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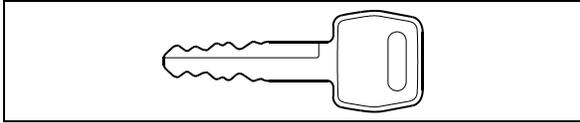
## **24      Controls and Instruments**

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**KEYS**

**ENTRANCE DOOR AND EXTERIOR COMPARTMENT DOORS KEY**

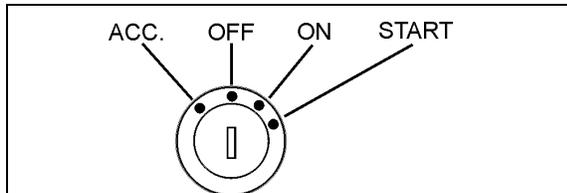


Use this key to lock or unlock the entrance door, the baggage doors, the electrical and service compartment doors.

**NOTE**

*It is also possible to lock or unlock the baggage compartments and engine compartment R.H. side door from the inside by means of the optional baggage compartments locking system.*

**IGNITION SWITCH**



IGNITION SWITCH POSITIONS

06354

Coaches are equipped with an ignition lever instead of an ignition key. Use the ignition lever to activate the electrical circuit by turning it counterclockwise to the ACC position.

To start the engine, turn the lever clockwise to the START position, and then release it. The lever will set to ON position.



**CAUTION**

When the vehicle is parked overnight or for an extended period of time, the battery master switch (ignition switch) should be set to the off position.

**NOTE**

*When the battery master switch (ignition switch) is set to the off position, all electrical supply from the batteries is cut off, with the exception of battery equalizer check module, ECM ignition and power supply, Allison TCM, coolant electronic, coolant heater and water re-circulating pump, pro-driver, power-verter, fire alarm and entrance door.*

The ignition switch doubles as the battery master switch. Any position other than OFF activates the electrical circuits. Electrical circuits are also activated when the hazard switch is depressed. Two auxiliary master switches in series with the ignition switch are installed on the vehicle; one is located on the rear electrical panel and one in the engine compartment on the rear start panel, for maintenance ease.

The ignition switch is located on the lower left side of the dashboard. It has four positions:

**Accessories**

To operate the accessories only, turn the ignition lever counterclockwise to the “ACC” position.

The electrical circuits are activated when the switch is in this position or when the hazard flashers are activated.

The features enabled when the switch is in the ACC position are all those linked directly to the battery plus the exterior temperature display, exterior and interior lighting.

**Off**

In the OFF position, ignition cannot take place.

The electrical circuits are not activated when the switch is in this position. Only the accessories connected directly to the batteries can be activated. These are the coolant heater and water pump, the battery master switch, the baggage compartments locking system, the entrance door and Driver information Display (DID). Maintain the switch in this position when parked overnight or for an extended period.

**NOTE**

*The battery master switch is on when the hazard flashers are activated, even if the lever is in the off position.*

**On**

To place ignition switch to ON, turn the lever clockwise to the first position.

The electrical circuits activated when the switch is in the ACC position plus the transmission, engine and accessories, ABS system, wipers, Aesys electronic destination sign, dashboard cluster gauges and buzzers, air horn and air dryer heater are activated when the switch is in this position. Do not leave the lever in this position unless the engine is running.

### Start

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

The ignition switch is equipped with a starter protection which inhibits turning the lever to the START position if the lever has not previously been turned to the OFF position.



### 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.



### CAUTION

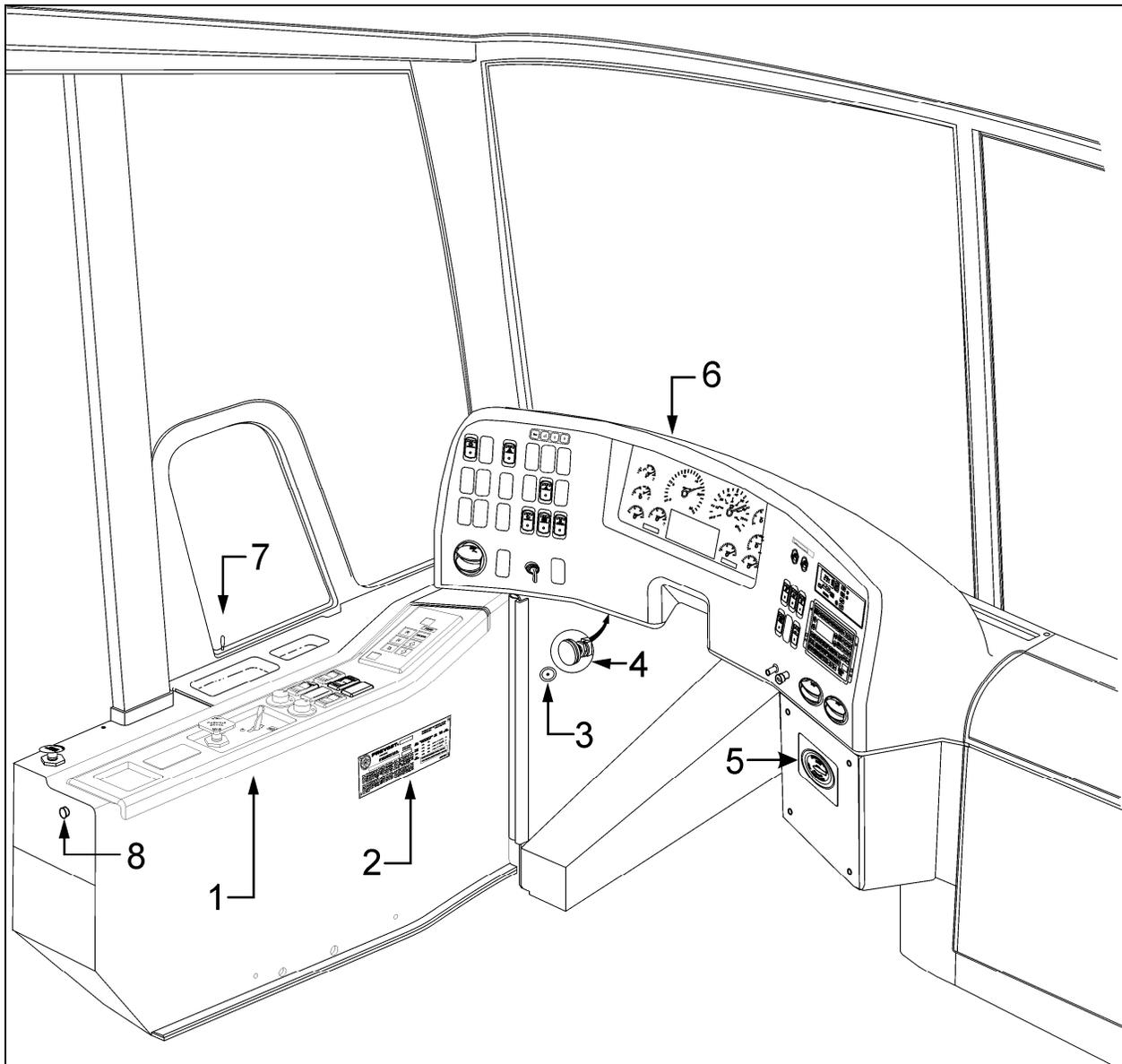
If the “starter on” indicator light remains illuminated even after releasing the ignition switch, stop the engine immediately and set the battery master switch (ignition switch) to the off position. Have the starter checked immediately.

The features activated when the engine is running are all those described above plus the HVAC system and daytime running lights.



### DANGER

**Do not** use ether or other combustible starting aid fluid on any engine equipped with an intake air preheater. If the engine is equipped with a preheater, introduction of ether or similar starting aids could cause a fire or explosion resulting in severe property damage, serious personal injury or death.

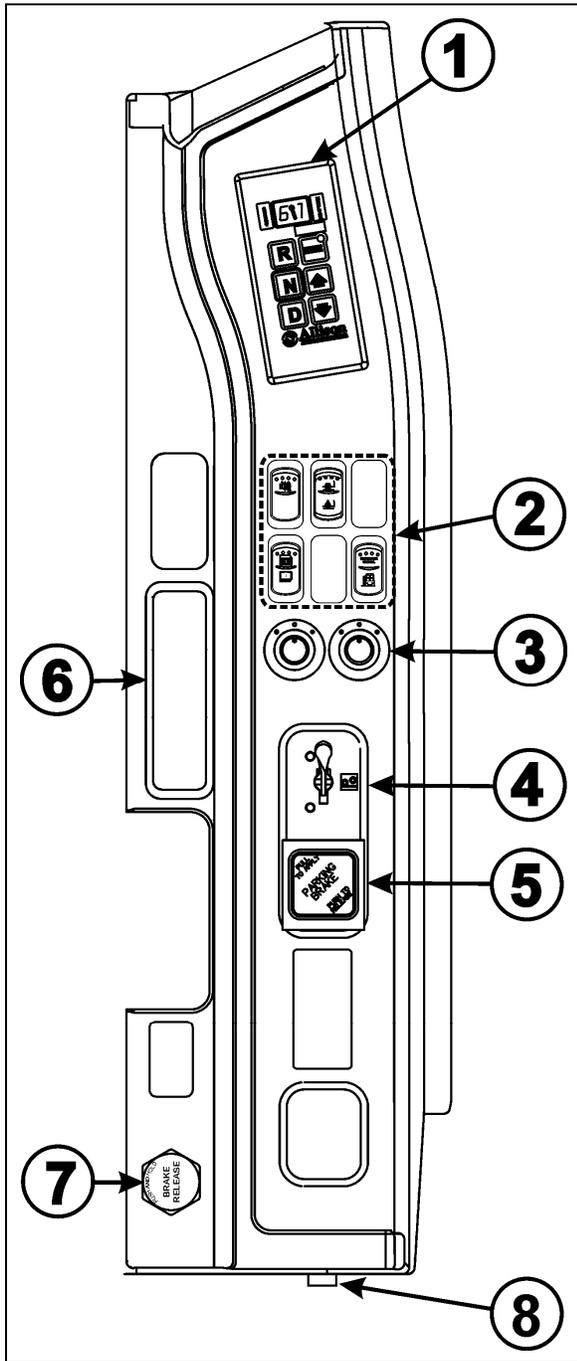


DRIVER'S SECTION

18671

1. Lateral control panel
2. DOT certification plate
3. Diagnostic Data Reader (DDR) receptacle
4. Foot operated steering wheel adjustment unlock air valve
5. Entrance door emergency release air valve
6. Dashboard
7. Front service door unlocking pull rod
8. Silent Alarm Switch

LATERAL CONTROL PANEL



- 1. Transmission control pad
- 2. Control switches
- 3. Mirror controls
- 4. Tag axle control valve
- 5. Parking brakes control valve
- 6. Utility Compartment
- 7. Emergency Parking Brakes Ovrerule Control Valve
- 8. Silent Alarm Switch

LATERAL CONTROL PANEL

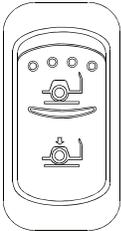
06704

**TRANSMISSION CONTROL PAD (1)**

The Allison transmission control pad is located on the lateral control panel. Refer to "Automatic Transmission" in this chapter for operating instructions and more information.

**CONTROL SWITCHES (2)**

**Kneeling**



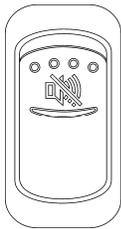
06250

Momentarily press the rocker switch downwards to lower the front end of the coach 4 inches (100 mm). Momentarily press the rocker switch upwards to raise the coach to the normal driving height. Refer to "OTHER FEATURES" chapter for more information.

**NOTE**

The parking brakes must be applied to allow the use of the kneeling.

**Back-up alarm Cancel Switch**

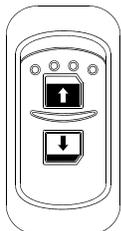


06338

Use this rocker switch to cancel the back-up alarm.

**NOTE:** After use, return to normal operation.

**Power Window Switch**



06338

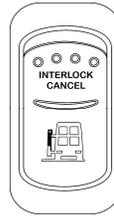
Use this rocker switch to open or close the driver's power window.



**CAUTION**

Close power window when parked or leaving the coach unattended.

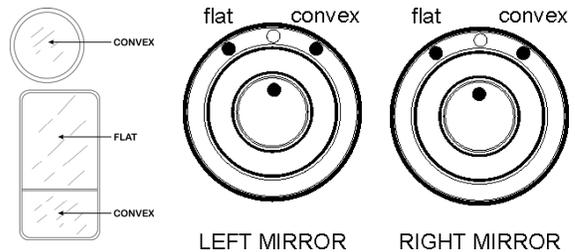
**Entrance door interlock cancel switch**



06266

This switch enables moving the vehicle while the entrance door is open for maintenance purposes or in case of emergency.

**MIRROR CONTROLS (OPTION) (3)**



LEFT MIRROR

RIGHT MIRROR

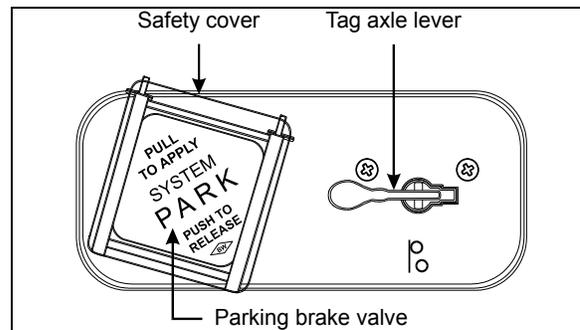
**MIRROR CONTROLS**

06374

Turn left pointer knob counterclockwise for flat mirror adjustments and to the right for convex mirror adjustments, then use the joystick control to adjust the selected mirror's viewing angle. Adjust the right outside mirror similarly but by using the right side control.

**TAG AXLE CONTROL VALVE (4)**

Lift the tag axle by pushing the lever forward. Pulling the lever back will lower the tag axle. Refer to "Other Features" chapter for additional information.



CONTROL VALVES

12129

**PARKING BRAKES CONTROL VALVE (5)**

Spring-loaded parking brakes are applied by pulling up the control valve knob and protector assembly. Lift the safety cover and push down to release brakes. Refer to "Safety Features and Equipment" chapter.

**UTILITY COMPARTMENT (6)**

To open the compartment, lift the cover.

**EMERGENCY/PARKING BRAKES  
OVERRIDE CONTROL VALVE (BRAKE  
RELEASE) (7)**

During normal operation, if air pressure in any brake circuit drops below 40 psi (276 kPa), spring-loaded emergency brake will be immediately applied at full capacity to the drive axle wheels to stop the vehicle. Search and correct the cause of this pressure drop before driving vehicle.

The coach is equipped with the parking brake override system, which allows the vehicle to be driven to the nearest safe parking area even if air pressure is below 40 psi (276 kPa). To actuate the parking brakes override system, push and hold down the control valve located on the lateral control panel.

**SILENT ALARM SWITCH (8)**

Use this switch to signal an emergency and ask for immediate assistance. A message will be sent via the Motorola system to the monitoring station.

**DIAGNOSTIC DATA READER (DDR)  
RECEPTACLE**

To ease troubleshooting, a Diagnostic Data Reader (DDR) (not supplied) can be connected through the DDR receptacle. A user's manual is supplied with the optional DDR. The DDR receptacle is located inside the footwell, on the upper left side wall.

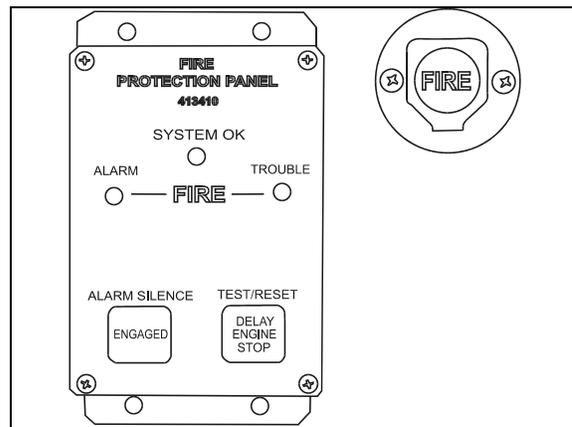
**AUTOMATIC FIRE DETECTION AND  
SUPPRESSION SYSTEM (AFSS)**

**Protection Panel**

The protection panel displays the current system status. The protection panel contains "SYSTEM OK", fire "ALARM" and "TROUBLE" lamps, the audio alarm, the "TEST/RESET" switch, and the "ALARM SILENCE" switch.

The "SYSTEM OK" lamp indicates power is on the system and that there are no trouble conditions present. The "TROUBLE" lamp blinks if there is a fault in the detection circuitry and illuminates solid if there is a fault in the extinguishing circuitry. When the "TROUBLE" lamp is on, the "SYSTEM OK" lamp will be off and the audible alarm will sound intermittently. The "SYSTEM OK" lamp will flash when the system is low on battery power. Depressing the "TEST/RESET" switch tests the protection panel lamps and audio alarm. The "ALARM SILENCE" switch will disable the audio alarm.

When a fire detector automatically detects a fire, the fire "ALARM" lamp and audio alarm activate. When the Manual Activation Switch is activated, the fire "ALARM" lamp blinks and the audio alarm activates. The lamp will remain blinking until power is cycled to the system.



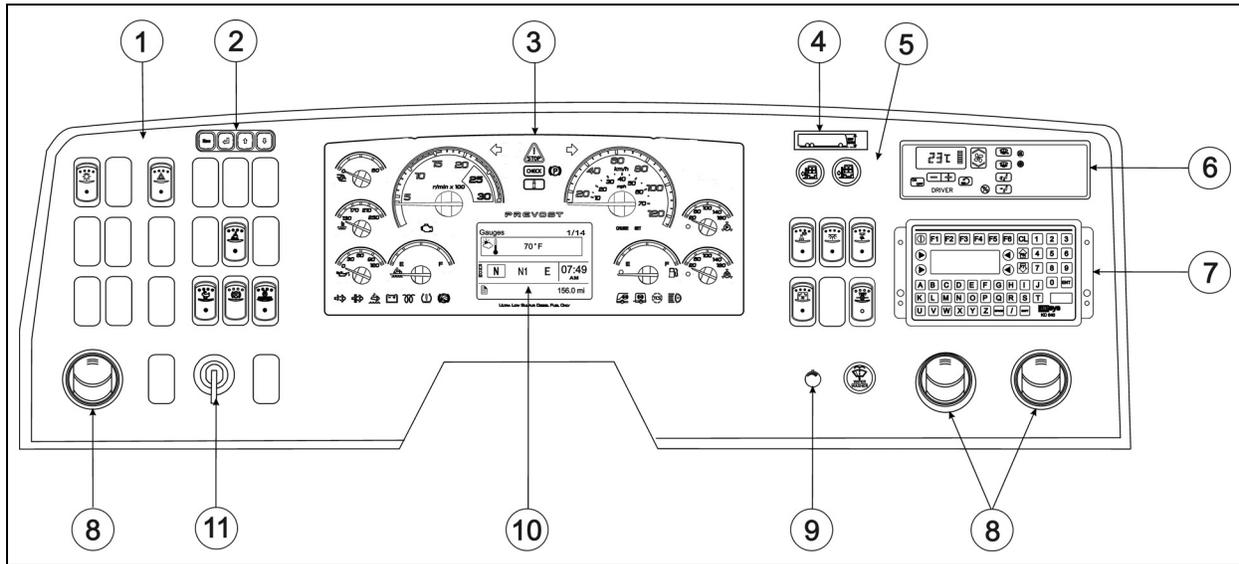
**AFSS PROTECTION PANEL & MANUAL ACTIVATION SWITCH**

**Manual Activation Switch**

The manual activation switch allows immediate system activation (extinguisher discharge and engine shutdown) by the operator at any time. Activation of the switch is accomplished by twisting and pulling the tamper seal to remove, lifting the cover and pressing the red "FIRE" button for more than half a second. After the manual activation switch has been activated, the protection panel will blink the fire "ALARM" indicator until power has been cycled to the system.

Refer to chapter "SAFETY FEATURES AND EQUIPMENT" for more information on *Kidde Dual Spectrum* Automatic Fire detection and Suppression System (AFSS).

**DASHBOARD**



**DASHBOARD**

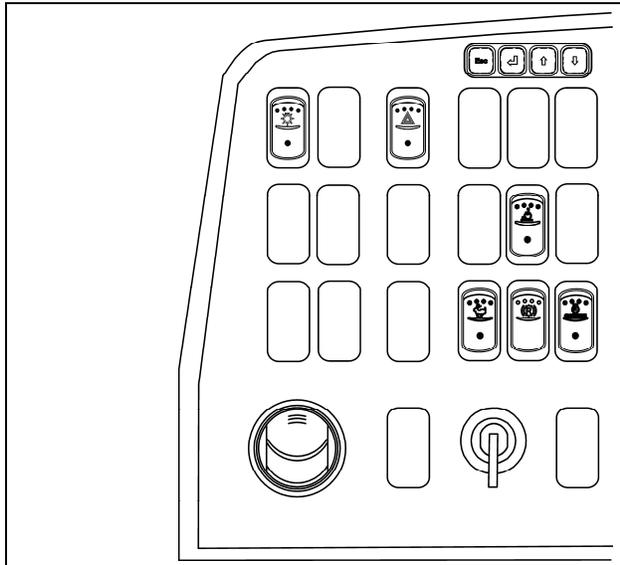
06761

1. L. H. Dashboard Panel
2. Driver Information Display (DID) Keyboard
3. Instrument Cluster
4. Vehicle Clearance Information
5. R. H. Dashboard Panel
6. HVAC Control Unit
7. Electronic Destination Sign Central Control Unit
8. Air Vents
9. Brightness Control
10. Diver Information Display (DID)
11. Ignition Switch (Lever)

**CONTROL SWITCHES**

High quality laser-engraved switches are used to control many of the features of the vehicle. Many switches have an embedded indicator LED to inform the driver at a glance which features are active. Some switches' LED will turn OFF after a short while when the engine is running. This is normal and is designed to reduce glare when driving. The functions still operate even if the LED is OFF. If the switches are still ON when the engine is turned OFF, the LEDs will illuminate to warn the driver to turn them OFF. Switches are described in the order they appear, from left to right, top to bottom.

**L. H. DASHBOARD PANEL**

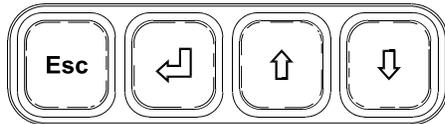


The L.H. Dashboard panel includes controls for the operation of the coach; it also includes the ignition switch and an adjustable air vent.

L. H. DASHBOARD PANEL

06762

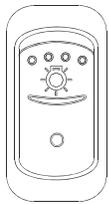
**Driver Information Display (DID)**



06399

This standard feature gathers, stores and displays important information about the vehicle's operation on a display screen on the lower center portion of the cluster. Refer to Driver Information Display in Other Features chapter for a description of how to set up and operate the Driver Information Display.

**Headlights and Exterior Lighting**



06254

**Off position** – Daytime running lights only

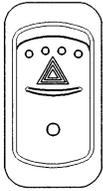
Press this rocker switch to turn on the following lights:

**First position** – Front parking lights, clearance lights, tail lights, license plate lights and marker lights.

**Second position** - Push down fully to turn ON the headlights, the controls and instrument lights and all lights from first position.

**NOTE**

Daytime running lights will be automatically cancelled when the exterior lighting switch is fully depressed (second position).



06256

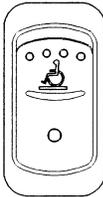
**Hazard Warning Flashers**

Press the rocker switch to make all turn signal lights flash at once. The dashboard telltale lights will flash when the hazard warning flashers are *ON*.



**CAUTION**

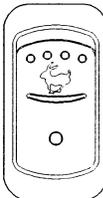
Do not use the hazard flashers for an extended period of time unless necessary because the electrical circuits are activated when the hazard switch is depressed.



06268

**Wheelchair Lift**

Activate the optional wheelchair lift by pressing down on the rocker switch. Refer to “Other Features” section and to wheelchair lift system’s Operator’s Manual for operating instructions.



06264

**Fast Idle**

For extended idling periods, run the engine at fast idle. Press down the rocker switch to engage fast idle. This increases the engine speed to approximately 1,000 rpm. Return to normal idle before driving or when stopping engine.



**CAUTION**

Reduce the engine to normal idle before shutting the engine *off*.

**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 normal idle and remain there as long as the parking brake is not applied and/or transmission is not placed in neutral (n).*

*The engine will return to fast idle once the parking brake is applied or neutral (n) selected.*



06703

**Transmission Retarder**

Press this rocker switch to activate the transmission retarder. Refer to "Transmission Output Retarder" in this chapter. Refer also to "Transmission Retarder" in “OTHER FEATURES” chapter.

**NOTE**

*Deactivating the transmission retarder will turn the indicator light located at the front of the coach ON.*



06265

**Engine Stop Override**

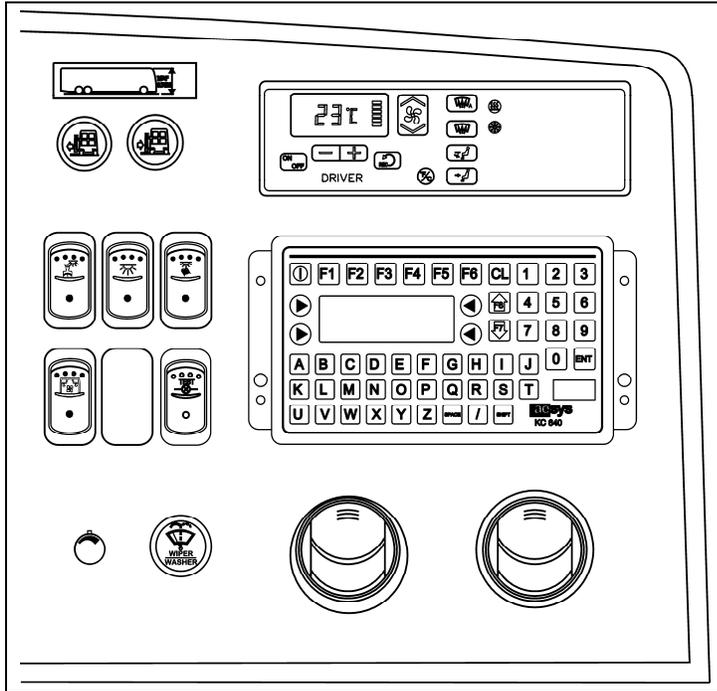
Press this switch then release to override the emergency engine shutdown protection. Engine emergency shutdown will be turned *OFF* for 30 seconds. This procedure can be repeated if done before 30 seconds are up.



**CAUTION**

Use sparingly and in order to move the vehicle to a safe parking place only. Excessive use can cause severe engine damage.

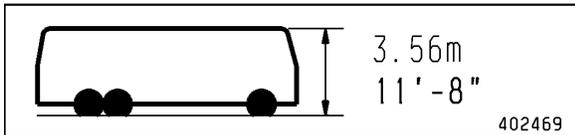
**R. H. DASHBOARD PANEL**



The HVAC control module, electronic destination sign control unit as well as the cluster dimmer switch, interior lighting control switches, entrance door operating buttons and miscellaneous control switches and air vents are located on the R.H. Dashboard panel.

R. H. DASHBOARD PANEL

06724



**Vehicle Clearance Information**

Normal vehicle clearance is 11' 8" (3,56 m).

402469



**WARNING**

Vehicle clearance is higher when the ventilation hatch is open or if additional equipment is installed on the roof.



06464

**Entrance Door Operating Buttons**

Press the L.H. button to open the door, press and hold the R.H. button to close the door.

Entrance door takes less than 5 seconds to fully open or close.



**WARNING**

The door mechanism has no automatic safety protection to avoid injury to bystanders. The driver is responsible for the safe operation of the door.



**Driver's Area Lighting**

Press the rocker switch to illuminate the ceiling lights in the driver's area as needed.



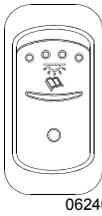
**Interior Lighting**

Press this rocker switch to the first position to illuminate the aisle fluorescent lighting. Press down the second position to illuminate the in-station fluorescent lights.



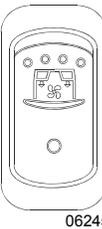
**CAUTION**

To avoid running down the batteries when the engine is OFF, turn off the lights or connect the optional battery charger to a 110 - 120 volt ac power supply.



**Reading Lights**

This switch powers the reading light circuit enabling passengers to operate their personal reading lights. Refer to "Coach Interior" chapter.



**Passenger Overhead Air Registers**

Press the switch to the first position to set the fans to low speed. Press the switch to the second position to set the fans to high speed.



**LED Light Test**

Press this switch while ignition is in the ON position to illuminate the LED lights. Perform this test to verify all of the LED lights in the interior of the bus. LED lights will extinguish automatically after about three seconds.



**Brightness Control**

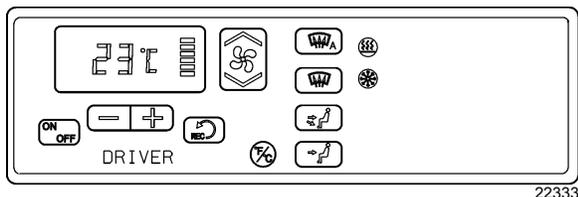
Adjusts the brightness of the dashboard instruments and switches.



**Wiper/Washer Control**

Push the control to activate the windshield washer. Turn the button to activate the wipers. The first position activates the wipers intermittently. The second position is the slow speed and the third position is for high speed wiping.

**HVAC CONTROL UNIT**



The vehicle is slightly pressurized by the central HVAC system to prevent dust and moisture from entering. Air flow and controls divide the vehicle into two areas: driver's area with defroster and passengers' area.

Fresh air is fed in each area and has a separate return air and discharge air duct.

**NOTE**

To operate the air conditioning system when stationary, run engine at fast idle. When the system is running, keep windows and door closed.

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

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

Separate driver and passenger heating, ventilation and air conditioning controls are located on this panel. To operate, the vehicle's engine must be running.

The driver's and the passengers' units may be turned ON by pressing  button.

Also, the driver's HVAC section turns on automatically at starting of the engine and uses the settings that were kept in memory before turning off of the system.

The A/C compressor starts automatically when the two following conditions are satisfied:

1. The outside temperature is above 32°F (0°C).
2. The passenger's area temperature has reached 7°F (4°C) under the set point.

**NOTE**

Upon starting, if the outside temperature is above 32°F (0°C) and then drops below 32°F (0°C), the compressor will keep running up to a temperature of 15°F (-9°C) to prevent condensation from forming on the windows.

All parameters set before turning the system OFF will be kept in memory for the next power ON.

The HVAC module performs a self diagnosis every time it is turned ON. Codes are shown on displays or flashed on control buttons. Refer to "Maintenance Manual" for more information on the diagnostic codes.

**Heating Mode Indicator**



This red LED illuminates when system is heating.

22131

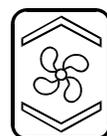
**Cooling Mode Indicator**



This green LED illuminates when the system is cooling (when the compressor clutch is engaged).

22134

**Fan Speed**



22135

The driver's fan has six speeds. Increase speed by pressing on the upper portion of the button, decrease by pressing on the lower portion.

**Recirculate**



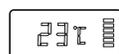
22138

Closes or opens the driver's and passenger's section fresh air damper.

A red LED in the top right corner of the button illuminates when air is recirculated. Use for faster driver's section heating.

This feature is automatically cancelled when defogging is activated.

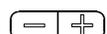
**Driver's section temperature setting**



22303

The temperature displayed on the driver's side HVAC control unit is the temperature set point.

To increase the temperature set point, press on the "+" sign, to decrease the temperature set point, press on the "-" sign. Temperature range is between 60°F and 82°F (16°C to 28°C). On the driver's side only, asking for a temperature set point above 82°F (28°C) will keep the coolant valve open and "FUL" will be displayed.



22132

In case of interior temperature sender unit failure, the coolant valve will remain open and three lines "---" will be displayed.

**WARNING**

Warm temperatures may cause drowsiness and affect alertness while driving. Keep the temperature comfortable but not too high.

**Passenger's section temperature setting**

The passenger's section has a preset temperature of 68°F (20°C).

**NOTE**

Upon starting of the vehicle, when the ambient temperature is very cold and so is the inside of the vehicle, the HVAC control unit will permit a temperature overshoot up to 3° over the passenger's area set point to help warming up of the area because some parts of the vehicle like the seats and the overhead compartments accumulate cold.

**Windshield Defogger**

Upon pressing this button, the dashboard damper sends air only to the lower windshield. The fan is turned on to maximum speed, the fresh air damper opens completely (REC off) and the driver set point is increased to 4°F (2°C) over the passenger's section set point.

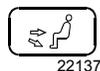


The dashboard damper sends air only to the lower windshield when activated. The footwell damper is closed also but the fan speed can be reduced or increased.



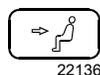
**Panel and Footwell**

The dashboard damper sends air to the panel vents and footwell.



**Panel**

Air is sent to panel registers. The footwell damper is closed.



**Temperature Degree Selector**

Toggles the HVAV control unit temperature units between Fahrenheit and Celsius. The driver's section must be on. Also toggles the outside temperature units displayed on the telltale panel.

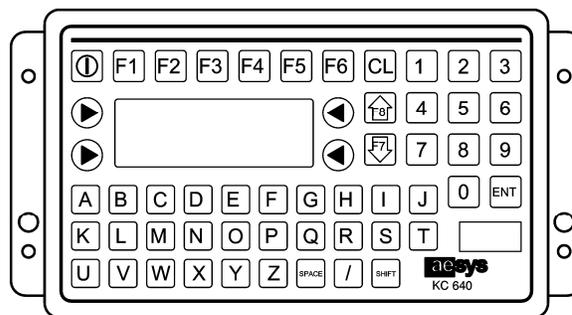


**ELECTRONIC DESTINATION SIGN**

The "aesys" destination sign is automatically activated when the ignition switch located on the dashboard is turned to the ON position.

After the program/TRX file has been successfully loaded, the user can start displaying messages or destinations on the sign by using the following keys:

- Numeric keypad — Type in the destination code number on the keypad
- <ENT>-key — Press the <ENT> key to send the message to sign
- <CL> key — Press <CL> key and press <ENT> to clear/disable all signs
- <F8> — This key starts the message list from the first message/destination entered, then counts down
- <F7> — This key starts the message list from last message/destination entered then counts up, and
- Rocker Switch — Toggle through messages to view code numbers and destinations.



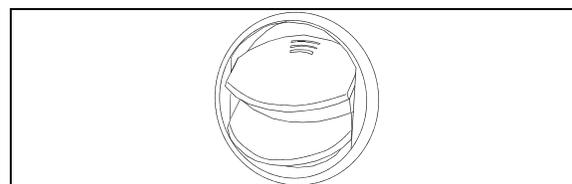
KC640 CENTRAL CONTROL UNIT

**NOTE**

After you select the destination or message, you must press <ENT> to transmit that data to the sign. Refer to Destination Sign Operator's manual included at the end of section 23 in Maintenance Manual for more information on programming and downloading data archive.

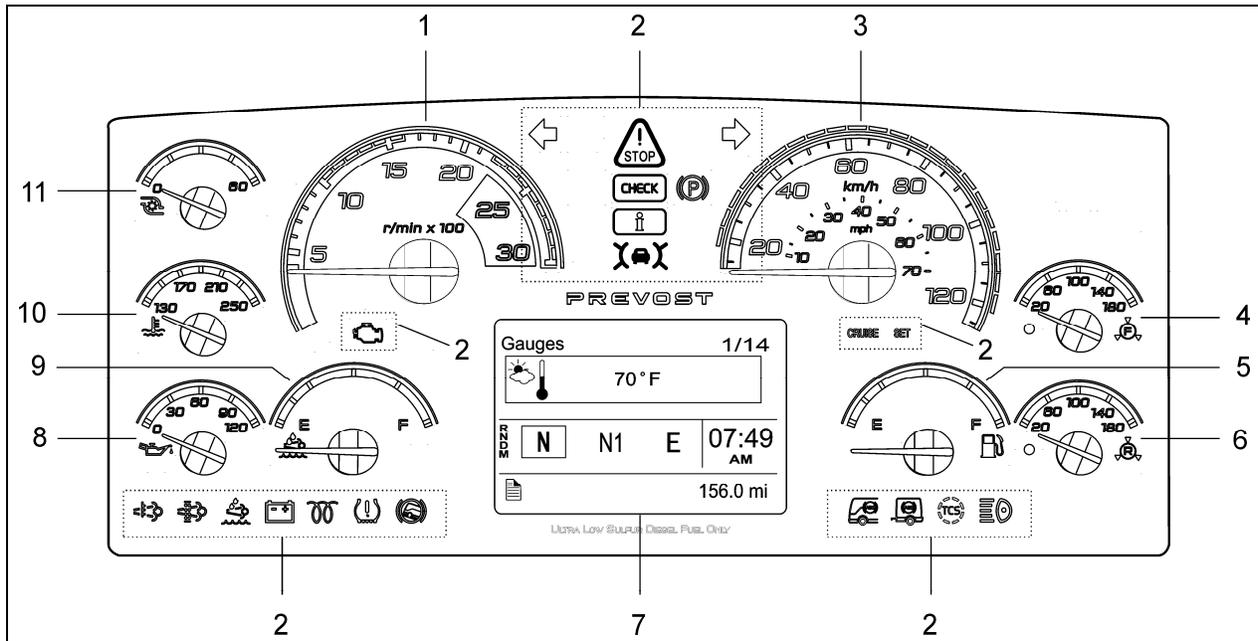
**AIR VENTS**

Three adjustable driver air vents in the dashboard and one near the door feed air to the driver's compartment. Use the HVAC control panel to set air temperature and fan speed.



AIR VENT

**INSTRUMENT CLUSTER**



06727

- |                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>1. TACHOMETER</li> <li>2. TELLTALE LIGHTS</li> <li>3. SPEEDOMETER</li> <li>4. FRONT BRAKE AIR PRESSURE (SECONDARY)</li> <li>5. FUEL LEVEL</li> <li>6. REAR BRAKE AIR PRESSURE (PRIMARY)</li> </ul> | <ul style="list-style-type: none"> <li>7. DRIVER INFORMATION DISPLAY (DID)</li> <li>8. OIL PRESSURE INDICATOR</li> <li>9. DEF LEVEL (DIESEL EXHAUST FLUID) INDICATOR</li> <li>10. ENGINE COOLANT TEMPERATURE</li> <li>11. TURBO BOOST PRESSURE</li> </ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The instrument cluster includes the analog instruments. It also presents two devices to communicate information to the driver, the telltale lights and the Driver Information Display (DID).

Indications and warnings are presented according to three levels of attention required:

**1. THE TELLTALE LIGHTS**

The highest level of attention. The telltale lights are temporary and exceptional; they present information critical to safety or vehicle integrity.

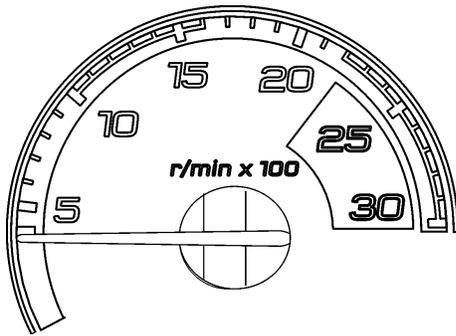
**2. THE POP-UP MESSAGES**

The second level of attention. The pop-up messages appear in the Driver Information Display DID without the driver's intervention and acknowledgement. Pop-up messages present supplemental information to the driver.

**3. THE STATUS LINE**

The lowest level of attention. The status line monitors certain systems and gives feedback to the driver concerning current actions and functions.

**ANALOG INDICATORS**

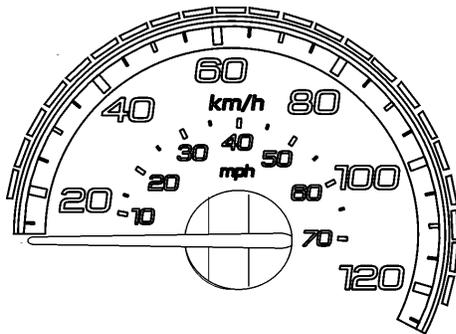


06728

**Tachometer (rpm x 100)**

Indicates the operating speed of the engine in hundreds of revolutions per minute. The tachometer serves as a guide for gear shifting and helps to prevent engine over-speeding when driving downhill with the engine brake operating. Use the green field for normal driving (1000 to 1600 rpm).

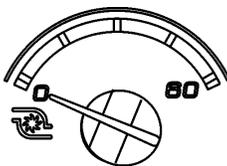
	<p><b>CAUTION</b></p>
<p>Never allow the engine to go into the red field. This could lead to severe engine damage.</p>	



06729

**Speedometer (mph, km/h)**

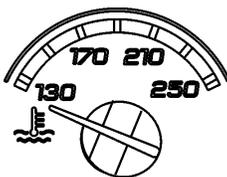
Indicates the vehicle speed in miles per hour (mph) and kilometers per hour (km/h).



06730

**Turbo Boost Pressure (Psi)**

Indicates the turbo boost pressure in psi. This pressure should be the same at a given engine temperature, speed, and load. An unusual reading could indicate an engine failure.



06731

**Engine Coolant Temperature (°F)**

Indicates the operating temperature of the engine coolant in °f. The normal reading should be between 170°f and 222°f (80°c to 106°c).

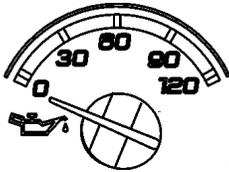
The temperature limit is dependent on the electronic program for the engine model. When coolant temperature is excessive, the stop telltale light turns on, an audible alarm sounds and a pop-up message appears on the DID. If the engine is at risk, the EECU may decrease the engine power. Stop at the first safe place where the problem can be checked.

If the temperature remains below or exceeds the normal temperature range, the cooling system should be checked for problems.



STOP telltale light

**Engine Oil Pressure (Psi)**



06732

Indicates the engine oil pressure in psi. When the oil pressure is too low, the stop telltale light turns on, an audible alarm sounds and a message appears on the DID. If the engine is at risk, the EECU may decrease the engine power. Bring the vehicle to a safe stop where the problem can be checked.



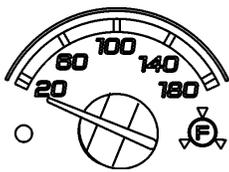
STOP telltale light



OIL PRESSURE pictogram

	<p><b>WARNING</b></p>
<p>Failure to take necessary action when the stop telltale light is on can ultimately result in automatic engine shutdown and loss of power steering assist. Vehicle crash can occur, resulting in severe personal injuries.</p>	

**Front Brake Air Pressure (Psi)**



06737

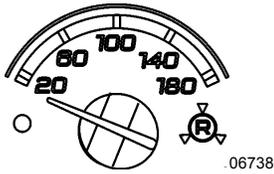
Indicates the front brake air system pressure in psi. The normal operating pressure is from 95 to 125 psi.

A low air pressure indicator led illuminates when the front (secondary) air system pressure drops below 66 psi. If the air pressure drops below 60 psi, the stop telltale light will turn on, an audible alarm will sound and a message will appear on the DID. If the air pressure drops below 40 psi, the emergency spring brake applies at full capacity.

	<p><b>WARNING</b></p>
<p>Do not drive the coach when the brake air pressure is low.</p>	

<p><b>NOTE</b></p>
<p>Do not refer to dashboard instruments during adjustment procedures. Use only calibrated gauges.</p>

**Rear Brake Air Pressure (Psi)**



Indicates the rear brake air system pressure in psi. The normal operating pressure is from 95 to 125 psi.

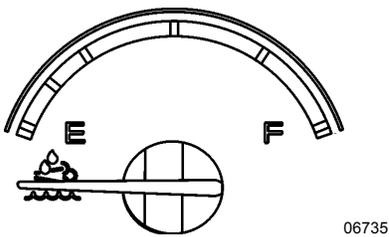
A low air pressure indicator led illuminates when the rear (primary) air system pressure drops below 66 psi. If the air pressure drops below 60 psi, the stop telltale light will turn on, an audible alarm will sound and a message will appear in the DID. If the air pressure drops below 40 psi, the emergency spring brake applies at full capacity.



STOP telltale light

 <b>WARNING</b>
Do not drive the coach when the brake air pressure is low.

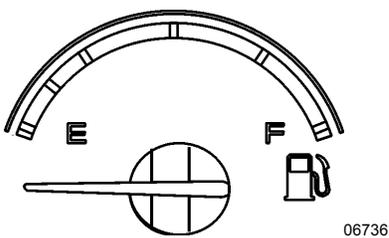
**DEF Level**



Indicates the amount of DEF (diesel exhaust fluid) remaining in the DEF tank. The DEF tank is considered as being full when it contains 16 gallons (60 liters) of DEF. DEF consumption will be approximately 2% of the diesel fuel consumed.

 <b>CAUTION</b>
DEF will begin to crystallize and freeze at 12°f (-11°c). DEF expands by approximately 7% when frozen. In order to permit DEF expansion without causing damages to the DEF tank, do not fill the DEF tank with more than 16 gallons (60 liters).

**Fuel Level**



Indicates the amount of fuel remaining in the fuel tank. At the beginning of the red area, there is approximately 48 gallons (182 liters) left in the tank.

<b>NOTE</b>
A pop-up message will appear in the DID informing that there is only 24 gallons (92 liters) left in the fuel tank.

**TELLTALE LIGHTS**

The telltale lights illuminate during 5 seconds at the start of every ignition cycle as a light bulb check.



**STOP**

Indicates that a serious problem has been detected. Immediately park the coach in a safe place and stop the engine. This telltale light may be accompanied with a message in the DID and a diagnostic troubleshooting code will be stored to ease identification of the problem.



**CHECK**

Indicates that a problem has been detected and must be checked at the next stop. This telltale light may be accompanied with a message in the DID and a diagnostic troubleshooting code will be stored to ease identification of the problem.



**INFORMATION**

This telltale light illuminates when there is a new information message or an abnormal status is detected by the electronic control unit. A pictogram, text or both are shown in the DID in addition to the info telltale light. Make sure the indicated fault is checked at the next stop.



**TURN SIGNAL INDICATORS**

Flashes when the right or left turn signals are activated. Signal right and left turns by operating the foot control switches. See “Foot Operated Controls” in this chapter.

*NOTE*  
*The turn signals are automatically activated when the vehicle is backing up.*



**PARKING BRAKE OR EMERGENCY BRAKE APPLIED**

Illuminates when the emergency/parking brake is applied. The control valve is located on the L.H. control panel. An audible alert will sound if ignition is turned to off and the parking brake is not engaged.



**AFTERTREATMENT SYSTEM MALFUNCTION (MALFUNCTION INDICATOR LAMP)**

Indicates a failure of an emission control device. May illuminate at the same time as the CHECK amber warning light. The lamp will go out after 3 completed *ignition on-ride-ignition off* cycles. Vehicle can be driven to end of shift. Call for service.



**HIGH EXHAUST SYSTEM TEMPERATURE (HEST)**

Illuminates to notify the driver of potentially hazardous exhaust gas temperature at the exhaust system diffuser.

06740\_A

**WARNING**

During regeneration, exhaust temperature may reach up to 1200°f (650°c) at the particulate filter. When parking the vehicle, if this telltale light is illuminating, make sure that the exhaust system diffuser is away from people or any flammable materials, vapors or structures.



06740\_B

**DPF REGENERATION REQUEST**

Illuminates to notify the driver that a manual stationary regeneration will be required soon. Refer to “Exhaust Aftertreatment System” paragraph in *Other Features* chapter.



06740\_C

**LOW DEF LEVEL**

Illuminates when there is less than 2.6 gallons (10 liters) of DEF left in the tank.



**CAUTION**

This telltale light starts flashing when there is only 2.5 liters (0.6 gallons) left in the tank.

If the vehicle is kept in operation with an empty DEF tank, and engine derate will eventually occur, limiting the speed to 5 mph.



06740\_D

**ALTERNATORS**

Indicates an alternator problem. One of the alternators is not charging.

***NOTE***

*To identify which alternator is defective (1=lower alternator, 2=upper alternator), perform a system diagnostic using the Driver Information Display DIAGNOSTICS menu. Select VIEW ACTIVE FAULTS and then ELECTRICAL SYSTEM. Scroll through the active faults. The electrical system active faults will appear. A diagnostic message indicating “alternator 1” or “alternator 2” with failure mode “open circuit” will come in sight.*



**INTAKE AIR PREHEATER ON – WAIT BEFORE STARTING**

Illuminates when the intake air preheater element is in function. Wait until this telltale light has turned off before starting the engine. For more information on this feature, refer to paragraph “Cold Weather Starting” in Starting And Stopping Procedures chapter.



06740\_G

**HILL START ASSIST**

Indicates a malfunction of the hill start assist function. This function might not be available.



06740\_H

**ANTILOCK BRAKE SYSTEM (ABS)**

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



06740\_K

**HIGH BEAM**

Illuminates when the high beams are selected. High and low beams are selected with the foot operated controls. Refer to “Foot Operated Controls” paragraph in this chapter.

**STOP, CHECK and INFORMATION telltale lights**

STOP, CHECK and INFORMATION telltale lights illuminate automatically to draw the attention of the driver and their associated messages are displayed in the DID. More than one message (see “Acknowledging Messages” below) can be active at the same time. A displayed message can be replaced by a new message provided the new message has a higher priority. Only fault codes that have a direct impact on vehicle operation are displayed. All fault codes are stored in the appropriate ECU for access by service technicians.

**STOP Telltale light**

In the event of a serious fault, the red STOP telltale light comes on and an audible alarm will sound if the engine is running. An illuminated stop message light indicates a serious problem has been detected, and the driver must respond immediately to the problem.



When illuminating, this telltale light means the vehicle must be safely pulled off the road and stopped. In some instances, the engine must be switched off immediately.

	<p><b>WARNING</b></p> <p>Failure to stop and take necessary action when the STOP telltale light is on can result in automatic engine shutdown and loss of power steering assist. This can result in vehicle accident and severe personal injuries.</p>
-------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

In some cases preventive action may be taken by the engine ECU to protect the engine, for example:

- 1- If oil pressure or coolant level drop too low, the engine is forced to low idle and when the vehicle speed is zero, the engine shuts down.
- 2- With excessive coolant temperature, the engine will gradually reduce power output to 50%. This telltale light always activates an audible alarm.

After the automatic engine shutdown sequence, the engine may be restarted after the key is turned off and then back on. However, it will only operate for 30 seconds unless the problem is resolved. The Engine Stop Override switch can be used to override the automatic engine shutdown protection. The automatic engine emergency shutdown will be turned OFF for 30 seconds. This procedure can be repeated if done before the 30 seconds are up. Use this function sparingly and in order to move the vehicle to a safe parking place only.

**CHECK Telltale light**

This telltale light means that a fault or an abnormal operating condition has been detected. The vehicle must be checked at the next stop.



If the CHECK telltale light illuminates, an associated message is displayed in the DID. Always pay attention to the associated messages (see “Acknowledging Messages” below).

**INFORMATION Telltale light**

The INFO indicator light comes on when there is a new information message or an abnormal status is detected by the electronic control unit. A pictogram or text or both are shown in the DID in addition to the INFO telltale light (see “Acknowledging Messages” below).

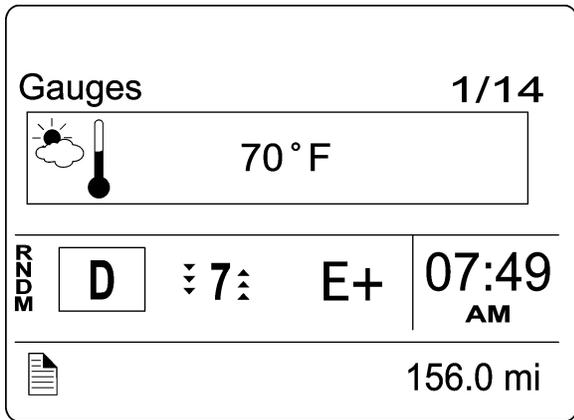


**Acknowledging Messages**

A fault message associated to a STOP, CHECK or INFORMATION telltale light must be acknowledged by pressing the ESCAPE or ENTER button after which the display returns to the same status that existed before the fault occurred. All messages can be acknowledged. Acknowledged but inactive messages are displayed again when the ignition key is turned to the START position or they can be read in the DID menu. Refer to *Other Features* for more information on the DID menus.

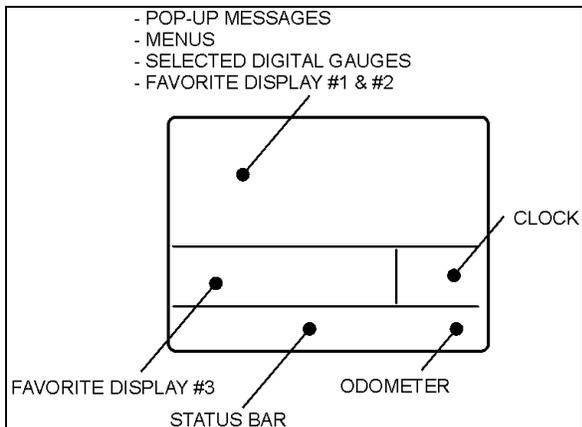
**DRIVER INFORMATION DISPLAY**

The DID (Driver Information Display) is located in the center of the instrument cluster. It displays digital gauges, main menus and sub-menus that provide necessary and important information to the driver. The information available to the driver depends on vehicle configuration, and whether the vehicle is in operation or parked. For the list of the available menus and sub-menus, refer to "Driver Information Display Menus" in *Other Features* chapter.

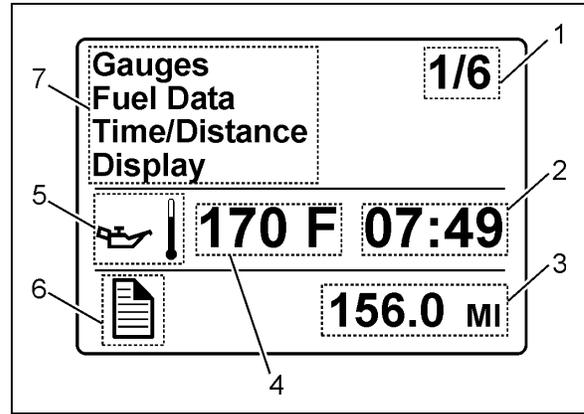


06746

The outside air temperature, fuel flow and the odometer (Allison transmission) are part of the default display. You can replace the default display by your selection of favorite gauges using the Driver Information Display sub-menu Favorite Display Setting. Refer to *Other Features* chapter for more information.



06742

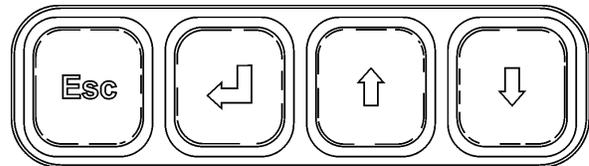


06743

1. Indicates first of six available menus (varies by menu)
2. Clock
3. Odometer
4. Value or data (in this example, the engine oil temperature)
5. Pictogram relevant to the displayed value or data
6. Status bar active pictogram
7. Messages or available menus

**Selecting a menu**

Menus are placed in a cascade arrangement. Use the Driver Information Display (DID) keyboard to scroll through them.

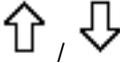


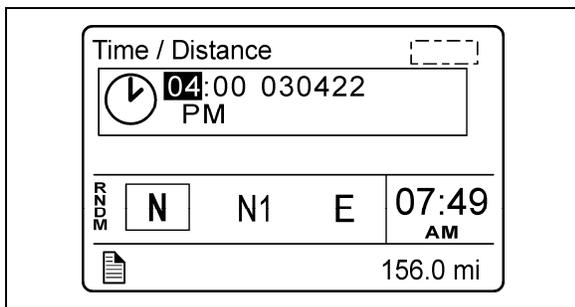
To select a menu:

1. Press the or **ESC** button to display the list of available menus.
2. Use the button to scroll up or down through the menus.
3. Use the button to open a menu.
4. Use the **ESC** button to return to the previous menu or display or to cancel a setting or operation.

### To change settings

To change a setting, like the clock for example:

5. Use the  button to increase or decrease the numerical value of the selected field.
6. Use the  button to confirm your choice and to move to the next field.
7. Press the  button to return to the previous field or to cancel a setting or operation.



06743

**PICTOGRAMS displayed on the driver information display (DID)**

**NOTE**

*In certain situations, the pictogram displayed represents a system or a function of the vehicle. A particular pictogram may be displayed with different messages. In that situation, it is very important to pay attention to the message displayed with the pictogram.*

**Warning pictograms, pop-up message pictograms, verifications and information pictograms**

DRIVER INFORMATION DISPLAY “GAUGES” MENU PICTOGRAMS	
Pictogram	Description
	<b>Engine oil temperature</b>
	<b>Outside air temperature</b>
 A/C	<b>A/c compressor pressure</b> This pictogram is displayed with A/C compressor suction pressure value (low side) and discharge pressure value (high side).
	<b>Accessories air pressure</b> Normal pressure should be between 95 and 125 psi.
	<b>Voltmeter</b> This pictogram is displayed with both the 12-volt and 24-volt electrical system current voltage value. When the engine is running, the 24-volt electrical system voltage value should be between 26,5 et 28,0 volts.
	<b>Transmission oil temperature</b>

**POP-UP MESSAGES**

Pictogram

Description



**High engine oil temperature**



**Engine coolant temperature**



**Engine oil pressure**



**Intake air preheater failure**



**High transmission oil temperature**

This pictogram indicates that the transmission oil temperature is too high. Turn the transmission retarder off to allow the oil to cool down.



**Allison transmission– oil or filter replacement required**

This pictogram may be displayed with many different messages. Pay attention to the displayed message which can advise that the transmission oil or filter change is necessary. Refer to Appendix C for more information on the Allison transmission prognostic features (oil life monitor, filter life monitor, transmission health monitor).



**Low brake or ABS air pressure**



**A/C system pressure high**

This pictogram indicates that 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.

***NOTE***

When outside temperature is high, it is possible and normal for that pictogram to appear.



**A/C system pressure low**

This pictogram indicates that the A/C system pressure is too low. If the A/C pressure is too low, the compressor clutch disengages and the fan stops.

***NOTE***

When outside temperature is low, it is possible and normal for that pictogram to appear.



### Battery voltage warning

This pictogram indicates that the battery voltage is too high, too low or the 12-volts/24-volts battery arrangement is not equalized.

The value LOW or HIGH is displayed at the right of the pictogram to indicate if the voltage is too low or too high.

#### *NOTE*

This pictogram will illuminate for a few seconds after the engine is started because of the voltage drop when the starter is engaged.

#### *NOTE*

To identify the battery problem (too high, too low or not equalized voltage), using the DID menus, perform a system diagnostic by selecting DIAGNOSTICS, VIEW ACTIVE FAULTS, ELECTRICAL SYSTEM and see the fault messages.

#### *NOTE*

To prevent discharge of the batteries when the engine is not running, some functions are automatically switched off if the batteries voltage drops below 24.0 volts for more than 30 seconds. Set the ignition key to the OFF position and then turn the ignition key to the ON position to reactivate the functions for a period of 30 seconds before they switch off again.

#### *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 on the rear junction panel, on the engine compartment R.H. side.



### Engine door ajar

This pictogram indicates that the engine compartment door is ajar.



### Emergency window open

This pictogram indicates that an emergency window is open or unlocked.



### Baggage compartment door ajar

This pictogram indicates that one or more baggage bay doors are ajar.



### Low windshield washer fluid level

Illuminates when the windshield washer fluid level is low. The washer fluid container is located inside the front service compartment.



## WARNING

Do not drive without sufficient washer fluid.

**Wheelchair lift**

This pictogram indicates that the wheelchair lift system is enabled and the wheelchair access door or the lift compartment door is open. It is necessary to stow the wheelchair lift, close the doors and set the wheelchair lift system enable switch to the off position to permit release of the parking brake.

**Freezing conditions**

This pictogram appears when the temperature is in the range between 0°C and 2°C (32°F et 35°F), when the road is most slippery.

**Fuel level**

This pictogram appears when approximately 24 US gallons (92 liters) of fuel remains in the tank. Refuel as soon as possible.

**Parking brake applied****DPF regeneration****High exhaust gas temperature**

This pictogram appears to notify the driver of potentially hazardous exhaust gas temperature at the DPF outlet.

**WARNING**

During regeneration, exhaust temperature may reach up to 1200°F (650°C) at the particulate filter. When parking the vehicle, if this pictogram is displayed, make sure that the DPF outlet diffuser is away from people or any flammable materials, vapors or structures.

**Fuel economy**

This pictogram is displayed with fuel consumption value of the vehicle. Proper units for the displayed value are written under the pictogram: liters/100km, km/liter, mpg, liters/hour.

**Leg fuel consumption**

This pictogram is displayed with the value for the fuel consumption for the current leg.

**Trip data**

Function of the DID's "Time/Distance" menu. Refer to "Driver Information Display Menus" in *Other Features* chapter.

**Estimated time of arrival**

Function of the DID's "Time/Distance" menu. Refer to "Driver Information Display Menus" in *Other Features* chapter.



**Fuel filter/water separator**

Indicates that the draining the fuel filter/water separator is required. See *Care And Maintenance* chapter.



**Raised tag axle**

This pictogram appears if the vehicle speed exceeds 12 mph (20 km/h) while the tag axle is raised.



**Kneeling**

This pictogram appears if the vehicle speed exceeds 12 mph (20 km/h) while the front suspension of the vehicle (kneeling) is lowered.



**Fire in engine compartment**

This pictogram appears if a fire is detected in the engine compartment while the vehicle is on the road. An audible alarm informs the driver when a fire is detected. In case of fire detection when parked (parking brake applied, engine running or not), the electric horn is activated to alert the driver. Refer to *Safety Features And Equipment* chapter.



**WARNING**

In case of a fire, stop the vehicle immediately, stop the engine and evacuate the vehicle.

**NOTE**

*It is possible to cancel an alarm while on the road. To do so, stop the vehicle. Cycle the ignition between the ON and OFF position and then start the vehicle normally. This can be done on a temporary basis when a false alarm is activated by a defective fire detector. The driver can go on without being annoyed by the alarm.*

**NOTE**

*To stop the electric horn alarm when parked, cycle the ignition between the ON and OFF position twice within 3 seconds.*

**NOTE**

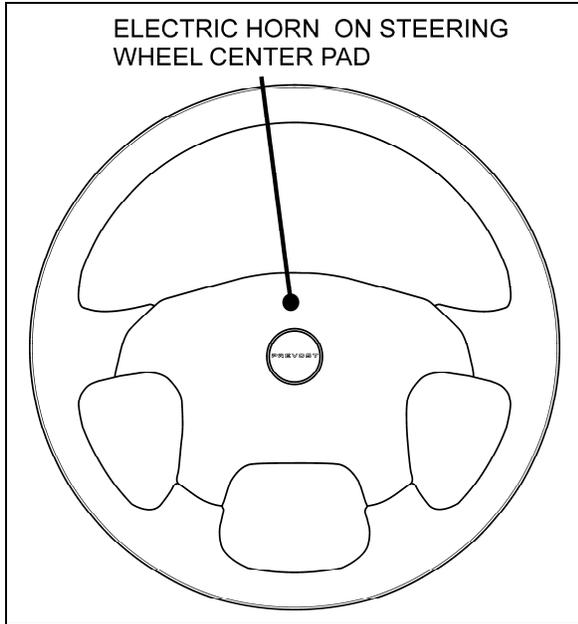
*For extinguisher's location, refer to SAFETY FEATURES AND EQUIPMENT chapter.*

Status Line Pictograms

Pictogram	Description
	<b>Message active</b>
	<b>Alarm clock activated</b>
	<b>Raised tag axle</b>
	<b>Kneeling/front suspension active</b> Indicates that the front suspension is lowered (kneeling).
	<b>Allison Transmission Retarder</b> Confirms that the Allison transmission retarder is OFF.
	<b>Allison Transmission Retarder</b> Confirms that the transmission retarder is ON. Refer to "Transmission Retarder" heading in this chapter.

**HORN**

The electric horn is operated from the steering wheel center pad or from the foot-operated switch.



STEERING WHEEL

**NOTE**

When the vehicle is stationary, the electric horn will sound to inform the driver that a fire is detected in the engine compartment.

**TRANSMISSION OUTPUT RETARDER**



To use the transmission retarder, it must be activated first by pressing the switch located on the L.H. dashboard panel.

**NOTE**

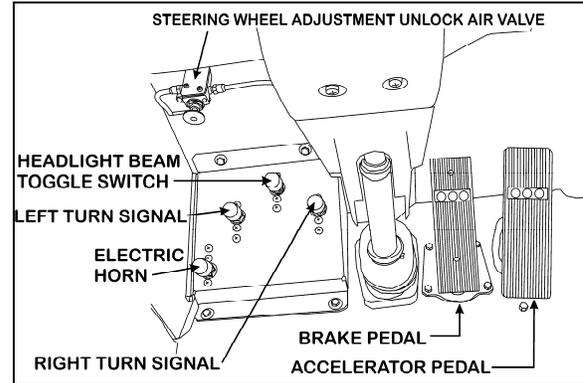
Deactivating the transmission retarder will turn the indicator light located at the front of the coach ON.

With the retarder enabled, depressing the brake pedal will engage both the service brake and the transmission retarder. This is referred to as retarder-brake blending. The further the pedal is depressed, the more total braking power is provided. Refer to "OTHER FEATURES" chapter for further information about the transmission retarder.

**NOTE**

If the wheels start to lock up on slippery roads, the output retarder will automatically deactivate until the wheels start to turn.

**FOOT-OPERATED CONTROLS**



FOOT-OPERATED CONTROLS

00023A

**HEADLIGHT BEAM TOGGLE SWITCH**

Toggle between high and low beams by pressing the foot-operated switch.

**LEFT TURN SIGNAL SWITCH**

Press the foot-operated switch to signal a left turn. Press again to stop the signal.

**RIGHT TURN SIGNAL SWITCH**

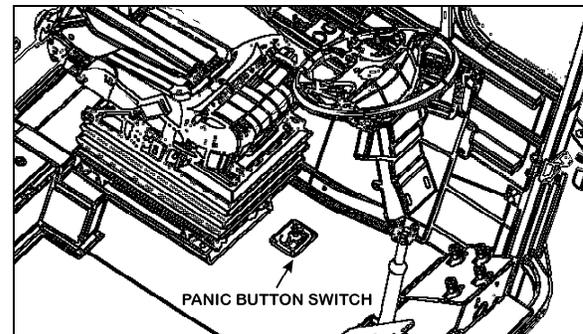
Press the foot-operated switch to signal a right turn. Press again to stop the signal.

**ELECTRIC HORN**

Press the foot-operated switch to activate the electric horn (city horn).

**PANIC BUTTON SWITCH**

Press the foot-operated panic switch to signal an emergency and ask for immediate assistance. A warning message will be displayed on all exterior destination signs.



PANIC BUTTON SWITCH

**BRAKE PEDAL**

The coach is equipped with a dual braking system. The front brakes operate from a different air pressure source from the drive and tag axle brakes. The dual braking system becomes a modulated emergency system if a pressure drop occurs in the primary 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 chapter under 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 and an audible alert will sound when the air pressure in either the primary or secondary circuits drops below 66 psi (455 kPa). If this occurs, stop the coach; determine the cause of the pressure loss before proceeding. The brake pedal can be used in conjunction with the transmission retarder. Refer to Transmission Output Retarder in this chapter.

	<p><b>DANGER</b></p>
<p>Immediately report any brake system problem to your company or directly to the nearest Prevost or Prevost-approved service center.</p> <p>Do not "fan" or "pump" the brake pedal. This practice does not increase brake system effectiveness but rather reduces system air pressure thereby causing reduced braking effectiveness.</p>	

	<p><b>CAUTION</b></p>
<p>"Riding" the brake by resting one's 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.</p>	

**ACCELERATOR PEDAL**

Controls engine RPM as needed.

<p><i>NOTE</i></p> <p><i>The accelerator pedal will not operate when the entrance door is open.</i></p>
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**ALLISON AUTOMATIC TRANSMISSION**

The transmission is fully automatic: Proper ranges should be automatically selected according to driving speeds to improve vehicle performance and control. The speed ratio of the power converter changes automatically as vehicle speed increases and direct-drive goes in and out as necessary. The speed ratio is modulated by vehicle speed and accelerator pedal position. You will find the complete transmission operation instructions and driving tips in the **Allison Bus Series Operator's Manual** included in your vehicle's publication box.

**OPERATION**

When a button is depressed on the transmission control pad, the corresponding letter or number is displayed indicating the transmission is ready to operate in the selected range. If the transmission control module (TCM) detects a serious problem in the transmission, the "CHECK" telltale light will illuminate on the dashboard.

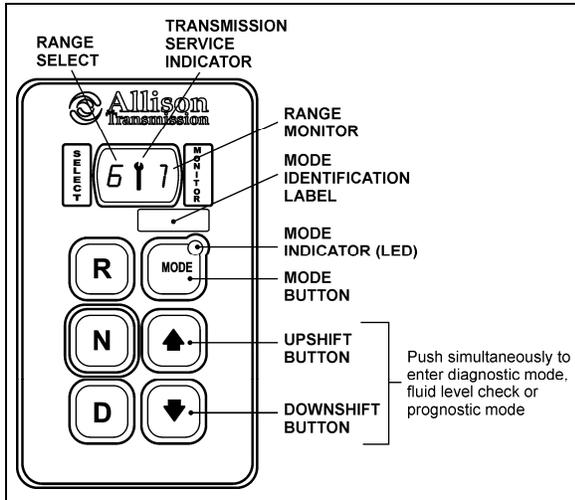
**PUSHBUTTON SHIFT SELECTOR**

The pushbutton shift selector has the following elements:

**R** (Reverse) — Press this button to select Reverse.

**N** (Neutral) — Press this button to select Neutral.

**D** (Drive) — Press this button to select Drive. The highest forward range available will appear in the digital display window under SELECT. The transmission will start out in the lowest available forward range, displayed under MONITOR, and advance automatically to the highest range.



ALLISON PUSHBUTTON SHIFT SELECTOR 07134

▲ ▼ — Press respectively the ▲ (Upshift) or ▼ (Downshift) arrow button when in DRIVE to request the next higher or lower range. One press changes gears by one range. If the button is held down, the selection will scroll up or down until the button is released or until the highest or lowest possible range is selected. Protection mechanisms inhibit selecting ranges that are not appropriate for the current speed or which may damage driveline components.

**MODE** — The MODE button can allow the driver to enable a secondary shift mode that has been programmed into the TCM unit. The name of the secondary mode appears on the MODE IDENTIFICATION label adjacent to the MODE button. Pressing the MODE button activates the PERFORMANCE shift schedule and illuminates the mode indicator (LED).

**NOTE**  
 When the diagnostic display mode has been entered, the MODE button is used to view and toggle through diagnostic code information. Refer to appendix C for more details about **diagnostic code display procedure** and **fluid level check** using the pushbutton shift selector.

**Functions of The “Mode” Button**

Both ECONOMY (default mode at starting of the engine) and PERFORMANCE (secondary shift mode) modes are equivalent from the first to the fourth gear as the transmission upshifts at around 2000 rpm.

The ECONOMY mode allows for upshifts in fifth and sixth gear at around 1700 rpm. This is a

more efficient operation of the transmission and thereby helps improve fuel economy.

The PERFORMANCE mode keeps upshifts at 2000 rpm in fifth and sixth gears. This makes for better performance than the economy mode but with higher fuel consumption. It is recommended this mode be selected while driving up or down grades. The mode indicator (LED) is illuminating when PERFORMANCE mode is selected.

**TRANSMISSION SERVICE INDICATOR**

⚙ — This indicator will be illuminated upon the detection of a service issue relating to clutch, filter or fluid life. The appearance of the indicator (lit steadily, flashing, etc.) varies for each of the conditions monitored by the system. Refer to appendix C for more details about **diagnostic code display procedure, fluid level check or prognostic features** (Oil Life Monitor, Filter Life Monitor and Transmission Health Monitor) using the pushbutton shift selector.

Illuminated at startup for a bulb check, this indicator will then be turned off if no service conditions exist.

**DESCRIPTION OF AVAILABLE RANGES**

**R (Reverse)**

Press the «R» button to select reverse. Completely stop the vehicle and let the engine return to idle before shifting from forward range «D» to reverse «R» or from reverse to forward range. The reverse warning signal will be activated when this range is selected.

**N (Neutral)**

Use this position to start engine. Select «N» (Neutral) when checking vehicle accessories and for extended periods of engine idle operation; parking brake must then be applied. The pushbutton shifter will automatically select «N» (Neutral) when the ignition switch is turned ON.

**NOTE**  
 The automatic transmission does not have a park «P» position. Select «N» (neutral) and apply parking brake when the vehicle is left unattended. An audible alert will sound if the engine is stopped and the parking brake is not applied.

**DANGER**

Always apply parking brake and put the transmission in NEUTRAL before leaving driver's seat.

**CAUTION**

Volvo diesel engines should not be idled for extended periods at "slow" idle. For extended idling, engine should run at "fast" idle.

**DANGER**

The vehicle service brakes or park brake must be applied whenever NEUTRAL is selected to prevent unexpected vehicle movement.

**CAUTION**

Do not allow your vehicle to "coast" in neutral «N». This practice can result in transmission damage. Also, no engine braking is available in neutral.

**D (Drive)**

Use this position for all normal driving conditions. After touching this pad, the vehicle will start in first or second range and will automatically upshift to a higher range as output speed increases. As the vehicle slows down, output speed decreases, the transmission automatically downshifts to the correct range. If a locked brake or a slick surface condition should occur, the TCM (Transmission Control Module) will command converter operation (disconnect lockup) and inhibit downshifts for a period of time or until normal wheel speed has been restored.

**IMPORTANT NOTE**

*Brake pedal must be applied when selecting «D» (Drive) otherwise the transmission will stay in «N» (Neutral).*

**NOTE**

*The transmission should normally be allowed to shift by itself, but manual shifting can be done as described below.*

**1 (First range)**

Select this range when pulling through mud and snow, when speed control is needed for driving up or down steep grades or when maneuvering in tight spaces. This range also provides maximum driving torque and engine braking power or retarder braking effect. In the lower ranges (1, 2, 3 and 4), the transmission will not upshift above the highest gear selected unless engine overspeed is detected.

**2 (Second range)**

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

**3, 4 (Third and fourth ranges)**

Select these ranges when driving on moderate grades or when load and traffic conditions limit speed.

**WARNING**

Service brake should not be used to control the speed of vehicle on long, steep descents. Instead, lower transmission ranges should be used (in conjunction with output retarder. Refer to "Engine Brake" and "Transmission Retarder" headings in "Other Features" chapter for details regarding both systems. This procedure keeps service brake cool and ready for emergency stopping.

**CAUTION**

When descending in lower ranges, care must be taken that engine speed does not exceed 2,450 rpm.