UNDER OVERPASSES IF THE EMERGENCY ROOF ESCAPE HATCH IS OPEN.

## EMERGENCY SAFETY FEATURES

To relatch handle after use, vent arms must be pushed upright in FULL OPEN VENT position. Insert edge between the two sections of the bracket and pull handle in to lock the hatch. Finally, pull the hatch in to close, one side at a time.

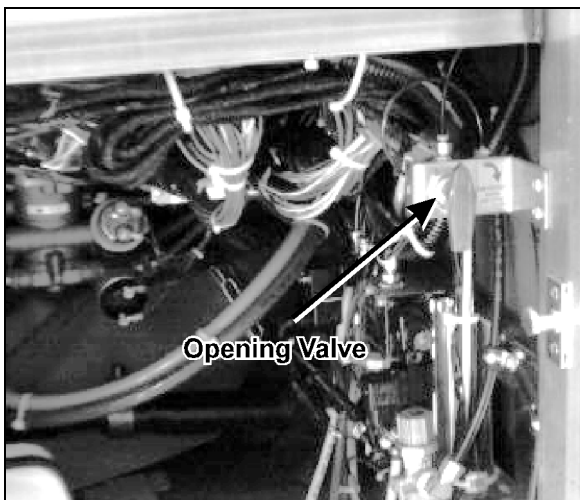


ROOF ESCAPE HANDLE

OEH3B606

### FRONT DOOR EMERGENCY OPENING

#### Outside Emergency Opening Valve



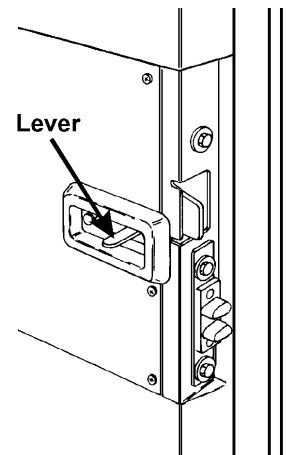
FRONT SERVICE COMPARTMENT

OEH3B608

Before operating the system, the front door must be unlocked. To operate the system, set the valve located in the front service compartment to the UNLATCH position before pulling the door open. Reset the valve to its initial position before closing the door.

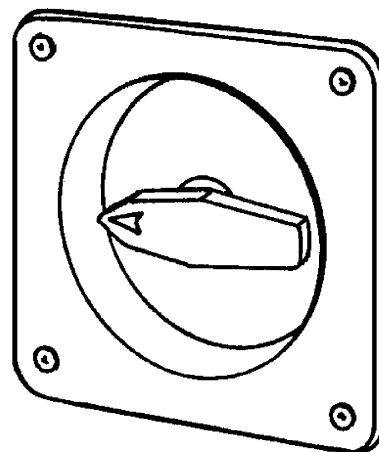
#### Inside Emergency Opening Valve

If the door is locked, push and hold the unlocking lever forward. Release the latch by turning the emergency opening valve, located beside the stairwell, clockwise, then push the door open. Reset the valve to its initial position before closing the door.



FRONT DOOR UNLOCKING LEVER

OEH3B610



EMERGENCY OPENING VALVE

OEH3B612

**SAFETY EQUIPMENT**

**First Aid Kit**

A first aid kit is stored in the first R.H. parcel rack.

**Fire Extinguishers**

A fire extinguisher is located under the first R.H. seat. A second fire extinguisher is located under the first L.H. seat. Instructions for use are found on the extinguishers. Know how to operate fire extinguishers in case of an emergency. Decals indicating the location of the fire extinguishers are found on each window adjacent to the first L.H. and R.H. seat.

**Fire Hatchet**

The first R.H. side parcel rack can be equipped with an optional fire hatchet.

**Emergency Warning Reflectors**

A kit containing three triangular reflectors is provided to warn other drivers on the road in case of a coach breakdown. The kit is located on the right side of the first R.H. side baggage compartment. The reflectors provide visible warning of an emergency situation. The three reflectors should be placed as indicated on the box cover. These reflectors comply with FMVSS 125 (Federal Motor Vehicle Safety Standards).

**Jack/Tools**

A kit for jacking up the coach is stored in the first R.H. side baggage compartment. The kit includes a 12.5 ton hydraulic jack and a wheel nut wrench.

**ALARM SYSTEM**

In addition to the control console indicator lights, the coach is equipped with an audible alarm system to provide audible indications to the driver of the conditions given in the following table.

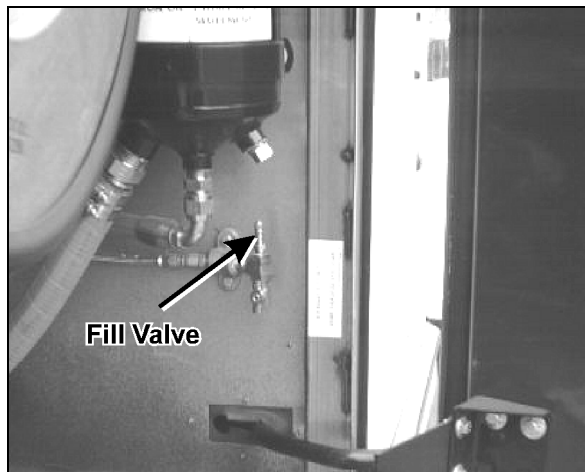
<b>Indicator Light</b>	<b>Audible Alarm</b>	<b>Condition</b>
Air primary	Buzzer	Low air pressure
Air secondary	Buzzer	Low air pressure
Do not shift	Buzzer	Inhibits shifting of transmission
N/A	Buzzer	Lavatory emergency button is activated
N/A	Chime	Button activated by passenger
Fire	Bell ringing	Fire in engine compartment
Front kneeling	Beep	Front kneeling position is selected
Tag-Axle	Beep	Tag axle raised or unloaded
N/A	Beep	Parking brake not applied and/or brake pedal applied with ignition switch to "Off" position

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



## **AIR SYSTEM EMERGENCY FILL VALVE**

The coach is equipped with two air system emergency fill valves to supplement the air system when air pressure is low and the engine cannot be operated. One valve is located inside the engine compartment near the R.H. access door hinge. The other valve is located inside the front service compartment.



FILL VALVE IN ENGINE COMPARTMENT

OEH3B614



FILL VALVE IN FRONT SERVICE COMPARTMENT

OEH3B616

Both air system emergency fill valves are fitted with standard tire valve stems. The air systems can be filled using any standard external air supply line. The fill valve located in the engine compartment supplies air for all systems (brakes, suspension and accessories). The fill valve located in the service compartment supplies air for accessories only.

**CAUTION:** AIR FILLED THROUGH THE TWO EMERGENCY FILL VALVES WILL PASS THROUGH THE STANDARD AIR FILTERING SYSTEM. DO NOT FILL AIR AT ANY OTHER LOCATION. DO NOT EXCEED 120 PSI (827 KPA).

## **COMBINED EMERGENCY AND PARKING BRAKES**

During normal operation, if air pressure in both brake circuits drops below 40 psi (276 kPa), spring-loaded emergency parking brakes will be immediately applied at full capacity to the drive axle wheels to stop the coach.

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

Parking brakes are not designed to be used as service brakes. For normal driving conditions, the control valve knob must remain in the down position.

**NOTE:** Only use the parking brakes to supplement the service brakes to stop the coach in emergency conditions. The stopping distance will be considerably longer than when using normal service brakes.

**NOTE:** Before releasing the parking brakes by pushing down the control valve knob, check the pressure gauges to make sure that the brake system air pressure is greater than or equal to 95 psi (655 kPa).

**WARNING:** ALWAYS APPLY THE PARKING BRAKE BEFORE LEAVING THE DRIVER'S SEAT.

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

**NOTE:** The stoplights will automatically turn on when the parking brake is applied and the ignition key is turned to the ON position.

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## CARE AND MAINTENANCE

### INTERIOR CLEANING

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

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

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

### Seat Upholstery

#### Normal Cleaning

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

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

#### Removal of Stains and Marks

Remove stains and marks from the wool plush as follows:

##### Method 1

- Apply a nonflammable solvent (Trichloroethylene) to stained area with a clean, white absorbent rag.

- Clean stain by starting at the outer edges of the stain and working in toward the center.
- Blot affected area frequently with a clean, dry absorbent cloth to prevent stain rings caused by excess solvent.

**WARNING:** USE SOLVENTS IN A WELL-VENTILATED AREA. OPEN ALL WINDOWS AND DOORS.

##### Method 2

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

**CAUTION:** DO NOT USE SOAP, SOAP POWDER, AMMONIA, SODA, BLEACH OR CLEANING PRODUCTS CONTAINING ANY OF THESE COMPOUNDS.

#### Beverage Stains

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

#### Alcoholic Beverage Stains

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

#### Burns

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

**Cosmetic Stains**

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

**Ink Stains**

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

**Blood Stains**

Remove blood stains following method 2.

**Urine Stains**

Remove urine stains following method 2.

**Vomit Stains**

Remove vomit stains following method 2.

**Copying Ink - Ballpoint Pen Ink**

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

**Marking Ink (Felt-Tip Pens)**

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

**Oil, Grease and Paint**

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

**Rust Stains**

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

**Tar**

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

**Chewing Gum**

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

**Plastic and Vinyl**

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

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

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

**Windows**

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

**Stainless Steel**

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

**Formica**

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

**Carpet**

Vacuum carpets regularly to prolong the carpet life.

**Rubber Components**

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

**CAUTION: NEVER USE SOLVENTS ON RUBBER COMPONENTS.**

## Floor Cleaning

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

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

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

Mop floor periodically with a solution of 5 per cent clorox in warm water.

## EXTERIOR CLEANING

Frequent washing and waxing of the coach exterior will help to protect the paint finish. The paint finish is attacked by the abrasive effects of airborne particles and damage from corrosive pollutants.

Before washing the exterior of the coach, close the fresh air dampers using the switch located on the lower R.H. control panel. Install keyhole protectors to prevent water from penetrating. Rinse coach with water to remove all loose dirt. Wash coach using a quality brand car wash soap. Follow manufacturer's recommendations for cleaning. Rinse well with water.

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

**CAUTION:** HOT WATER CAN DAMAGE PAINT. KEEP WATER COOL OR LUKEWARM.

**CAUTION:** MAKE SURE CLEANING SOLUTIONS ARE NOT HARMFUL TO PAINTED SURFACES. READ THE MANUFACTURER'S INSTRUCTIONS BEFORE USING.

**CAUTION:** DO NOT SPRAY WATER JET DIRECTLY INTO FRESH AIR INLET DAMPERS.

**CAUTION:** DO NOT AIM HIGH PRESSURE WATER JET AT RADIATOR DOORS. THIS COULD DAMAGE THE RADIATOR FINS.

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

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

### Tar or Oil

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

### Insects

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

### Tree Sap

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

### Windows

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

### Wiper Blades

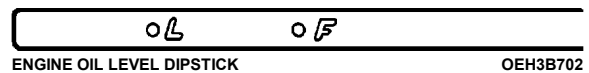
To avoid tearing frozen wiper blades, loosen them before removing. Remove and clean wiper blades periodically with an alcohol-based cleaning solution. Clean wiper blades using a sponge or soft cloth.

## OIL LEVEL VERIFICATION

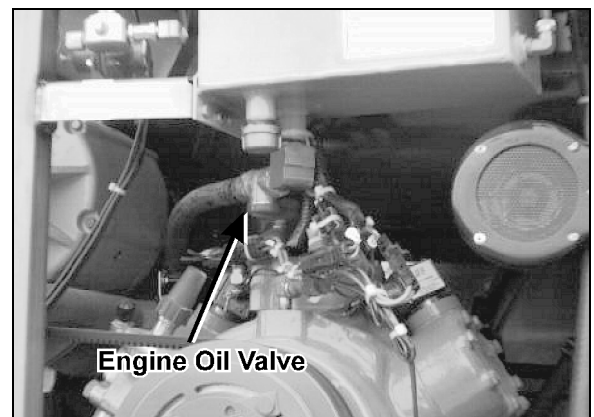
### Engine Oil Level

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

The oil level must be maintained between the two marks indicated on the dipstick. Do not let the oil level drop below the L mark. Add oil by opening the oil reserve tank drain valve and checking the quantity added through the tank sight glass. Close the oil reserve tank drain valve after adding oil. Recheck the oil level. Do not let the oil level go above the F mark on the dipstick.



**CAUTION:** KEEP ENGINE OIL LEVEL BETWEEN "L" AND "F" ON DIPSTICK. DO NOT OVERFILL. CHECK WHEN REFUELLING.



## Automatic Transmission Oil Level

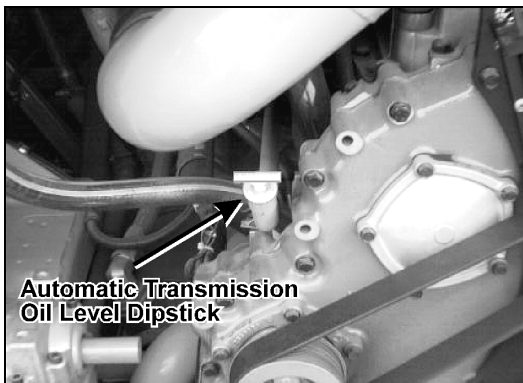
To check the transmission oil level, a "cold check" and a "hot check" must be performed. A cold check must be made when the transmission oil is between 60°F and 140°F (16°C and 60°C).

**NOTE:** Perform the cold check first to verify the transmission oil level before performing the hot check.

The hot check can be performed when the transmission oil reaches normal operating temperature of 160°F to 250 °F (70°C to 120°C).

To check the transmission oil level, park the coach on a level surface and apply the parking brake. Run the engine between 1,000 and 1,200 RPM for approximately one minute to purge air from the system. While the engine is idling, shift the transmission into Drive (D), then Reverse (R) and back into Neutral (N) in order to fill clutch cavities and circuits with oil.

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



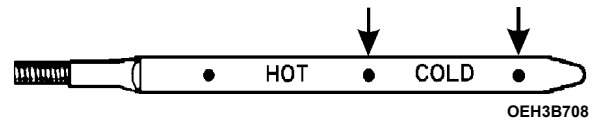
ENGINE COMPARTMENT OEH3B706

**WARNING:** TO PREVENT PERSONAL INJURY, DO NOT SERVICE TRANSMISSION WEARING LOOSE CLOTHING. STAND CLEAR OF THE ENGINE AND ROTATING COMPONENTS WHILE CHECKING THE OIL LEVEL.

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

### Cold Check

Run the engine until the transmission oil temperature is between 60 °F and 140°F (16°C and 60°C). With the engine idling, make sure the parking brake is applied and the transmission is in Neutral (N). Remove and wipe the dipstick with a clean cloth. Check oil level. If the oil level is within the COLD RUN band, a hot check can be performed. If the oil level is on or below the lower line of the COLD RUN band, add oil until the level lies within the COLD RUN band. If the oil level is above the COLD RUN band, drain oil until the level is within the band. A hot check can be performed when the transmission reaches normal operating temperature of 160°F to 250°F (70°C to 120°C).

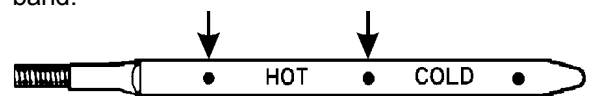


OEH3B708

**CAUTION:** THE OIL LEVEL RISES AS OIL TEMPERATURE RISES. DO NOT ADD OIL ABOVE THE "COLD RUN" BAND BEFORE THE TRANSMISSION REACHES 160°F TO 250°F (70°C TO 120°C).

### Hot Check

Make sure the transmission oil temperature is between 160°F and 250°F (70°C and 120°C) before performing the hot check. With the engine idling and the parking brake applied, shift transmission from Forward (D) to Reverse (R) and back into Neutral (N). Remove and clean dipstick, then check oil level. If the oil level is on or under the lower HOT RUN line, add just enough oil to bring up the level to the middle of the HOT RUN band.



OFH3B710

**NOTE:** Approximately 1 quart (0.95 litres) of oil will raise the oil level from the lower line of the HOT RUN band to the middle of the HOT RUN band.

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

**CAUTION:** DO NOT OVERFILL TRANSMISSION OIL RESERVOIR. SEVERE DAMAGE MAY RESULT.

## 6-Speed and 7-Speed Manual Transmission Oil Level

### Oil Check

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

**WARNING:** BEFORE SERVICING THE COACH, PARK SAFELY OVER A REPAIR PIT, APPLY PARKING BRAKE, STOP ENGINE AND SET BATTERY MASTER SWITCH TO THE OFF POSITION.

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

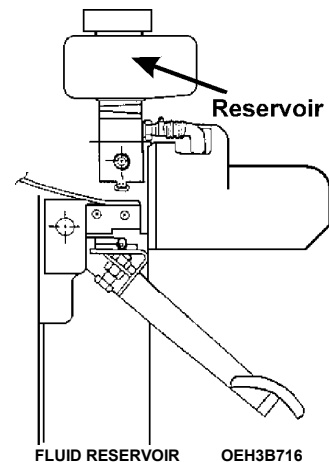
### Refill

Refill manual transmission as follows:

1. Remove fill plug.
2. Add oil until it overflows.
3. Clean oil from the transmission case and the fill plug.
4. Replace fill plug.

## Clutch Pedal Master Cylinder Fluid Level

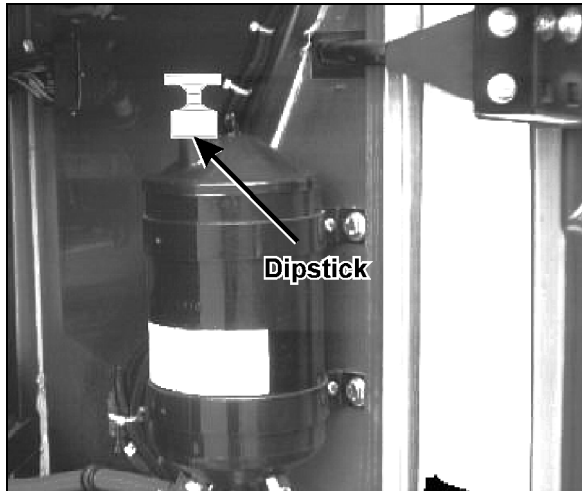
Maintain the clutch pedal master cylinder fluid level at the reservoir seam. The fluid reservoir is located under the dashboard near the clutch pedal.





## Power Steering Fluid Level

The coach is equipped with a power steering system. The hydraulic fluid tank is located in the engine compartment R.H. side door.



ENGINE COMPARTMENT R.H. SIDE DOOR

OEH3B718

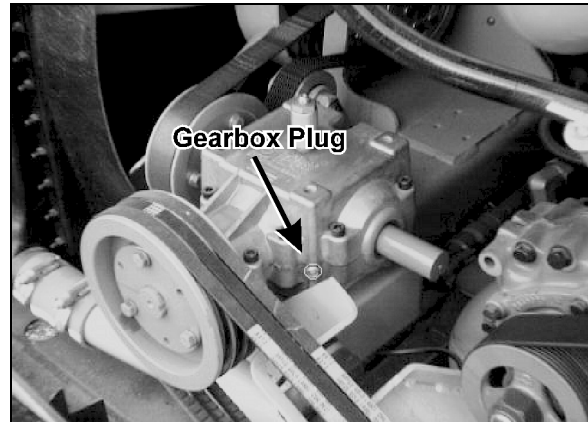
### Hydraulic Fluid Level Check

Check fluid level as follows:

1. Stop engine and open engine compartment R.H. side door.
2. Unscrew and remove the dipstick located on top of the fluid tank and wipe with a clean rag.
3. Replace dipstick in tank, and then remove to check fluid level.
4. Add hydraulic fluid until it reaches the FULL mark on the dipstick (use Dexron II, Dexron IIE, Dexron III or Mercon fluid type).
5. Replace and tighten dipstick.

## Radiator Fan Gearbox Oil Level

The radiator fan is belt-driven by the engine crankshaft pulley through a gearbox and drive shaft. A plug located on the right side of the gearbox is used to check the radiator fan gearbox oil level.



ENGINE COMPARTMENT

OEH3B720

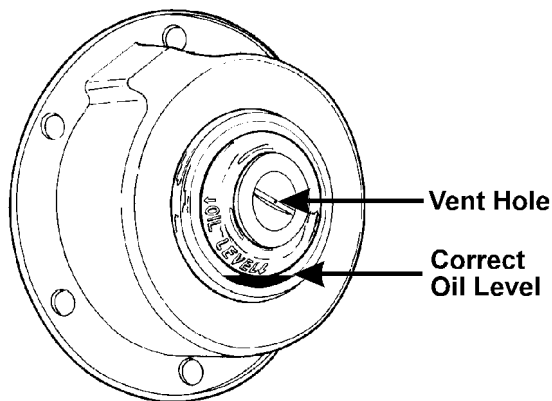
### Oil Level Check

Check oil level as follows:

1. Stop Engine.
2. Set battery master switch to OFF position.
3. Open engine compartment door and place engine starter switch to OFF position.
4. Unscrew the plug located on the right side of the gearbox.
5. Check if the oil is at the plug thread level.
6. Add, if necessary, MOBIL SHC 630 synthetic lubricant (or Prevost P/N 180217) until it reaches side plug thread level.
7. Replace fill plug.
8. Place engine control box to the FRONT START position. Close engine compartment door.
9. Set battery master switch to ON position.

### Wheel Bearing Oil Level

The oil level for the front and tag axle wheel bearings must be maintained to the level marked in the cap. The oil level indicator, which is shown as a line with arrows, is part of the plastic lens and is located below the words OIL LEVEL. Wait at least 15 minutes before checking the oil level after the coach has been driven to make sure the bearing oil has settled. Differential oil is used to lubricate the drive axle wheel bearings. Maintain the drive axle wheel bearing oil at the level indicated to ensure adequate lubrication.



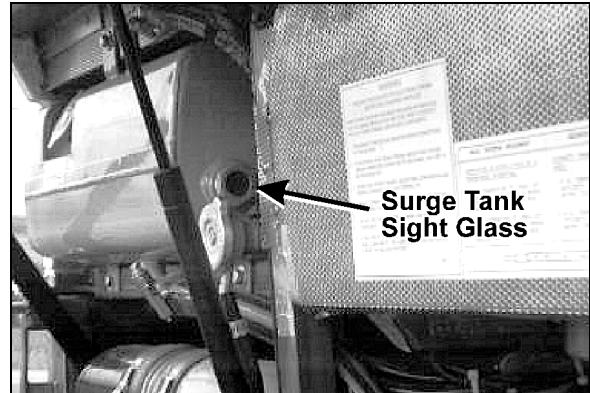
WHEEL BEARINGS LUBRICATION

OEH3B722

**CAUTION:** THE WHEEL BEARING OIL FILL CAP HAS A SMALL VENT HOLE IN THE CENTER TO PREVENT OVERPRESSURE IN THE BEARING HOUSING. CLEAN OCCASIONALLY BY INSERTING A NEEDLE.

### COOLANT LEVEL VERIFICATION

Coolant level is correct when the cold coolant is visible through the surge tank sight glass. If coolant level is low, fill cooling system with the same 50-50 mixture normally used.



ENGINE COMPARTMENT

OEH3B724

**WARNING:** HOT ENGINE COOLANT IS UNDER HIGH PRESSURE. ALLOW ENGINE TO COOL DOWN BEFORE ADDING COOLANT.

## AIR TANKS

The coach can be equipped with six air tanks. Purge accessory and wet air tanks daily or before each trip. The primary, secondary, kneeling system (optional) and parking brake override (optional) air tanks, must be purged at every oil change. Oil changes should be scheduled at least every 12,500 miles (20 000 km).

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

Drain tanks by turning cocks counter-clockwise.



ENGINE COMPARTMENT

OEH3B726



FRONT SERVICE COMPARTMENT

OEH3B728

## FIRE EXTINGUISHERS

Inspect fire extinguishers monthly to insure operation in emergency situations.

- On extinguishers with a pressure gauge, the needle should be in the green or NORMAL range. Refill or replace extinguisher if pressure is below normal.
- Check that seal on handle is intact.
- Check that hose nozzle is in good condition and the nozzle is free of obstruction.
- Keep fire extinguishers clean.
- Check signature and date of last inspection. Replace signature and date if not inspected within last month.

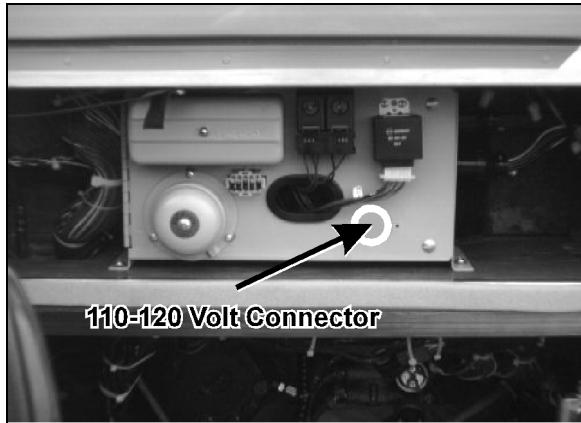
## WATER SEPARATOR

A water separator installed in the engine compartment is used to prevent water from entering the fuel system. The water separator should be drained periodically, or when the water separator indicator light on the dashboard goes on. To drain water, loosen bleed screw below separator one quarter turn. Tighten bleed screw when finished.

## 110-120 VOLT IN-STATION LIGHTING CIRCUIT (OPTIONAL)

A 110-120 volt lighting system can be used when the coach is being cleaned or serviced by using an interior power receptacle.

The optional receptacle used for the in-station lighting circuit is located in the front left service compartment on the alarm box.



ALARM BOX IN FRONT SERVICE COMPARTMENT OEH3B732

## 110-120 VOLT CONNECTOR (ENGINE BLOCK HEATER & OPTIONAL FRESH WATER TANK HEATER)

The 110-120 volt power connector is located on the engine compartment rear door. Refer to "Exterior of Coach" section. Connect the female extension cord plug to the male connector on the engine compartment rear door. Connect the plug at the other end of the cord to a 110-120 VAC outlet only.

The engine is equipped with an engine immersion-type electric block heater to assist cold weather starting.

The engine block heater should be used whenever the coach is parked for extended periods in cold weather and whenever a suitable power source is available.

The coach can be equipped with a fresh water tank heater.

When the coach is plugged to an external power source, the engine block heater and the optional fresh water tank heater turn on.

**CAUTION:** ONLY USE A 110-120 VAC POWER SOURCE. USE ONLY A GROUNDED TYPE (THREE PRONGED) EXTENSION CORD WITH A MINIMUM RATED CURRENT CAPACITY OF 15 AMPS. DISCONNECT THE EXTENSION CORD BEFORE STARTING OR MOVING THE COACH.

## BELT TENSION ADJUSTMENT

The radiator transfer fan and air conditioning compressor are driven by V-belts.

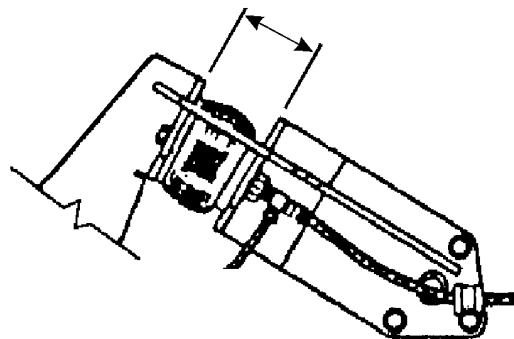
Belt Tension Gauge #68-2404 is used to measure the belt tension of series-60 engine belts. Refer to Prevost Maintenance Manuals or Service Bulletins for recommended belt sizes and tension settings.

## BELT TENSIONERS

### Air-operated type

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

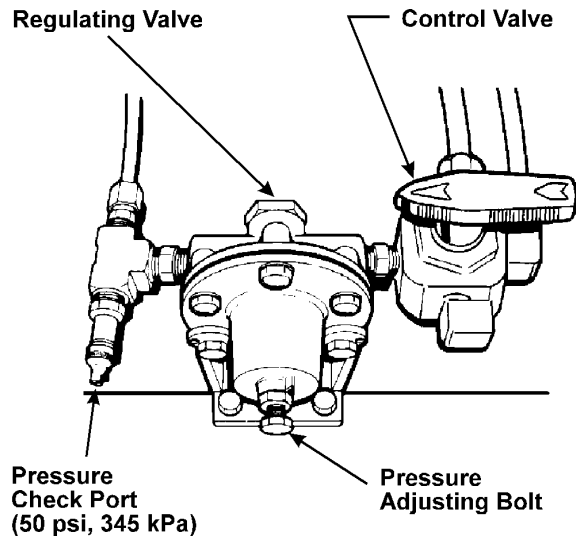
2 3/8" to 2 1/2" (60 to 64 mm)



AIR BELLOW

OEH3B734

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



OEH3B738

**Manually adjustable type**

There are two (2) different types of manually adjustable belt tensioning systems. Tension belts according to the instructions in "Maintenance Manual".

**GENERAL RULES FOR BELT TENSION**

- a. Refer to Prevost Maintenance Manuals or Service Bulletins for recommended belt sizes and tension settings.
- b. With belt tension set, run engine for 10 minutes. Check tension and reset if necessary.
- c. Periodically inspect belt and pulleys for wear or damage.
- d. Do not treat belts with any compounds. Keep belts dry.
- e. Do not use belts wider than the bottom surface of the tension gauge.

**BACK-UP CAMERA**

A back-up camera with a TV monitor can be installed as an option. When the transmission is placed in reverse (R), the camera and TV monitor will automatically switch on. The monitor will switch off when the coach is taken out of reverse (R). The back-up camera is retractable and is visible only when turned on. A switch located in the rear electric compartment is used to extract the camera for cleaning.

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

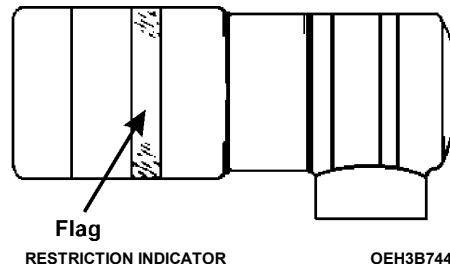
**WARNING:** TO AVOID INJURY, DO NOT CLEAN CAMERA WITH TRANSMISSION IN REVERSE (R). SHUT-OFF ENGINE AND APPLY PARKING BRAKE BEFORE CLEANING.

**CAUTION:** TO PREVENT SCRATCHES TO THE CAMERA PROTECTIVE GLASS, DO NOT WIPE WITH DRY RAG. USE A CLEAN DAMP RAG.

**FILTER RESTRICTION INDICATOR**

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

The filter restriction indicator is located on the engine air intake near the turbocharger. When the red flag is displayed, the air filter must be replaced. Press down on indicator to reset flag.



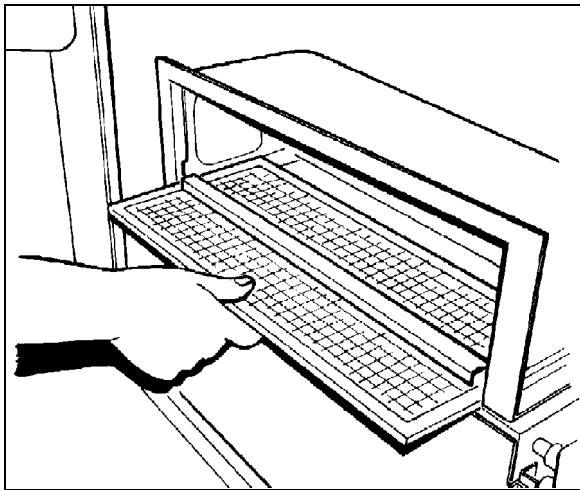
## HEATING AND AIR CONDITIONING

### A/C and Heating System Air Filters

For maximum system efficiency, air filters should be inspected and cleaned regularly.

#### Driver's Area Air Filter

The driver's area air filter is located under the dashboard. To access, pull on the two catches at each end of the access panel located above the entrance door steps. Remove, inspect and clean filter regularly.

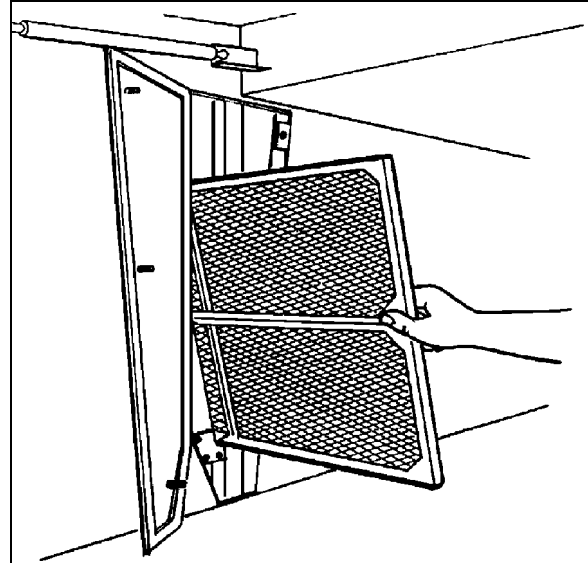


DRIVER'S AREA AIR FILTER

OEH3B746

#### Passenger's Area Air Filter

The passenger's area air filters are located in the first and second baggage compartments. To access, unscrew the three panel fasteners 1/4 turn. Remove, clean and replace filters.



PASSENGER'S AREA AIR FILTER

OEH3B748

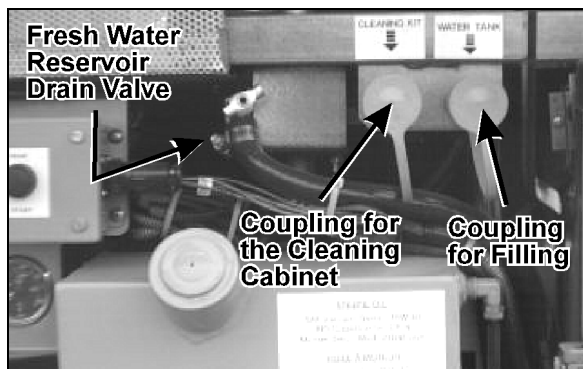
**CAUTION:** BE SURE NOT TO REVERSE FILTER UPON INSTALLATION.

## LAVATORY MAINTENANCE

Draining and filling lavatory tanks should be performed by maintenance personnel. Unless an appropriate power source (110-120 VAC) is available to connect the tank heating element (optional), emergency draining of water tanks must be performed in case of engine or heating failure in freezing weather. The driver should supervise the servicing when on the road. Refer to "Exterior of Coach" section under "110-120 Volt Connector"

### Fresh Water Reservoir Filling

Plug the fresh water reservoir supply connector in the 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.



SERVICES VALVES

OEH3B750

**WARNING:** NEVER PUT ANTIFREEZE IN FRESH WATER RESERVOIR. ANTI-FREEZE IS TOXIC.

**CAUTION:** NEVER LEAVE WATER IN FRESH WATER TANK DURING FREEZING WEATHER, UNLESS HEATING ELEMENT CAN BE PLUGGED TO AN EXTERNAL POWER SOURCE.

### Fresh Water Reservoir Draining

To drain fresh water reservoir, open drain valve located near the quick-release couplings in the engine compartment. Close valve when finished.

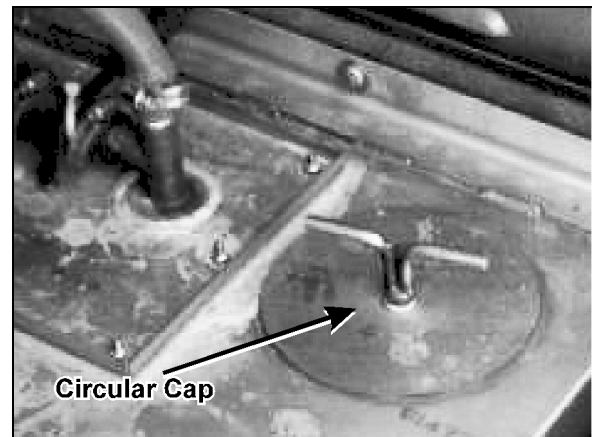
## Sump Tank Draining

To drain sump tank, unscrew cap a few turns and pull on the drain hose slide valve T-handle located under the sump tank. Flush tank and pump cage with clean water.

**NOTE:** To prevent mounting plate from falling inside tank, do not completely remove tank cap.

**NOTE:** Do not empty sump tank contents on the ground. This is against the law.

**CAUTION:** THE LAVATORY SHOULD BE SERVICED BY MAINTENANCE PERSONNEL AFTER EMERGENCY DRAINING. LAVATORY TANKS SHOULD BE SERVICED ONLY AT SUITABLY EQUIPPED STATIONS.



ENGINE COMPARTMENT R.H. SIDE

OEH3B752

## Sump Tank Filling

Remove cap on sump tank. Fill tank with 2 gallons (9 liters) of antifreeze and two gallons of water.

**CAUTION:** DO NOT OVERFILL SUMP TANK.

**NOTE:** The antifreeze solution in the sump tank will be diluted by fresh water from the lavatory sink. Regular maintenance of the sump tank is required to prevent freezing.

## Cleaning Cabinet

A coiled hose located in the cleaning cabinet above the toilet can be used during lavatory cleaning. To use, connect a fresh water supply to the "Hansen" quick-release coupling, identified as "Cleaning Kit", located above the engine oil reserve tank. Refer to the figure under "Fresh Water Reservoir Draining" in this section.

To prevent freezing during cold weather, drain the hose after every use. To drain the hose, uncoil and open the nozzle near the lavatory floor drain. Have an assistant push on the spring ball of the quick-release coupling to allow air into the system.

## FLEXIBLE HOSES MAINTENANCE

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

## Pre-Starting Inspection

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

## Leaks

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

**WARNING:** FIRE HAZARD. - PERSONAL INJURY AND PROPERTY DAMAGE MAY RESULT FROM FIRE CAUSED BY LEAKING FLAMMABLE FLUIDS.

## Service Life

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

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

## WINDSHIELD WASHER RESERVOIR

The windshield washer reservoir is located in the front left service compartment. The reservoir has a capacity of 5 U.S. gallons (19 liters) and is equipped with a spin-on type cover. Check the windshield washer fluid level regularly.



The spray jets are located under the windshield wiper arms.

Upper and lower windshield wipers have separate controls and separate washer pumps which are connected to the same reservoir.

## TIRES

### Tire Pressure

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

**NOTE:** Recommended tire inflation pressures are given in the "Coach final record" located in the technical publication package supplied with the coach. The cold tire inflation pressures are on the Department of Transport certification plate located on the back of the driver's seat.



**WARNING:** DO NOT EXCEED MAXIMUM INFLATION PRESSURE. INCORRECT TIRE PRESSURE INCREASES TIRE WEAR AND COULD LEAD TO LOSS OF DRIVING CONTROL BECAUSE OF REDUCED ROAD HANDLING. CHECK TIRE PRESSURE REGULARLY.

**NOTE:** Always check the spare tire pressure when checking tire pressures.

## CHANGING WHEELS

For a flat tire, turn ON the hazard flashers and bring the coach to a stop on the side of the road. Apply the parking brake. Make sure the coach is parked safely away from traffic. Set-up the triangular reflectors in accordance with applicable highway regulations.

### Removing Front Bumper

The spare tire is stored in the compartment directly behind the front bumper. To gain access to the spare tire, unscrew the nut located below each end of the bumper and then push up. With the help of an assistant, carefully lower the bumper to the ground.

**WARNING:** THE BUMPER IS HEAVY. GET THE HELP OF AN ASSISTANT BEFORE ATTEMPTING TO RECLINE THE BUMPER.

**WARNING:** THE SPARE TIRE COMPARTMENT IS NOT MADE FOR STORAGE. DO NOT STORE LOOSE OBJECTS IN THE SPARE TIRE COMPARTMENT. LOOSE OBJECTS MAY INTERFERE WITH THE STEERING LINKAGE. REMOVE ANY LOOSE OBJECTS FOUND IN COMPARTMENT.

### Removing Spare Wheel and Tire From Compartment

To remove the spare wheel and tire from the compartment, loosen the turn-buckle on the holding chain to release the wheel and dolly. Open the front service compartment. Remove the wing nut holding the support and rail extension assembly. Remove the support and rail extension assembly. Attach the assembly to the matching holes located in the front center of the spare tire compartment. Remove the spare wheel using the strap. Remove the tire covering. Remove the two nuts and separate the spare wheel from the dolly.

**CAUTION:** BEFORE DRIVING, MAKE SURE THAT THE SUPPORT AND RAIL EXTENSION ASSEMBLY IS REINSTALLED AND THE WHEEL HAS BEEN SECURED WITH THE HOLDING CHAIN.

**CAUTION:** MAKE SURE THAT THE BUMPER IS SAFELY HOOKED IN PLACE, AND THAT THE RETAINING NUTS ARE TIGHT.

**NOTE:** The jack and wheel nut wrench are stored in the right side of the R.H. side first baggage compartment.

**NOTE:** Check the spare tire inflation pressure periodically. Inflate the spare tire to the maximum tire pressure specified in the chart.

**NOTE:** Periodically check that spare tire is securely fastened in compartment.

#### Procedure

##### Step 1

Apply parking brake and stop engine. Remove spare wheel and tire from compartment.

##### Step 2

Remove wheel cover or hub cap

Stud mounted wheel:

Loosen wheel nuts about one turn. Turn nuts counter-clockwise for R.H. side and clockwise for the L.H. side. Do not remove the nuts.

Hub mounted wheel:

Loosen wheel nuts about one turn. Turn nuts counter-clockwise. Do not remove the nuts.

**Step 3**

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

**NOTE:** Five jacking points are located on each side of the coach: three are located under the frame, and two are located under the axles. Refer to "Jacking Points" in this section.

**WARNING:** PLACE THE JACK ON STABLE AND LEVEL GROUND. IF NECESSARY, PLACE A BOARD UNDER THE JACK.

**WARNING:** TO PREVENT PERSONAL INJURY OR EQUIPMENT DAMAGE, ONLY USE THE RECOMMENDED JACKING POINTS.

**WARNING:** DO NOT RAISE THE COACH UNTIL YOU ARE SURE THE JACK IS SECURELY ENGAGED.

**WARNING:** PASSENGERS MUST NOT REMAIN IN THE COACH WHEN IT IS JACKED UP.

**Step 4**

Remove the wheel nuts. Replace wheel with spare tire. Replace nuts and loosely tighten in a criss-cross pattern before lowering the coach.

**Step 5**

Lower coach until the tire just touches the ground by slowly unscrewing the hydraulic valve on the jack.

**Step 6**

Torque the nuts in a criss-cross pattern to 450 to 500 foot-pounds (610 to 680 N.m).

**Step 7**

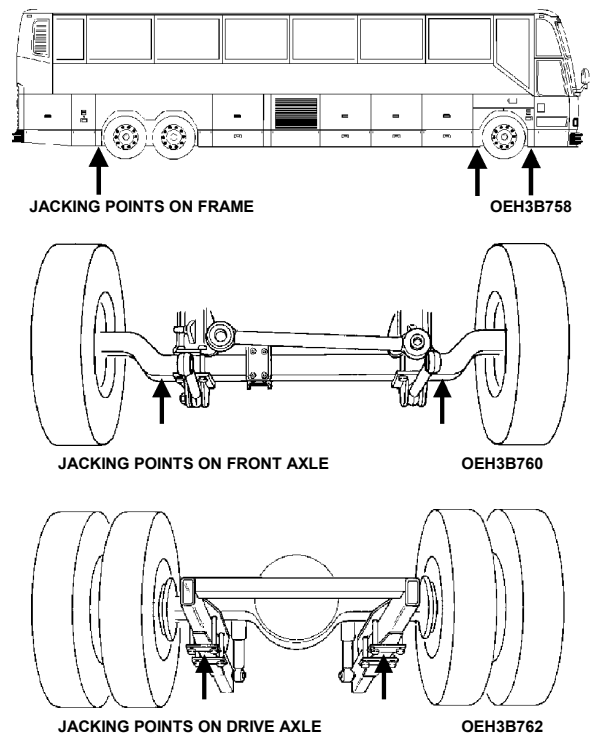
Lower the coach completely and remove jack. Inflate tire pressure to the cold tire inflation pressure.

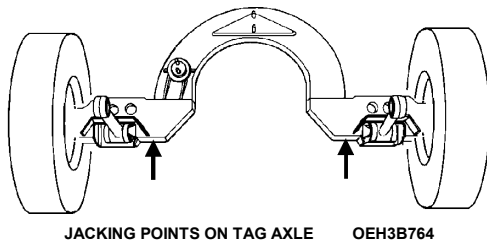
**Step 8**

Store damaged wheel in spare tire compartment. Repair and balance the flat tire as soon as possible.

**JACKING POINTS**

Five jacking points are located on each side of the coach: three are located under the frame and two are located under the axles. Refer to the following illustration for the location of jacking points.





Several kinds of hydraulic jacks can be used. Only jack at the specified jacking points. Jack must support the following capacities:

Front axle: 13,000 lbs (5 900 kg)  
 Drive axle: 25,000 lbs (11 365 kg)

## TOWING

To prevent damage to the coach, use the two tow eyes located under each bumper. Use only a solid link tow bar and a safety chain to tow the coach. If required, connect an auxiliary air supply to the coach so brakes can be operated while towing.

**WARNING:** UNLOAD PASSENGERS BEFORE TOWING. DO NOT CARRY PASSENGERS IN THE COACH WHILE TOWING.

**CAUTION:** TO PREVENT DAMAGE TO THE DRIVETRAIN COMPONENTS, DISCONNECT AXLE SHAFTS OR DRIVESHAFT BEFORE TOWING. DO NOT ATTEMPT TO PUSH- OR PULL-START THE COACH WITH A MANUAL TRANSMISSION IN FIRST OR SECOND GEAR. DO NOT ATTEMPT TO PUSH- OR PULL-START A COACH EQUIPPED WITH AN AUTOMATIC TRANSMISSION.

**NOTE:** Make sure axle shafts or driveshaft are installed correctly after towing. Tighten axle shaft and driveshaft nuts to the correct torque settings. Do not invert shafts.

## LUBRICATION

Lubricate at all lubrication points during scheduled maintenance. For heavy loads, or extended use, lubricate more often.

## FIRST SERVICE ON NEW COACH

### Engine Oil

Preliminary oil change is not required since the engine has been test-run at the factory. Change oil and filter every 12,500 miles (20 000 km).

### Automatic Transmission Oil Filter

Replace automatic transmission oil filter cartridge after first 5,000 miles (8 000 km), and then every 25,000 miles (40 000).

### Coolant System Strainer

The coolant system strainer is designed to recover the soldering residues trapped inside the coolant lines during their initial assembly. Clean strainer after first 3,000 miles (5 000 km), and then every 50,000 miles (80 000 km).

**NOTE:** If soldering has been performed on cooling system, clean strainer after 3,000 miles (5 000 km).

## DAILY INSPECTION

### With Engine Stopped

#### General

Check for loose nuts and bolts. Visually inspect security of compartment door latches. Test operation of all exterior lights.

#### Tires and Wheels

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

#### Air Leaks

Check for leaks under coach and in compartments. Record and report leaks to maintenance personnel.

**Doors**

Close all exterior doors and windows.

**Tools and Spares**

Make sure coach is equipped with a wheel nut wrench, door keys, spare belts, reflectors and jack.

**Air System**

To purge water from air and accessory tanks, open drain cocks. Close Drains when completed. Refer to heading "Air tanks" in this section.

**Water Separator**

To purge water separator, loosen bleed screw. Tighten bleed screw after purging.

**Coolant Level**

Check coolant level. Coolant level is correct when visible in the filler neck of the surge tank. If coolant level is low, fill system with 50-50 coolant mixture. Refer to the coach "Maintenance Manual" for more information.

**WARNING:** HOT ENGINE COOLANT IS UNDER PRESSURE. DO NOT ATTEMPT TO OPEN THE COOLANT FILLER CAP WHEN THE ENGINE IS HOT. ALLOW ENGINE TO COOL BEFORE ADDING COOLANT.

**Wheel Bearings**

Check wheel bearing oil level in sight glass. Refer to heading "Wheel Bearing Oil Level" in this section.

**CAUTION:** CHECK WHEEL BEARING COVER FOR OVERHEATING (ESPECIALLY AFTER BRAKE WORK) DURING FUEL STOPS BY TOUCHING THE WHEEL BEARING COVER.

**Windshield Washer Reservoir**

Make sure windshield washer reservoir is full. For cold weather, use antifreeze windshield washer to prevent freezing.

**Engine Oil**

Check engine oil level during fuel stops. If the oil level is low, refer to heading "Oil Level Verification" in this section.

**WARNING:** CHECK THE ENGINE OIL LEVEL WITH COACH PARKED ON A LEVEL SURFACE AND WITH THE PARKING BRAKE ENGAGED.

**Power Steering Oil Tank**

Check steering oil level. Refer to heading "Oil Level Verification" in this section.

**Belts**

Check for loose, worn or broken belts.

**Belt Tension Adjustment**

Check belt tension manually. Refer to heading "Belt Tension Adjustment" in this section.

**Extinguishers and First Aid Kit**

Make sure that the first aid kit is complete and stowed in place. Check fire extinguishers to make sure they are ready for operation. Refer to "Fire Extinguishers" in this section.

**Seats**

Ensure all seats and seat cushions are securely attached.

**Emergency Exits**

Test emergency exits for correct operation.

**Lavatory**

Make sure the lavatory is clean and equipped with an adequate supply of toilet paper, towels and water.

**Driver's Section**

Adjust driver's mirrors and seat.

**With Engine Running****Leaks**

Walk around coach and listen for air leaks.

**Turbocharger**

Check for leaks and listen for unusual sounds coming from the turbo compressor.

**Automatic Transmission**

Check automatic transmission oil level. Refer to "Oil Level Verification" in this section.

**Gauges and Buzzers**

Make sure gauges are in normal operating positions. Indicator lights and buzzers should all be off.

**Fuel Level**

Make sure fuel level is sufficient.

**Service brakes**

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

**Parking and Emergency Brakes**

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

**GENERAL RECOMMENDATIONS**

- Understand basic principles of coach operation.
- Always maintain the coach in good running condition.
- Do not drive coach with low fuel. If the fuel tank runs dry, the engine will not start until the air is bled from the fuel system. Refer to "Maintenance Manual" for more information.
- Allow engine to run for at least 2 minutes at slow idle before shutting off.
- Engine should be at idle when shifting from neutral (N) to forward (D) or neutral (N) to reverse (R).
- The automatic transmission does not have a park (P) position. Place transmission in neutral (N) position and apply parking brake when coach is stopped. A warning buzzer will sound if the engine is stopped and the parking brake has not been applied when foot pressure is removed from the brake pedal.
- Always follow the procedures described in this manual.
- Unless stated otherwise, shut-off the engine before performing all servicing, lubrication and maintenance tasks.
- Do not attempt to push- or pull- start a coach equipped with an automatic transmission.
- Coaches equipped with a manual transmission may be damaged if towed with the axle shafts or drive shaft connected. Do not push- or pull-start the coach in first or reverse gears.
- Chemical fire extinguishers are stored under the first L.H. and R.H. seats. In case of fire, immediately evacuate all passengers. Passenger and personal safety is the first priority. Do not attempt to extinguish the fire if there is immediate danger of passenger or personal injury.
- When driving on ice and snow, accelerate and decelerate gradually.

**WARNING:** REPORT ALL PROBLEMS AFFECTING PASSENGER OR DRIVER SAFETY TO MAINTENANCE PERSONNEL. HAVE PROBLEMS CORRECTED IMMEDIATELY.

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## TECHNICAL INFORMATION

### DIMENSIONS

#### Length, Overall (over bumpers)

H3-45.....	45'	(13 716 mm)
H3-41.....	41'	(12 497 mm)

**Width, Overall**..... 102" (2 591 mm)

**Height, Overall**..... 12' (3 658 mm)  
(over closed roof hatches)

#### Wheelbase

H3-45.....	317"	(8 052 mm)
H3-41.....	268"	(6 807 mm)

**Cabin Floor Height**..... 63" (1601 mm)

**Ground Clearance**..... 11" (280 mm)

**Floor-to Ceiling Height**..... 77" (1 956 mm)

**Center Aisle Width**..... 14" (356 mm)

**Step Height from Ground**..... 14" (356 mm)

**Height of other Steps**..... 7" (178 mm)

**Entrance Door Opening Width**..... 27" (685 mm)

**Front Overhang**..... 71.5" (1 816 mm)

**Rear Overhang**..... 103.5" (2 628 mm)

**Front Track**..... 84.4" (2 145 mm)

**Drive Track**..... 76.7" (1 949 mm)

**Rear Track**..... 83.6" (2 124 mm)

**Turning Radius**..... (exterior front corner)

H3-45.....	45.7'	(13 930 mm)
H3-41.....	39'	(11 885 mm)

### WEIGHTS

**GVW** ..... 49 000 lbs (22 270 kg)

#### Dry Weight (w/6-Cyl. & World. Trans.)

H3-45.....	33 800 lbs	(15 330 kg)
H3-41.....	32 400 lbs	(14 695 kg)

#### Gross Axle Weight Rating (G.A.W.R.)

Refer to the Coach Final Record located in the technical publication package supplied with the coach.

### STORAGE VOLUME

Exterior baggage compartments:

H3-45.....	470 ft <sup>3</sup> / 13,3 m <sup>3</sup>
H3-41.....	360 ft <sup>3</sup> / 10,2 m <sup>3</sup>

Parcel racks:

H3-45.....	92 ft <sup>3</sup> / 2,6 m <sup>3</sup>
H3-41.....	84 ft <sup>3</sup> / 2,4 m <sup>3</sup>

### SEATS

**Seating capacity:** (Normal configuration)

Including 1 or 2 card table(s)

H3-45.....	56
H3-41.....	48

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



**CAPACITIES**

**Engine Oil**

- Without oil filters
  - To the LOW mark..... 26 quarts / 24.5 liters
  - To the FULL mark ..... 32 quarts / 30.25 liters
- With oil filters installed
  - To the LOW mark..... 41 quarts / 38.75 liters
- Reserve tank..... 10 quarts / 9,45 liters

**Fuel Reservoir**

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

**Differential Oil**

20.4 quarts / 19.3 liters

**Cooling System**

24 US gal / 91 liters

**Transmissions**

- **Automatic Transmission**  
(does not include external circuits)  
  
40 US qts / 37,8 liters
- **Manual Transmission**
  - 7 speed** ..... 24 US qts / 22,7 liters
  - 6 speed** ..... 20,5 US qts / 19.4 liters

**Power Steering Reservoir**

4 US qts / 3,7 liters

**Windshield Washer Reservoir**

5 US gal / 19 liters

**FUEL TYPE**

Specification: ..... ASTM D-975

Recommended grade:..... 1-D

Acceptable grade:..... 2-D

**WHEELS AND TIRES**

Keep the tires inflated to the recommended inflation pressure to prolong tire life and for safety. See the tire inflation pressures and loadings in the Coach Final Record located in the technical publication package supplied with the coach.

**NOTE:** For a specific vehicle, inflation pressures and loadings change with the type of tires.

**WARNING:** All tires on the same axle should always be inflated to the same pressure. A 5 psi (35 kPa) under inflation in one front tire not only can destroy ease of steering, but creates steering hazard which could lead to a potential accident.

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

**NOTE:** Always check the spare tire pressure when checking tire pressure. The spare tire should be inflated to the maximum tire pressure specified in the chart.

**BELTS**

**Radiator Fan Drive (Transfer)**

Make: ..... Dayco

Model:

Prevost number ..... 50-6663

Supplier number ..... 5100495

Qty:..... 1

**Radiator Fan Drive with  
Thermostatic Option**

Make:.....Dayco  
 Model:.....50-6691  
 Qty: ..... 3

**A/C System Compressor**

Make:..... Gates  
 Model:..... CX 97  
 Qty:..... 2

**TRANSMISSIONS**

- **Automatic**

**Allison B-500 World Trans., 6-speed**

Available in 4, 5, or 6 speed shift calibrations.

<b>Gear</b>	<b>Ratio</b>
1 <sup>st</sup> .....	3.510
2 <sup>nd</sup> .....	1.906
3 <sup>rd</sup> .....	1.429
4 <sup>th</sup> .....	1.000
5 <sup>th</sup> .....	0.737
6 <sup>th</sup> .....	0.639
Rev.....	4.801
Converter .....	1.578
Output retarder.....	optional

**NOTE:** Gear ratios do not include torque converter multiplication.

- **Manual**

**Spicer PS145-7A, 7-speed**

<b>Gear</b>	<b>Ratio</b>
1 <sup>st</sup> .....	10.13
2 <sup>nd</sup> .....	5.99
3 <sup>rd</sup> .....	3.56
4 <sup>th</sup> .....	2.57
5 <sup>th</sup> .....	1.84
6 <sup>th</sup> .....	1.33
7 <sup>th</sup> .....	1.00
Rev.....	10.13

**Spicer PS130-6B, 6-speed**

<b>Gear</b>	<b>Ratio</b>
1 <sup>st</sup> .....	8.53
2 <sup>nd</sup> .....	4.87
3 <sup>rd</sup> .....	3.00
4 <sup>th</sup> .....	1.90
5 <sup>th</sup> .....	1.33
6 <sup>th</sup> .....	1.00
Rev.....	8.53



## SOUND SYSTEM

Sixteen (H3-45) or twelve (H3-41) Hi-Fi speakers in passengers' section (standard)

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

Deluxe sound system AM/FM cassette (optional)

CD player (10 stacks) (optional)

PA system with volume control (standard)

Microphone outlets (one standard)

Cellular phone antenna (optional)

## VIDEO SYSTEM (Optional)

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: 15-W40 with classification API: CF4 and meeting military specification: MIL-L-2104E.

### Transmission

#### Automatic

Use, "Dexron IIE" "Dexron III" or "Mercon" 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 coach is operated.

SAE 85W-140 (above 10 °F (-12 °C))

SAE 75W-90 (below 10 °F (-12 °C))

### Fan Gearbox

Bearing and gear MOBIL SHC 630 synthetic lubricant (PREVOST # 180217) is recommended for the fan gearbox.

### Power Steering Reservoir

Fill reservoir with "Dexron II", "Dexron IIE", "Dexron III" or "Mercon" 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**

Use DOT 3 heavy-duty brake fluid.

**HEATING AND AIR CONDITIONING SYSTEM**

**Driver's System**

Air conditioning capacity: ..... 2 tons

Refrigerant: ..... 134a

Heating capacity:..... 37,000 Btu/hr

**Central System**

Air conditioning capacity: ..... 7.5 tons

Refrigerant: ..... 134a

Heating capacity:..... 152,000 Btu/hr

Modulated A/C and ventilation speed

Two axial fans

Make: ..... Leroy Somer

Model: ..... TAP 12

Voltage: .....27.5 V

Amperage: .....23 A

Speed:.....1900 rpm

P:.....0.57 hp

Two blowers

One blower motor

Model: .....Prevost

Type: ..... T 19

Compound winding

Speed: ..... 1750 rpm

Power:..... 2 hp

Voltage:.....27.5 V

Maximum amperage: ..... 69 A

**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

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 liters)

Approved oil: ..... Castrol S-W 68 (POE)

**ANTILOCK BRAKING SYSTEM (ABS)**

- Components:        Electronic Control Unit (ECU)
- Solenoid control valves
- Sensors
- Clamping bushes
- Wiring harnesses

**Electronic Control Unit 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<sup>2</sup>)

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 (ESPAR)  
TECHNICAL DATA**

Heater: ..... Model D12W

Heating capacity: ..... 12 kW

Heating output .....40,000 Btu/hr

Fuel type: ..... Same as engine

Fuel consumption:  
..... 1,75 U.S. quarts (1,65 liter) / hour

Rated voltage.....24 ± 4 volts

Electric power consumption: ..... 55 watts

**DDEC III DIAGNOSTIC CODES**

**To Read Codes:**

Plug a diagnostic data reader into the receptacle located on the side panel of the L.H. control panel or momentarily depress the STOP ENGINE OVERRIDE switch, located on the L.H. lower control panel, with the ignition ON, the engine idling or engine shut-off. Active codes will be flashed on the STOP ENGINE indicator light, located on the central dashboard, followed by the inactive codes being flashed on the CHECK ENGINE indicator light located on the central dashboard. The cycle is repeated until the operator depresses the STOP ENGINE OVERRIDE switch. For example; a code "43" consists of four flashes, followed by a short pause, then another three flashes in quick succession. The following table is a list of the diagnostic codes.

DDEC Code Number (Flashed)	DESCRIPTION	DDEC Code Number (Flashed)	DESCRIPTION
11	Variable speed governor sensor voltage low	12	Variable speed governor sensor voltage high
13	Coolant level circuit failed low	14	Intercooler temperature circuit failed high
14	Coolant temperature circuit failed high	14	Oil temperature circuit failed high
15	Intercooler temperature circuit failed low	15	Coolant temperature circuit failed low
15	Oil temperature circuit failed low	16	Coolant level circuit failed high
17	Bypass position circuit failed high	18	Bypass position circuit failed low
21	EFPA circuit failed high	22	EFPA circuit failed low
23	Fuel temperature circuit failed high	24	Fuel temperature circuit failed low
25	Reserved for "no codes"	26	Aux. shutdown #1 active
26	Aux. shutdown #2 active	27	Air temperature circuit failed high
28	Air temperature circuit failed low	31	Aux. output #3 open circuit (high side)
31	Aux. output #3 short to ground (high side)	31	Aux. output #4 open circuit (high side)
31	Aux. output #4 short to ground (high side)	32	SEL open circuit
32	SEL short to battery	33	Turbo boost pressure circuit failed high
34	Turbo boost pressure circuit failed low	35	Oil pressure circuit failed high

**TECHNICAL INFORMATION**

DDEC Code Number (Flashed)	DESCRIPTION	DDEC Code Number (Flashed)	DESCRIPTION
36	Oil pressure circuit failed low	37	Fuel pressure circuit failed high
38	Fuel pressure circuit failed low	41	Too many SRS (missing TRS)
42	Too few SRS (missing SRS)	43	Coolant level low
44	Intercooler temperature high	44	Coolant temperature high
44	Oil temperature high	45	Oil pressure low
46	Battery voltage low	47	Fuel pressure high
48	Fuel pressure low	52	A/D conversion fail
53	Nonvolatile checksum incorrect	53	EEPROM write error
54	Vehicle speed sensor fault	55	J1939 data link fault
55	Proprietary link fault (master)	55	Proprietary link fault (receiver)
56	J1587 data link fault	57	J1922 data link fault
58	Torque overload	61	Response time long
62	Aux. output #1 short to battery	62	Aux. output #1 open circuit
62	Aux. output #2 short to battery	62	Aux. output #2 open circuit
62	Aux. output #5 short to battery	62	Aux. output #5 open circuit
62	Aux. output #6 short to battery	62	Aux. output #6 open circuit
62	Aux. output #7 short to battery	62	Aux. output #7 open circuit
62	Aux. output #8 short to battery	62	Aux. output #8 open circuit
63	PWM #1 short to battery	63	PWM #1 open circuit
63	PWM #2 short to battery	63	PWM #2 open circuit
63	PWM #3 short to battery	63	PWM #3 open circuit
63	PWM #4 short to battery	63	PWM #4 open circuit
64	Turbo speed circuit failed	65	Reserved for air filter differential pressure circuit failed high
65	Reserved for air filter differential pressure circuit failed low	66	Reserved for oil filter differential pressure circuit failed high
66	Reserved for oil filter differential	67	Coolant pressure circuit failed high



**TECHNICAL INFORMATION**

DDEC Code Number (Flashed)	DESCRIPTION	DDEC Code Number (Flashed)	DESCRIPTION
	pressure circuit failed low		
67	Coolant pressure circuit failed low	68	Idle validation circuit fault (grounded circuit)
68	Idle validation circuit fault (open circuit)	71	Injector response time short
72	Vehicle overspeed	72	Reserved for vehicle overspeed (absolute)
73	Reserved for air differential pressure high	74	Oil differential pressure high
75	Battery voltage high	76	Engine overspeed with engine brake
77	All other faults not listed	81	Timing actuator (dual fuel) failed high
81	Oil level circuit failed high	81	Crankcase pressure circuit failed high
82	Timing actuator (dual fuel) failed low	82	Oil level circuit failed low
82	Crankcase pressure circuit failed low	83	Oil level high
83	Crankcase pressure high	84	Oil level low
84	Crankcase pressure low	85	Engine overspeed
86	Pump pressure circuit failed high	86	Barometric pressure circuit failed high
87	Pump pressure circuit failed low	87	Barometric pressure circuit failed high
88	Coolant pressure low	--	CEL short to battery
--	CEL open circuit	--	Clock Module failure
--	Clock module abnormal rate		

**WORLD TRANSMISSION (WT) DIAGNOSTIC CODES**

**Diagnostic Code Memory**

Diagnostic codes are stored in a list in memory (sometimes referred to as a queue). The last occurring codes are listed first. Up to five codes can be stored in memory. Accessing the code list position, main code, sub code and active indicator is done through the shift selector display or through the Pro-Link diagnostic tool. Access to the ignition cycle counter and event counter is through the Pro-Link diagnostic tool only. The following table is an example of the information stored in memory.

Code List Position	Main Code	Sub Code	Active Indicator	Ignition Cycle Counter	Event Counter
d1	21	12	YES	00	10
d2	41	12	YES	00	04
d3	23	12	NO	08	02
d4	34	12	NO	13	01
d5	56	11	NO	22	02
Displayed on shift selector display and diagnostic tool			"YES"=ACTIVE = "MODE ON"	Ignition cycle counter and event counter are not available on shift selector display	

**NOTE:** All information stored in memory can be accessed using the Pro-Link diagnostic tool.

**Definitions of Diagnostic Codes**

Diagnostic codes are defined as follows:

**Code list position:**

The diagnostic codes are stored in the memory queue in positions 1 through 5. The location of a diagnostic code in the memory queue is identified by "d1" (diagnostic code #1) through "d5".

**Main Code**

The general condition or area of fault detected by the ECU.

**Sub Code**

The specific area or condition under the main code in which the condition was detected.

**Active Indicator**

Illuminates when a fault condition is active (shift selector will display MODE ON or the Pro-Link diagnostic tool will display YES). The indicator will be extinguished when conditions exist that indicate the fault condition is gone.

**Ignition Cycle Counter**

Used to clear inactive diagnostic codes from the code list in memory. The counter is incremented each time a normal ECU power-down occurs following the clearing of the active indicator. A diagnostic code will be cleared from the list when the counter exceeds 25.

**Event Counter**

Used to record the number of times a diagnostic code occurs prior to the incident being cleared from the code list. The last occurring code will be stored in position "d1". If the most recent code is already in the code list, that code will be moved to position "d1". The active indicator will illuminate (shift selector will display MODE ON or the diagnostic tool will display "YES"), the ignition cycle counter will be cleared and "1" will be added to the event counter.

**Clearing the Active Indicator and Code Records from the Code List in Memory:**

If the conditions causing a diagnostic code are cleared, the active indicator can be manually cleared by holding the MODE push-button down continuously for 3 seconds until a tone is heard from the shift selector. To clear code records from the list, hold the MODE push-button down continuously for ten seconds until a second tone sounds. All diagnostic records in the list that are inactive will then be cleared and the remaining records will then move up the list.

**Code Reading and Code Clearing Procedures:**

Diagnostic codes can be read and cleared by two methods: by using the Pro-Link 9000 diagnostic tool plugged into the receptacle located on the L.H. control panel; or, by using the shift selector display. The operation of the Pro-Link 9000 diagnostic tool is described in the user's manual provided with the tool. This section describes how to read and clear codes using the shift selector display.

The Diagnostic Display Mode can be entered for viewing codes at any speed. Codes can only be cleared when the output speed = 0 and no output speed sensor failure is active.

The following describes how to read and clear codes using the shift selector display:

**Reading Codes:**

Read codes as follows:

1. Enter the diagnostic display mode by pressing both the "▲" (up arrow) and "▼" (down arrow) push-buttons at the same time, twice on the push-button shift selector.

**NOTE:** To obtain the oil level, press the "▲" (up arrow) and "▼" (down arrow) push-buttons once, at the same time. Refer to "Oil Level Sensor (OLS) Codes" in this section.

2. Read the first code in the first of the five code positions on the digital display of the shift selector. For example, code "25 11" is stored in the first position. The display will change every two seconds as follows:

- a. Code list position = "d1"
- b. Main code = "25"
- c. Sub code = "11"
- d. Display will repeat steps a., b. and c.

3. Press the MODE push-button momentarily to view the second position (d2) as described in step 2.
4. To view the third, fourth and fifth positions (d3, d4 and d5), momentarily press the MODE push-button as explained above.
5. Pressing the MODE push-button momentarily after the fifth position is displayed will return the code display to the first position (d1).
6. Any code which is active will be indicated by the MODE ON indicator (active indicator) being illuminated while in that code position. While in the normal operating mode, the MODE ON indicator is illuminated to indicate the ECONOMY mode operation. Refer to "Controls & Instruments" section under MODE.
7. Any code position in the list which does not have a diagnostic code logged will display "- -" for both the main and sub code displays. All positions after a code position without any code stored will also display "- -".

**Clearing Codes:**

Clear codes as follows:

1. Clearing of the active indicator is automatically done at ECU power-down for all codes except code "69 34".
2. Some codes will clear the active indicator automatically when the condition causing the code is no longer detected by the ECU. Refer to the "Diagnostic Code List and Description" table in this section.
3. Manual clearing is possible while in the diagnostic display mode and after the condition causing the code is corrected (output speed must be zero).

- To clear all active indicators, hold down the MODE push-button continuously for 3 seconds until the shift selector tone sounds for 0.5 seconds.
- Release the MODE push-button to return to normal operating mode. If the condition causing the code was not active at the time, the active indicator will go out.

**NOTE:** *If clearing a code while locked in a drive (D) or reverse (R) position (fail-to-range), the transmission will still be in drive (D) or reverse (R) when the clearing procedure is completed. Neutral (N) must be manually selected.*

#### **Exiting the Diagnostic Display Mode:**

The diagnostic display mode can be exited by any of the following methods:

1. Press the "▲" (up arrow) and "▼" (down arrow) push-buttons at the same time on the push-button shift selector.
2. Press any range button, "D", "N" or "R" on the push-button shift selector (the shift will be commanded if it is not inhibited by an active code).
3. Do nothing and wait until the calibrated time (approximately 10 minutes) has passed. The system will automatically return to the normal operating mode.
4. Turn off power to the ECU (shut-off the engine with the ignition key).
5. After clearing the active indicator as described in "Clearing Codes" section.

#### **Clearing Records from the Code List in Memory**

If the active indicator has been successfully cleared manually, and the MODE push-button is held down continuously for ten seconds while in the display mode until a tone sounds, all diagnostic records in the code list that are not active will be cleared and the remaining records will be moved up the code list.

#### **Code Chart Abbreviations**

The following responses are used in the "Diagnostic Code List and Description" table to command safe operation when diagnostic codes are set.

#### **DNS (Do Not Shift) Response**

- Turn off lock-up clutch and inhibit lock-up operation.
- Inhibit all shifts.
- Turn on DO NOT SHIFT light.
- Pulse the tone generator for 8 seconds when the condition is first detected.
- Blank the select digit in the display.
- Ignore any range selection inputs and disable the push-button feedback tone for the push-button shift selector.

#### **SOL OFF (Solenoid Off) Response**

- All solenoids are commanded off (turning solenoids "A" and "B" off electrically causes them to operate hydraulically).

#### **RPR (Return to Previous Range) Response**

- When the ratio or C3 pressure switch tests associated with a shift are not passed, the ECU commands the same range as commanded at the beginning of the shift.

#### **NNC (Neutral No Clutches) Response**

- When certain ratio or C3 pressure switch tests are not passed, the ECU commands a neutral condition with no clutches applied.

**Diagnostic Code List and Description**

MAIN CODE	SUB CODE	DESCRIPTION	DO NOT SHIFT LIGHT	INHIBITED OPERATION DESCRIPTION
12	12	Oil level, low	No	No upshift above a calibration range
12	23	Oil level,high	No	No upshift above a calibration range
13	12	ECU input voltage, low	Yes	DNS, SOL OFF (Hydraulic default)
13	13	ECU input voltage, medium low	No	None: Shift adaptive feature will not function.
13	23	ECU input voltage, high	Yes	DNS, SOL OFF (Hydraulic default)
14	12	Oil level sensor, low	No	None
14	23	Oil level sensor, high	No	None
21	12	Throttle position sensor, low	No	Use Throttle default value
21	23	Throttle position sensor, high	No	Use Throttle default value
22	14	Engine speed sensor reasonableness test	No	Use default engine speed
22	15	Turbine speed sensor reasonableness test	Yes	DNS, Lock in current range
22	16	Output speed sensor reasonableness or rapid decel test	Yes	DNS, Lock in current range
23	12	Primary Shift Selector or RSI Link Fault	No	Hold in last valid direction
23	13	Primary Shift Selector Mode Function Fault	No	Mode change not permitted
23	14	Secondary Shift Selector or RSI Link Fault	No	Hold in last valid direction
23	15	Secondary Shift Selector Mode Function Fault	No	Mode change not permitted
24	12	Sump oil temperature, cold	Yes	DNS
24	23	Sump oil temperature, hot	No	No upshifts above a calibration range
25	0	Output speed reasonableness test, detected at 0 speed, (L)	Yes	DNS, Lock in current range (L)
25	11	Output speed reasonableness test, detected at 0 speed, (1st)	Yes	DNS, Lock in current range (1 st)
25	22	Output speed reasonableness test, detected at 0 speed 2nd	Yes	DNS, Lock in current range (2nd)

**TECHNICAL INFORMATION**

MAIN CODE	SUB CODE	DESCRIPTION	DO NOT SHIFT LIGHT	INHIBITED OPERATION DESCRIPTION
25	33	Output speed reasonableness test, detected at 0 speed, 3rd	Yes	DNS, Lock in current range (3rd)
25	44	Output speed reasonableness test, detected at 0 speed, 4th	Yes	DNS, Lock in current range (4th)
25	55	Output speed reasonableness test, detected at 0 speed, 5th	Yes	DNS, Lock in current range (5th)
25	66	Output speed reasonableness test, detected at 0 speed, 6th	Yes	DNS, Lock in current range (6th)
25	77	Output speed reasonableness test, detected at 0 speed, R	Yes	DNS, Lock in current range (R)
32	0	C3 pressure switch open, L range	Yes	DNS, Lock in current range (L)
32	33	C3 pressure switch open, 3rd range	Yes	DNS, Lock in current range (3rd)
32	55	C3 pressure switch open, 5th range	Yes	DNS, Lock in current range (5th)
32	77	C3 pressure switch open, R range	Yes	DNS, Lock in current range (R)
33	12	Sump oil temperature sensor, low	No	Use default value of 200ø F (93ø C)
33	23	Sump oil temperature sensor, high	No	Use default value of 200ø F (93ø C)
34	12	EEPROM, factory cal. compatibility number wrong	Yes	DNS, SOL OFF (Hydraulic default)
34	13	EEPROM, factory calibration block checksum	Yes	DNS, SOL OFF (Hydraulic default)
34	14	EEPROM, Power Off Block checksum	Yes	Use previous location, or factory calibration and reset adaptive
34	15	EEPROM, Diagnostic Queue Block Checksum	Yes	Use previous location, or clear diagnostic queue
34	16	EEPROM, Real Time Block Checksum	Yes	DNS, SOL OFF (Hydraulic default)
35	0	Power interruption (Code set after power restored)	No	NONE (Hydraulic default during interruption)
35	16	Real Time EEPROM Write Interruption	Yes	DNS, SOL OFF (Hydraulic default)

**TECHNICAL INFORMATION**

MAIN CODE	SUB CODE	DESCRIPTION	DO NOT SHIFT LIGHT	INHIBITED OPERATION DESCRIPTION
36	0	Hardware/Software not compatible	Yes	DNS, SOL OFF (Hydraulic default)
41	12	Open or short to ground, A solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
41	13	Open or short to ground, B solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
41	14	Open or short to ground, C solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
41	15	Open or short to ground, D solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
41	16	Open or short to ground, E solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
41	21	Open or short to ground, F solenoid circuit	No	Lock-up inhibited
41	22	Open or short to ground, G solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
41	23	Open or short to ground, H solenoid circuit	No	Retarder allowed, differential lock inhibited
41	24	Open or short to ground, J solenoid circuit	No	Low and 1st inhibited
41	25	Open or short to ground, K solenoid circuit	No	K solenoid operation inhibited
41	26	Open or short to ground, N solenoid circuit	No	Low and 1st inhibited
42	12	Short to battery, A solenoid circuit	Yes	DNS, Lock in a range
42	13	Short to battery, B solenoid circuit	Yes	DNS, Lock in a range
42	14	Short to battery, C solenoid circuit	Yes	DNS, Lock in a range
42	15	Short to battery, D solenoid circuit	Yes	DNS, Lock in a range
42	16	Short to battery, E solenoid circuit	Yes	DNS, Lock in a range
42	21	Short to battery, F solenoid circuit	No	Lock-up inhibited
42	22	Short to battery, G solenoid circuit	Yes	DNS, Lock in a range

**TECHNICAL INFORMATION**

<b>MAIN CODE</b>	<b>SUB CODE</b>	<b>DESCRIPTION</b>	<b>DO NOT SHIFT LIGHT</b>	<b>INHIBITED OPERATION DESCRIPTION</b>
42	23	Short to battery, H solenoid circuit	No	Retarder allowed, differential lock inhibited
42	24	Short to battery, J solenoid circuit	No	Low and 1st inhibited
42	25	Short to battery, K solenoid circuit	No	K solenoid operation inhibited
42	26	Short to battery, N solenoid circuit	No	Low and 1st inhibited
43	21	Low side driver, F solenoid circuit	No	Lock-up inhibited
43	25	Low side driver, K solenoid circuit	No	K solenoid operation inhibited
43	26	Low side driver, N solenoid circuit	No	Low and 1st inhibited
44	12	Short to ground,A solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
44	13	Short to ground,B solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
44	14	Short to ground,C solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
44	15	Short to ground,D solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
44	16	Short to ground,E solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
44	21	Short to ground,F solenoid circuit	No	Lock-up inhibited
44	22	Short to ground,G solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
44	23	Short to ground,H solenoid circuit	No	Retarder allowed. differential lock inhibited
44	24	Short to ground,J solenoid circuit	No	Low and 1st inhibited
44	25	Short to ground,K solenoid circuit	No	K solenoid operation inhibited
44	26	Short to ground,N solenoid circuit	No	Low and 1st inhibited
45	12	Open circuit,A solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)



**TECHNICAL INFORMATION**

<b>MAIN CODE</b>	<b>SUB CODE</b>	<b>DESCRIPTION</b>	<b>DO NOT SHIFT LIGHT</b>	<b>INHIBITED OPERATION DESCRIPTION</b>
45	13	Open circuit,B solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
45	14	Open circuit,C solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
45	15	Open circuit,D solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
45	16	Open circuit,E solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
45	21	Open circuit,F solenoid circuit	No	Lock-up inhibited
45	22	Open circuit,G solenoid circuit	Yes	DNS, SOL OFF (Hydraulic default)
45	23	Open circuit,H solenoid circuit	No	Retarder allowed differential lock inhibited
45	24	Open circuit,J solenoid circuit	No	Low and 1st inhibited
45	25	Open circuit,K solenoid circuit	No	K solenoid operation inhibited
45	26	Open circuit,N solenoid circuit	No	Low and 1st inhibited
51	10	Offgoing ratio test (during shift), 1 to L	Yes	Low and 1st inhibited
51	12	Offgoing ratio test (during shift), 1 to 2	Yes	DNS, RPR
51	21	Offgoing ratio test (during shift), 2 to 1	Yes	DNS, RPR
51	23	Offgoing ratio test (during shift). 2 to 3	Yes	DNS, RPR
51	43	Offgoing ratio test (during shift), 4 to 3	Yes	DNS, RPR
51	45	Offgoing ratio test (during shift), 4 to 5	Yes	DNS, RPR

**TECHNICAL INFORMATION**

MAIN CODE	SUB CODE	DESCRIPTION	DO NOT SHIFT LIGHT	INHIBITED OPERATION DESCRIPTION
51	65	Offgoing ratio test (during shift), 6 to 5	Yes	DNS, RPR
52	1	Offgoing C3PS test (during shift), L to 1	Yes	DNS, RPR
52	8	Offgoing C3PS test (during shift), L to N1	Yes	DNS, NNC
52	32	Offgoing C3PS test (during shift), 3 to 2	Yes	DNS, RPR
52	34	Offgoing C3PS test (during shift), 3 to 4	Yes	DNS, RPR
52	54	Offgoing C3PS test (during shift), 5 to 4	Yes	DNS, RPR
52	56	Offgoing C3PS test (during shift), 5 to 6	Yes	DNS, RPR
52	71	Offgoing C3PS test (during shift), R to 1	Yes	DNS, NNC
52	72	Offgoing C3PS test (during shift), R to 2	Yes	DNS, NNC
52	78	Offgoing C3PS test (during shift), R to N1	Yes	DNS, NNC
52	79	Offgoing C3PS test (during shift), R to 2 (R to NNC to 2)	Yes	DNS, NNC
52	99	Offgoing C3PS test (during shift), N3 to N2	Yes	DNS, RPR
53	8	Offgoing speed test (during shift), L to N1	Yes	DNS, NNC

**TECHNICAL INFORMATION**

MAIN CODE	SUB CODE	DESCRIPTION	DO NOT SHIFT LIGHT	INHIBITED OPERATION DESCRIPTION
53	18	Offgoing speed test (during shift), 1 to N1	Yes	DNS, NNC
53	28	Offgoing speed test (during shift), 2 to N1	Yes	DNS, NNC
53	29	Offgoing speed test (during shift), 2 to N2	Yes	DNS, RPR
53	38	Offgoing speed test (during shift), 3 to N1	Yes	DNS, NNC
53	39	Offgoing speed test (during shift), 3 to N3	Yes	DNS, RPR
53	48	Offgoing speed test (during shift), 4 to N1	Yes	DNS, NNC
53	49	Offgoing speed test (during shift), 4 to N3	Yes	DNS, RPR
53	58	Offgoing speed test (during shift), 5 to N1	Yes	DNS, NNC
53	59	Offgoing speed test (during shift), 5 to N3	Yes	DNS, RPR
53	68	Offgoing speed test (during shift), 6 to N1	Yes	DNS, NNC
53	69	Offgoing speed test (during shift), 6 to N4	Yes	DNS, RPR
53	78	Offgoing speed test (during shift), R to N1	Yes	DNS, NNC
53	99	Offgoing speed test (during shift), N2 to N3 or N3 to N2	Yes	DNS, RPR

**TECHNICAL INFORMATION**

MAIN CODE	SUB CODE	DESCRIPTION	DO NOT SHIFT LIGHT	INHIBITED OPERATION DESCRIPTION
54	1	Oncoming ratio test (after shift), L to 1	Yes	DNS, RPR
54	7	Oncoming ratio test (after shift), L to R	Yes	DNS, NNC
54	10	Oncoming ratio test (after shift), 1 to L	Yes	DNS, RPR
54	12	Oncoming ratio test (after shift), 1 to 2	Yes	DNS, RPR
54	17	Oncoming ratio test (after shift), 1 to R	Yes	DNS, NNC
54	21	Oncoming ratio test (after shift), 2 to 1	Yes	DNS, RPR
54	23	Oncoming ratio test (after shift), 2 to 3	Yes	DNS, RPR
54	27	Oncoming ratio test (after shift), 2 to R	Yes	DNS, NNC
54	32	Oncoming ratio test (after shift), 3 to 2	Yes	DNS, RPR
54	34	Oncoming ratio test (after shift), 3 to 4	Yes	DNS, RPR
54	43	Oncoming ratio test (after shift), 4 to 3	Yes	DNS, RPR
54	45	Oncoming ratio test (after shift), 4 to 5	Yes	DNS, RPR or SOL OFF (Hydraulic default)
54	54	Oncoming ratio test (after shift), 5 to 4	Yes	DNS, RPR

**TECHNICAL INFORMATION**

MAIN CODE	SUB CODE	DESCRIPTION	DO NOT SHIFT LIGHT	INHIBITED OPERATION DESCRIPTION
54	56	Oncoming ratio test (after shift), 5 to 6	Yes	DNS,RPR
54	65	Oncoming ratio test (after shift), 6 to 5	Yes	DNS,RPR
54	70	Oncoming ratio test (after shift), R to L	Yes	DNS,NNC
54	71	Oncoming ratio test (after shift), R to 1	Yes	DNS,NNC
54	72	Oncoming ratio test (after shift), R to 2	Yes	DNS,NNC
54	80	Oncoming ratio test (after shift), N1 to L	Yes	DNS,RPR
54	81	Oncoming ratio test (after shift), N1 to 1	Yes	DNS,RPR
54	82	Oncoming ratio test (after shift), N1 to 2	Yes	DNS,RPR
54	83	Oncoming ratio test (after shift), N1 to 3	Yes	DNS,RPR
54	85	Oncoming ratio test (after shift), N1 to 5	Yes	DNS,RPR
54	86	Oncoming ratio test (after shift), N1 to 6	Yes	DNS, RPR
54	92	Oncoming ratio test (after shift), R to 2 (R to NNC to 2)	Yes	DNS, NNC
54	92	Oncoming ratio test (after shift), N1 to 2 (N1 to NNC to 2)	Yes	DNS, RPR

**TECHNICAL INFORMATION**

<b>MAIN CODE</b>	<b>SUB CODE</b>	<b>DESCRIPTION</b>	<b>DO NOT SHIFT LIGHT</b>	<b>INHIBITED OPERATION DESCRIPTION</b>
54	92	Oncoming ratio test (after shift), N2 to 2	Yes	DNS, RPR
54	93	Oncoming ratio test (after shift), N3 to 3	Yes	DNS, RPR
54	95	Oncoming ratio test (after shift), N3 to 5	Yes	DNS, RPR
54	96	Oncoming ratio test (after shift), N4 to 6	Yes	DNS, RPR
54	97	Oncoming ratio test (after shift), 2 to R (2 to NNC to R)	Yes	DNS, NNC
55	17	Oncoming C3PS test (after shift), 1 to R	Yes	DNS, NNC
55	27	Oncoming C3PS test (after shift), 2 to R	Yes	DNS, NNC
55	80	Oncoming C3PS test (after shift), N1 to L	Yes	DNS, RPR
55	87	Oncoming C3PS test (after shift), N1 to R	Yes	DNS, RPR
55	97	Oncoming C3PS test (after shift), 2 to R or NVL to R (2 to NNC to R)	Yes	DNS, NNC
56	0	Range verification test, L	Yes	DNS, 1st, Low, or SOL OFF (Low)
56	11	Range verification test, 1st	Yes	DNS, 6th
56	22	Range verification test, 2nd	Yes	DNS, 6th or 5th
56	33	Range verification test, 3rd	Yes	DNS, 5th or SOL
56	44	Range verification test, 4th	Yes	DNS, 3rd or 5th

**TECHNICAL INFORMATION**

MAIN CODE	SUB CODE	DESCRIPTION	DO NOT SHIFT LIGHT	INHIBITED OPERATION DESCRIPTION
56	55	Range verification test, 5th	Yes	DNS, SOL OFF (5th) or 3rd
56	66	Range verification test, 6th	Yes	DNS, 5th, 3rd, or SOL OFF (3rd)
56	77	Range verification test, R	Yes	DNS, N2 or N3
57	11	Range verification C3PS test, 1st	Yes	DNS, SOL OFF (3rd)
57	22	Range verification C3PS test, 2nd	Yes	DNS, 3rd
57	44	Range verification C3PS test, 4th	Yes	DNS, 5th or SOL OFF (3rd)
57	66	Range verification C3PS test, 6th	Yes	SOL OFF (5th), DNS
57	88	Range verification C3PS test, N1	Yes	DNS, N3
57	99	Range verification C3PS test, N2 or N4	Yes	DNS, N3
61	0	Retarder oil temperature, hot	No	None
62	12	Retarder oil temperature sensor, low	No	None
62	23	Retarder oil temperature sensor, high	No	None
63	0	Special function input	No	Depends on special function
64	12	Retarder modulation request sensor, low	No	Retarder operation inhibited
64	23	Retarder modulation request sensor, high	No	Retarder operation inhibited
65	0	Engine rating too high	Yes	DNS
66	0	Serial communications interface fault	No	Use default throttle values
69	12	ECU, A solenoid driver open	Yes	DNS, SOL OFF (hydraulic default)
69	13	ECU, B solenoid driver open	Yes	DNS, SOL OFF (hydraulic default)
69	14	ECU, C solenoid driver open	Yes	DNS, SOL OFF (hydraulic default)

**TECHNICAL INFORMATION**

MAIN CODE	SUB CODE	DESCRIPTION	DO NOT SHIFT LIGHT	INHIBITED OPERATION DESCRIPTION
69	15	ECU, D solenoid driver open	Yes	DNS, SOL OFF (hydraulic default)
69	16	ECU, E solenoid driver open	Yes	DNS, SOL OFF (hydraulic default)
69	21	ECU, F solenoid driver open	No	Lock-up inhibited
69	22	ECU, G solenoid driver open	Yes	DNS, SOL OFF (Hydraulic default)
69	23	ECU, H solenoid driver open	No	Retarder allowed, differential lock inhibited
69	24	ECU, J solenoid driver open	No	Low and 1 st inhibited
69	25	ECU, K solenoid driver open	No	K solenoid operation inhibited
69	26	ECU, N solenoid driver open	No	Low and 1st inhibited
69	32	ECU, SPI communications link fault	No	Hold in last valid direction
69	33	ECU, Central Operating Processor (COP) timeout	Yes	Reset ECU, Shutdown ECU on 2nd occurrence (power loss: hydraulic defaults)
69	34	ECU, EEPROM write timeout	Yes	DNS, SOL OFF (Hydraulic default)
69	35	ECU, EEPROM checksum	Yes	Induce COP timeout (reset ECU)
69	36	ECU, RAM self test	Yes	Induce COP timeout (reset ECU)
69	41	ECU, I/O ASIC addressing test	Yes	Induce COP timeout (reset ECU)



**Oil Level Sensor (OLS) Codes**

Oil level codes are obtained as follows:

- Press both the "▲" (up arrow) and "▼" (down arrow) push-buttons simultaneously. Oil level codes are displayed in two minutes (e.g., display will flash and 8, 7,...; countdown will occur during the two minutes) once the following parameters are met:
  - engine at idle
  - oil at operating temperature
  - transmission in neutral (N)
  - transmission output shaft stopped
  - oil level sensor present and working

After two minutes, the display will flash one of the codes shown below.

CODE	CAUSE OF CODE
OL-OK	oil level is correct
LO-01	one quart low
LO-02	two quarts low
HI-01	one quart high
HI-02	two quarts high

**NOTE:** Failure to meet one of the above parameters will stop the two minute countdown. One of the codes shown below will indicate the cause of the countdown interruption. Once all parameters are met, the countdown will continue from where it left off.

CODE	CAUSE OF CODE
OL-50	engine speed (rpm) too low
OL-59	engine speed (rpm) too high
OL-65	neutral must be selected
OL-70	sump oil temperature too low
OL-79	sump oil temperature too high
OL-89	output shaft rotation
OL-95	sensor failure

**Exiting the Oil Level Display Mode**

To exit the oil level display mode, press any range button ("R", "N" or "D").

**Clearing Codes**

If the DO NOT SHIFT light is illuminated, first clear all diagnostic codes by pressing both the "▲" (up arrow) and "▼" (down arrow) push-buttons at the same time, twice.

Take the coach for a test drive. If the DO NOT SHIFT light illuminates again, record the diagnostic codes. Refer to "World Transmission (WT) Diagnostic Codes" under "Reading Codes".

LIGHT BULB DATA

Please, refer to your vehicle Parts Manual for selection of replacement light bulbs.



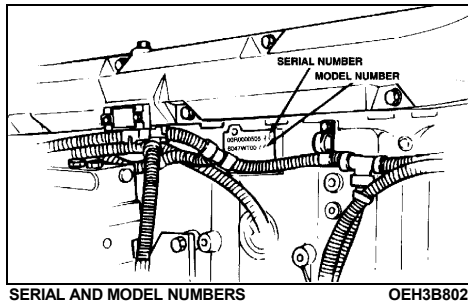
**DATA PLATES AND CERTIFICATIONS**

**Data Plates**

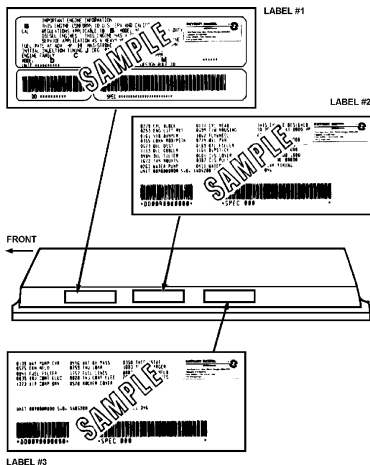
The engine, transmission, axles, chassis and other major components are identified by serial numbers. Refer to the component serial numbers when requesting warranty service.

**Engine**

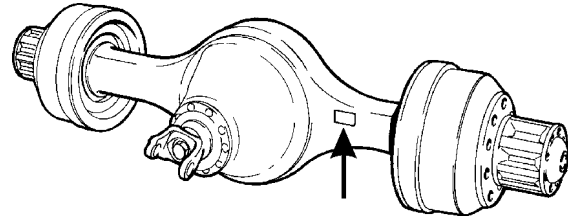
The engine serial and model number are stamped on the cylinder block (as viewed from the flywheel end) on the left side just below the fire deck and above the cast-in Detroit Diesel logo.



In addition, option plates made of laminated paper are located on the rocker cover (starter side). The engine serial and model number and a list of the optional engine equipment is written on the option plate. Refer to this information when ordering replacement parts.



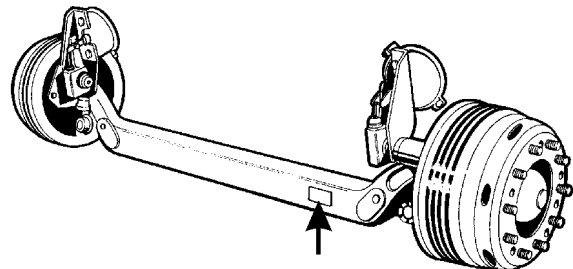
**Drive Axle**



TYPICAL SERIAL AND MODEL NUMBERS

OEH3B812

**Front Axle**

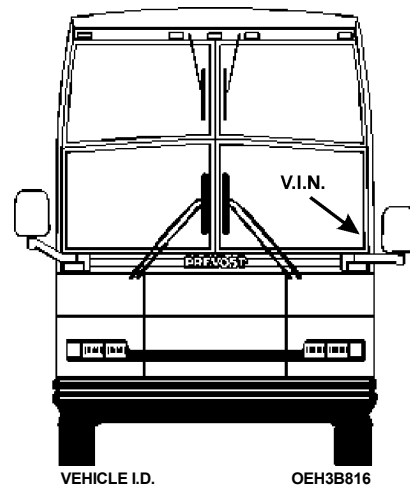


TYPICAL SERIAL AND MODEL NUMBERS

OEH3B814

**Vehicle Identification Number (VIN)**

The Vehicle Identification Number is stamped on a plate located on the windshield frame pillar (driver's side). The VIN is visible from the outside of the coach. Make sure the correct vehicle identification number is given when ordering replacement parts. Using the VIN when ordering parts will facilitate processing.



**NOTE:** Record the VIN in the coach documentation and keep with company records. The VIN will normally be used for vehicle registration and for obtaining vehicle insurance coverage.

**Coach Final Record**

The Coach Final Record is a record of all data pertaining to the assembly of the coach. This record is included in the technical publication package supplied with the coach. Retain this record in the company records office for reference and safe-keeping.

**Safety Certification**

Coach components meet specifications and standards as follows:

- Material and parts conform to ASTM and/or SAE standards in effect at the time of manufacture.
- All factory-installed interior materials meet FMVSS 302 for fire resistance.
- Certified according to Provincial, State and Federal Safety standards (Canadian and US) BMCSS, FMVSS, and CMVSS.

Other applicable certification labels are affixed to the component.

**DOT Certification Label**

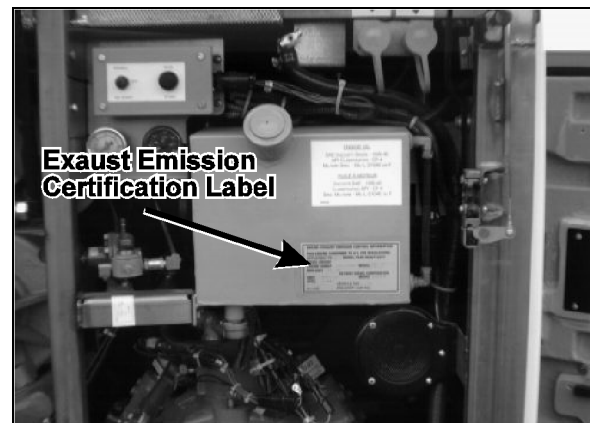
This certifies that coaches manufactured by Prevost Car Inc., comply with all Federal Motor Vehicle Safety Standards at the time of manufacture. The DOT Certification label is affixed on the wall, at the L.H. side of the driver's seat under the L.H. side control panel.



OEH3B818

**EPA Engine Label**

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

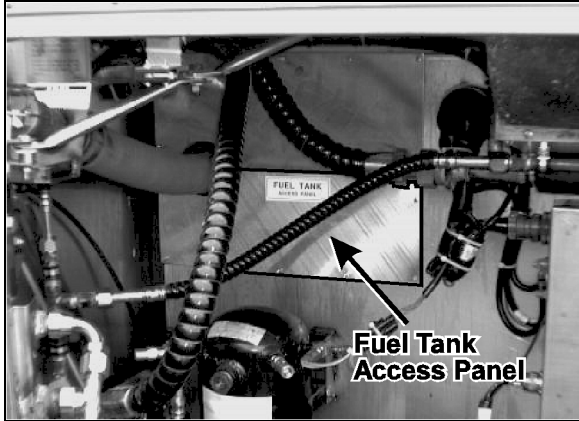


ENGINE COMPARTMENT

OEH3B820

**Fuel Tank Label**

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



FUEL TANK ACCESS PANEL

OEH3B822

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## **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  
35, boulevard Gagnon,  
Sainte-Claire, Québec,  
Canada, G0R 2V0

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





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## **NOTICE**

### **Declaration Of The Manufacturing Defects To The Government Of The United States**

If you believe that your vehicle has defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Prévost Car Inc..

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign.

However, NHTSA cannot become involved in individual problems between you, your dealer, or Prévost Car Inc..

To contact NHTSA you may either call the Auto Safety Hotline toll-free at **1-800-424-9393** (or **366-0123** in Washington, D.C. area) or write to:

**NHTSA  
U.S. Department of transportation  
Washington, D.C. 20590.**

You can also obtain other information about motor vehicle safety from the Hotline.

### **Declaration Of The Manufacturing Defects To The Canadian Government**

If you stay in Canada, and if you believe that your vehicle has a safety defect, you should immediately inform Transport Canada and Prévost Car Inc. You may write to:

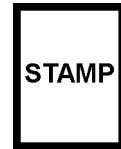
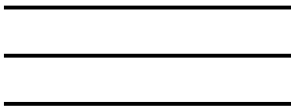
**Transport Canada  
Box 8880  
Ottawa, Ontario, K1G 3J2**

### **Declaration Of The Manufacturing Defects To Prévost Car Inc.**

In addition to notify the NHTSA (or Transport Canada), please contact Prévost Car at **1-418-883-3391**. Or you may write to :

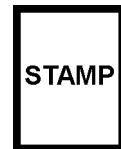
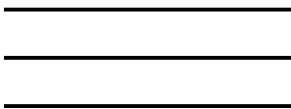
**Prévost Car Inc.  
After-sales service department  
35, boulevard Gagnon  
Ste-Claire, (Québec)  
Canada G0R 2V0**

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**P R E V O S T**

PRÉVOST CAR INC.  
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