



H3-45

OPERATOR'S MANUAL

PREVOST

THE ULTIMATE EXPERIENCE

PREVOST

OPERATOR'S MANUAL H3 SERIES COACH

PA-1652 rev.1
March 2023

PA-1652

Featuring:

- New front and rear aerodynamic design
- New dashboard & driver environment

First edition: March 2023, starting from vehicle R-1453

REV	EFFECTIVE	DESCRIPTION	DATE
-	R-1453	First release	March 2023
1	R-1453	ADDITION: Appendix D, E	04-19-2023

	i
FOREWORD	
IMPORTANT INFORMATION	ii
COMPLIANCE	iii
STATE OF CALIFORNIA PROPOSITION 65	iii
CRITICAL EMISSION-RELATED MAINTENANCE	iv
DATA LOGGING	v
EVENT DATA RECORDING DEVICES	v
ELECTRONIC LOGGING DEVICE (ELD)	vi
TELEMATICS DEVICE	vii
OWNERSHIP OR ADDRESS HAS CHANGED	vii
QUESTIONS AND COMPLAINTS	vii
REPORTING SAFETY DEFECTS	viii
UNITED STATES	viii
CANADA	viii
SECTION 1 - Safety Precautions	
SAFE OPERATING PRACTICES	2
DEFENSIVE DRIVING PRACTICES	2
OTHER PRECAUTIONS	3
SECTION 2 - Coach Exterior	
EXTERIOR VIEW	2
ENGINE COMPARTMENT COMPONENTS	4
ENGINE COMPARTMENT DOOR	6
EXHAUST AFTERTREATMENT SYSTEM ACCESS HATCH	6
BACK-UP CAMERA	7
ENGINE COMPARTMENT CURBSIDE DOOR	7
120-VOLT CONNECTORS	7
ENGINE BLOCK HEATER	7
BATTERY CHARGER	8
MAIN POWER COMPARTMENT	8
WHEELCHAIR LIFT ACCESS DOORS	9
CURBSIDE FUEL AND DIESEL EXHAUST FLUID (DEF) FILLER NECK ACCESS	9
HVAC CONDENSER COMPARTMENT	10
BAGGAGE COMPARTMENTS	10
ENTRANCE DOOR	10
LOCK OPERATION	10
OPENING THE ENTRANCE DOOR FROM OUTSIDE	11
OPENING THE ENTRANCE DOOR FROM INSIDE	11
DOOR OPERATION LOGIC	11
EMERGENCY DOOR OPENING	11
RECLINING BUMPER COMPARTMENT	11
WIPER MECHANISM ACCESS HATCH	12
HEADLIGHTS	13
FRONT ELECTRICAL AND SERVICE COMPARTMENT	14
REAR-VIEW MIRRORS	14
SIDE CAMERA REAR-VIEW SYSTEM	15
EVAPORATOR COMPARTMENT	15
STREET SIDE FUEL FILLER NECK ACCESS	16
RADIATOR DOOR	17
SCR CONVERTER ACCESS HATCH	17
TRAILER HITCH	18
TRAILER HITCH LIMITATIONS	18

SECTION 3 - Coach Interior

UTILITY COMPARTMENTS	2
DRIVER'S PERSONAL COMPARTMENTS	2
MICROPHONE JACKS	2
DRIVER'S SEAT - ISRI	2
MECHANICAL ISRI SEAT	2
PNEUMATIC ISRI SEAT MODEL 6832/872 NTS	4
DRIVER'S SEAT – USSC 9100ALX	4
DRIVER SEAT BELT	4
PASSENGER SEATS	5
SWIVEL SEATS	6
PASSENGER SEAT BELT	7
TABLES	7
OVERHEAD CONSOLE	8
ADJUSTABLE AIR REGISTERS	8
SERVICE CHIME	8
READING LIGHTS	8
WINDOWS	8
PANORAMIC WINDOWS	8
DRIVER'S POWER WINDOW	9
DRIVER'S WINDOW SUNSHADE	9
VENTILATION / EMERGENCY EGRESS HATCHES	9
OVERHEAD COMPARTMENTS	10
WASTE CONTAINER	10
LAVATORY	10
KEYS	11
ENTRANCE DOOR KEY	11
EXTERIOR COMPARTMENT KEY	11
PAPER TOWEL DISPENSER KEY	11

SECTION 4 - Controls and Instruments

DRIVER'S AREA OVERVIEW	3
LATERAL CONTROL PANEL	4
ENGINE START BUTTON	4
12-VOLT POWER OUTLET	4
TRANSMISSION CONTROL PAD	5
MIRROR CONTROLS	5
LATERAL UTILITY COMPARTMENT	5
AUTOMATIC FIRE DETECTION AND SUPPRESSION SYSTEM (AFSS)	6
AUTOMATIC FIRE SUPPRESSION SYSTEM PANEL	6
DASHBOARD	7
CONTROL SWITCHES	8
PARKING BRAKE CONTROL KNOB	12
AUDIO-VIDEO SELECTOR FOR THE PASSENGER'S AREA	14
OPERATION OF THE OPTIONAL AUDIO-VIDEO MODESTY PANEL	17
DEA600 SERIES RADIO SYSTEM AND INFOTAINMENT DISPLAY OVERVIEW	18
DASHBOARD RADIO	18
SECONDARY INFORMATION DISPLAY (SID)	18
HVAC CONTROL UNIT	20
CENTRAL UTILITY COMPARTMENT	21
INSTRUMENT PANEL	22
DRIVER INFORMATION LEVEL	23
ANALOG INDICATORS	24
TELLTALE LIGHTS	28
STOP AND CHECK TELLTALE LIGHTS	31
DRIVER INFORMATION DISPLAY	32
STEERING COLUMN CONTROLS	39

DIRECTION INDICATOR AND HIGH BEAM CONTROL STALK	39
WINDSHIELD WIPERS CONTROL STALK	40
AUXILIARY BRAKE CONTROL STALKS	40
STEERING WHEEL KEYPADS	42
FOOT-OPERATED CONTROLS	44
STEERING WHEEL ADJUSTMENT	44
BRAKE PEDAL	44
ACCELERATOR PEDAL	44
ON BOARD DIAGNOSTIC TOOL RECEPTACLE	45
TIRE PRESSURE MONITORING SYSTEMS (TPMS)	45
SYSTEM MALFUNCTION	45
TPMS - SYSTEM DESCRIPTION	45
CRUISE CONTROL	47
TURNING THE SYSTEM ON	47
SETTING CRUISE SPEED	47
PREVOST DRIVER ASSIST™	49
ASSOCIATED HARDWARE EQUIPMENT	49
PREVOST DRIVER ASSIST™ CONSISTS OF THE FOLLOWING SYSTEMS AND FEATURES	50
POTENTIALLY CHALLENGING SITUATIONS FOR THE PREVOST DRIVER ASSIST™ SYSTEM	52
LANE DEPARTURE WARNING LDW	52
FORWARD COLLISION MITIGATION FCM	55
ADAPTIVE CRUISE WITH BRAKING ACB	56
DRIVER WARNINGS AND SYSTEM STATUS	59
FOLLOWING DISTANCE ALERT	62
IMPACT ALERT	62
WHAT TO EXPECT WHEN USING THE PREVOST DRIVER ASSIST™ SYSTEM	65
HOW YOUR ACTIONS IMPACT THE PREVOST DRIVER ASSIST™ SYSTEM	67
BACK-UP CAMERA AND MONITOR	69
SIDE CAMERA REAR-VIEW MONITORS	70
REFERENCE LINES	70
BRIGHTNESS ADJUSTMENT	70
MONITOR STATE	71
ALLISON TRANSMISSION	72
OPERATION	72
PUSHBUTTON SHIFT SELECTOR	72
PRIMARY AND SECONDARY SHIFT SCHEDULES	72
TRANSMISSION SERVICE INDICATOR	73
DESCRIPTION OF AVAILABLE RANGES	73
TOWING RECOMMENDATIONS	74
 SECTION 5 - Other Features	
EXHAUST AFTERTREATMENT SYSTEM	3
FILTRATION AND REGENERATION UNIT	3
PASSIVE REGENERATION	3
ACTIVE REGENERATION	3
STATIONARY (PARKED) REGENERATION	3
DEF CLOGGING SEQUENCE – INSTRUMENT CLUSTER TELLTALE LIGHT	4
SELECTIVE CATALYTIC REDUCTION UNIT	5
DRIVER WARNING AND INDUCEMENT MEASURES	7
INTELLIGENT SLEEP MODE (ISM)	11
TRANSMISSION RETARDER (OPTION)	11
ENGINE BRAKE	11
VOLVO ENGINE BRAKE (VEB)	12
ABS, TRACTION CONTROL SYSTEM (TCS) & ELECTRONIC STABILITY CONTROL (ESC)	12

iv Table of contents

ANTILOCK BRAKING SYSTEM (ABS)	12
TRACTION CONTROL SYSTEM (TCS)	13
ELECTRONIC STABILITY CONTROL (OPTION)	13
KNEELING SYSTEM	14
HIGH-BUOY	14
LOW-BUOY	14
AUTOMATIC TAG UNLOAD	15
MANUAL UNLOAD	15
AUTOMATIC MODE	15
LOAD & LOCK	15
PREHEATER	15
SWITCHING THE HEATER ON	15
SWITCHING THE HEATER OFF	16
COOLANT HEATER TIMER	16
PREHEATER TROUBLESHOOTING AND MAINTENANCE	18
WHEELCHAIR LIFT SYSTEM	19
INTRODUCTION	19
OVERVIEW	19
GENERAL SAFETY PRECAUTIONS	21
OPERATING INSTRUCTIONS	21
MANUAL LIFT OPERATION	28
SEATS RECONFIGURATION	33
WHEELCHAIR RESTRAINT SYSTEMS	34
4-POINT SECUREMENT WITH FLOOR ANCHORAGE	34
4-POINT SECUREMENT WITH ANCHORAGE TO PASSENGERS SEAT PEDESTALS	35
WHEELCHAIR LIFT SYSTEM - THRESHOLD WARNING SYSTEM (TWS) ADJUSTMENT	36
ADJUST AIMING OF ACOUSTIC SENSOR BEAM	36
TEST AIM OF ACOUSTIC SENSOR BEAM (WHEELCHAIR ACCESS)	37
ADJUST ACOUSTIC SENSOR TIMING	37
WCL CASSETTE INSTALLATION AND REMOVAL	37
SECTION 6 - Starting and Stopping Procedures	
STARTING THE ENGINE	2
STARTING FROM THE DRIVER'S SEAT	2
STARTING FROM THE ENGINE COMPARTMENT	3
COLD WEATHER STARTING	4
JUMP STARTING	4
ENGINE PROTECTION SYSTEM	6
AUTOMATIC ENGINE SHUTDOWN	6
IDLE SHUTDOWN TIMER	6
ENGINE BLOCK HEATER	7
ENGINE WARM-UP	7
ALLISON TRANSMISSION WARM-UP	7
SECTION 7 - Safety Features and Equipment	
EMERGENCY EXITS	2
SIDE WINDOWS	2
ROOF HATCH	2
ENTRANCE DOOR OPENING - EMERGENCY SITUATION	3
EMERGENCY EQUIPMENT	4
FIRE EXTINGUISHERS	4
FIRST-AID KIT	5
FIRE HATCHET	5
WARNING REFLECTORS H3 SERIES	5
JACK AND TOOLS H3 SERIES	5
SPARE PARTS KIT	5
AUTOMATIC FIRE SUPPRESSION SYSTEM (AFSS)	5

LIMP-HOME BELT	6
LOWER ALTERNATOR FAILURE	6
SPARE WHEEL	7
CHANGING A WHEEL	7
SUPER SINGLE TIRE REPLACEMENT	8
EMERGENCY AIR-FILL VALVES	8
EMERGENCY AND PARKING BRAKES	9
VEHICLE JACKING POINTS	9
TOWING THE VEHICLE	9
DAYTIME RUNNING LIGHTS	9
FOG LIGHTS	10
COMPARTMENT LIGHTING	10
MUD FLAPS AND SPLASH GUARDS	10
BACK-UP CAMERA	10
BACK-UP ALARM	10
ESSENTIAL FUNCTIONS TO OPERATE THE VEHICLE (BASIC LIMP-HOME FUNCTIONS)	10
AVAILABLE FUNCTIONS	10
 SECTION 8 - Care and Maintenance	
CLEANING	3
SEAT UPHOLSTERY	3
PLASTIC AND VINYL	4
WINDOWS	4
STAINLESS STEEL	4
HIGH PRESSURE LAMINATE	4
CARPET	4
RUBBER COMPONENTS	4
FLOOR CLEANING	4
EXTERIOR SURFACES	5
WINDSHIELD	5
WIPER BLADES	5
LAVATORY MAINTENANCE	5
WASTE WATER RESERVOIR	6
FRESH WATER RESERVOIR	7
FLUID LEVEL VERIFICATION	8
ENGINE OIL LEVEL	8
TRANSMISSION FLUID LEVEL	8
POWER STEERING FLUID LEVEL	9
DRIVE AXLE WHEEL BEARING OIL LEVEL	10
FRONT AND TAG AXLE WHEEL HUBS	10
COOLANT FLUID LEVEL	10
WINDSHIELD WASHER & HEADLIGHTS WASHER RESERVOIRS	11
OTHER VERIFICATION	12
ELECTRIC COOLING FANS	12
FIRE EXTINGUISHERS	12
PRIMARY FUEL FILTER	13
CENTRAL A/C COMPRESSOR BELTS	13
ALTERNATOR DRIVE BELTS	14
BACK-UP CAMERA	14
ENGINE AIR FILTER RESTRICTION INDICATOR	14
A/C AND HEATING SYSTEM AIR FILTERS	14
HOSE INSPECTION	15
LUBRICATION	16
WHEELS AND TIRES VERIFICATION	16
WHEEL BEARINGS	16
SERVICE BRAKE TEST	16
PARKING BRAKE TEST	16

vi Table of contents

EXTERIOR LIGHTING VERIFICATION WITH TEST MODE	17
GENERAL RECOMMENDATIONS	19
WALKAROUND INSPECTION (BEFORE EVERY TRIP)	23
APPROACHING THE VEHICLE	24
PREPARATION	24
STEP 1: RIGHT SIDE	24
STEP 2: ENGINE COMPARTMENT RIGHT SIDE AREA	24
STEP 3: ENGINE COMPARTMENT	24
STEP 4: REAR LEFT SIDE	24
STEP 5: FRONT LEFT SIDE	25
STEP 6: FRONT	25
STEP 7: FRONT RIGHT SIDE	25
STEP 8: INSIDE THE VEHICLE	25
WITH ENGINE RUNNING	25
SECTION 9 - Technical Information	
DIMENSIONS AND WEIGHTS	3
CAPACITIES	7
TURNING RADIUS	8
FUEL TYPE	9
BIODIESEL FUEL	9
WHEELS AND TIRES	9
RECOMMENDED TIRE INFLATION PRESSURE AT MAXIMUM COLD LOAD	9
BELTS ROUTING	10
VOLVO D13 ENGINE	10
ALLISON TRANSMISSION	10
GEAR RATIOS	10
PROPELLER SHAFT	10
BRAKES	10
BRAKE CHAMBER EFFECTIVE AREA	10
AIR SYSTEM	10
ANTILOCK BRAKING SYSTEM (ABS)	11
AUTOMATIC TRACTION CONTROL (ATC) – ELECTRONIC STABILITY CONTROL (ESC)	11
STEERING	11
ELECTRICAL SYSTEM	11
AXLES	12
I-BEAM FRONT AXLE	12
FRONT AXLE - INDEPENDENT FRONT SUSPENSION (IFS)	12
DRIVE AXLE	12
TAG AXLE	12
SUSPENSION	12
I-BEAM AXLE FRONT SUSPENSION	12
DRIVE AXLE	12
TAG AXLE	12
ALIGNMENT SPECIFICATIONS	12
COOLING SYSTEM	13
FUEL SYSTEM	13
EXHAUST SYSTEM	14
HEATING AND AIR CONDITIONING	14
OIL SPECIFICATIONS	14
ENGINE	14
ALLISON TRANSMISSION	14
DIFFERENTIAL	15
POWER STEERING RESERVOIR	15
PRE-HEATING SYSTEM	15
PLATES AND CERTIFICATION	15
SAFETY CERTIFICATION	16

DOT CERTIFICATION PLATE	16
EPA ENGINE LABEL	16
VEHICLE IDENTIFICATION NUMBER (VIN)	17
VIN DEFINITION	18
COACH FINAL RECORD	19
SECTION 10 - Abbreviations	
ABBREVIATIONS	2
APPENDIX A - SERVICE LITERATURE	
SERVICE LITERATURE	2
NOTICE	2
DECLARATION OF THE MANUFACTURING DEFECTS TO THE GOVERNMENT OF THE UNITED STATES	2
DECLARATION OF THE MANUFACTURING DEFECTS TO THE CANADIAN GOVERNMENT	3
DECLARATION OF THE MANUFACTURING DEFECTS TO PREVOST	3
APPENDIX B - Multiplex Troubleshooting	
MULTIPLEX TROUBLESHOOTING GUIDE	2
APPENDIX C - Allison Transmission Other Features	
ALLISON 5TH & 6TH GENERATION SPECIAL FEATURES	2
APPENDIX D -Tire Inflation Guide	
TIRE INFLATION GUIDE	2
COLD INFLATION PRESSURE	2
PRESSURE AND TEMPERATURE	2
CONSEQUENCES	4
RECOMMENDATIONS	4
APPENDIX E - DID Menus Supplementary Information	
APPLICATION MENU	2
SETTINGS - TPMS MANUAL LEARNING	2
VEHICLE TESTS - ALTERNATOR TEST	3
VEHICLE TESTS - ELECTRIC MOTORS TEST	4
VEHICLE TESTS - MUX INPUT TEST	8
VEHICLE TESTS - HVAC PUMP TEST	10
VEHICLE TESTS - FORCE RADIATOR FAN SPEED 50%, 100%	11
PRE-TRIP ASSISTANT - EXTERIOR LIGHT INSPECTION TEST	12
PRE-TRIP ASSISTANT - AIR BRAKE LEAK-DOWN TEST	13

FOREWORD

IMPORTANT INFORMATION	II
COMPLIANCE	III
STATE OF CALIFORNIA PROPOSITION 65	III
CRITICAL EMISSION-RELATED MAINTENANCE	IV
DATA LOGGING	V
EVENT DATA RECORDING DEVICES	V
ELECTRONIC LOGGING DEVICE (ELD)	VI
TELEMATICS DEVICE	VII
OWNERSHIP OR ADDRESS HAS CHANGED	VII
QUESTIONS AND COMPLAINTS	VII
REPORTING SAFETY DEFECTS	VIII
UNITED STATES	VIII
CANADA	VIII

IMPORTANT INFORMATION

This manual has been prepared to thoroughly acquaint the driver and service technicians with the equipment and features in order to fully appreciate and safely enjoy this vehicle.

Prevost is committed to the continuous improvement of quality, reliability, durability and safety. With innovative features, the vehicle was designed with passengers, driver safety and comfort in mind.

This manual contains information available at the time of publication. Standard and optional equipment are covered in this manual. Therefore, some of the optional equipment described may not apply to your vehicle. In doubt, refer to the technical documentation package provided.

Driver controls and instruments incorporate advanced technology for enhanced driving ease and security. This manual describes the main features, instruments, controls, and servicing requirements for standard and optional equipment.

Read this manual carefully to take advantage of the advanced features and to ensure optimum safety and passenger comfort.

Keep the manual in the vehicle at all times. Make sure it is kept with the vehicle when ownership is transferred. Please notify the [Prevost Warranty Support Team](#) of any change of address or transfer of ownership. This will ensure fast and reliable service to all operators.

NOTE

Illustrations in this manual are used for reference only and may differ from the actual vehicle; however, key components addressed in the manual are represented as accurately as possible.

Danger, Warning, Caution and Note are used throughout this manual to emphasize important points when necessary:



DANGER

Directs the operator's attention to unsafe practices which could result in serious personal injury or death.



WARNING

Directs the operator's attention to unsafe practices which could result in serious personal injury or severe damage to the vehicle.



CAUTION

Directs the operator's attention to unsafe practices where personal injury is not likely but damage to vehicle components could occur.

NOTE

Indicates supplementary information essential to the proper operation of the vehicle.


The service life of the vehicle 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 vehicle and attached to equipment.

Continuous improvement is a primary focus at Prevost, 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.

COMPLIANCE

STATE OF CALIFORNIA PROPOSITION 65

	<h2 style="margin: 0;">WARNING</h2>
<p>Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.</p> <ul style="list-style-type: none"> - Always start and operate the engine in a well-ventilated area. - If in an enclosed area, vent the exhaust to the outside. - Do not modify or tamper with the exhaust system. - Do not idle the engine except as necessary. <p>For more information go to www.P65warnings.ca.gov/diesel</p>	

Proposition 65 Warning Decal on Diesel Engine Exhaust Health Hazard

<div style="text-align: right; font-size: small;">18755-1</div> <div style="background-color: #f96; padding: 5px; text-align: center; font-weight: bold;">  WARNING </div> <div style="background-color: #333; color: white; padding: 10px;"> <p>Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.</p> <ul style="list-style-type: none"> - Always start and operate the engine in a well-ventilated area. - If in an enclosed area, vent the exhaust to the outside. - Do not modify or tamper with the exhaust system. - Do not idle the engine except as necessary. <p>For more information go to www.P65warnings.ca.gov/diesel</p> <div style="text-align: right; font-size: x-small;">0691001</div> </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; border-right: 1px dashed black; padding: 5px;"> <h3 style="margin: 0;">H3 SERIES</h3>  </td> <td style="text-align: center; padding: 5px;"> <h3 style="margin: 0;">X3 SERIES</h3>  </td> </tr> <tr> <td colspan="2" style="text-align: right; font-size: small;">18755</td> </tr> </table>	<h3 style="margin: 0;">H3 SERIES</h3> 	<h3 style="margin: 0;">X3 SERIES</h3> 	18755	
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18755					
<p>DECAL #0691001</p> <p>This warning decal is available through Prevost Parts.</p>	<p>Best location where to affix the decal on the vehicle.</p>				

CRITICAL EMISSION-RELATED MAINTENANCE

Source of parts and repair:

A repair shop or person of the owner's choosing must maintain, replace, or repair emission control devices and systems per manufacturer's recommendations.

Replacement of tires that are GHG certified:

The original equipment tires installed on this vehicle at the factory were certified to the U.S. EPA Greenhouse Gas (GHG) and National Highway Traffic Safety Administration (NHTSA) Fuel Efficiency regulations. Replacement of these tires should be with a tire of equal or lower rolling resistance levels (TRRL or Crr). Please consult your tire supplier(s) for appropriate replacement tires.

Maintaining a GHG certified tire:

In order to maintain the certified rolling resistance of the tires which optimize fuel economy, the maintenance procedures provide by the tire manufacturer must be followed.

DATA LOGGING

EVENT DATA RECORDING DEVICES

This PREVOST vehicle is equipped with a device generally referred to as an "event data recorder" or "EDR." Please note that while the term "event data recorder" is typically used throughout the motor vehicle industry, not every EDR is the same; i.e., they do not all record the same data elements.

The EDR on this PREVOST vehicle records vehicle speed, engine RPM, time and date, plus a variety of pedal and switch positions, both before and after an "event." Sudden vehicle deceleration or the occurrence of certain other vehicle operational characteristics will define (trigger) an "event."

For any questions about this vehicle EDR device, contact a PREVOST Service Center or a regional service manager.

ELECTRONIC LOGGING DEVICE (ELD)

This vehicle is equipped with a dedicated ELD interface connector located under the lower left part of the dashboard. This SAE J1939 9 PIN connector is compatible with most FMCSA approved ELD and will ensure that the ELD will not interfere with the vehicle communication, diagnostic and/or driving systems.

Please take note that **the OBD connector is only intended as a diagnostic equipment connection.** Installing an aftermarket plug-in device that uses the OBD port may cause interference and/or damage to the vehicle systems, potentially affecting safe operation.

Both connectors (OBD and ELD) are clearly identified under the dash by stickers. **The OBD port must remain unconnected at all times except during vehicle maintenance (using Prevost approved diagnostic equipment only).**

Connecting aftermarket equipment to the OBD connector may lead to:

- Incorrect emission monitoring and failure to meet the requirements of emission tests.
- Erratic behavior of one or more of the vehicle safety devices/driving aids, increasing the risk of accidents.
- False code readings and inconsistency during vehicle diagnostic procedures, increasing the vehicle down time.
- Unreliable ELD connection/recording and potential violations with the federal ELD regulations*.

* For more information regarding Federal ELD requirements, consult the [FMSCA](#)

TELEMATICS DEVICE

Your vehicle is equipped with one or more recording devices (“Telematics Device”), associated with Prevost’s Connected Vehicle Services (the “Telematics Services”). These services, which are described in greater detail at www.prevostcar.com (the “Website”), allow you to manage vehicle maintenance and repair in a cost-effective manner by providing: proactive diagnostic and repair planning assistance with detailed analysis of diagnostic trouble codes; streamlined service procedures with parts-on-hand confirmation before a vehicle arrives for service; and live repair and customer communication. The service eliminates or reduces diagnostic time, enhances repair efficiency, expedites the decision process, improves communications and maximizes uptime. To access the Telematics Services, you must enter into a Telematics Subscription Agreement with Prevost, via the sales agreement pertaining to your vehicle.

The Telematics Device collects stores and/or transmits information about your vehicle. Such information may include direction and rate of speed, fuel consumption, engine performance, gearing, rpm, altitude, geo-location (including a history of where the vehicle travels), safety information related to the use and operation of the vehicle, vehicle performance, diagnostic data and error codes. The Telematics Device has the capacity to store historical data about the use and performance of your vehicle. The Telematics Device has the ability to transmit information to a central communications system. The information contained in your Telematics Device may be periodically transmitted to or accessed by Prevost and others authorized by Prevost, along with your vehicle’s VIN or other identifying information. Prevost does not collect any driver information. Prevost retains and uses this information to understand the operational use of your vehicle, to remotely tune your vehicle, and to help facilitate maintenance and vehicle improvements. To the extent allowed by law, Prevost reserves the right to access, use and control this information.

Declining to enter into a Telematics Subscription Agreement with Prevost, or canceling a Telematics Subscription Agreement, will not end the transmission of data from your Telematics Device or the collection of information by Prevost. Prevost may access Telematics Data, to the extent it is available, and use it in connection with providing services and vehicle improvements to you and your vehicle. Prevost will regularly purge from its systems all data collected from your Telematics Device, at time intervals determined by Prevost at its sole discretion.

OWNERSHIP OR ADDRESS HAS CHANGED

If your address has changed or you are the new owner, please help us update our records. Use the link below to access the Prevost Warranty Support web page.

<http://www.prevostcar.com/parts-and-services/warranty>

Click on the link ‘Change of address or ownership’, fill the form, save it and email the file at prevost.onlinewarranty@volvo.com.

QUESTIONS AND COMPLAINTS

Your satisfaction is our most important concern. If questions or complaints arise, first discuss the matter with the service manager at the Prevost facility involved. If you are not satisfied with the service manager’s response, contact the branch manager. If, for any reason, you need further assistance after dealing with the personnel at a Prevost facility, contact your regional service manager. The regional service manager has the responsibility and the authority to recommend action in most cases and (with the aid of relevant district service personnel) will make every effort to conduct a fair review of the situation.

REPORTING SAFETY DEFECTS

UNITED STATES

If you believe that your vehicle has a defect which could cause a crash, injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA), in addition to notifying Prevest.

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 Prevest Service Center, or Prevest.

To contact NHTSA, either call the U.S. Government's Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.NHTSA.gov>; or write to: Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, S.W., Washington, DC 20590. You can also obtain other information about motor vehicle safety from the Vehicle Safety Hotline.

CANADA

Canadian customers who wish to report a safety-related defect to Transport Canada — Defect Investigations and Recalls, may telephone the toll free hotline at 1-800-333-0510, or contact Transport Canada by mail at Transport Canada, ASFAD, Place de Ville Tower C, 330 Sparks Street, Ottawa ON K1A 0N5. For additional road safety information, please visit the Road Safety website at <http://www.tc.gc.ca/roadsafety/menu.htm>.

SECTION 1 - SAFETY PRECAUTIONS

SAFE OPERATING PRACTICES 2
DEFENSIVE DRIVING PRACTICES 2
OTHER PRECAUTIONS 3

1-2 Safety Precautions

SAFE OPERATING PRACTICES

To ensure safe and reliable operation, heed the following safety precautions.

- Operation and maintenance of the vehicle must be performed only by qualified personnel.
- Before driving, conduct a walk around inspection and check that all baggage compartment doors and equipment access doors are securely shut.
- Make sure good visibility is maintained at all times. Keep windshields clean and free of obstructions.
- Adjust the driver's seat so that all controls can be reached easily.
- Always wear your safety belt when driving.
- Check the instrument panel frequently. Do not operate the vehicle when dials or indicators do not indicate normal operating conditions.
- Always pay attention to pedestrians passing in front and behind the vehicle. Always yield to pedestrians at pedestrian walkways.
- Do not drive over obstacles on the road. Empty boxes, piles of leaves, and snowdrifts could conceal hidden dangers that could damage the vehicle suspension and underbody.
- When turning or changing lanes, signal your intention well in advance.
- When approaching to make a right turn, reduce the space between the vehicle and the curb to make sure another vehicle cannot pass on the right. Since the vehicle makes wide turns, allow enough space to make safe turns.
- Switch from high beams to low beams when meeting or following other vehicles within 500 feet (150 meters).
- Never leave the vehicle 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 vehicle.
- Shut-off the engine before refueling, adding oil, performing maintenance or servicing tasks, unless stated otherwise.
- Fuel is highly flammable and explosive. Do not smoke when refueling. Keep away from open flames or sparks.
- Do not run the engine or HVAC system with access doors left open. Close compartment doors before operating any equipment.
- 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.
- Do not attempt to push or pull-start the vehicle.
- The service life of the vehicle depends on the kind of maintenance it receives. Always record any problems and report them immediately to maintenance personnel.
- After each trip, perform a system diagnostic to check if error codes and anomalies were recorded in the vehicle electronic modules.
- Do not use the trailer hitch before reading the safety, technical and operational requirements..
- Do not use the trailer hitch before reading the safety, technical and operational requirements on page 14 of this manual.

DEFENSIVE DRIVING PRACTICES

- For city driving, allow a four to six second travel interval between your vehicle and the vehicle ahead. Increase this travel interval to six to eight seconds for highway driving. Increase time interval for driving at night or in foul weather.

- Be prepared to stop when approaching an intersection. The stopping distance of the vehicle increases with the weight and speed.
- Establish eye-to-eye contact with other drivers and with pedestrians. Use, high beam and low beam headlights, turn signals and horn as needed.
- On highway, don't stare at the road ahead. Keep your eyes moving. Check mirrors and dashboard instruments frequently.
- To keep the vehicle from drifting across lanes during highway driving, always look over the horizon on the road ahead.
- Adjust your speed to road conditions, traffic and visibility. Never exceed the posted speed limits.
- If another vehicle is following close behind, reduce your speed to let the vehicle pass.
- For additional information about safe operation and defensive driving practices, contact the local department of motor vehicles authority.

OTHER PRECAUTIONS



WARNING

This vehicle is not designed to carry standing passengers.



WARNING

CALIFORNIA PROPOSITION 65

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

Battery posts, terminals and other related accessories contain lead and lead compounds, chemical known to the State of California to cause cancer and other reproductive harm.

Batteries also contain other chemicals known to the State of California to cause cancer.

Wash hands after handling.



DANGER

Make sure that electrical current or air pressure is removed before performing any work. A part may be energized even if the ignition switch is OFF. A part may be under pressure even if all tanks are empty. Before performing any work on the vehicle, refer to wiring diagrams and/or air schematics to thoroughly understand the system.

NOTE

When the ignition switch is set to the OFF position, the electrical components are not energized except for the MCM (Master Chassis Module), the battery equalizer, the preheater system and some electronic modules; which are energized during 15 minutes after the ignition has been set to the OFF position. Prior to working on one of these electrical components, set the main electrical shut-off switch to the OFF position. If the vehicle will not be operated for a long period (more than 2 weeks), it is recommended, in order to prevent the batteries from discharging, to trip the main circuit breakers located in the main power compartment to stop the small current drawn by the radio preset station memory, the MCM memory and the instrument cluster clock. Note that the radio station presets will be erased, same thing for the diagnostic codes history and the instrument cluster clock will have to be reset.

1-4 Safety Precautions



CAUTION

PRECAUTIONS ARE TO BE OBSERVED BEFORE WELDING TO MINIMIZE THE RISK OF MAJOR AND COSTLY DAMAGES CAUSED TO THE VEHICLE ELECTRONIC COMPONENTS!

1. Set the main electrical shut-off switch to "OFF" position.
2. Trip circuit breaker CB2 and CB6.
3. Disconnect electronic ground terminal from the ground junction block located in the battery compartment.
4. Make sure to clamp the welding ground return as close as possible to the welding point and make a good electric contact to the chassis.

Detailed instructions are provided in section 00-GENERAL of your vehicle maintenance manual.

SECTION 2 - COACH EXTERIOR

EXTERIOR VIEW	2
ENGINE COMPARTMENT COMPONENTS	4
ENGINE COMPARTMENT DOOR	6
EXHAUST AFTERTREATMENT SYSTEM ACCESS HATCH	6
BACK-UP CAMERA	7
ENGINE COMPARTMENT CURBSIDE DOOR	7
120-VOLT CONNECTORS	7
ENGINE BLOCK HEATER	7
BATTERY CHARGER	8
MAIN POWER COMPARTMENT	8
WHEELCHAIR LIFT ACCESS DOORS	9
CURBSIDE FUEL AND DIESEL EXHAUST FLUID (DEF) FILLER NECK ACCESS	9
HVAC CONDENSER COMPARTMENT	10
BAGGAGE COMPARTMENTS	10
ENTRANCE DOOR	10
LOCK OPERATION	10
OPENING THE ENTRANCE DOOR FROM OUTSIDE	11
OPENING THE ENTRANCE DOOR FROM INSIDE	11
DOOR OPERATION LOGIC	11
EMERGENCY DOOR OPENING	11
RECLINING BUMPER COMPARTMENT	11
WIPER MECHANISM ACCESS HATCH	12
HEADLIGHTS	13
FRONT ELECTRICAL AND SERVICE COMPARTMENT	14
REAR-VIEW MIRRORS	14
SIDE CAMERA REAR-VIEW SYSTEM	15
EVAPORATOR COMPARTMENT	15
STREET SIDE FUEL FILLER NECK ACCESS	16
RADIATOR DOOR	17
SCR CONVERTER ACCESS HATCH	17
TRAILER HITCH	18
TRAILER HITCH LIMITATIONS	18

2-2 Coach Exterior

EXTERIOR VIEW

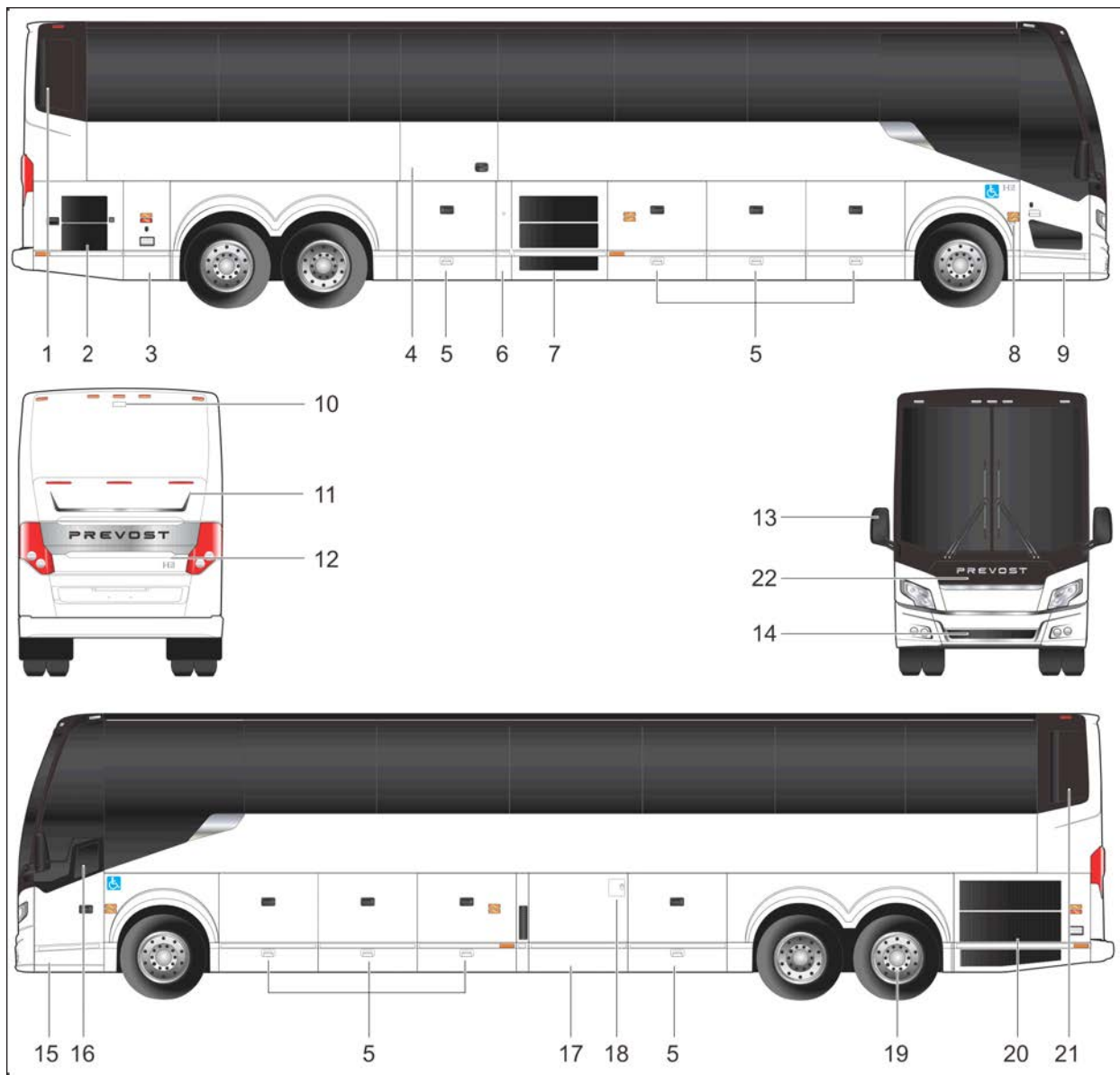


FIGURE 1: H3-45 EXTERIOR VIEW

1. Engine air intake
2. Engine R.H. side access door
3. Main power compartment (battery compartment)
4. Wheelchair area access door
5. Baggage compartment
6. Fuel filler neck access door
7. Condenser compartment (HVAC)
8. Entrance door control switch
9. Entrance door
10. Backup camera (optional)
11. Diesel Particulate Filter (DPF) access door
12. Engine compartment rear door
13. Rear-view mirror
14. Reclining bumper compartment
15. Front electrical and service compartment
16. Driver's power window
17. Evaporator compartment (HVAC)
18. Fuel filler neck and diesel exhaust fluid (DEF) filler neck access door
19. Auxiliary axle (tag)
20. Engine radiator door
21. SCR catalytic converter access door
22. Wiper mechanism access hatch

2-4 Coach Exterior

ENGINE COMPARTMENT COMPONENTS

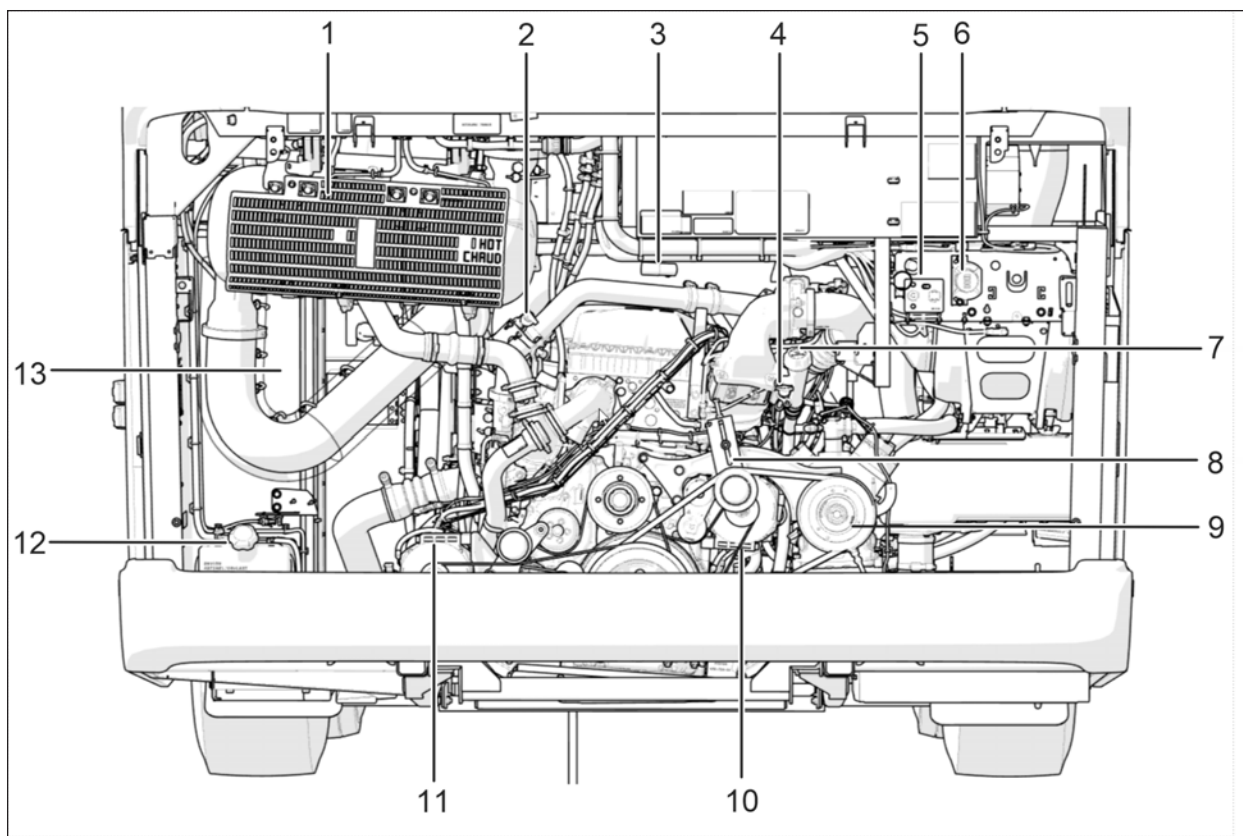
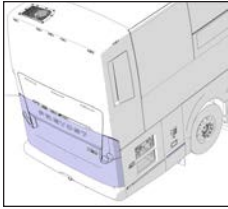


FIGURE 2: ENGINE COMPARTMENT

1. Diesel Particulate Filter (DPF) Assembly;
2. Transmission fluid dipstick;
3. Air filter restriction indicator;
4. Engine oil dipstick;
5. Rear start/stop panel;
6. Back-up alarm;
7. Engine oil filler tube and cap;
8. A/C compressor belt tensioner;
9. A/C compressor;
10. Alternator, curbside
11. Alternators, street side;
12. Coolant recovery tank;
13. Radiator & Charge Air Cooler (CAC)

2-6 Coach Exterior

ENGINE COMPARTMENT DOOR



To open the engine door, first open the curbside door. Lift the latch release lever. Unlatch the door and pull it out and up.

The door should stay open by itself but it is recommended to always use the safety catch as shown. The lighting in the engine compartment turns on automatically when the door is open. When open or not closed properly, a pictogram appears on the instrument cluster DID. To close the door, lift it slightly and release the safety catch.

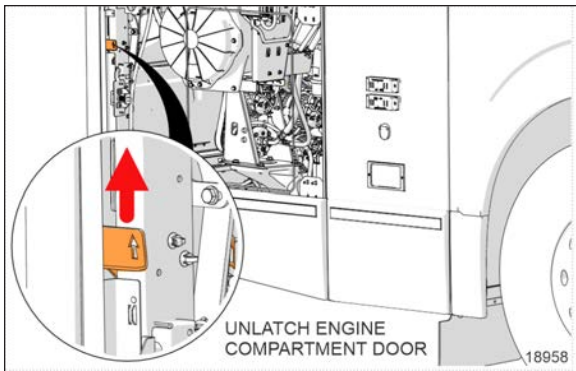


FIGURE 3: OPENING THE ENGINE COMPARTMENT DOOR

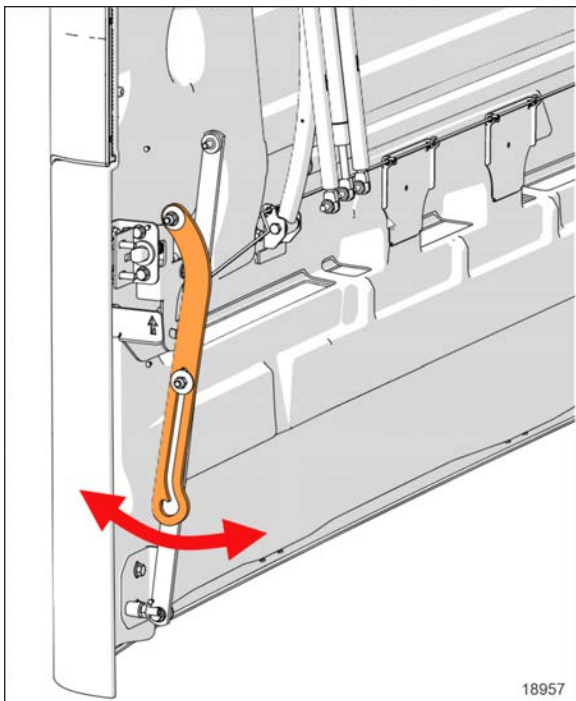


FIGURE 4: SAFETY CATCH

This door provides access to the following equipment:

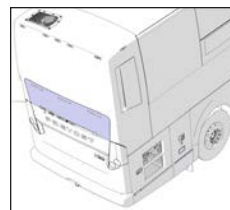
- Engine
- Alternators
- Belts and belt tensioners
- A/C compressor
- Rear starter switch (see ["STARTING FROM THE ENGINE COMPARTMENT" on page 3](#) in Section 6 Starting and Stopping Procedures)
- Engine certification plate
- Air filter restriction indicator
- Couplings and valves for lavatory maintenance
- Fresh water tank coupling
- Engine oil dipstick and filler cap
- Transmission oil dipstick
- Cooling fluid surge tank and recovery tank



WARNING

Unless otherwise stated, avoid running the engine when the engine compartment door is open.

EXHAUST AFTERTREATMENT SYSTEM ACCESS HATCH



The engine compartment door must be opened before opening the DPF access hatch. To open, press the latch release lever. Using both hands, push the access hatch up until it locks in place.

To close the access hatch, press the latch release lever again and lower the hatch, holding it with both hands.

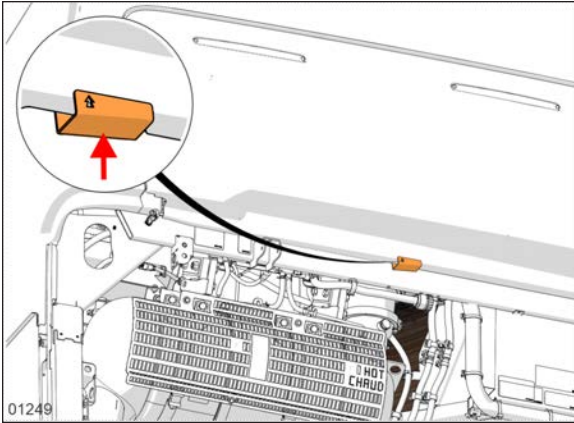


FIGURE 5: EXHAUST AFTERTREATMENT SYSTEM ACCESS HATCH

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 housing with a retractable cover. For additional information, refer to Controls and Instruments and Care and maintenance chapters.

ENGINE COMPARTMENT CURBSIDE DOOR



Lock this door using the exterior compartment key. To open, pull up the door handle to release the latch and then pull the door open.

The curbside door also has a safety catch to prevent it from closing inadvertently. Release the catch before attempting to close.

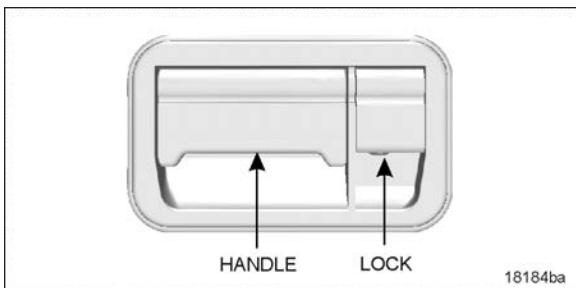


FIGURE 6: DOOR HANDLE

The engine compartment curbside door provides access to the following (if equipped):

- Engine compartment rear door release lever
- Davco Fuel Pro filtration system (option)
- Primary & secondary air system fill valve
- Power steering fluid tank
- Booster block terminals
- Lavatory waste water tank access cap
- Engine air filter
- Battery charger 120 volts connector
- Engine block heater 120 volts connector



WARNING

Unless otherwise stated, do not run the engine when the engine compartment curbside door is open.

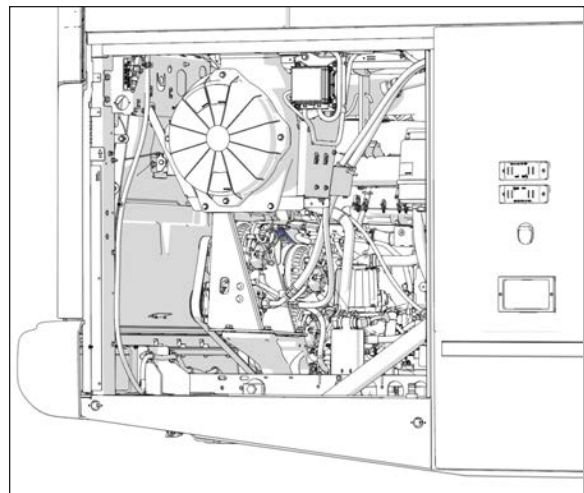


FIGURE 7: ENGINE COMPARTMENT CURB SIDE

120-VOLT CONNECTORS

ENGINE BLOCK HEATER

This connector is used with a 120-volts supply and is connected to the optional engine block heater. Refer to Starting and Stopping Procedures chapter.

2-8 Coach Exterior

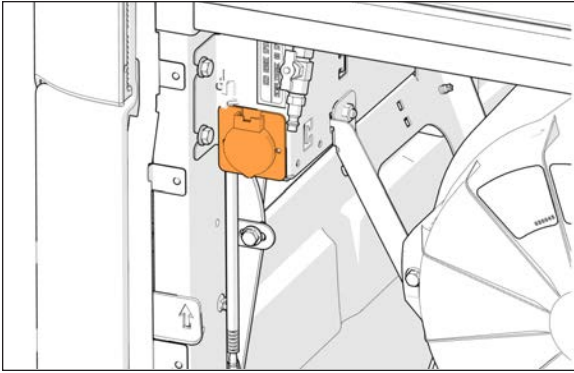


FIGURE 8: ENGINE BLOCK HEATER LOCATED CLOSE TO THE ENGINE AIR FILTER

BATTERY CHARGER

Another connector is used to connect the battery charger to a 120-VAC power source.

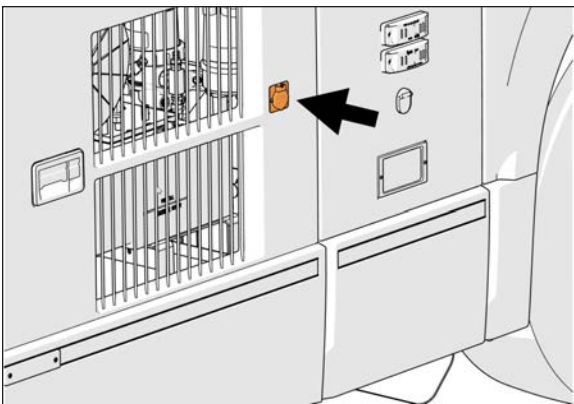
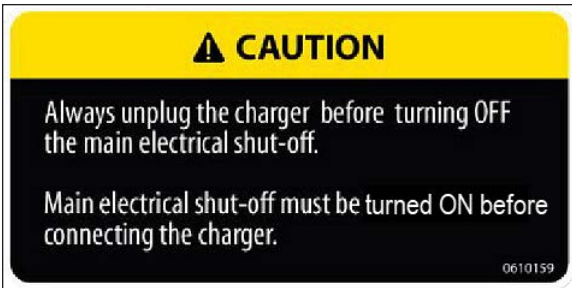


FIGURE 9: BATTERY CHARGER 120-VOLT CONNECTOR

MAIN POWER COMPARTMENT



To open the main power compartment door, use the exterior compartment door key. The door will pop open.

This compartment is closed off from the engine compartment and is used to house the batteries and electrical components. The following items are located in the main power compartment:

- (4x) 12-volt battery
- Main circuit breakers (12 & 24 volts)
- Battery charger/inverter (optional)
- Battery equalizer
- Rear multiplex modules
- Transmission Electronic Control Module for Allison transmission
- Rear fuse box (VECR)
- Relays
- Electronic ground stud

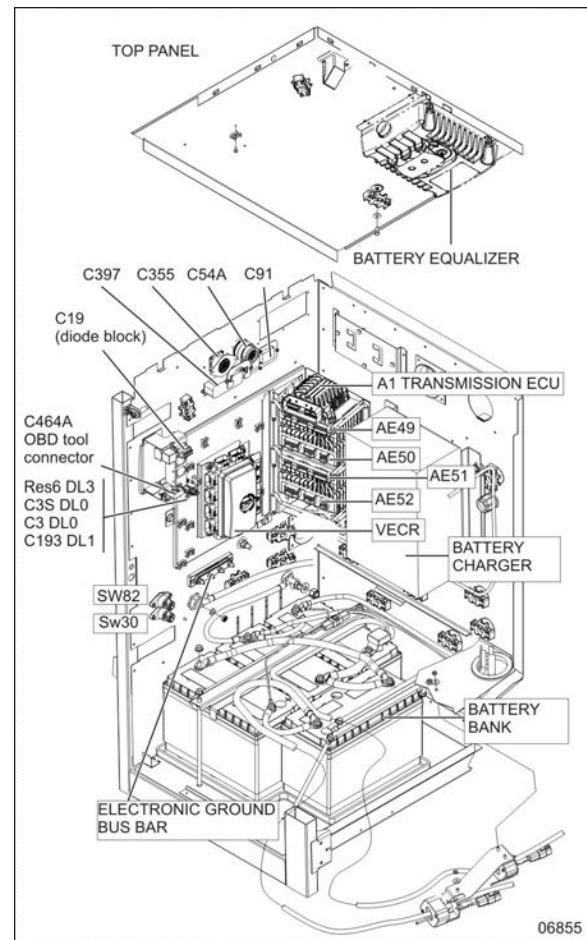


FIGURE 10: VIEW OF MAIN POWER COMPARTMENT (TYPICAL)

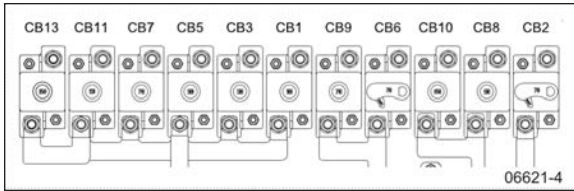
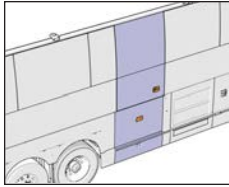


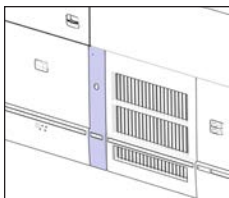
FIGURE 11: MAIN CIRCUIT BREAKERS 12 & 24 VOLTS (TYPICAL)

WHEELCHAIR LIFT ACCESS DOORS



To open the optional wheelchair lift door, the coach must be parked on a flat and level surface with the parking brake applied. The wheelchair access door swings to the side and is maintained open by a locking mechanism. Open the baggage compartment containing the lift mechanism. The baggage compartment door is located directly below the wheelchair access door and it opens to the side.

CURBSIDE FUEL AND DIESEL EXHAUST FLUID (DEF) FILLER NECK ACCESS



Open this door using the exterior compartment key. To open, turn the key $\frac{1}{4}$ turn clockwise and pull the door open.

NOTE

It is recommended to refuel from the curbside whenever possible, to avoid spilling fuel into the evaporator compartment. Any amount of fuel vapor in this compartment would be carried right up into the cabin by the HVAC system fresh air intake.

Moreover, the curbside filler neck access door is the only access to the DEF filler neck.

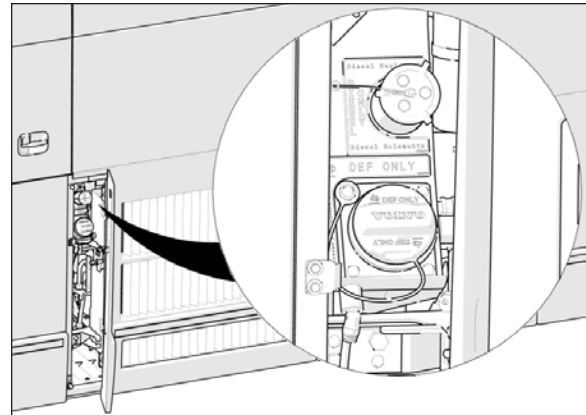


FIGURE 12: FUEL AND DIESEL EXHAUST FLUID (DEF) FILLER NECKS

NOTE

Provided the vehicle is parked on level ground, an automatic nozzle will automatically shut off when the fuel tank is approximately 95% full.



CAUTION

Do not fill to more than 95% of the fuel tank capacity. Do not "top off" the tank, doing so may result in fuel spillage when the fuel expands.



CAUTION

DEF – Do not overfill

If an automatic nozzle is used for filling diesel exhaust fluid (DEF), do not add further DEF after the nozzle has automatically shut off flow a first time.

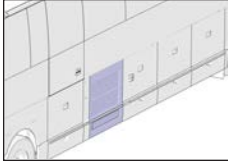
If such nozzle is not available, use the DEF level gage on the instrument panel to control the quantity during filling.

Diesel exhaust fluid DEF will begin to crystallize and freeze at 12°F (-11°C) and expand by 7% when frozen. To allow expansion without damaging the DEF tank, do not fill the tank with more than 16 gallons (60 liters).

During vehicle operations, the SCR system is designed to provide heating for the DEF tank and supply lines. If DEF freezes when the vehicle is shut down, start up and normal operation of the vehicle will not be inhibited. The SCR heating system is designed to quickly return the DEF to liquid form and the operation of the vehicle will not be impacted.

2-10 Coach Exterior

HVAC CONDENSER COMPARTMENT



To open the condenser compartment door:

1. Open the curbside fuel and diesel exhaust fluid filler neck access door first;
2. Move the latch bolt pin to the right as shown (step 1 on image below);
3. Rotate the latch handle as shown (step 2 on the image below)
4. Open the door from the right side.

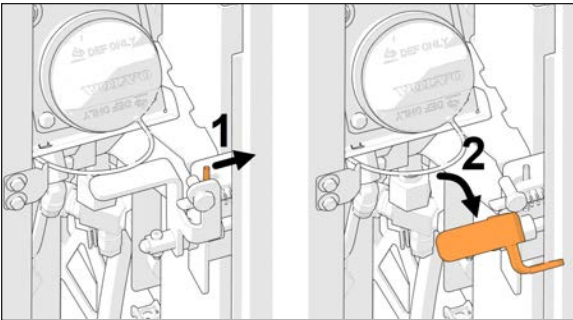


FIGURE 13: HVAC CONDENSER COMPARTMENT DOOR OPENING

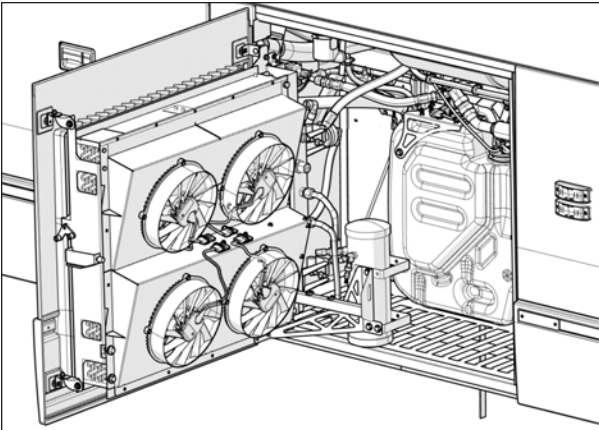


FIGURE 14: HVAC CONDENSER COMPARTMENT

BAGGAGE COMPARTMENTS

The baggage compartment doors can be locked and unlocked using the exterior compartment key. Lift up the cover to gain access to the lock. Pull up the door handle to release the latch and then pull the door open. Pressurized cylinders

assist the opening and closing of the baggage compartment doors and hold the doors open.

The lighting in the baggage compartments turns on automatically when the door is opened if the ignition key is set to ON or ACC.



WARNING

To avoid injury, keep hands clear of door edge and door frame when closing.

NOTE

To prevent theft and vandalism, always lock all doors before leaving the vehicle unattended.

NOTE

The baggage compartment doors can also be locked and unlocked using:

- The baggage compartments central locking system switch on the L.H. dashboard (refer to Controls and Instruments chapter).

NOTE

To prevent the door from closing in case of defective cylinders, lock the door in open position by pushing it further towards the body of the vehicle, until it locks in place.

ENTRANCE DOOR

LOCK OPERATION

Lock or unlock the entrance door from outside the vehicle by turning the key in the door lock (counterclockwise to lock, clockwise to unlock).

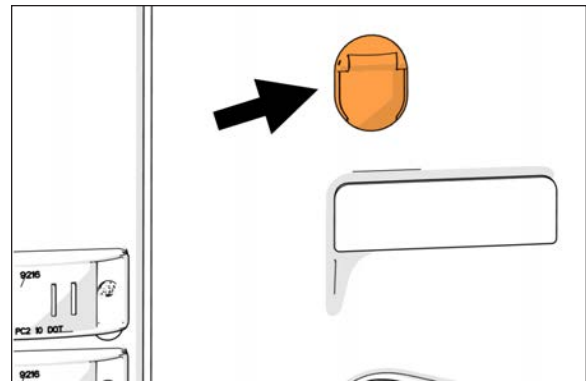


FIGURE 15: ENTRANCE DOOR EXTERIOR LOCK

To lock the entrance door from the inside, slide the lock lever to the left.

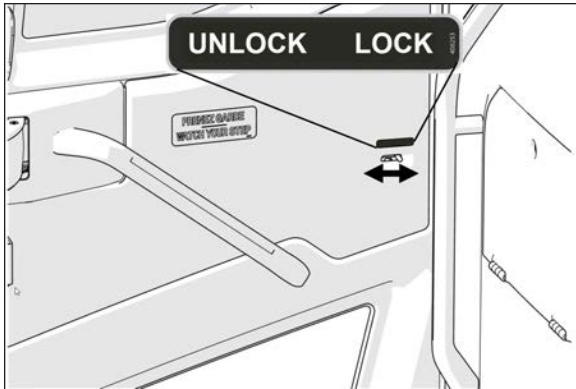


FIGURE 16: INSIDE LOCKING DEVICES

OPENING THE ENTRANCE DOOR FROM OUTSIDE

The opening and closing of the door may be pneumatically controlled from the outside using the 3-position switch located on the door L.H. side. Open the door by pushing the switch forward, close by pushing the switch rearward.

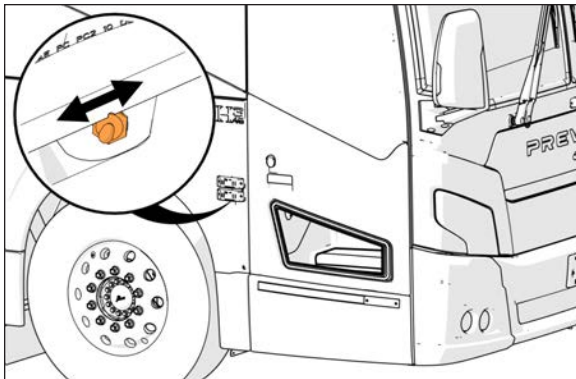


FIGURE 17: ENTRANCE DOOR EXTERIOR SWITCH

OPENING THE ENTRANCE DOOR FROM INSIDE

From the inside, open and close the door using the door operation buttons on the R.H. dashboard panel.

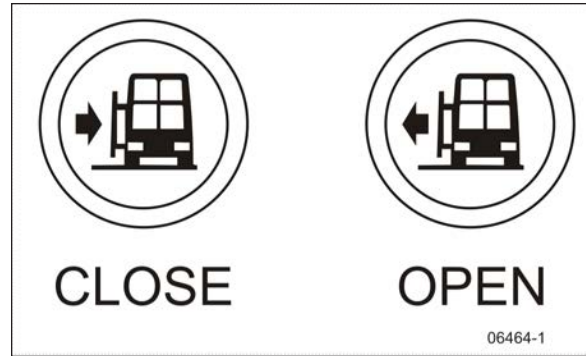


FIGURE 18: DASHBOARD SWITCHES

NOTE

If the interior lever is used to exit the coach and the key is not used to unlock the door, it will lock again upon closing. Remember to keep the key with you upon exiting.

DOOR OPERATION LOGIC

If the switch is held in position until the door is fully open or closed, the system holds pressure in the door cylinder, locking the door in that position. The door can be open to any position by releasing the exterior switch or inside door control buttons when the desired position is attained. However, the door is not locked in any position other than fully open or fully closed. The door can then be open or closed further by pushing or pulling on the door.

When the door is almost shut, a mechanism will finish the closing of the door. This works even when the door is closed manually.

EMERGENCY DOOR OPENING

Refer to "[ENTRANCE DOOR OPENING - EMERGENCY SITUATION](#)" on page 3 in Section 7, Safety Features and Equipment.

RECLINING BUMPER COMPARTMENT

The front bumper can be tilted downward to give access to the bumper compartment. Pull the release handle located inside the front service compartment to unlock. Tilt down the entire bumper assembly to access the compartment. Push the bumper back firmly in place to lock in position.

2-12 Coach Exterior

Check that bumper is securely closed before driving.

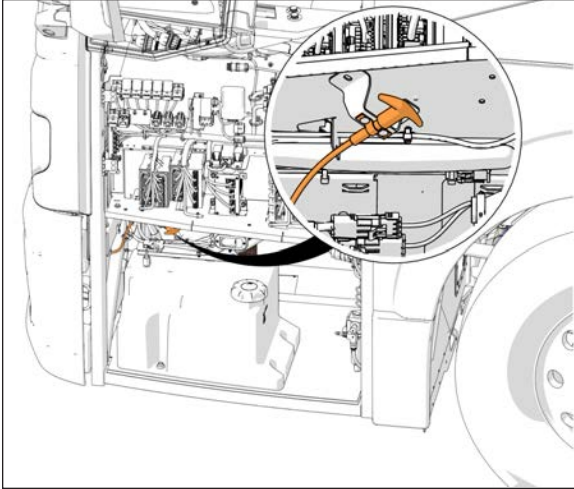


FIGURE 19: RECLINING BUMPER RELEASE HANDLE



WARNING

The compartment behind the bumper is not designed for miscellaneous storage. Never store loose objects in this compartment since they can interfere with the steering linkage mechanism.



WARNING

Although a powerful spring assists in reclining the bumper, it remains heavy and rests low when open. Caution should be used when reclining.

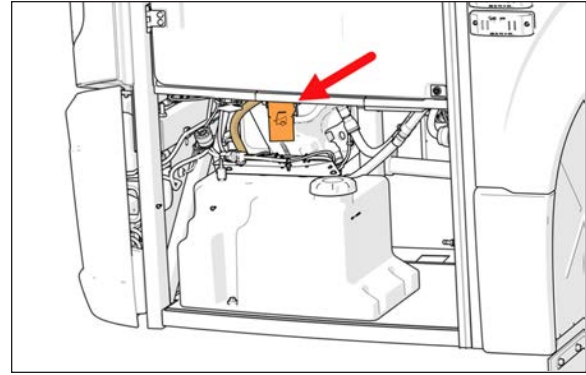


FIGURE 20: WIPERS MECHANISM ACCESS HATCH RELEASE LEVER

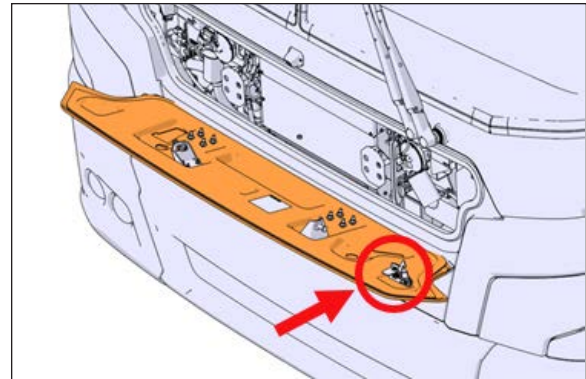
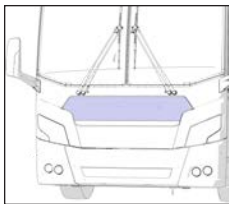


FIGURE 21: SAFETY LATCH LOCATION

WIPER MECHANISM ACCESS HATCH



This access hatch can be opened downward to give access to the wipers mechanism. To open:

Pull the release lever located inside the front service compartment to unlock.

Pull the safety latch located on the upper right inner side of the hatch.

HEADLIGHTS

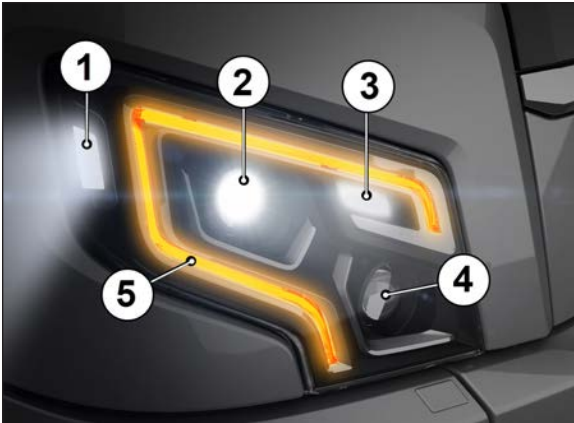


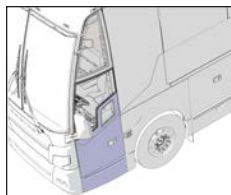
FIGURE 22: HEADLIGHTS

- (1) Cornering light
- (2) Low beam
- (3) Auxiliary low beam
- (4) High beam
- (5) Light pipe

FUNCTION	UNIT				
	LIGHT PIPE	HIGH BEAM	LOW BEAM	AUX LOW	CORNERING
Parking light	ON white dimmed				
Daytime running light	ON white				
Low	ON white dimmed		ON	ON	
High		ON	ON dimmed	ON	
Directional turn signal	ON amber				ON
Hazard	ON amber				

14 - Coach Exterior -

FRONT ELECTRICAL AND SERVICE COMPARTMENT



Unlock this compartment door using the exterior compartment key. The light in the front service compartment turns on automatically when the door is open.

The front electrical and service compartment provides access to the following:

- Front fuse box (VECF) & spare fuses
- ABS module
- VECU
- Front multiplex modules I/O-A, I/O-B
- Relays & resistors
- Kneeling audible alarm
- Emergency door opening unlock valve
- Windshield washer reservoir
- Reclining bumper opening handle
- Accessories air tank fill valve
- MCM module
- Electronic ground stud
- Tire Pressure Monitoring System module

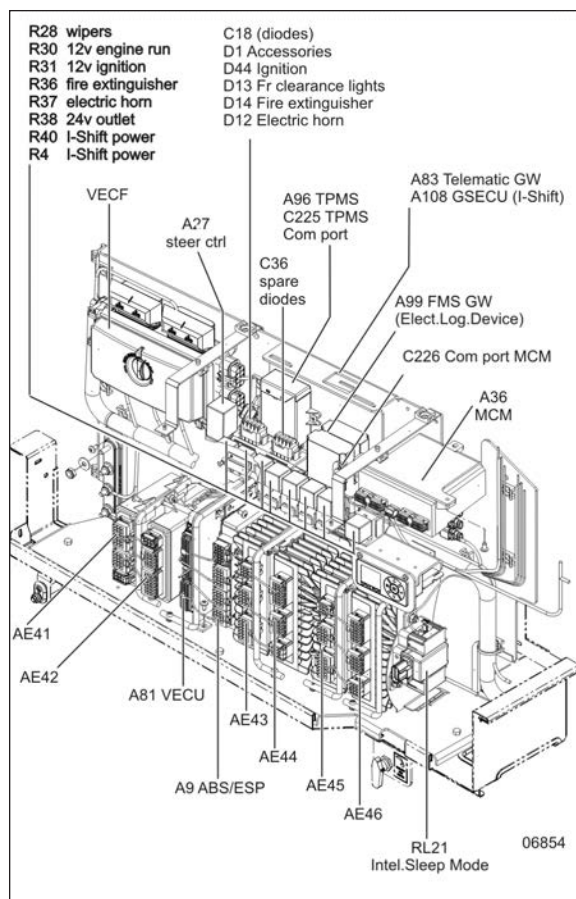


FIGURE 23: FRONT ELECTRICAL COMPARTMENT

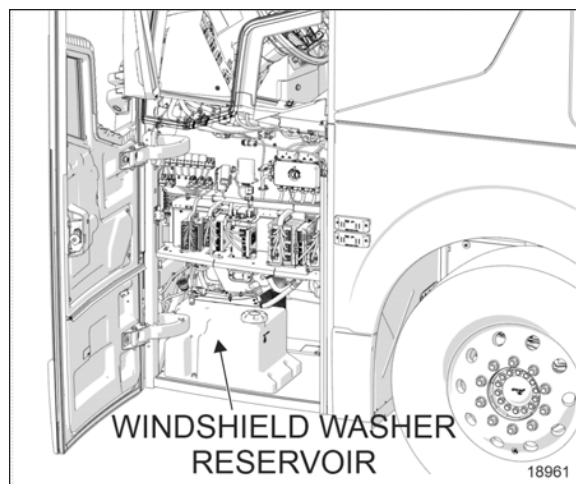
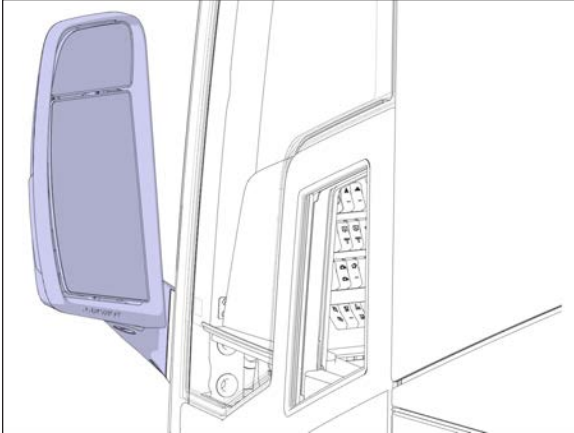


FIGURE 24: FRONT ELECTRICAL & SERVICE COMPARTMENT

REAR-VIEW MIRRORS

The vehicle 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 can be equipped with heating elements. The elements are activated by a rocker switch located on the dashboard. Refer to "Controls & Instruments" chapter. 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 and could break the mirror glass.

As an option, the mirrors may be equipped with LED turning signal lights to give an additional signal light when turning or changing lane for extra safety or for other drivers to see your signal when driving too close, in rain, fog or when in a blind spot.

The mirrors are adjusted using the controls located on the lateral control panel. Refer to "Controls & Instruments" section.

Adjust the side-view mirrors until the side of the vehicle is visible. Adjust the flat-type mirror until the road behind is in full view.

SIDE CAMERA REAR-VIEW SYSTEM

The vehicle may be equipped with the optional video camera mirror system. To provide good visibility in cold weather, the camera lens shield is equipped with heating elements. The heating elements are activated by a rocker switch located on the dashboard. Refer to "Controls & Instruments" chapter.



CAUTION

To avoid damage to the heating system, the heating elements shall not be permanently activated.

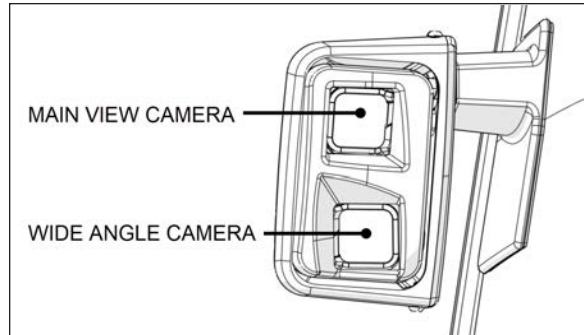
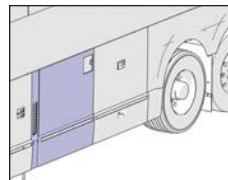


FIGURE 25: L.H. SIDE CAMERA

EVAPORATOR COMPARTMENT



To access the evaporator compartment, pull the release latch located on the left side wall of the rearmost baggage compartment.

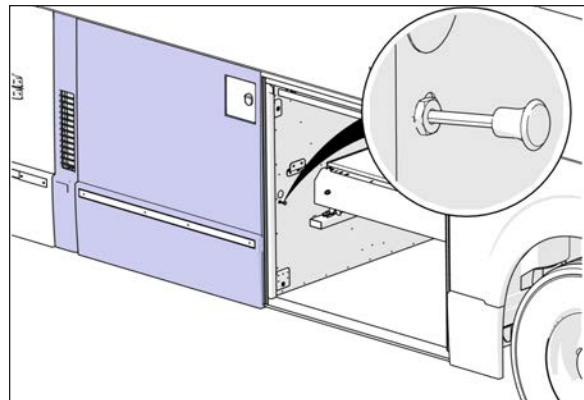


FIGURE 26: EVAPORATOR COMPARTMENT ACCESS

16 - Coach Exterior -

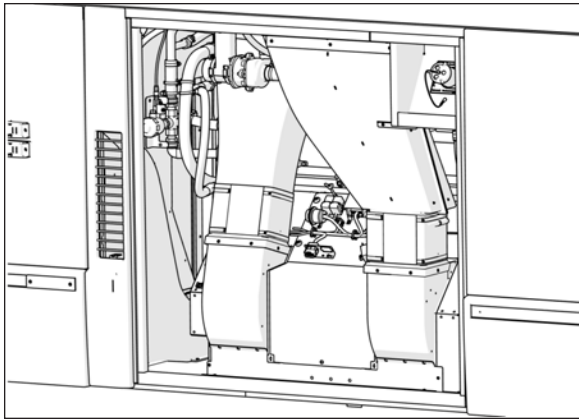


FIGURE 27: EVAPORATOR COMPARTMENT

The evaporator compartment contains relays, diodes and a multiplex electronic module mounted on a panel located on top of the fan assembly.

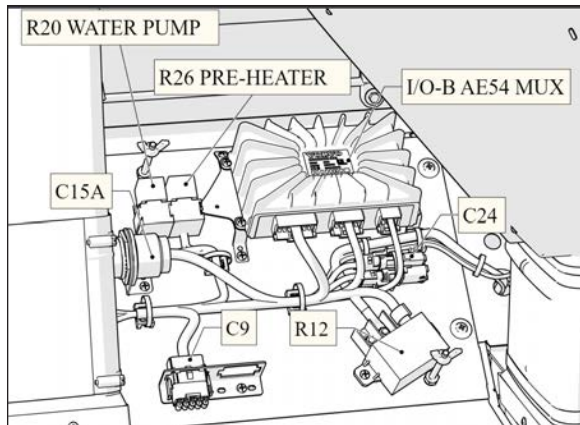


FIGURE 28: HVAC PANEL

NOTE

It is important to keep the evaporator compartment door closed while checking the HVAC system to prevent faulty readings.

STREET SIDE FUEL FILLER NECK ACCESS

Open this access hatch with the exterior compartment key.

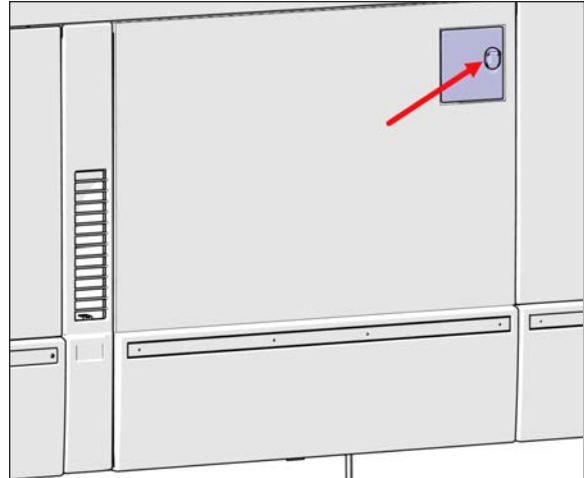


FIGURE 29: FUEL FILLER NECK ACCESS HATCH LOCK

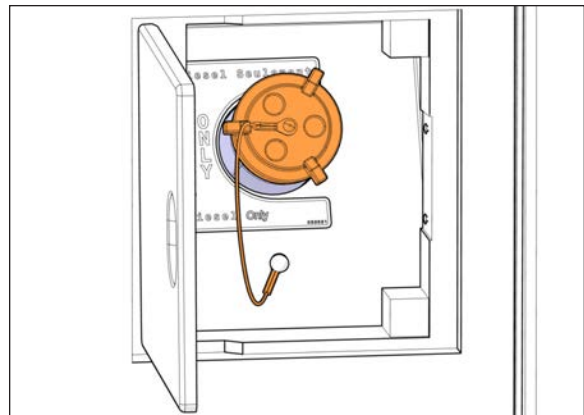


FIGURE 30: STREET SIDE FUEL FILLER NECK

NOTE

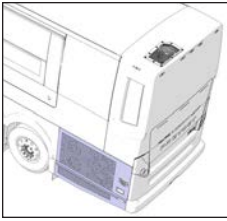
Provided the vehicle is parked on level ground, an automatic nozzle will automatically shut off when the tank is approximately 95% full.



CAUTION

Do not fill more than 95% of the fuel tank capacity. Do not "top off" the fuel tank, doing so may result in fuel spillage when the fuel expands.

RADIATOR DOOR



Open the engine compartment rear door to access the engine radiator door release handle.

Open the engine radiator door by pulling on the latch release lever from inside the engine compartment left pillar.

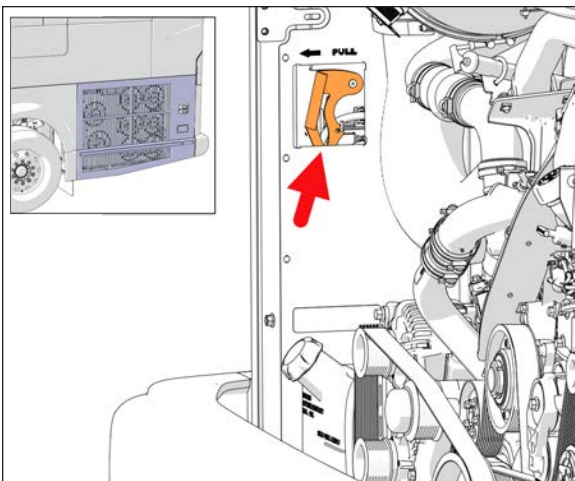


FIGURE 31: RADIATOR DOOR LATCH RELEASE LEVER LOCATION



WARNING

WHEN THE ENGINE IS RUNNING...

Cooling fans may activate at any moment.

Keep hands away from cooling fans or keep the radiator door closed.



WARNING

Cooling fans may be running when the engine is shut down in the following conditions:

- If a High Exhaust Temperature condition exists (e.g., following regeneration). The CAC fans will keep running for a maximum of 15 minutes.
- During the electric Motor Test Sequence, the cooling fans will start running briefly.

SCR CONVERTER ACCESS HATCH

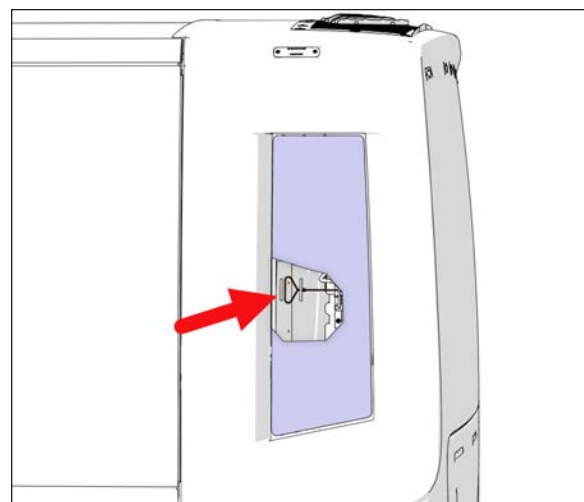


FIGURE 32: SCR CONVERTER ACCESS DOOR

18 - Coach Exterior -

To gain access to the SCR catalytic converter, pull the catch connecting rod to unlock the access hatch;



WARNING

External and internal temperatures remain hot long after the engine has been shut down. Allow the Exhaust Aftertreatment System to cool before handling. Wear protective clothing and gloves while servicing.

TRAILER HITCH

Your vehicle may be equipped with a factory-installed trailer hitch which has been designed to meet the following rating:

Maximum gross trailer weight:

20,000 lbs. (9072 kg)

Maximum tongue weight at 6 1/2 inches (165 mm) or less from coupling receiver:

1,500 lbs. (680 kg)

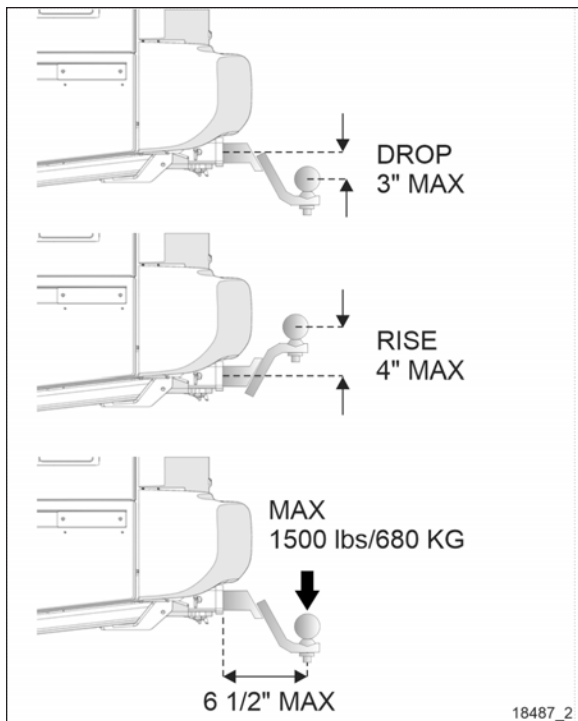


FIGURE 33: TRAILER HITCH

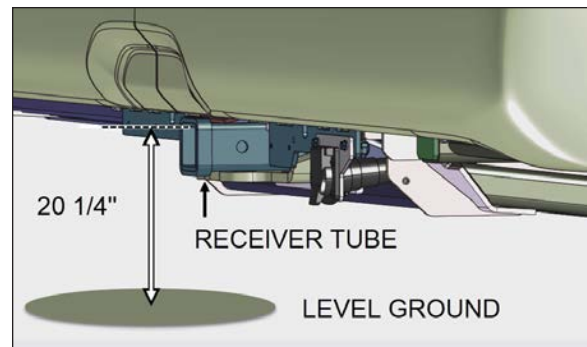


FIGURE 34: TRAILER HITCH



DANGER

The draw bar and the ball used for towing the trailer should be rated for 20,000 lbs. capacity or more.



WARNING

Pulling a trailer weighing more than the recommended *maximum gross weight* may cause engine and transmission overheating, and a possible hitch failure.

NOTE

Pulling a trailer over long distances is considered as a "severe operating condition" for the vehicle. The engine will require more frequent servicing.

TRAILER HITCH LIMITATIONS

The minimum requirement for a trailer weighing up to 20,000 lbs. when coupled to a 20,000 lbs. Prevest Trailer Hitch is as per the following:

1. The trailer must comply with **Federal Motor Carrier Safety Regulations 393.52** regarding trailer braking capability.
2. The trailer coupling attachments must meet the following minimum static test load requirements. Use the indicated Gross Trailer Weight Rating (GTWR) of your trailer and multiply by the indicated value below.

- Longitudinal tension and compression: (1.5 x GTWR)

- Transverse thrust: (0.5 x GTWR)
- Vertical tension and compression: (0.5 x GTWR)

Loads indicated must be applied without incurring loss of attachments or distortion or failure which could affect the safe towing of a trailer.

3. The ball and trailer coupling must meet the following minimum test load requirements without incurring failure. Use the indicated Gross Weight Rating (GTWR) of your trailer and multiply by the indicated value below.
 - Longitudinal tension and compression: (GTWR x 3)
 - Transverse thrust: (GTWR x 1)
 - Vertical tension and compression: (GTWR x 1.3)

In this case, failure is identified as the point at which the coupling or ball will accept no additional test load without separation of the ball from the coupling ball socket, or the occurrence of a metal fracture of either coupling ball or coupling assembly, which results in separation of the ball from the coupling ball socket.

4. Two lengths of safety chain shall be used. The strength rating (minimum breaking force) of each individual chain and its connecting means shall be equal to, or exceed the trailer's Gross Weight Rating (GTWR).
5. The towing vehicle must be equipped with engine brake or transmission retarder. The engine or the transmission retarder on the vehicle must be functional at all times (to be inspected frequently).

SECTION 3 - COACH INTERIOR

UTILITY COMPARTMENTS	2
DRIVER'S PERSONAL COMPARTMENTS	2
MICROPHONE JACKS	2
DRIVER'S SEAT - ISRI	2
MECHANICAL ISRI SEAT	2
PNEUMATIC ISRI SEAT MODEL 6832/872 NTS	4
DRIVER'S SEAT – USSC 9100ALX	4
DRIVER SEAT BELT	4
PASSENGER SEATS	5
SWIVEL SEATS	6
PASSENGER SEAT BELT	7
TABLES	7
OVERHEAD CONSOLE	8
ADJUSTABLE AIR REGISTERS	8
SERVICE CHIME	8
READING LIGHTS	8
WINDOWS	8
PANORAMIC WINDOWS	8
DRIVER'S POWER WINDOW	9
DRIVER'S WINDOW SUNSHADE	9
VENTILATION / EMERGENCY EGRESS HATCHES	9
OVERHEAD COMPARTMENTS	10
WASTE CONTAINER	10
LAVATORY	10
KEYS	11
ENTRANCE DOOR KEY	11
EXTERIOR COMPARTMENT KEY	11
PAPER TOWEL DISPENSER KEY	11

3-2 Coach Interior

UTILITY COMPARTMENTS

Two utility compartments are located at the R.H. side of the dashboard. For other utility compartments already covered in this manual, refer to "[LATERAL UTILITY COMPARTMENT](#)" on page 5 and "[CENTRAL UTILITY COMPARTMENT](#)" on page 21.

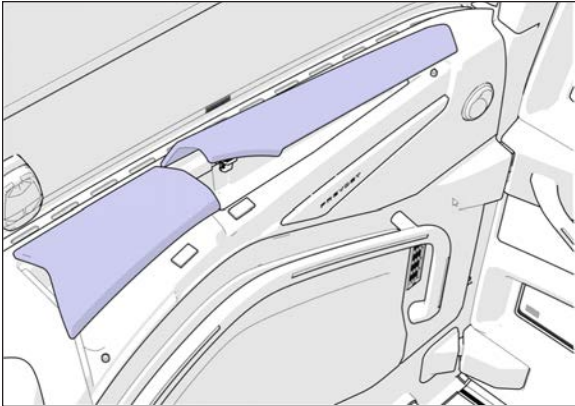


FIGURE 1: UTILITY COMPARTMENT

DRIVER'S PERSONAL COMPARTMENTS

A lockable compartment for the driver is located on the L.H. side of the entrance stepwell. This compartment may be locked using the appropriate key. A tour guide seat is available as an option and is installed in front of the driver's compartment on dedicated seat anchors.

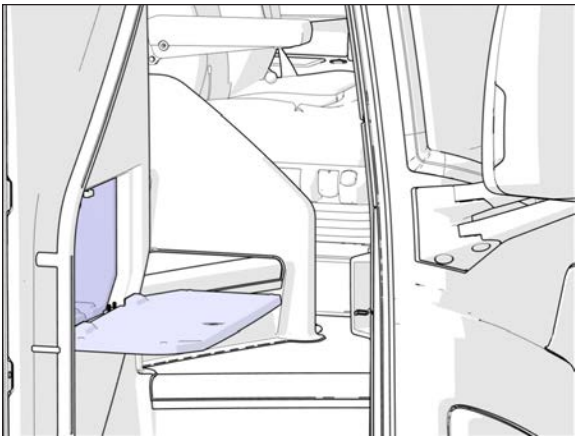


FIGURE 2: DRIVER'S PERSONAL COMPARTMENT

MICROPHONE JACKS

Up to six microphone jacks for the PA system can be located in the following locations:

- On the wall to the left of the driver;
- On the right-hand side of the dashboard;
- Two optional outlet for the tour guide on the modesty panel;
- One optional outlet on the lavatory wall, behind the last row of seats;
- One optional outlet under the overhead storage compartment, at the rear of the coach.

DRIVER'S SEAT - ISRI

The vehicle can be equipped with one of two models of ISRI driver's seats. Mechanically adjusted seat and pneumatic models are available. Both seats are equipped with safety belts. Lumbar supports, heated cushions and adjustable armrests are optional.



DANGER

The driver's seat must be adjusted to allow the driver easy access to the coach controls. Never adjust seat while driving vehicle as this could result in loss of vehicle control.



DANGER

Make sure that seat is adjusted and that safety belt is buckled up before driving vehicle.

MECHANICAL ISRI SEAT

Adjustment

Seat can be adjusted to the desired driving position by following the instructions listed below:

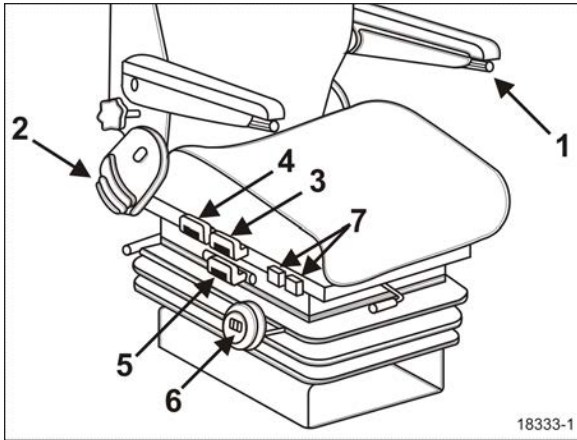


FIGURE 3: DRIVER'S SEAT ADJUSTMENT (MECHANICAL)

Armrest



The driver's seat can be equipped with two folding armrests.

To lower the armrest:

- Turn the control knob #1 (refer to figure: Driver's seat adjustment (mechanical)) counter-clockwise without applying pressure on the armrest
- Push the armrest down.
- Repeat procedure until the desired position is reached.

Backrest



Lift the lever #2 then adjust backrest to the desired angle.

Tilt (front)



To lower or raise the seat's front section, pull the handle #3 up and push or pull the seat cushion.

Tilt (rear)



To lower or raise the seat's rear section, pull the handle #4 up and push or pull the seat cushion.



WARNING

To avoid pinching the fingers between buckle and controls, lower the safety belt buckle before adjusting seat height.

Up and Down



Pull both handles (3 and 4) up to adjust the height of the seat.

Fore and Aft



To adjust distance between driver and dashboard, pull the handle #5 up and slide the seat forward or backward.

NOTE

Fore-and-aft seat adjustment control may also be located at the front of the seat.

Suspension



For maximum mechanical suspension performance, rotate the handwheel #6 until your body weight (in pounds) is shown on the indicator.

The seat suspension resistance can be changed to suit the driver. Turn the handwheel clockwise to increase suspension resistance and counter-clockwise to decrease resistance.

3-4 Coach Interior

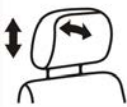
Lumbar Support



To inflate the upper lumbar support bellows, depress the front rocker switch #7 upward. To deflate, depress the rocker switch downward.

Follow the same procedure to inflate and deflate the lower bellows using the rear rocker switch.

Headrest



The headrest can be adjusted forward, rearward and vertically by 2 inches (50 mm). Directly move the headrest to the desired position.



DANGER

For best protection, position headrest behind your head, not behind your neck.

PNEUMATIC ISRI SEAT MODEL 6832/872 NTS

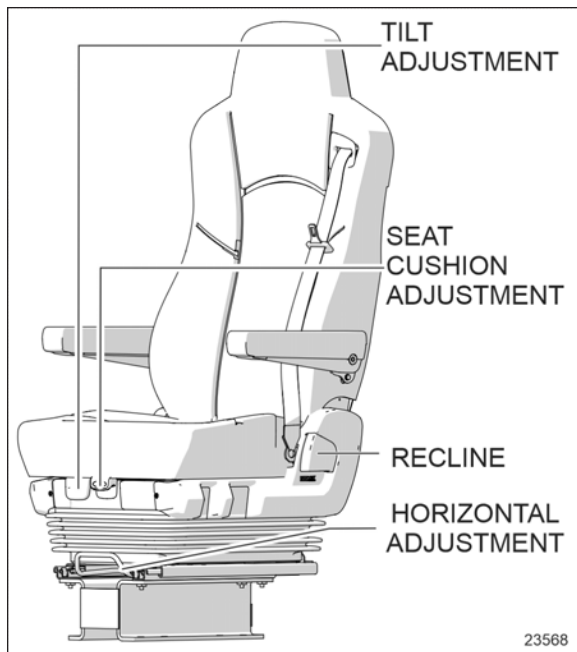


FIGURE 4: PNEUMATIC DRIVER'S SEAT

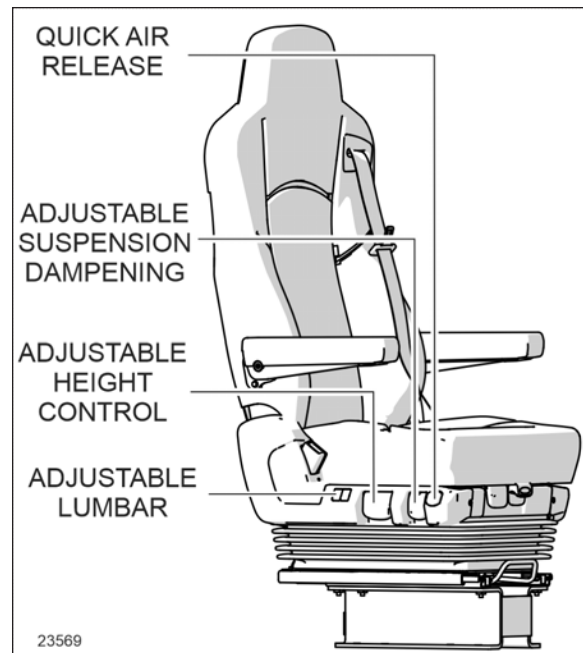


FIGURE 5: PNEUMATIC DRIVER'S SEAT

DRIVER'S SEAT – USSC 9100ALX

The coach can be equipped with USSC 9100 ALX air suspension seat. This seat is equipped with 3-point safety belts, lumbar supports, dual shock suspension damping and quick dump air release. This seat also features adjustable headrest.



DANGER

The driver's seat must be adjusted to allow the driver easy access to the coach controls. Never adjust seat while driving vehicle as this could result in loss of vehicle control.



DANGER

Make sure that seat is adjusted and that safety belt is buckled up before driving vehicle.

DRIVER SEAT BELT

The driver's seat is equipped with a retractable safety belt as required by State, Provincial and Federal regulations.

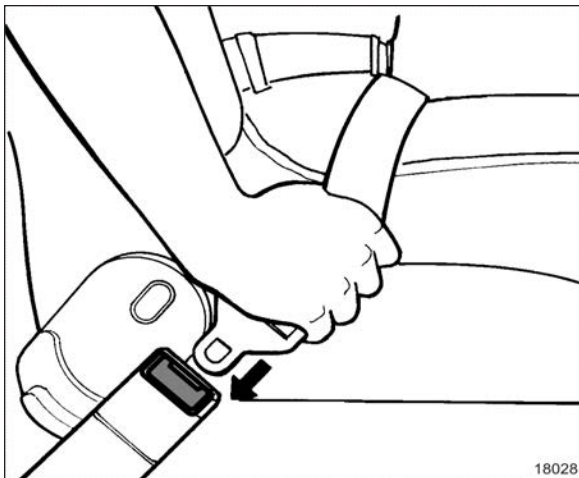
**WARNING**

A snug fit with the lap belt positioned low on the hips is necessary to maximize driver safety. The belt should not be worn twisted. Avoid pinching belt and/or belt hardware in the seat mechanism. Do not wear the belt over rigid or breakable objects, such as eyeglasses, pens or keys as these may cause injuries.

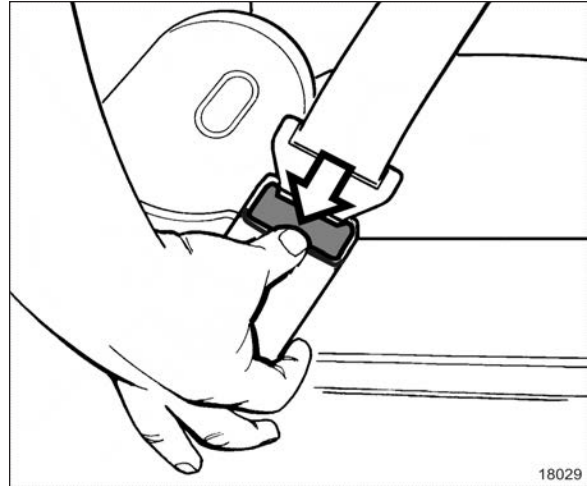
**CAUTION**

Never bleach or dry clean a safety belt.

To fasten, pull seat belt out of the retractor and insert the latch plate into the buckle until it clicks. No special adjustment is required since the reel device is self-adjusting. If seat belt operation becomes defective, report to a Prevest Car service center immediately.

**FIGURE 6: TO FASTEN SEAT BELT**

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

**FIGURE 7: TO UNFASTEN SEAT BELT****WARNING**

Most State and Provincial laws require that safety belts be worn when they are supplied with the seat.

NOTE

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

PASSENGER SEATS

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

3-6 Coach Interior

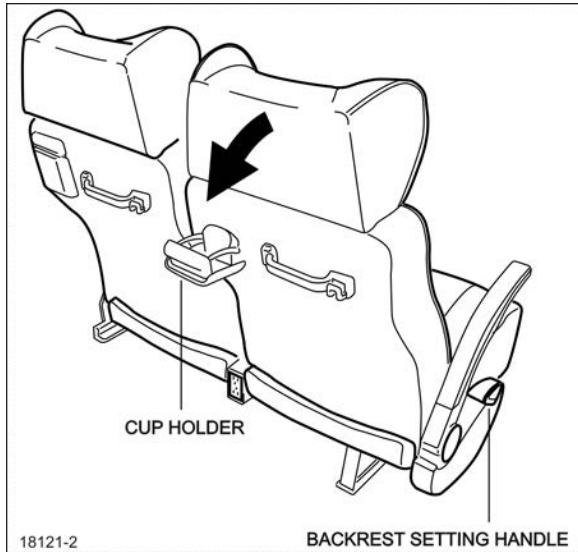


FIGURE 8: PASSENGER SEAT

All seats are track-mounted so that the seating configuration can be changed. Each set is mounted on rectangular aluminum bases to make cleaning between the base and side wall easier.

Passenger seat backrests can be tilted by using the push-button located on the base of the seat. Depress and hold push-button, then adjust backrest to the desired angle. Release the push-button to lock backrest in position.

A folding armrest is installed on the aisle side of the passenger. Another 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 may be equipped with two sets of swivel seats to allow the installation of card tables. The swivel seat can be rotated for passenger privacy. Follow this procedure for seat rotation:

1. Loosen the threaded stud knob under the seat on the aisle side.

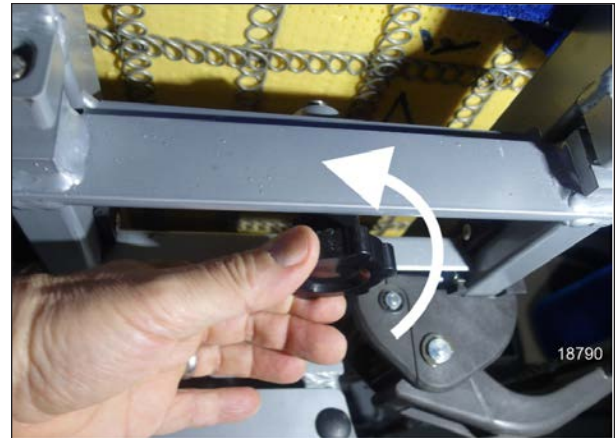


FIGURE 9: LOOSEN THE KNOB

2. Pull the seat toward the aisle to unlock the rotation.



FIGURE 10: PULL TO UNLOCK THE ROTATION

3. Rotate the seats until it stops (A) and push back toward the window to lock rotation (B).



FIGURE 11: FINAL POSITION

4. Fasten the threaded-stud knob under the seat on the aisle side.

PASSENGER SEAT BELT

Passengers are strongly advised to wear seat belts at all times. Children can use a passenger seat belt as long as they are large enough to properly wear the seat belt. The shoulder belt must be correctly positioned over the child's shoulder and it must not touch the neck or lie below the shoulder.

To fasten, pull seat belt out of the retractor and insert the latch plate into the buckle until it clicks. No special adjustment is required since the retractor device is self adjusting. If the seat belt operation becomes defective, report to maintenance personnel immediately.

ELR/ALR RETRACTOR LOCK MODE

Amaya passenger seat belts are equipped with switchable ELR/ALR retractor lock mode:

- **Emergency Locking Retractor (ELR) mode:** Allows the seat belt to extend and retract to allow passengers some freedom of movement in the seat. Locks only when the vehicle or occupant slows quickly/abruptly or stops suddenly. **Will not secure a child safety seat.**
- **Automatic Locking Retractor (ALR) mode:** Locks and maintains a fixed seat belt length during use. The belt cannot be extended further. **For use with a child safety seat.**



CHILD RESTRAINT SYSTEMS

Occupants under 40" height must use Child Seat / Booster

The seat belts are equipped with switchable ELR/ALR retractor lock mode.

Activate the ALR retractor lock mode to hold a child restraint system by pulling the shoulder belt all the way out. Allow it to retract to desired length. Check that the belt straps are fully tightened and the retractor / webbing are locked.

Note: Unbuckling the belt and allowing it to retract fully deactivates the ALR retractor.

Failure to use the ALR lock mode will result in the child safety seat not being properly secured.

When using a booster seat, do not pull the shoulder belt all the way out. Doing so would engage the ALR lock mode which is not recommended with booster seat.

Install the child seat/booster according to the manufacturer's instructions.

TABLES

Two removable tables are provided as standard equipment in the passenger swivel seat configuration. The tables are stored in the overhead storage compartments in separate stowage bags.

To install the 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.

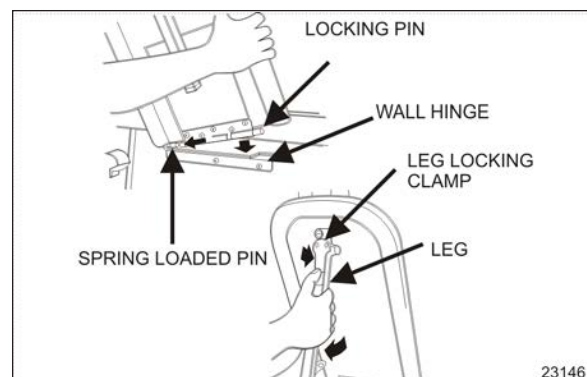


FIGURE 12: REMOVABLE TABLE INSTALLATION

3-8 Coach Interior

OVERHEAD CONSOLE

An overhead console is installed above each row of twin seats. Amenities include reading lights, air vents and an optional service bell.

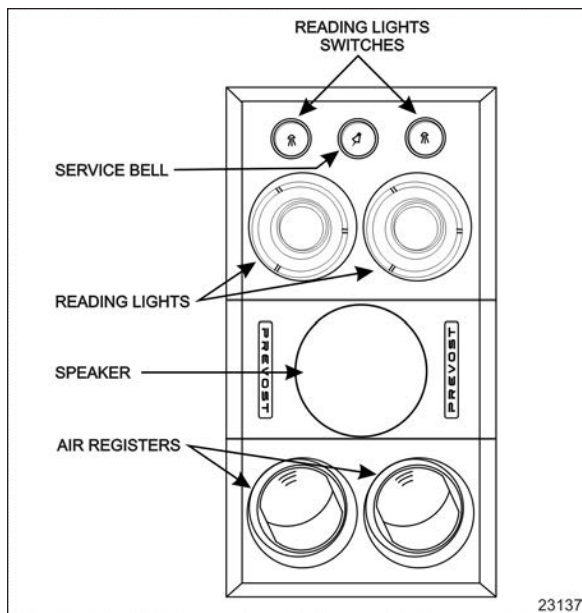


FIGURE 13: OVERHEAD CONSOLE

ADJUSTABLE AIR REGISTERS

Manually adjustable registers located on the overhead console provide air flow to the passengers. Airflow can be directed, passengers can orient individual registers by rotating the nozzle. To adjust the airflow, passengers must open or close the flaps. Activation of the fans is done by depressing a rocker switch on the dashboard. Refer to Controls & Instruments.

SERVICE CHIME

Pressing the service button on the overhead console will illuminate the button providing a visual cue for service personnel and, if activated, will sound a chime in the driver's area. The chime system is activated by a rocker switch located on the dashboard. Refer to [Stop / Service Chime \(Optional\)](#) in Controls & Instruments chapter. Passengers may also use the chime system to request a stop for disembarking. Press the service button a second time to cancel the service request. To adjust the chime volume level, refer to "Controls & Instruments" under Audiovisual Controller.

READING LIGHTS

Reading lights are mounted underneath the overhead storage compartments. Depressing a rocker switch located on the dashboard (refer to ["Reading Lights" on page 1](#) in Controls & Instruments) will activate the reading light circuit and allow passenger control of reading lights.

WINDOWS

The vehicle is equipped with flush-mount type windows all around and a split-window windshield for maximum visibility.

PANORAMIC WINDOWS

Panoramic side windows can come in either single pane or, as an option, double pane (thermopane) glass. Some of these windows are of the fixed type and cannot be opened. Others can be easily opened to serve as emergency exits.

Fixed Windows

These windows are bonded to the structure. Fixed windows cannot be opened.

Emergency Windows

These windows can be opened from inside the vehicle as emergency exits. A decal on window sills indicates the location of the emergency windows. To open an emergency window, lift the window release bar (sill) and push the window open from the bottom.



FIGURE 14: EMERGENCY WINDOW OPENING

To close, lift the release bar and pull the window into position. Push down on release bar to lock the window shut.

For more information on emergency windows, refer to [EMERGENCY EXITS](#) in section **SAFETY FEATURES & EQUIPMENT**.

Window Sun Shades

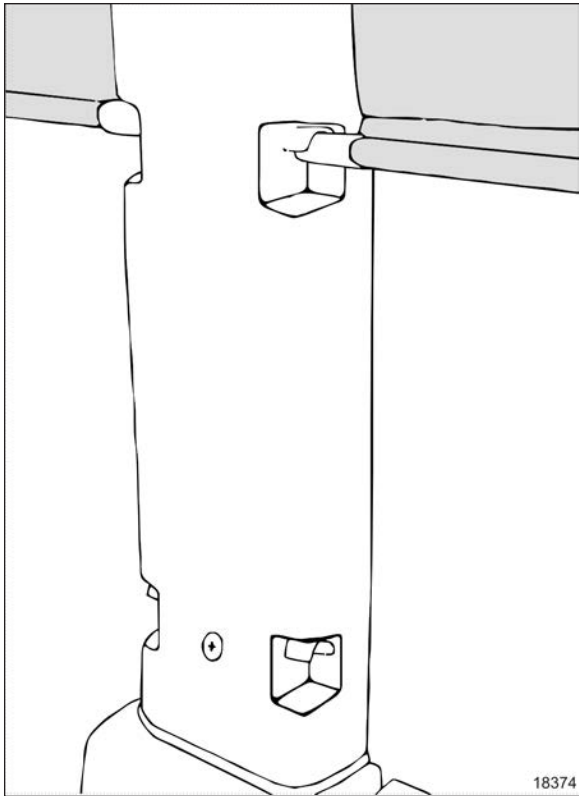


FIGURE 15: PULL DOWN SUN SHADES

Passenger windows may be equipped with pull-down sun shades. To operate, pull down the shade and insert the hem into the first or second catch. To retract pull out from the slots and guide the shade back up.

DRIVER'S POWER WINDOW

The driver has a power window on the left side of the vehicle. The windows are controlled by a rocker switch located on the dashboard. Refer to "Controls and Instruments".

DRIVER'S WINDOW SUNSHADE

This vehicle is provided with a sunshade on the driver's left side window. To operate, pull down by its pull tab to the appropriate position, it will remain in position. To raise, lift the sunshade back using the pull tab.

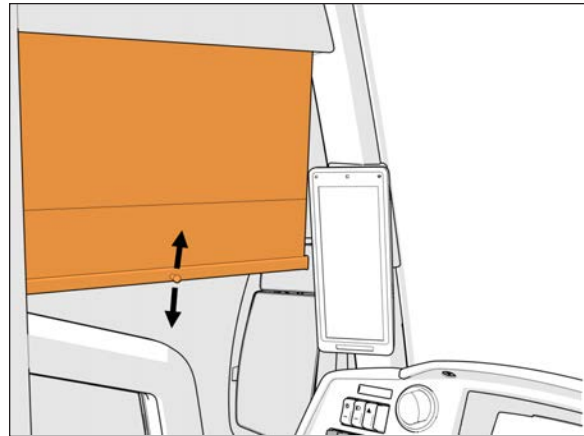


FIGURE 16: SUNSHADE

Two electrically operated sunshades are installed at the windshields. Two rocker switches on the dashboard operate each sunshade individually. Refer to "Controls and Instruments" chapter for more information.



CAUTION

The electric sunshades should only be operated electrically. Pulling down manually may damage the mechanism.

VENTILATION / EMERGENCY EGRESS HATCHES

A ventilation hatch may be installed in the ceiling at the rear of the coach. A second, optional hatch can be installed on the roof 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 opened for emergency egress. Refer to "Safety Features and Equipment".

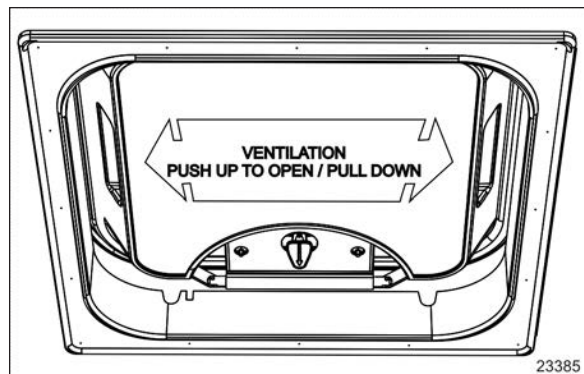


FIGURE 17: VENTILATION HATCH

3-10 Coach Interior



WARNING

Be aware of coach overhead clearance when traveling under overpasses with the ventilation hatch(es) open. Check for maximum clearance height.

OVERHEAD COMPARTMENTS

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 curb side overhead storage compartment.

A media player may be installed in the first front driver's side overhead storage compartment.

To open the optional closed overhead storage compartments, push the handle in to release the latch, then let go. A pressurized cylinder opens the door.

NOTE

The overhead storage compartments have a minimum number of separators installed so as to quicken inspection for forgotten objects.

NOTE

An optional lock can be installed on the first front driver's side overhead storage compartment door.



FIGURE 18: OVERHEAD STORAGE COMPARTMENTS

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.

LAVATORY

The lavatory is located in the rear curb side corner of the coach. It can be equipped with a chemical flush toilet, bathroom tissue dispenser, wash-basin, towel dispenser, waste container, mirror and cleaning cabinet, containing a coiled hose. A liquid soap dispenser and moist towel dispenser are optional.

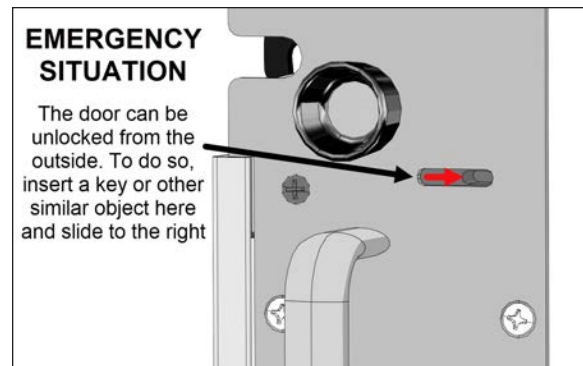


FIGURE 19: LAVATORY

A nightlight is permanently lit in the lavatory when the ignition switch is in the ON position. If emergency assistance is required, the lavatory occupant can actuate a buzzer that will sound in the driver area. The buzzer push-button and instruction label are located on the wall of the lavatory.

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

The fresh water tank may be equipped with an immersion heater supplied by the 120-volt connector for the engine block heater.

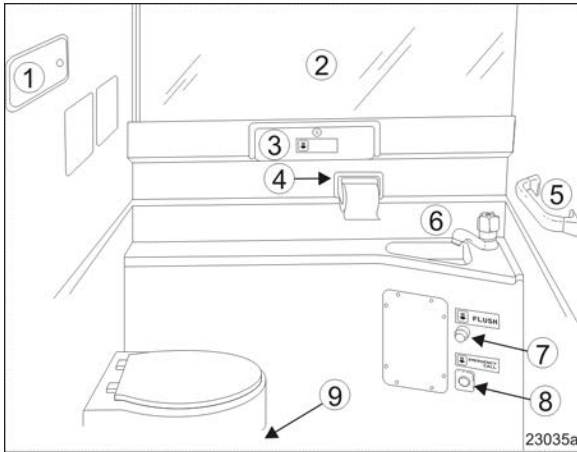


FIGURE 20: LAVATORY

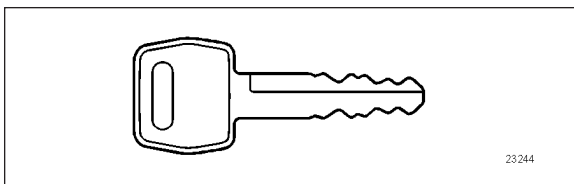
1. Cleaning cabinet
2. Mirror
3. Paper towel dispenser
4. Toilet paper roll
5. Grip handle
6. Wash basin
7. Flush button
8. Emergency call button
9. Waste basket

KEYS

Depending on options, up to nine different keys may be provided with the coach.

ENTRANCE DOOR KEY

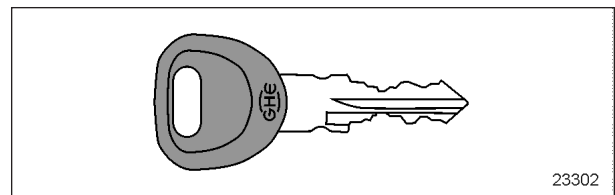
Use the entrance door key to lock the door from the outside.



EXTERIOR COMPARTMENT KEY

Use this key to lock:

- the baggage compartment doors
- the electrical and service compartment doors
- the fuel filler access hatches
- the overhead compartments (audio-video equipment compartment)
- the driver personal compartment
- the central utility compartment

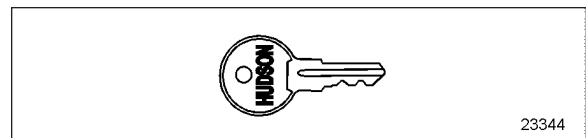


NOTE

It is also possible to lock/unlock the baggage compartment doors from the inside by means of the baggage compartment central locking system switch located on the dashboard.

PAPER TOWEL DISPENSER KEY

This key opens the paper towel dispenser in the lavatory.



NOTE

The optional moist towel dispenser uses a different key.

SECTION 4 - CONTROLS AND INSTRUMENTS

DRIVER'S AREA OVERVIEW	3
LATERAL CONTROL PANEL	4
ENGINE START BUTTON	4
12-VOLT POWER OUTLET	4
TRANSMISSION CONTROL PAD	5
MIRROR CONTROLS	5
LATERAL UTILITY COMPARTMENT	5
AUTOMATIC FIRE DETECTION AND SUPPRESSION SYSTEM (AFSS)	6
AUTOMATIC FIRE SUPPRESSION SYSTEM PANEL	6
DASHBOARD	7
CONTROL SWITCHES	8
PARKING BRAKE CONTROL KNOB	12
AUDIO-VIDEO SELECTOR FOR THE PASSENGER'S AREA	14
OPERATION OF THE OPTIONAL AUDIO-VIDEO MODESTY PANEL	17
DEA600 SERIES RADIO SYSTEM AND INFOTAINMENT DISPLAY OVERVIEW	18
DASHBOARD RADIO	18
SECONDARY INFORMATION DISPLAY (SID)	18
HVAC CONTROL UNIT	20
CENTRAL UTILITY COMPARTMENT	21
INSTRUMENT PANEL	22
DRIVER INFORMATION LEVEL	23
ANALOG INDICATORS	24
TELLTALE LIGHTS	28
STOP AND CHECK TELLTALE LIGHTS	31
DRIVER INFORMATION DISPLAY	32
STEERING COLUMN CONTROLS	39
DIRECTION INDICATOR AND HIGH BEAM CONTROL STALK	39
WINDSHIELD WIPERS CONTROL STALK	40
AUXILIARY BRAKE CONTROL STALKS	40
STEERING WHEEL KEYPADS	42
FOOT-OPERATED CONTROLS	44
STEERING WHEEL ADJUSTMENT	44
BRAKE PEDAL	44
ACCELERATOR PEDAL	44
ON BOARD DIAGNOSTIC TOOL RECEPTACLE	45
TIRE PRESSURE MONITORING SYSTEMS (TPMS)	45
SYSTEM MALFUNCTION	45
TPMS - SYSTEM DESCRIPTION	45

4-2 Controls and Instruments

CRUISE CONTROL	47
TURNING THE SYSTEM ON	47
SETTING CRUISE SPEED	47
PREVOST DRIVER ASSIST™	49
ASSOCIATED HARDWARE EQUIPMENT	49
PREVOST DRIVER ASSIST™ CONSISTS OF THE FOLLOWING SYSTEMS AND FEATURES	50
POTENTIALLY CHALLENGING SITUATIONS FOR THE PREVOST DRIVER ASSIST™ SYSTEM	52
LANE DEPARTURE WARNING LDW	52
FORWARD COLLISION MITIGATION FCM	55
ADAPTIVE CRUISE WITH BRAKING ACB	56
DRIVER WARNINGS AND SYSTEM STATUS	59
FOLLOWING DISTANCE ALERT	62
IMPACT ALERT	62
WHAT TO EXPECT WHEN USING THE PREVOST DRIVER ASSIST™ SYSTEM	65
HOW YOUR ACTIONS IMPACT THE PREVOST DRIVER ASSIST™ SYSTEM	67
BACK-UP CAMERA AND MONITOR	69
SIDE CAMERA REAR-VIEW MONITORS	70
REFERENCE LINES	70
BRIGHTNESS ADJUSTMENT	70
MONITOR STATE	71
ALLISON TRANSMISSION	72
OPERATION	72
PUSHBUTTON SHIFT SELECTOR	72
PRIMARY AND SECONDARY SHIFT SCHEDULES	72
TRANSMISSION SERVICE INDICATOR	73
DESCRIPTION OF AVAILABLE RANGES	73
TOWING RECOMMENDATIONS	74

DRIVER'S AREA OVERVIEW

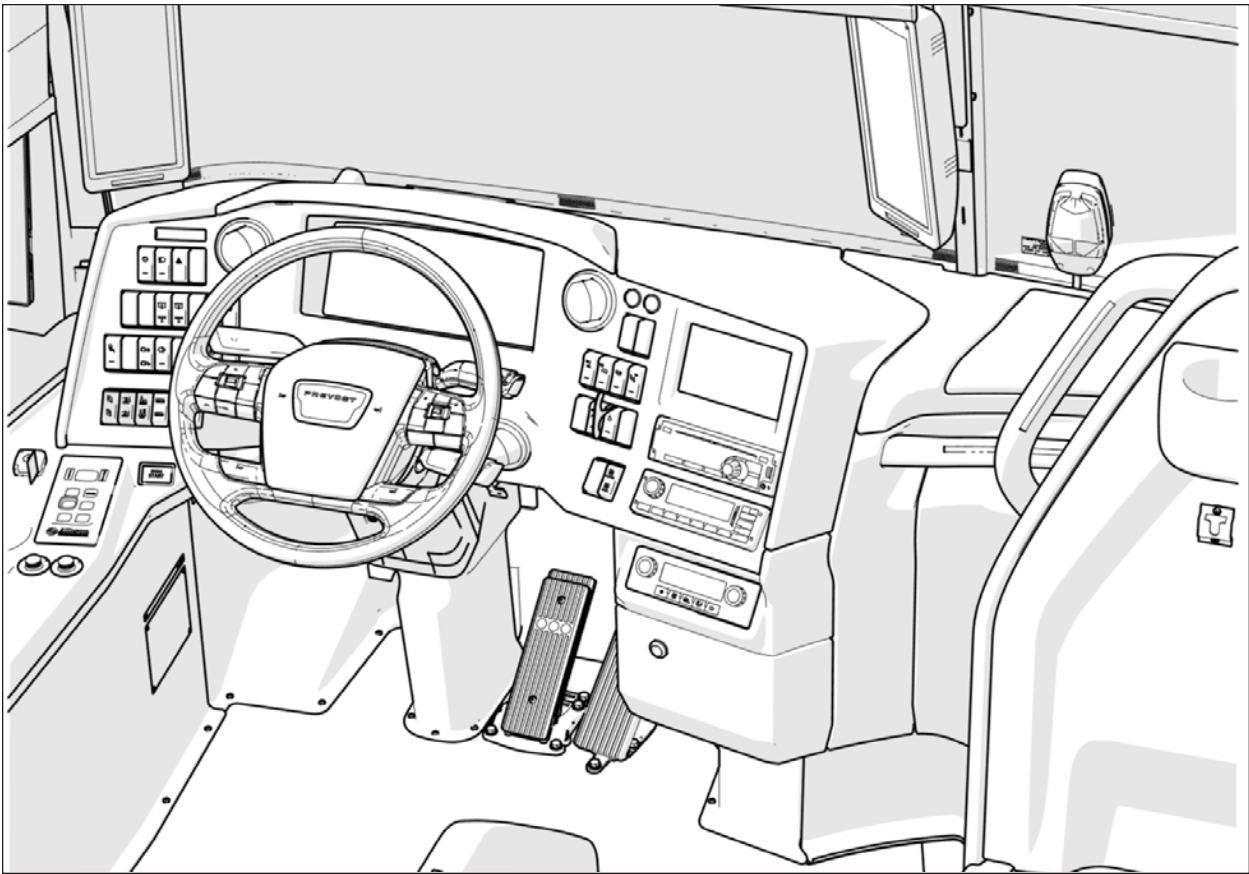


FIGURE 1: DRIVER'S AREA

4-4 Controls and Instruments

LATERAL CONTROL PANEL

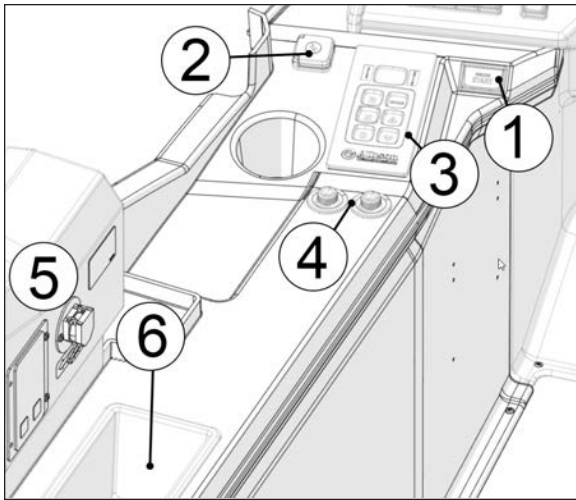


FIGURE 2: LATERAL CONTROL PANEL

- (1) Engine START button
- (2) 12-volt power outlet
- (3) Transmission control pad
- (4) Mirror controls
- (5) Automatic fire suppression system control panel (AFSS)
- (6) Lateral utility compartment

ENGINE START BUTTON

Performing the following operations start the engine.

Starting The Engine

1. Check that the parking brake is set.
2. Check that the transmission is set in neutral N.
3. Sit in the driver's seat and depress the brake pedal.
4. Activate the ignition switch to apply power to the vehicle.



FIGURE 3: IGNITION SWITCH

5. Press the ENGINE START button.

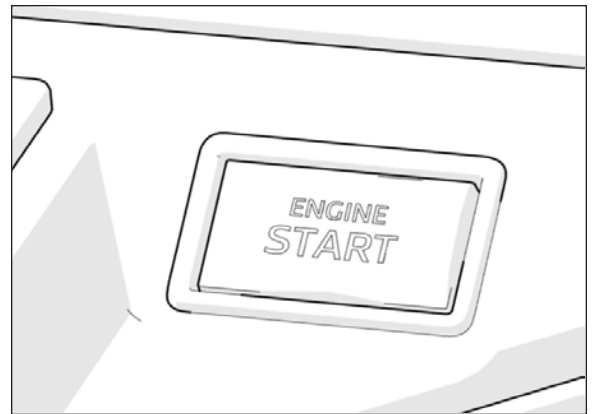


FIGURE 4: ENGINE START BUTTON

Shutting Down The Engine

1. Set the parking brake.
2. Check that the transmission is set in neutral N.
3. Flip the ignition switch to off.

NOTE

If ignition switch is turned OFF by mistake while the vehicle speed is higher than 6 mph (10km/h), the throttle function will be interrupted. The power steering will be maintained, and the transmission will stay in gear. An alarm in the instrument panel will sound to warn the driver.

Normal operation will resume as soon as the ignition switch is set back to ON.

12-VOLT POWER OUTLET

A 12-volt DC power outlet is located on the lateral control panel.

This socket can be used to power small 12-volt DC appliances. The maximum power consumption allowed for appliances plugged in this socket is 180 watts.

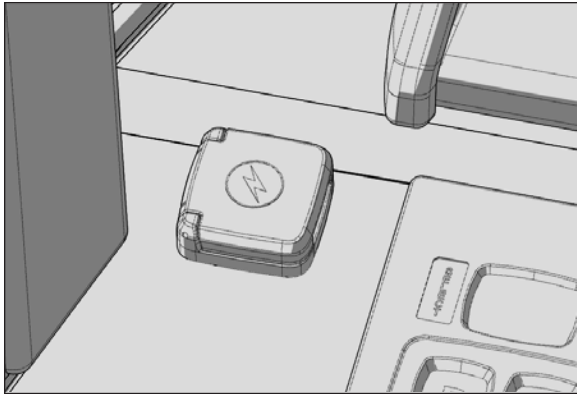


FIGURE 5: 12-V POWER OUTLET

TRANSMISSION CONTROL PAD

The Allison transmission control pad is located on the lateral control panel. Refer to [ALLISON TRANSMISSION](#) in this chapter for operating instructions and more information.



FIGURE 6: TRANSMISSION CONTROL PAD

MIRROR CONTROLS

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

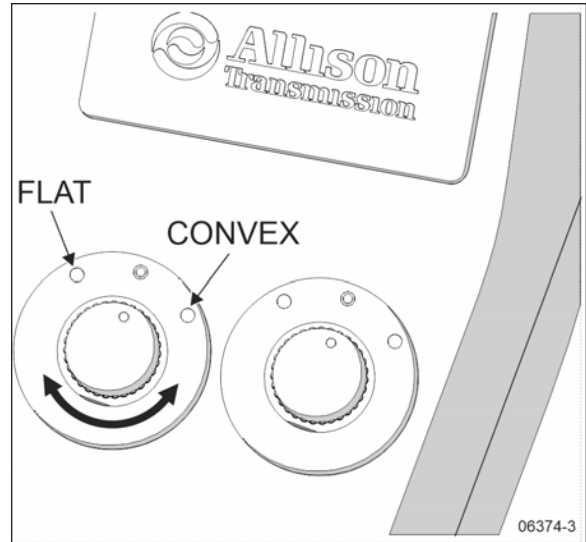


FIGURE 7: MIRROR CONTROLS

NOTE

If the mirror assemblies on your vehicle do not include convex mirrors, only one mirror control knob will be installed for both mirrors. To operate, turn the pointer counterclockwise for L.H. mirror adjustment and clockwise for R.H. mirror adjustment, then use the joystick control to adjust the selected mirror's viewing angle.

LATERAL UTILITY COMPARTMENT

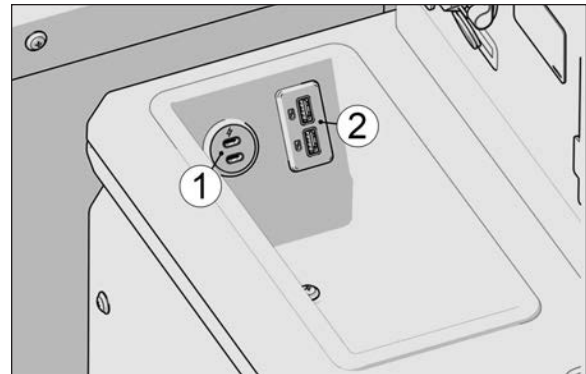


FIGURE 8: UTILITY COMPARTMENT

- (1) Dual-port universal USB-C charger. Charging current capacity for each of the two outlets, 3A @ 5V.
- (2) Dual-port USB-A smart charger . Output 2.4A @ 5V.

4-6 Controls and Instruments

AUTOMATIC FIRE DETECTION AND SUPPRESSION SYSTEM (AFSS)

The vehicle may be equipped with an Automatic Fire detection and Suppression System (AFSS).

AUTOMATIC FIRE SUPPRESSION SYSTEM PANEL

The 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 is 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 blink until power is cycled to the system.

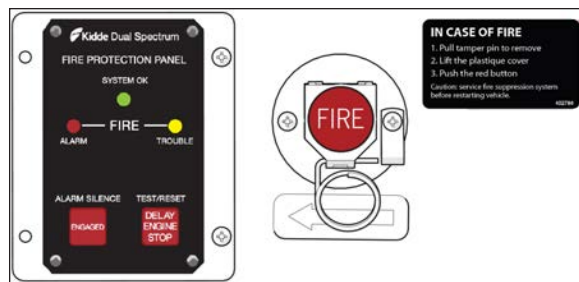


FIGURE 9: AFSS PANEL & MANUAL ACTIVATION SWITCH

Manual Activation Switch

The manual activation switch allows immediate system activation (extinguisher discharge and engine shutdown) by the driver 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 [AUTOMATIC FIRE SUPPRESSION SYSTEM \(AFSS\)](#) in section *Safety Features and Equipment* for more information.

DASHBOARD

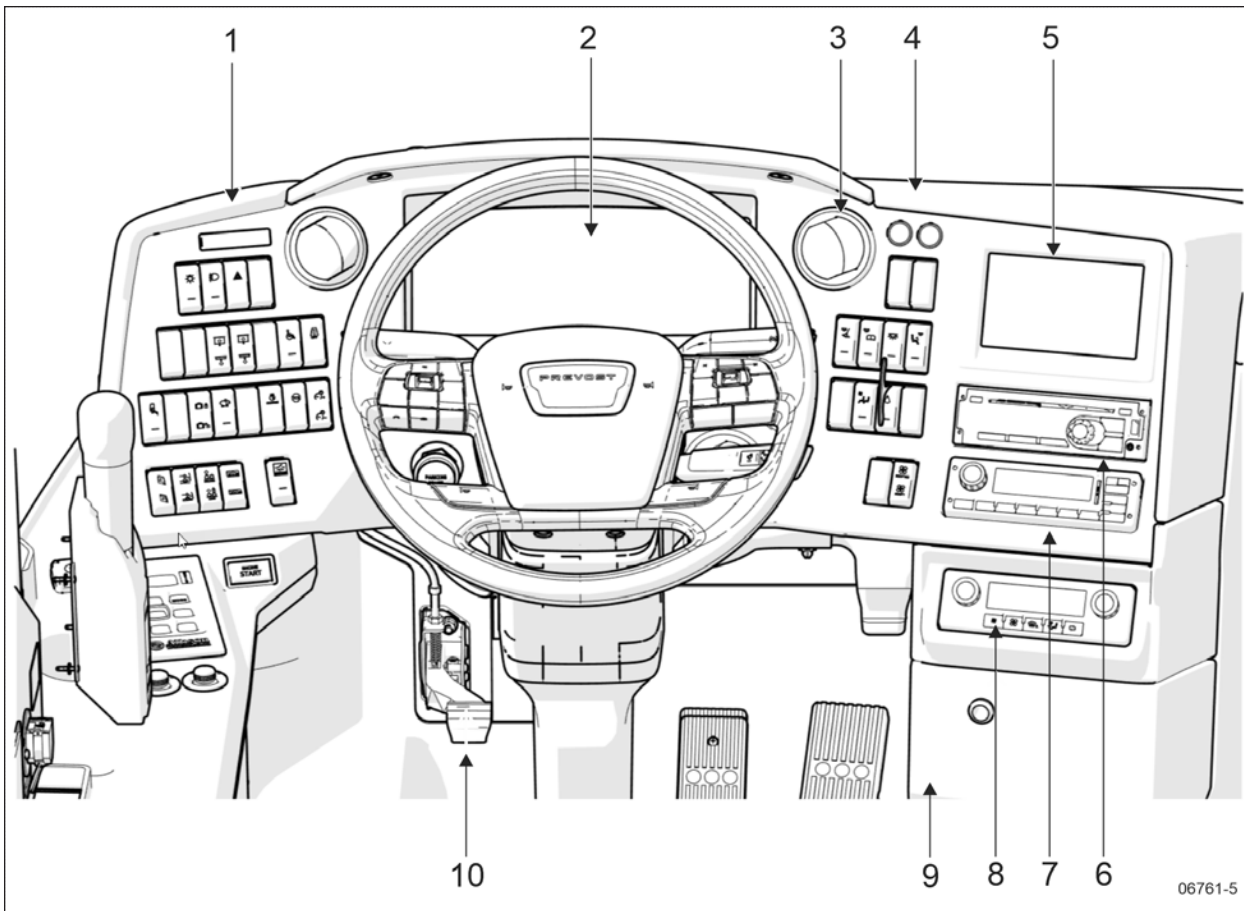


FIGURE 10: DASHBOARD

1. L.H. dashboard panel
2. Instrument panel
3. Air register
4. R.H. dashboard panel
5. SID (Secondary Information Display) Infotainment display
6. Driver radio
7. VSS-06 sound selector
8. HVAC control unit
9. Utility compartment
10. Steering wheel adjustment unlock air valve

4-8 Controls and Instruments

CONTROL SWITCHES

High quality 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.

On some switches, the indicator 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 to allow power up the vehicle.

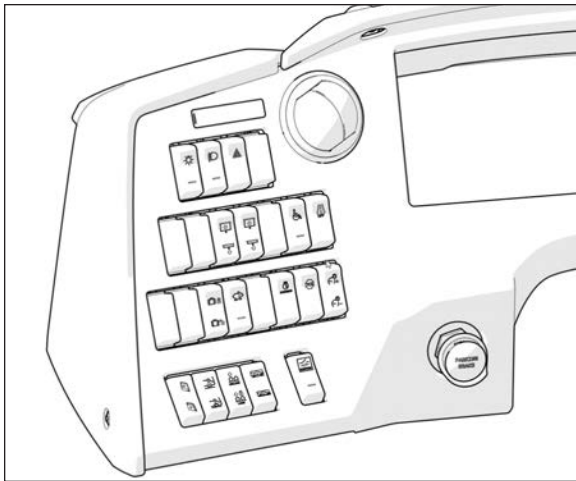


FIGURE 11: L.H. DASHBOARD PANEL

Vehicle Clearance Information



Vehicle height: 12'4" (3.76 m).



CAUTION

Vehicle height is greater when the ventilation hatch is open or if additional equipment is installed on the roof.

Headlights And Exterior Lighting

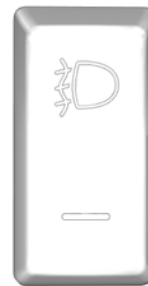


OFF position – Daytime running lights only (with engine running).

Press this rocker switch to turn on the following lights:

Headlights, taillights, clearance lights, identification lights, side marker lights, license plate light, left and right high-mounted stoplights in low intensity.

Fog Lights



Fog lights provide better visibility in fog and precipitation. They improve close range visibility and provide added safety.

NOTE

Some states and provinces restrict the use of fog lights. Verify local state or provincial regulations before using.

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.

Once the hazard warning flashers are activated, the ignition switch can be turned to the OFF position. The hazard warning flashers will stay activated and will prevent the vehicle systems from falling in "sleep mode".




CAUTION

Do not use the hazard flashers for an extended period of time with the engine shut down unless necessary. The electrical circuits remain activated when the hazard switch is depressed.

Headlights Washer (option)



Momentarily press this rocker switch to spray the headlights washer fluid. Each pressing of this switch produces two successive jets.

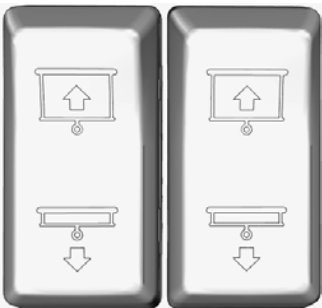
	CAUTION
Do not operate the washer while the washer fluid reservoirs are empty. This may damage the washer fluid pumps.	

Lane Departure Warning (LDW) Enable/Disable




To avoid erroneous LDW warnings in areas such as the work zone where the road markings present might cause false alerts, LDW system can be disabled by the driver using the enable/disable switch. LDW system will reactivate automatically after a delay of 15 minutes or a transition from OFF to ON of the ignition or upon pressing of the enable/disable switch a second time

Windshield Sunshades




Press and hold the appropriate button to lower the left or right windshield sunshades. Press twice rapidly to raise or lower up to the end position.

	CAUTION
Do not attempt to raise or lower these shades manually. Damage to the electric motor or roller mechanism could result.	

Outside Rear View Mirror & Video Camera Mirror System Heat



Press this rocker switch to clear fog, frost or thin ice from outside mirrors or the video camera mirror system lens protector.

	CAUTION
To avoid damage to the heating system, the heating elements shall not be permanently activated.	

Wheelchair Lift System Activation



Supply electrical power to the wheelchair lift system by pressing down on the rocker switch. Refer to Other Features for instructions on operating the wheelchair lift.

Baggage Compartments Central Locking System



This system enables locking all baggage compartment doors by pressing the switch forward. To unlock, press the switch rearward.

In the DID, a system status pictogram confirms the central locking system state.

NOTE
<i>Service compartment doors are not linked to the baggage compartment locking system.</i>

4-10 Controls and Instruments

NOTE

Baggage compartment doors must be unlocked using the key first, they can then be unlocked or locked using the baggage compartment-locking system.

Fast Idle



For extended idling periods, run the engine at fast idle. Press down this 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 the engine.



CAUTION

If the parking brake is released and/or the transmission is engaged with the engine running at fast idle, the engine will return and remain to normal idle as long as the parking brake is not applied and/or transmission is not placed into neutral (n).

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



CAUTION

Return the engine to normal idle before shutting the engine off.

Engine Stop Override (With Automatic Fire Detection And Suppression System)



Press the Engine Stop Override switch on the dashboard or the Delay Engine Stop switch on the AFSS protection panel to delay the engine shutdown and extinguisher discharge by an additional 15 seconds.



CAUTION

Use this function if you are not prepared to bring the vehicle to a safe stop (i.e. on a railroad track, in intersection).

This switch is functional only if the vehicle is equipped with the Automatic Fire Detection and Suppression System.

Traction Control System Mud/Snow Mode



On certain road conditions, it may be useful to retard the intervention of the traction control system TCS during vehicle acceleration. The Mud/Snow function allows greater engine power and more wheel spin during TCS operation. This function may be helpful to set the vehicle in motion on iced roads, for example.

Press the Mod/Snow switch to turn on this function. The TCS telltale blinks slowly when the TCS Mud/Snow mode is active. Always remember to turn the Mud/Snow feature off when driving on a firm road surface.

A new ignition cycle or a second pressing of the Mud/Snow switch will turn this function off.

Dashboard Brightness Control



Adjust the brightness of the dashboard instruments and switches.

Driver Power Window



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



CAUTION

Close power window when parked or leaving the coach unattended.

Kneeling / Front Axle High-Buoy (Optional)



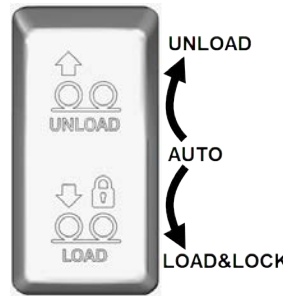
Momentarily press the rocker switch downwards to lower the front end of the coach 4 inches (100 mm). Momentarily press the rocker switch upwards to raise the coach to the normal driving height. Refer to ["High-BUOY" on page 14](#) and ["KNEELING SYSTEM" on page 1](#) in Section 5 for more information.

Press and hold the rocker switch upwards 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.

NOTE

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

Automatic Tag Axle Unload Override



UNLOAD

Press down the upper part of this switch to manually unload the tag axle.

AUTOMATIC UNLOAD

Neutral position of this switch.

LOAD & LOCK

Press down the lower part of this switch to load and lock the tag axle.

See also ["AUTOMATIC TAG UNLOAD" on page 15](#) in Other Features section.

High Buoy / Low Buoy



Press and hold this rocker switch to raise or lower the coach about 4 inches (100 mm). Release the rocker switch to return the coach to the normal driving height.

NOTE

The parking brakes must be applied to allow the use of the high buoy and low buoy feature.

4-12 Controls and Instruments

Ignition Switch



Press this switch to apply power to the vehicle.

State: vehicle in sleep mode. Pictogram OFF and LED OFF.



State: vehicle in wake up mode. Pictogram ON and LED OFF.



The main electrical shut-off switch is in the ON position and the ignition switch is flipped on.

State: power is applied to the vehicle. Pictogram ON and LED ON.

NOTE

If ignition switch is turned OFF by mistake while the vehicle speed is higher than 6 mph (10km/h), the throttle function will be interrupted. The power steering will be maintained, and the transmission will stay in gear. An alarm in the instrument panel will sound to warn the driver.

Normal operation will resume as soon as the ignition switch is set back to ON.

Back-up Alarm Cancel Switch



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

NOTE

Normal operation resumes after leaving reverse gear.

PARKING BRAKE CONTROL KNOB

Pull to apply the parking brake.

Push to release the parking brake.

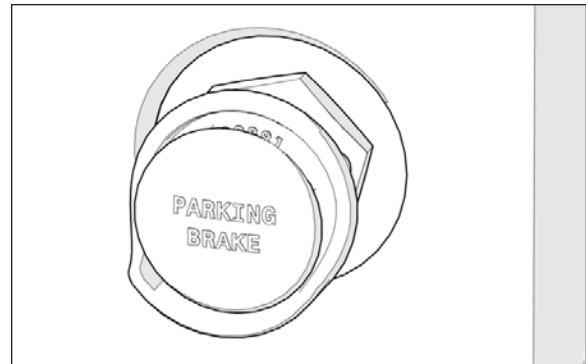


FIGURE 12: PARKING BRAKE CONTROL KNOB

R.H. DASHBOARD PANEL

The driver radio, the infotainment display, controls for passenger entertainment are grouped on the R.H. dashboard panel. The HVAC control module, miscellaneous control switches and air vents are also located on this side of the dashboard.

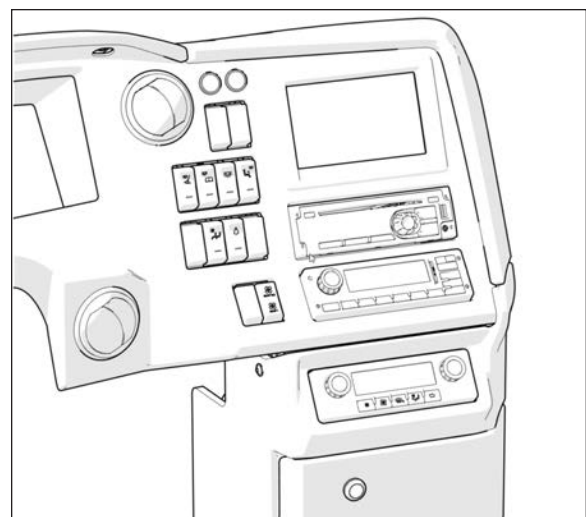


FIGURE 13: R.H. DASHBOARD PANEL

Door Operating Buttons





CLOSE **OPEN**
06464-1

Press and hold the button to open or close the door. Releasing the button at any time will immediately stop door movement.

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.

Interior Lighting




Press this rocker switch to turn on the aisle lighting. Two levels of intensities are available.

CAUTION


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

Cleaning Operation Lighting




Press this rocker switch to turn on the interior lighting in the most appropriate mode when cleaning the interior. Prior to do so, connect the vehicle to a battery charger.

Driver's Area Lighting



Press this rocker switch to turn on the driver's overhead light as needed.

Reading Lights




This switch powers the reading light circuit enabling passengers to operate their personal reading lights.

First position: Off

Second position: all reading lights enable except on the first two rows

Third position: all reading lights enable

Passenger Overhead Air Register Fan



Press this switch to activate the passenger overhead air registers fan.

CAUTION

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

4-14 Controls and Instruments

Stop / Service Chime (Optional)



Press this switch to enable the stop/service chime. Even when the chime circuit is disabled, the buttons in the overhead panels will illuminate if depressed by the passengers.

Destination Sign (Optional)



Press this rocker switch to illuminate the destination sign.

Emergency Lighting System



Use this switch to reset the Emergency Lighting System once it was triggered either by a real accident, by a big hit of the vehicle which led to a false trigger of the system or either due to a test of the system.

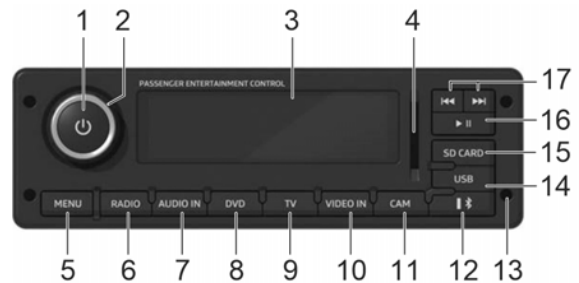
Emergency Escape Hatch Fan Activation



Press this switch to activate the fan on one or both emergency escape hatches.

Roof 1 activates the rear emergency escape hatch fan.

AUDIO-VIDEO SELECTOR FOR THE PASSENGER'S AREA



23558

The VSS-06 Video and Sound Selector enables the driver to select audio, audio/video and video sources with settings of volume level, bass, treble, loudness for the passenger's area only. The DVD player, media player, microphones and auxiliary audio or video sources are controlled with this unit.

1) POWER

Turns on/off the unit

2) VOLUME KNOB

Increases or decreases the sound output level. Changes the selected setting.

3) FRONT DISPLAY

Shows information about the operational status of the unit.

4) SD MEMORY CARD SLOT

5) MENU

- Press MENU to enter the menu.
- In menu, rotate VOLUME knob or short press ►►| or |◄◄ to reach the appropriate function.
- Short press POWER button or ►|| to select the function.
- Short press on any program source button will exit the menu.

6) RADIO program source

Selects the dashboard radio as current audio source for the passenger's area.

7) AUDIO IN program source

Selects the auxiliary 3.5 mm port as current audio source.

8) DVD program source

Selects DVD Player as current audio/video source.

9) TV program source

Selects the female HDMI cable connection coming from the back of the parcel rack HDMI switch as current audio/video source (standard on H3 Series, optional on X3 Series).

10) VIDEO IN program source

Press VIDEO IN to select an auxiliary video input as current audio/video source.

Press VIDEO IN to select the optional modesty panel HDMI connection as current audio/video source.

11) CAM program source

- a. Press CAM button to select the optional panoramic view camera signal. The video bar of the VSS06 front display will show "CAM". The video monitors turn on automatically.
- b. Press CAM button again to turn off the panoramic view camera and return to previous audio/video source.

12) BLUETOOTH program source

Selects the connected Bluetooth device audio streaming content as current audio source.

13) UNIT REMOVAL TOOL INSERTION HOLE (4X)

14) USB program source

Selects the device connected via the USB port as current audio/video source.

15) SD MEMORY CARD program source

Selects the SD card content as current audio/video source.

16) PLAYBACK / PAUSE

17) SKIP FORWARD / BACKWARD

Program Source Selection

1. Press any of the following buttons RADIO, AUDIO IN, VIDEO IN, BLUETOOTH, USB, SD CARD and select the needed program then press TV button to select VIDEO IN program sources if applicable.
2. In compatibility mode, pressing DVD button will select DVD program. In non-compatibility mode, then press DVD to switch into VIDEO IN program sources.
3. When pressing on the following buttons DVD, TV, VIDEO IN, select VIDEO IN video signal.
4. When USB, SD Card selection is to play video, it will select its related video signal. When switching from other signal source, the unit will mute 8 seconds and show Prevost interface.
5. Inserting SD Card or connecting USB will enter active status in inactive mode.

MENU Button Functions

Volume adjustment

- volume background
- volume gong to passengers
- microphone gong signal ON/OFF

Audio

- bass
- treble
- balance
- loudness

Language

4-16 Controls and Instruments

- english
- français

Compatibility

Test mode

Software update

Background Volume Adjustment

When a microphone is activated, the current audio source volume will reduce to a certain level which has been set at the factory. To adjust this level, proceed as follows:

1. Press MENU button to enter menu list.
2. Rotate VOLUME knob or short press ►►| or |◄◄ button to reach VOLUME ADJUSTMENT.
3. Press POWER button or ►|| button to select VOLUME ADJUSTMENT.
4. Press POWER button or ►|| button to select VOLUME BACKGROUND and rotate VOLUME knob or short press ►►| or |◄◄ button to adjust.
5. Press POWER button to save the setting. If no button press occurs within 8 seconds, the setting will be saved automatically and the unit returns to the previous program.

Gong Sound Level

A gong will sound in the passenger's area upon activating of the microphone. The gong sound level can be adjusted as follows:

1. Press MENU button to enter menu list.
2. Rotate VOLUME knob or short press ►►| or |◄◄ button to reach VOLUME ADJUSTMENT.
3. Press POWER button or ►|| button to select VOLUME ADJUSTMENT.

4. Press POWER button or ►|| button to select VOLUME GONG TO PASSENGERS and rotate VOLUME knob or short press ►►| or |◄◄ button to adjust.

5. Press POWER button to save the setting. If no button press occurs within 8 seconds, the setting will be saved automatically and the unit returns to the previous program.

Disabling Gong Sound

1. Press MENU button to enter menu list.
2. Rotate VOLUME knob or short press ►►| or |◄◄ button to reach VOLUME ADJUSTMENT.
3. Press POWER button or ►|| button to select VOLUME ADJUSTMENT.
4. Press POWER button or ►|| button to select MICROPHONE GONG SIGNAL ON/OFF and rotate VOLUME knob or short press ►►| or |◄◄ button to select ON or OFF as needed..
5. Press POWER button to save the setting. If no button press occurs within 8 seconds, the setting will be saved automatically and the unit returns to previous program.

AUDIO Settings Treble / Bass / Balance / Loudness Setting

1. Press MENU button to enter menu list.
2. Rotate VOLUME knob or short press ►►| or |◄◄ button to reach AUDIO.
3. Press POWER button or ►|| button to select AUDIO.

4. Rotate VOLUME knob or short press ►►| or |◄◄ button to reach the desired function.
5. Press POWER button or ►|| button to select desired function and rotate VOLUME knob or short press ►►| or |◄◄ button to adjust.

NOTE: If no VOLUME knob rotation occurs within 8 seconds after selecting BASS, TREB, BAL and LOUD modes, the unit automatically sets in the VOL mode.

Language Selection

The VSS06 supports English & French. To change language:

1. Press MENU button to enter menu list.
2. Rotate VOLUME knob or short press ►►| or |◄◄ button to reach LANGUAGE.
3. Press POWER button or ►|| button to select LANGUAGE.
4. Rotate VOLUME knob or short press ►►| or |◄◄ button to select the desired language.
5. Press POWER button to save the setting.

Compatibility

This function is used only when replacing a VSS05 unit by a VSS06.

Bluetooth Mode

1. The VSS06 automatically reconnects a paired device after power on. The blue Bluetooth indicator light will flash.
2. With a long press of 3 seconds on BLUETOOTH button, the user can disconnect the Bluetooth devices.

The red Bluetooth indicator light will flash when no Bluetooth device is connected.

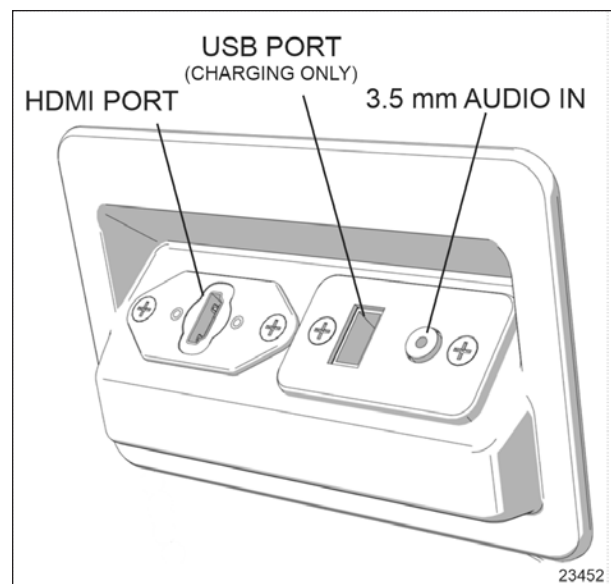
3. The blue Bluetooth indicator light lights up when the unit is connected to a Bluetooth device.
4. Pairing to the VSS06 is done through your Bluetooth device. When pairing a Bluetooth device, the user can confirm whether the pairing code displayed on the VSS06 matches the pairing code displayed on the Bluetooth device.

OPERATION OF THE OPTIONAL AUDIO-VIDEO MODESTY PANEL

On some vehicles, it is possible to connect and display on the main monitor a laptop (or other HDMI audio-video equipment) from an optional audio-video modesty panel located behind the driver's seat.

To do so, connect the laptop to the modesty HDMI connector, select VIDEO IN on the unit and turn on the laptop presentation mode.

Devices using 3.5 mm audio connectors (MP3 players) can also be used by connecting them to the 3.5 mm modesty connectors and selecting the AUDIO IN mode. A USB connection is also available to charge battery-operated devices.



4-18 Controls and Instruments

DEA600 SERIES RADIO SYSTEM AND INFOTAINMENT DISPLAY OVERVIEW

The DEA600 System consists of a 7" display connected to a Radio. The Smart Display functions as a main display managing the entire user interface. The display with resistive touchscreen has a rear USB for playback or USB modem connection, and manages the Applications, Phone interface, Audio, Internet and Bluetooth / Wi-Fi connections. The Radio is a module capable of managing the audio output of the system to the speakers, containing the tuner (AM, FM, WX), Sirius XM, Front Aux, Rear Aux, USB, CD. It also transmits the audio output from the Smart Display and manages the hard buttons.

See **DEA600 Series Radio System Owner's Manual** for more information. This manual is available on the Technical Publications site at <https://techpub.prevostcar.com/en/> . Select **Supplier Publications** tab and then select **Audio & Video (misc)** in the list of suppliers.

DASHBOARD RADIO



FIGURE 14: DASHBOARD RADIO

(1) Phone.

Open the Phone App.

(2) Back.

The Back button is used to exit the current screen and open the previous screen.

(3) Home.

The Home button is used to go directly to the main home screen.

(4) Menu / settings.

The Menu button is used to open the menu related to the current screen. When the System is on the Home screen, the Menu button opens the "System Settings" menu.

(5) Volume / power.

Rotate to increase / decrease Volume. Press Knob to turn ON / OFF the Radio.

(6) Display and button brightness adjustment, reduce¹.

(7) Display and button brightness adjustment, increase.

(8) Eject.

Ejects disc from the CD slot.

SECONDARY INFORMATION DISPLAY (SID)

The installed application icons are presented at the home screen. The home screen is distributed in a home main screen and subsequent home screens. Each of the home screens presents 6 application icons maximum, plus the Audio widget. The number of the subsequent home screens is relative to the number of installed applications. Each subsequent home screen is added to the right of the main home screen or next to the right of the last subsequent home screen. An indicator identifies which home screen is displayed. The screen indicator is placed below the top bar of the home screen.

Take note that some application icons from the home screen or functionalities cannot be selected by the user while the vehicle is in motion.



FIGURE 15: SECONDARY INFORMATION DISPLAY (SID) HOME PAGE NO.1

(1) Apps.

(2) Back.

(3) Home.

¹Dimming buttons are used to increase or reduce the brightness level of the display and the backlight level of the radio bezel independently from the dashboard brightness control switch.

- (4) Menu / Settings.
- (5) Radio station tuning up or down (long press) / previous or next favorite radio station / previous or next track¹.
- (6) Home page.
- (7) Audio widget.



FIGURE 16: SECONDARY INFORMATION DISPLAY (SID) AUDIO > FM SELECTED

- (1) Source tab.



WARNING

CoPilot NAVIGATION APPLICATION DISCLAIMER

Upon delivery from the factory, the H3-45 has the following vehicle profile characteristics set in the CoPilot GPS Software System:

- Length: 45 feet
- Width: 107 inches
- Height: 151 inches

The operator [user] must always make sure that the information listed in the CoPilot GPS Software System's vehicle profile characteristics accurately reflects the vehicle's dimensions, including a reasonable safety height margin of 3 inches.

It is the responsibility of the operator to set or modify the CoPilot GPS Software System profile characteristics without delay in the event of any change in vehicle dimensions, such as, but not limited to:

- Modifications to the vehicle configuration or dimensions;
- Addition or removal of equipment, in particular the roof; or
- Malfunction, rebooting or updating of the CoPilot GPS Software System.

The manufacturer shall not be liable for any damages arising from the misuse of the CoPilot GPS Software System or from inaccurate inputs of vehicle dimensions in the system's vehicle profile characteristics.

It is the sole responsibility of the operator to select and drive routes that are compatible with and safe for the vehicle's dimensions.

NOTE

Using the microphone while driving is not recommended. For this reason, there are no microphones installed on the radio at the factory.

¹Depends on the audio source currently selected.

4-20 Controls and Instruments

NOTE

The driver speakers are controlled from the dashboard radio volume knob while the passenger's area speakers are controlled from the VSS06 Sound Selector volume knob.

HVAC CONTROL UNIT

The vehicle is slightly pressurized by the central HVAC system to prevent dust and moisture from entering.

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

The driver HVAC unit turns on automatically at engine start and uses the settings that were kept in memory before turning off the system. The A/C compressor starts automatically when the two following conditions are met:

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.

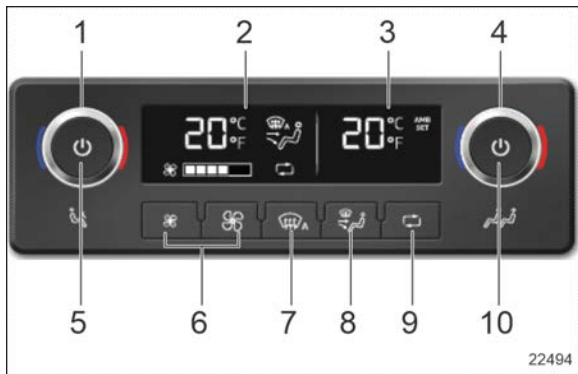


FIGURE 17: CONTROL UNIT FOR HIGH CAPACITY CENTRAL HVAC SYSTEM

1) Driver temperature set point adjustment

Increases or decreases the temperature set point for the driver's area.

2) Driver section display

Displays the temperature set point, the fan speed, the air selection and recirculate air status for the driver area.

3) Passenger section display

Displays the actual temperature in the passenger area.

4) Passenger temperature set point adjustment

Increases or decreases the temperature set point for the passenger area.

5) Driver HVAC power button

Turns on/off the driver HVAC unit.

6) Fan speed

Increases or decreases the fan speed.

7) Auto-defrost

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 (recirculate off) and the driver set point is increased to 4 °F (2 °C) over the passenger section set point.

8) Air selection

Changes the air outlets used.

9) Recirculate

Switches between outside air and recirculated air for the driver and passenger area. This feature is automatically canceled when the windshield defrost is activated.

10) Passenger HVAC power button

Turns on/off the passenger HVAC unit.

Temperature Unit Selection °F / °C

To switch the temperature units, press simultaneously both fan speed buttons for 3 seconds.

Driver Section Temperature Setting In Case Of Temperature Sender Failure

On the driver section of the control unit only, asking for a temperature set point above 82 °F (28 °C) will keep the coolant valve open .

In case of interior temperature sender unit failure, the coolant valve will remain open.

Passenger Section Temperature Setting In Case Of Temperature Sender Failure

In case of interior temperature sender unit failure, the coolant valve will remain open. The driver can nevertheless control the temperature by adjusting the temperature set point above 72 °F (22 °C) to heat and below 72 °F (22 °C) to cool.

NOTE

To operate the air conditioning system when stationary, run the 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.

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 fogging.



WARNING

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

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 allow a temperature overshoot up to 3° over the passenger area set point to help warm up of the area because some parts of the vehicle like the seats and the overhead compartments accumulate cold.

CENTRAL UTILITY COMPARTMENT

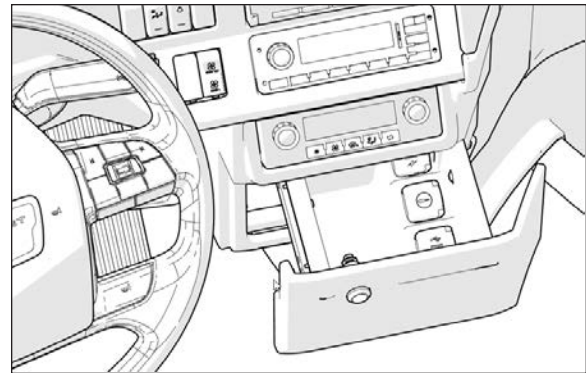


FIGURE 18: CENTRAL UTILITY COMPARTMENT

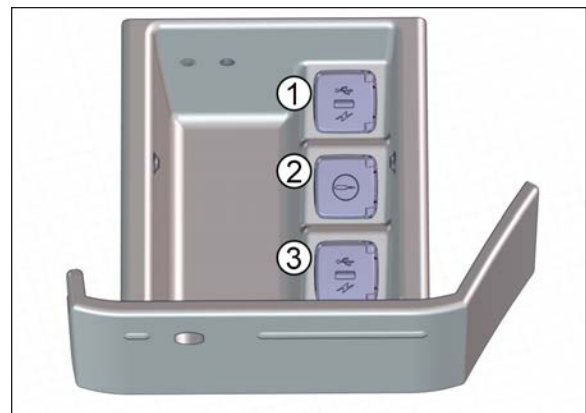


FIGURE 19: CENTRAL UTILITY COMPARTMENT

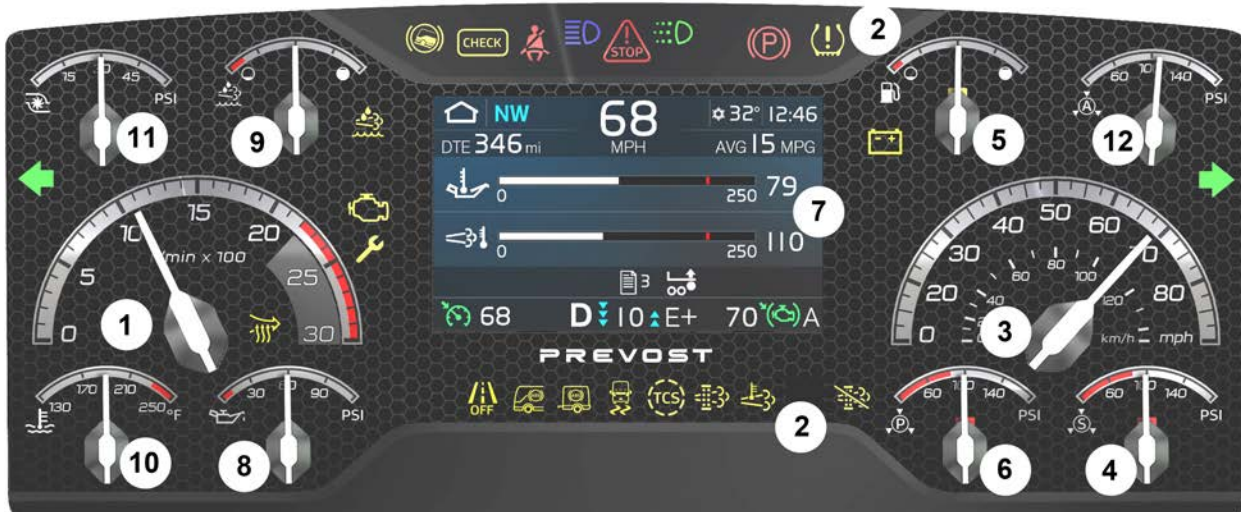
(1) DEA600 Radio System AUX audio input USB-A port and 500 mA charger.

(2) DEA600 Radio System AUX audio input 1/8 jack (3.5 mm).

(3) VSS-06 Audio AUX audio input USB port.

4-22 Controls and Instruments

INSTRUMENT PANEL



1. Tachometer
2. Telltale lights
3. Speedometer
4. Front brake air pressure (secondary system)
5. Fuel level
6. Rear brake air pressure (primary system)
7. Driver Information Display (DID)
8. Oil pressure indicator
9. DEF (Diesel Exhaust Fluid) level indicator
10. Engine coolant temperature
11. Turbo boost pressure
12. Accessory air pressure

DRIVER INFORMATION LEVEL

The instrument panel 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:

FIRST LEVEL - TELLTALE LIGHTS

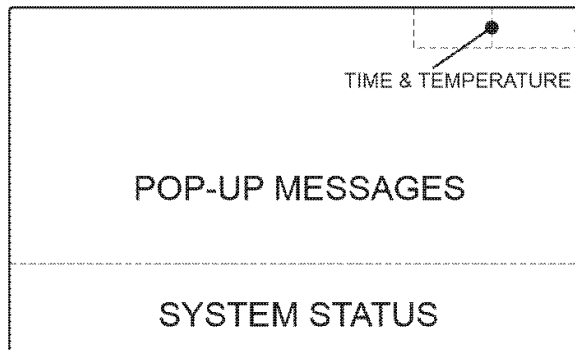
Telltale lights are temporary and exceptional; they present information critical to safety or vehicle integrity.

SECOND LEVEL - POP-UP MESSAGES

Pop-up messages appear in the Driver Information Display DID without the driver's intervention and acknowledgment. Pop-up messages present supplemental information to the driver.

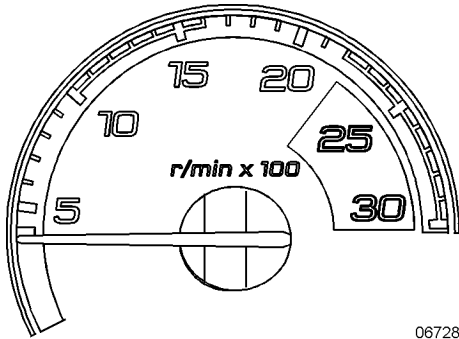
THIRD LEVEL- SYSTEM STATUS

The system status area monitors certain systems and gives feedback to the driver concerning current actions and functions.



4-24 Controls and Instruments

ANALOG INDICATORS



06728

Tachometer (Rpm X 100)

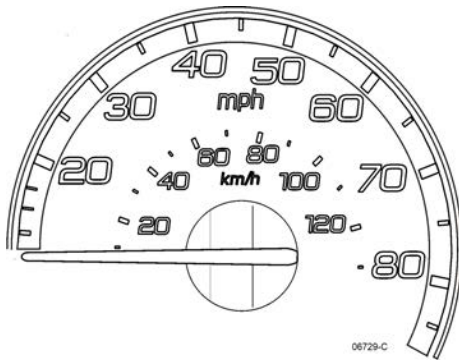
Indicates the operating speed of the engine in hundreds of revolutions per minute. Use the green range for normal driving (1000 to 1600 RPM).

The tachometer serves as a guide for gear shifting and helps to prevent engine overspeeding when driving downhill with the engine brake operating.



CAUTION

Never allow the engine to go into the red range. This could lead to severe engine damage.

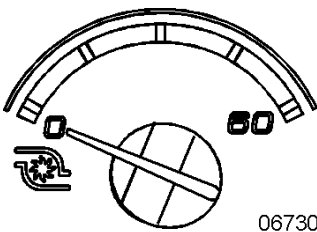


06729-C

Speedometer (MPH, Km/h)

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

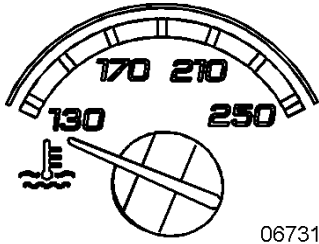
The LEDs above the instrument work in conjunction with the Adaptive Cruise With Braking (ACB) system. Refer to Adaptive Cruise With Braking" paragraph for further details.



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)

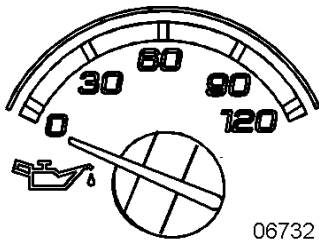
Indicates the operating temperature of the engine coolant in °F. The normal reading should be between 170°F and 222°F (80°C to 106°C).

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. The engine protection system will automatically derate and stop the engine in 30 seconds. 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



06732

Engine Oil Pressure (psi)

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. The engine protection system will automatically derate and stop the engine in 30 seconds. Bring the vehicle to a safe stop where the problem can be checked.



STOP telltale light



OIL PRESSURE Pictogram



CAUTION

Failure to take necessary action when the STOP telltale light is on can ultimately result in automatic engine derate and shutdown.

4-26 Controls and Instruments



Front Brake Air Pressure Gage (Secondary System)

Indicates the front brake air system pressure in psi. The normal operating pressure is from 122 to 140 psi.

The low air pressure indicator LED on the gage and the STOP telltale light illuminate when the front brake air system (secondary) pressure drops below 85 psi. An audible alarm will sound.



STOP telltale light



WARNING

The driver is responsible for monitoring the pressure as part of a regular sweep of the instruments.

If the pressure drops in the secondary system but remains normal in the primary system, the front axle service brakes will not function but the drive and tag axle service brakes will operate normally, although if there is a leak in any pneumatic system (Sec/Pri/Park/Acc), the primary system might eventually lose its air pressure as well, depending on the nature and size of the leak. In the event of any air pressure loss in any system, the driver should pull to the side of the road as soon as can be safely done and investigate the situation.

Do not drive the coach when the brake air pressure is low.



Rear Brake Air Pressure Gage (Primary System)

Indicates the rear brake air system pressure in psi. The normal operating pressure is from 122 to 140 psi.

The low air pressure indicator LED on the gage and the STOP telltale light illuminate when the rear brake air system pressure drops below 85 psi. An audible alarm will sound.



STOP telltale light



WARNING

The driver is responsible for monitoring the pressure as part of a regular sweep of the instruments.

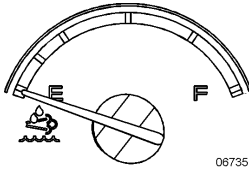
In the event of a pressure loss in the primary brake system, the drive and tag axle service brakes will not function normally. It is critical to bring the coach to a safe stop as quickly as possible.

If there is sufficient pressure in the secondary brake system, modulated spring brake pressure (using the park brake chambers) will be used to apply the drive axle brakes, proportional to the braking pressure on the front axle. It must be noted this is an emergency and a significant amount of secondary air pressure is lost with each apply/release cycle. The spring brake modulation will only function two or three times, depending on the amount of secondary air pressure that was on hand when the primary brake pressure was lost.

Once the secondary air pressure drops below 60 psig, the park spring brakes are fully applied and cannot be released until pressure is restored.

Do not drive the coach when the brake air pressure is low.

4-28 Controls and Instruments



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.

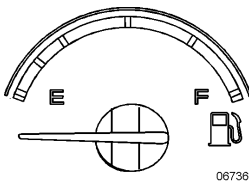


CAUTION

DEF – Do not overfill

If an automatic nozzle is used for filling diesel exhaust fluid (DEF), do not add further DEF after the nozzle has automatically shut off flow a first time. If such nozzle is not available, use the DEF level gage on the instrument panel to control the quantity during filling.

Diesel exhaust fluid DEF will begin to crystallize and freeze at 12°F (-11°C) and expand by 7% when frozen. To allow expansion without damaging the DEF tank, do not fill the 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.

NOTE

A pop-up message will appear in the DID informing that there is only 22 gallons (83 liters) left in the fuel tank.

TELLTALE LIGHTS

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

A telltale test can be initiated on the DID using the *cluster self test*. See [Driver Information Display \(DID\) Menus](#).



Hill Start Assist

Indicates a malfunction of the Hill Start Assist function. This function might not be available.



Check

Indicates 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 aid in identifying of the problem.



Seat Belt Reminder

When equipped with a seat belt buckle switch, warns the driver to fasten the seat belt.



High Beam

Illuminates when the high beams are selected.

High and low beams are selected with the *direction indicator and high beam control stalk* . See [DIRECTION INDICATOR AND HIGH BEAM CONTROL STALK](#) in this section.



Stop

Notifies the driver 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.



WARNING

Failure to take necessary action when the STOP telltale light is on can ultimately result in automatic engine derate and shutdown.



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.



Tire Pressure Monitoring System Warning

Indicates a high tire temperature condition or incorrect tire inflation pressure.

Refer to Tire Pressure Monitoring System (TPMS) in this section for further details.



Def Tank Low Level Indicator

Notifies the driver when there is less than 2.6 gallons (10 liters) of DEF remaining.



CAUTION

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



Emissions-related Malfunction (Malfunction Indicator Lamp)

Notifies the driver of 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. The vehicle can be driven to end of the shift. Call for service.



Intake Air Preheater On – Wait Before Starting

Notifies the driver when the intake air preheater element is activated. Wait until this telltale light has turned off before starting the engine. For more information, refer to ["COLD WEATHER STARTING" on page 4](#) in Section 6 Starting and Stopping Procedures.



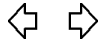
Charging System Warning Light

Indicates a malfunction of the charging system or a low battery voltage condition.

NOTE

To identify if an 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.

4-30 Controls and Instruments



Turn Signal Indicators

Flashes when the right or left turn signals are activated. Signal right and left turns by operating the *e direction indicator and high beam control stalk* . See [DIRECTION INDICATOR AND HIGH BEAM CONTROL STALK](#) in this section.

NOTE

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



Lane Departure Warning (LDW) Function Disabled

Notifies the driver that the Lane Departure Warning (LDW) function is temporarily disabled.



Anti-lock Brake System (ABS)

Illuminates when the ABS is not available or is malfunctioning. ABS is available over 4 mph (7 km/h); the indicator will remain illuminated until the coach reaches that speed. Refer to ["ANTILOCK BRAKING SYSTEM \(ABS\)" on page 12](#) in Section 5 Other Features.



Trailer Antilock Brake System (ABS)

Illuminates when trailer ABS is unavailable or malfunctioning.



ESC - Electronic Stability Control

At vehicle ignition, the ESC telltale lamp illuminates for approximately 3 seconds and then turns off. If it remains on steadily (not flashing) after ignition, or if it illuminates steadily while you are driving, the ESC system may not be fully functional or their operation may be completely disabled. If this happens, your vehicle will still have normal service braking and can still be driven, but without the benefits of the ESC system.

Flashes quickly when ESC intervenes to reduce the risk of loss of control.



Traction Control System (TCS)

At vehicle ignition, the TCS icon appears for approximately 2 seconds and then disappears. If it remains on steadily (not flashing) after ignition, or if it is on steadily while you are driving, the TCS system may not be fully functional or the operation may be completely disabled. If this happens, your vehicle will still have normal service braking and it still can be driven, although without the benefits of the TCS system.

Flashes slowly when TCS mud/snow mode is engaged.

Flashes quickly when TCS intervenes to reduce the risk of loss of control.



DPF Regeneration Request

Notifies the driver that a manual stationary regeneration will be required soon. Refer to ["STATIONARY \(PARKED\) REGENERATION" on page 3](#) in Section 5 Other Features.



High Exhaust System Temperature (HEST) During Regeneration

Notifies the driver of potentially hazardous exhaust gas temperature at the exhaust system diffuser.



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.



Automatic DPF Regeneration Inhibited

DPF regeneration process is inhibited.

STOP AND CHECK TELLTALE LIGHTS

STOP and CHECK 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 the 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.

WARNING

Failure to stop and take necessary action when the STOP telltale light is ON can result in an automatic engine derate and shutdown.

In some cases preventive action may be taken by the engine ECU to protect the engine. For further details, refer to [“ENGINE PROTECTION SYSTEM” on page 6](#) in Starting and Stopping Procedures.

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).

Acknowledging Messages

A fault message associated to a STOP or CHECK 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. Acknowledgement of pop-up messages and warnings stops the audible warning.

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.

4-32 Controls and Instruments

DRIVER INFORMATION DISPLAY

The DID (Driver Information Display) is located in the center of the instrument cluster. It displays digital gauges, main menus and submenus 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. Some Applications or features will be enabled or disabled based on these two vehicle states :

NON-DRIVING – DID is fully functional with all applications or features enabled.

DRIVING – DID functionality is less than in Non-Driving State: availability of Apps Screens / shortcuts in the Apps Menu list is restricted and the "Specific Non-Driving" items from Options list are grayed.

Home Screen

The Home Screen contains the following specific elements:

Top

- Home icon
- Compass
- Speedometer
- Ambient temperature
- Time

Middle - favorites display

- Two small gauges placed in the dynamic info zone (small digital gauge # 1 configurable with your selection of favorite gauges from Setup Home)
- Two large gauges placed in the dynamic info zone (both configurable with your selection of favorite gauges from Setup Home)

Bottom

- System status area. Active systems (ex. Cruise Control), vehicle messages,

transmission selection (Drive [D], Reverse [R], Neutral [N]), gear, engine brake activation, etc.

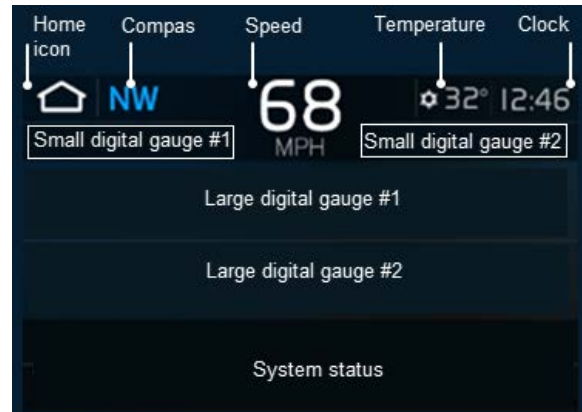


FIGURE 20: DID DISPLAY HOME SCREEN

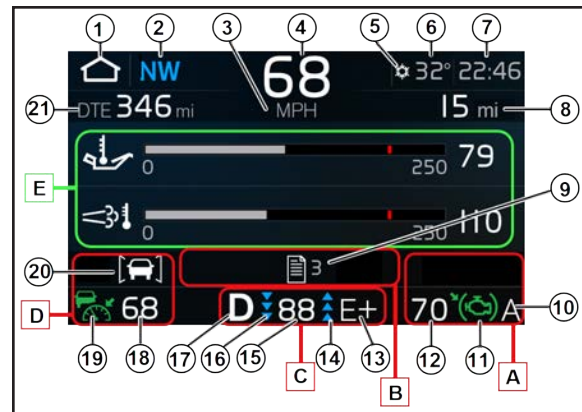


FIGURE 21: DID DISPLAY HOME SCREEN

A: brake cruise & retarder/engine brake status info zone

B: dynamic info zone

C: transmission info zone

D: cruise control / ACB info zone

E: this area is designated for content which can consist of one or two gauges or other information as defined by the user in Options - "Setup HOME".

1: Application icon

2: Current Compass heading

3: Speedometer units

4: Current Speedometer value

5: Freezing Condition indicator

6: Ambient temperature

7: Current Time

- 8: Odometer
- 9: Active message icon with count number
- 10: Engine brake / Retarder control stalk position: A, 1, 2, etc.
- 11: Auxiliary braking status (while driving on cruise control).
- 12: Brake Cruise set speed. Speed at which auxiliary braking (engine brake/retarder) occurs while driving on cruise control. This speed corresponds to the CC set speed + 2 mph / km/h.
- 13: Transmission driving mode indication
- 14: Available Gears - Higher Ratio
- 15: Gear position
- 16: Available Gears - Lower Ratio
- 17: Transmission selection (D, R, N)
- 18: CC or ACB set speed
- 19: CC or ACB Status pictogram
- 20: ACB Target Acquired icon
- 21: Digital Vehicle Info. Can be defined by user in Options - "Setup HOME"

System Status Dedicated Area Description

- Area 1: Adaptive Cruise Control
- Area 2: Dynamic Information
- Area 3: Cruise Control Downhill Brake
- Area 4: Cruise Control
- Area 5: Transmission
- Area 6: Auxiliary Brake control stalk Position



FIGURE 22: SYSTEM STATUS DEDICATED AREA

Navigation Through Menus

Four of the buttons on the steering wheel right-hand keypad are used to select and view the

various Driver Information Display (DID) screens. Also, use the middle rocker type with push functionality button to scroll through or select DID options.

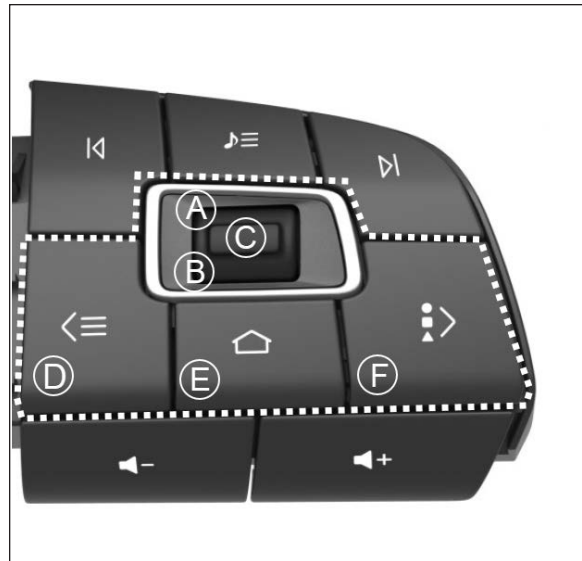


FIGURE 23: RIGHT-HAND KEYPAD

DID Menu Navigation

- (A) Scroll up (scroll wheel rocker type).
- (B) Scroll down (scroll wheel rocker type).
- (C) Enter / Select (scroll wheel rocker type with push functionality).

A, B & C :
Toggle/Scroll
Up/Down/Enter
Button; Used to open,
scroll through menus,
adjust values or make
selections.

- (D) Application tray / Back button.

Opens the
Applications menu.

Returns to the
previous view.

- (E) Home screen.

Returns to the home
screen and when
pressed a second
time, returns to the
starting view.

- (F) Options tray

4-34 Controls and Instruments

Opens the Options menu.

Selecting A Menu

To select a menu from the Home screen, proceed as follows:

1. To display the Options menu, press the Options Tray button (F). To display the Application menu, press the Application Tray button (D).
2. To scroll through the submenus or functions, move the rocker type button up (A) or down (B).
3. To select a menu, press the Enter/select button (C).
4. Press the Applicationtray/Back button (D) to return to the previous menu or view, or to cancel a setting or operation.
5. To return to the Home screen, press the Home button (E).

To Change Settings

To change a setting, like the time:

1. Move the rocker type button up (A) or down (B) to increase or decrease the numerical value of the selected range.
2. Press the Enter/select button (C) in to confirm your choice and to move to the next field.
3. Press the Back button (D) to return to the previous field or to cancel a setting or operation.

Driver Information Display (DID) Menus

There are two main menus available; Applications and Options. Several submenus are password-protected while the vehicle is parked. Some menus known as Non-Driving menus are accessible only when the vehicle is parked.

APPLICATIONS MENU

GAUGES	Fuel Economy (1) ¹	ECO Target (option button)
	Oil Temps (2)	
	Battery (3)	
	A/C Pressure (4)	
	Cooling Fan (5)	
	Oil Life Remaining	
	Trip 1 (6)	Reset Trip 1 (option button) Pause Trip 1 (option button) More Info (8) (option button)
	Trip 2 (6)	Reset Trip 2 (option button) Pause Trip 2 (option button) More Info (option button)
	EATS Status (7)	Status List (9) (option button)
	TIRE MONITOR	Set Placard (option button)
POP-UP NOTICES		
PRE-TRIP ASSISTANT	Exterior Light Inspection Test Air Brake Leak-Down Test	
VEHICLE TESTS	Alternators test Electric Motors Test MUX Input Test HVAC Pump Test Force Radiator Fan Speed 50% Force Radiator Fan Speed 100% Remove Force and End Tests	

¹See Table 1 - Information Displayed

4-36 Controls and Instruments

VEHICLE DATA	Vehicle Diagnostic	View active faults (10) Cluster self test Telematic gateway (TGW) status
	General Info	vehicle id cluster hardware cluster software Engine ECU hardware Engine ECU software Multiplex ECU hardware Multiplex ECU software ABS ECU hardware ABS ECU software Battery Monitor ECU hardware Battery Monitor ECU software
	Life of Vehicle Totals	Mileage (mi) Engine Hours (h) Time in Service (d h m) Fuel Used (g) Highest RPM (rpm) Highest Vehicle Speed Average Vehicle Speed Average Fuel Economy (mpg) Idle Time (%) Cruise Control Time (%) Sweet Spot Time (%)
	Services Messages	
SETTINGS	Global Units (us/metric, language) Fuel Consumption Units Eco Target Language Time & Date TPMS Manual Learning	

TABLE 1 - INFORMATION DISPLAYED

<p>(1) Distance to Empty (mi) Remaining Fuel (g)</p>	<p>(6) Distance MPH MPG d h m Distance to empty (mi) Fuel remaining (g) Sweet spot (%)</p>
<p>(2) Transmission Engine</p>	<p>(7) Regen Not Needed or Regen needed (status) Soot level Ash level Request Regen</p>
<p>3 Volt SOC (state of charge)</p>	<p>8 Additional Trip 1,2 Info Cruise Control Time (%) Engine brake time (%) Sweet spot time (%) Max rpm Max speed</p>
<p>(4) A/C Low (psi) A/C High (psi)</p>	<p>(9) Inhibit switch Acc pedal Gear status neutral Parking Brake No system fault Temporary lockout – see manual Permanent system lockout Engine not warmed up</p>
<p>(5) CAC (%) RAD (%)</p>	<p>(10) Engine ecu Transmission ecu ABS Instrument cluster Vehicle ecu Tire monitor Driver assist Forward imager Aftertreatment control module Multiplex control module ecu Wipers ecu Battery monitor ecu</p>

4-38 Controls and Instruments

OPTIONS (button)

Display	Screen OFF Brightness
---------	--------------------------

Speed Units	MPH km/h
-------------	----------

Setup Home	gauge 1 (small gauge #1)
------------	---------------------------------

Blank
RPM
Trip 1
Trip 2
Distance to empty
Transmission oil Temp
Engine oil temp

gauge 2 or 3 (large gauge #1 or #2)

Blank
Engine Load Percentage
Throttle Percentage
Fuel Economy (MPG)
Transmission Oil Temperature
Engine Oil Temperature
Rad Fan (%)
CAC Fan (%)
A/C High (psi)
A/C Low (psi)
Oil Life Remaining (%)
SOC 12 V 24 V (%)
Volt 12 V 24 V

STEERING COLUMN CONTROLS

Many of the most frequently used controls are conveniently placed on the steering column or the steering wheel. The direction indicator stalk is located on the left side of the steering wheel while the auxiliary brake control stalk and windshield wipers control stalk are located on the right side of the steering wheel. Switches for the horn are located directly on the steering wheel.

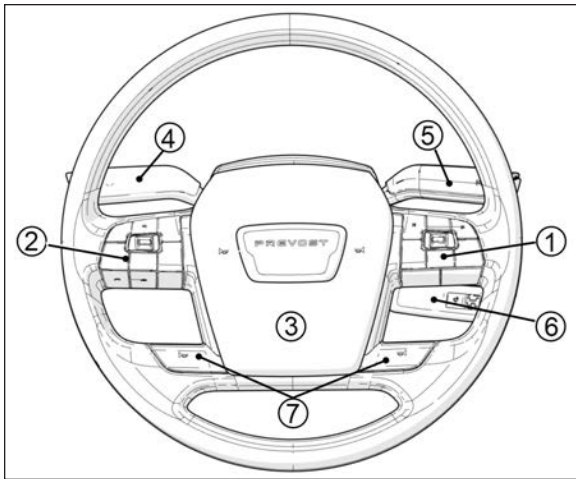


FIGURE 24: STEERING WHEEL

- (1) Right-hand keypad
- (2) Left-hand keypad
- (3) Air horn
- (4) Direction indicator and high beam control stalk
- (5) Auxiliary brake control stalk
- (6) Windshield wipers control stalk
- (7) Electric horn (city horn)

NOTE

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

DIRECTION INDICATOR AND HIGH BEAM CONTROL STALK

Direction Indicator

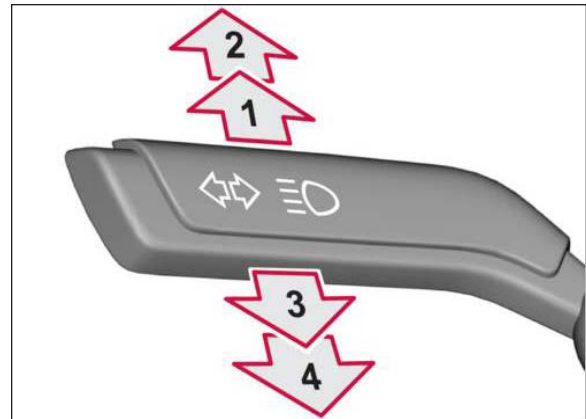


FIGURE 25: DIRECTION INDICATOR

- (1) Lane change signal to the right

Move and hold the control stalk partway to signal a lane change. The right-hand signal will flash until you release the lever.

- (2) Turn signal to the right

- (3) Lane change signal to the Left

Move and hold the control stalk partway to signal a lane change. The left-hand signal will flash until you release the control stalk.

- (4) Turn signal to the Left

High Beam Control



FIGURE 26: HIGH BEAM CONTROL

- (1) High beam flash

4-40 Controls and Instruments

For a quick flash of the high beam, pull the control stalk towards you to the first detent. The position is spring-loaded.

(2) High Beam Toggle

For constant high beam, pull the control stalk towards you to the second detent. Disengaging the high beam is performed the same way.

WINDSHIELD WIPERS CONTROL STALK

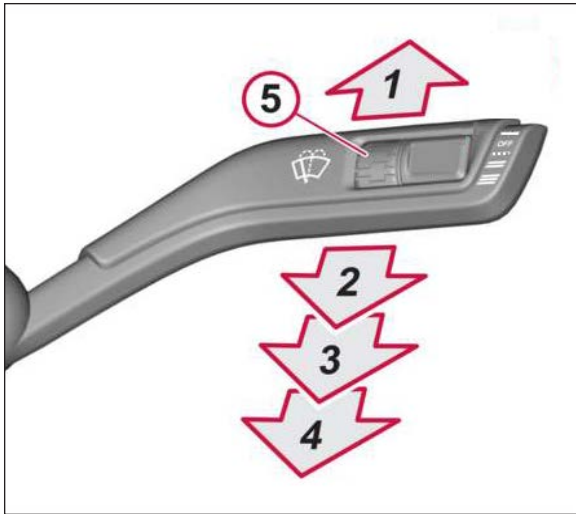


FIGURE 27: WINDSHIELD WIPERS CONTROL STALK

- (1) Windshield wiping at normal speed for as long as the hand lever is held in the spring-loaded position.
- (2) Intermittent wiping.
- (3) Windscreen wipers, normal speed.
- (4) Windscreen wipers, high speed.
- (5) Scroll wheel. Use the scroll wheel to adjust the time interval for intermittent wiping.



WARNING

Before using the windshield washers in cold weather, heat the windshield with the defroster to prevent icing and reduced visibility. Free wiper blades that may be frozen to the windshield before operating the wipers.



CAUTION

To avoid damaging the pump mechanism, do not use the windshield washer when the fluid level is very low or empty.



CAUTION

To avoid scratching the windshield, do not operate the wipers when the windshield is dry.

AUXILIARY BRAKE CONTROL STALKS

The auxiliary brake is a brake function in addition to the vehicle's normal service brake. It works in the vehicle's drive system. Use the auxiliary brake to avoid overheating in the wheel brakes and to reduce wear on the brake linings.

When the auxiliary brake is engaged, a pictogram is shown in the DID. Next to the symbol, the position of the auxiliary brake lever is shown.

In order for the auxiliary brakes to function when the accelerator is released,

- the vehicle must be in gear .
- the engine speed must be at least 1000 rpm, but preferably as high as possible for optimum effect without entering the tachometer red zone.

There are two types of auxiliary brake available as an option, either the Engine Brake, either the Transmission Retarder.

Engine Brake

The engine brake engages in accordance with the control stalk position.

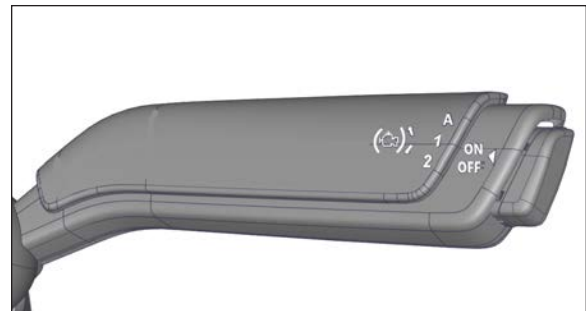


FIGURE 28: ENGINE BRAKE CONTROL STALK

ON/OFF momentary push button

- Activates the engine brake control mode based on actual engine brake control stalk position. At any time, use this push button to deactivate the engine brake.

Position A

- AUTOMATIC mode. In position "A", the engine brake acts together with the service brake when the brake pedal is depressed (referred to as "brake blending").
- Gradual application of up to 100% of braking power.

Position 1

- Engine brake low.
- 50% of braking power applied.
- Release the accelerator pedal for the engine brake to take effect.

Position 2

- Engine brake high.
- 100% of braking power applied.
- Release the accelerator pedal for the engine brake to take effect.

BRAKING PROGRAM

- Set the hand lever in automatic position (A) or manual position (1) or (2).
- Press the ON/OFF momentary push button on the end of the hand lever to activate the Engine Brake.

When the brake program is engaged, the gearbox changes to the gear providing optimum auxiliary brake effect.

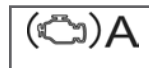
Disengage the brake program by pressing the ON/OFF momentary push button again or by depressing the accelerator pedal.

SYSTEM STATUS ZONE PICTOGRAMS

A pictogram appears in the DID system status zone to confirm activation of the engine brake and the currently selected mode.



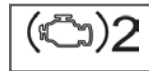
Engine brake OFF



Engine brake activated, position A selected



Engine brake activated, position 1 selected



Engine brake activated, position 2 selected

NOTE

The engine brake AUTO mode (A) will activate whenever the cruise control is enabled.

NOTE

Refer to [ENGINE BRAKE](#) in Other Features section for supplemental information regarding the Engine Brake operation.

4-42 Controls and Instruments

Transmission Retarder

The transmission retarder is engaged incrementally for every step you move the hand lever. Release the accelerator pedal for the retarder to take effect.



FIGURE 29: TRANSMISSION RETARDER CONTROL STALK

ON/OFF momentary push button

- Activates the transmission retarder based on actual transmission retarder control stalk position. At any time, use this push button to deactivate the transmission retarder.

Position 1 up to 6

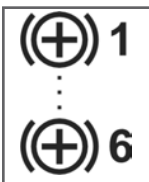
- From 17% (position 1) up to 100% (position 6) of braking power.

SYSTEM STATUS AREA PICTOGRAMS

A pictogram appears in the DID system status area to confirm activation of the transmission retarder and the currently selected braking power.



Retarder OFF



Transmission retarder activated, position 1, 2, 3, 4, 5 or 6 displayed

NOTE

Refer to ["TRANSMISSION RETARDER \(option\)" on page 11](#) in Other Features section for supplemental information regarding the Transmission Retarder operation.

STEERING WHEEL KEYPADS

The steering wheel has controls for the horn, certain lighting features, cruise control and the control of DID menus and infotainment functions.

Left-hand Keypad



FIGURE 30: LEFT-HAND KEYPAD

- (1) ON/OFF cruise control toggle.
- (2) Cancel / Resume set speed.
- (3) Increase speed (rocker type button).
- (4) Set. Select current speed as set speed (rocker type with push functionality button).
- (5) Decrease speed (rocker type button).
- (6) Headlight flash.
- (7) Marker flash (courtesy lights).
- (8) Accept the call¹.
- (9) End / reject a call.
- (10) Mute radio or media content.

¹To allow a phone call conversation, a Bluetooth earpiece must be connected to the user smartphone and the smartphone connected to the DEA600 Series Radio System.

Right-hand Keypad

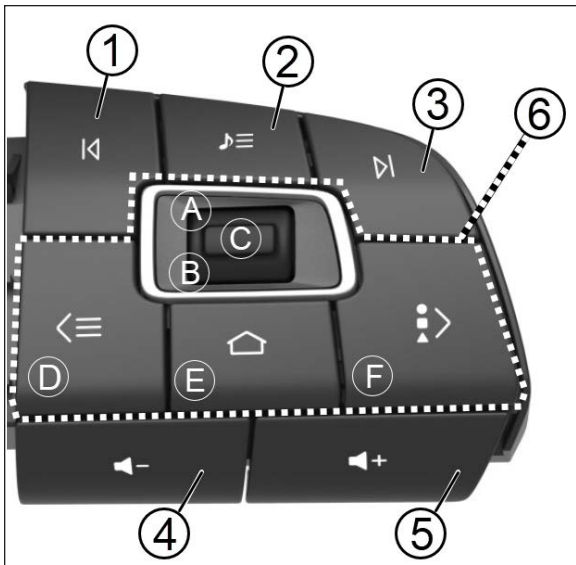


FIGURE 31: RIGHT-HAND KEYPAD

(1) Radio station seek down (long press) / previous favorite radio station / previous track.

(2) Next audio mode / source.

(3) Radio station seek up (long press) / next favorite radio station / next track.

(4) Volume down.

(5) Volume up.

(6) DID menu navigation

(A) Navigate up (scroll wheel rocker type).

(B) Navigate down (scroll wheel rocker type).

(C) Enter / Select (scroll wheel rocker type with push functionality).

(D) Application tray / back button.

(E) Home screen.

(F) Options tray.

4-44 Controls and Instruments

FOOT-OPERATED CONTROLS

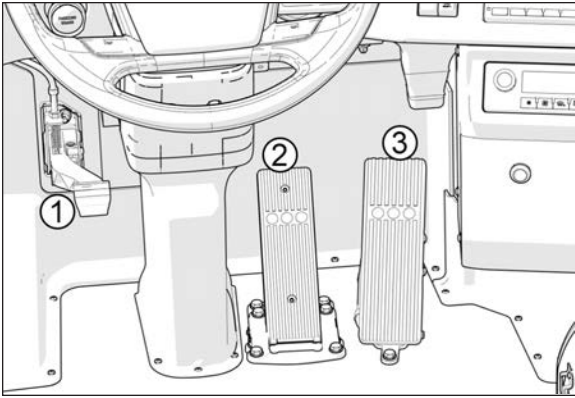


FIGURE 32: FOOT OPERATED CONTROLS

- (1) Steering wheel adjustment
- (2) Brake pedal.
- (3) Accelerator pedal.

STEERING WHEEL ADJUSTMENT

Press on the foot pedal located in the foot-operated control housing to unlock the steering wheel for tilt and telescopic adjustment .

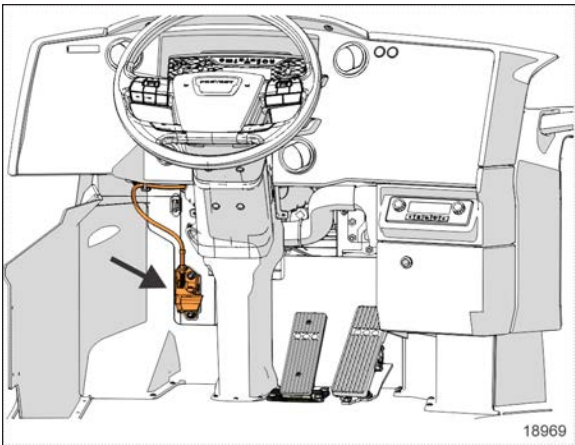


FIGURE 33: STEERING WHEEL TILT AND TELESCOPIC ADJUSTMENT



DANGER

Do not adjust the steering wheel while driving. Loss of control could result. Park the vehicle safely and apply parking brakes before adjusting the steering wheel.

BRAKE PEDAL

The coach is equipped with a dual braking system. The front brakes operate from a different air source than 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 (rear brakes).

Service brakes are applied by depressing the brake pedal. Braking increases with the amount of pressure applied to the foot pedal. Refer to ["ANTILOCK BRAKING SYSTEM \(ABS\)" on page 12](#) in Section 5 Other Features . 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 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 circuit drops below 85 psi. 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 RETARDER" on page 1](#) in this section.



DANGER

Immediately report any brake system problem to your company or directly to the nearest Prevest or Prevest-approved service center.

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.



CAUTION

"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.

ACCELERATOR PEDAL

Controls engine RPM as needed.



CAUTION

Do not let the engine operate above 2,450 rpm.

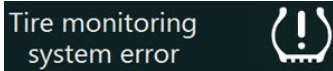
ON BOARD DIAGNOSTIC TOOL RECEPTACLE

To ease troubleshooting, you can connect a diagnostic tool through the OBD receptacle to access recorded data. The OBD receptacle is located under the dashboard, on the left side.

TIRE PRESSURE MONITORING SYSTEMS (TPMS)

SYSTEM MALFUNCTION

In case of system malfunction, the following warning pop-up message will show on the DID to warn the driver that the TPMS might be disabled or unreliable.



TPMS - SYSTEM DESCRIPTION

This system is a sensing device designed to identify and display tire operating data and activate an alert or warning when pressure or temperature irregularities are detected.

NOTE

It is the responsibility of the driver to react promptly and with discretion to alerts and warnings. Abnormal tire inflation pressures should be corrected at the earliest opportunity.

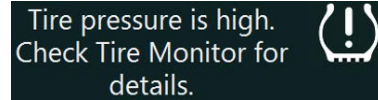
Driver Information Display Warnings

Visual warnings turn on to indicate either a low tire pressure, high tire pressure or high tire temperature through three different warning conditions:

1- HIGH TIRE PRESSURE WARNING



telltale turns on and the following message appears



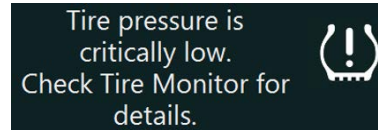
Indicates a high tire pressure.

You should stop the vehicle as soon as possible and check your tires.

2- TIRE PRESSURE CRITICALLY LOW WARNING



telltale turns on and the following message appears



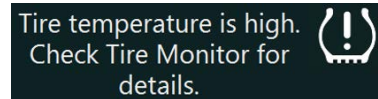
Indicates a critically low tire pressure.

You should stop the vehicle as soon as possible and check your tires.

3- HIGH TIRE TEMPERATURE WARNING



telltale turns on and the following message appears



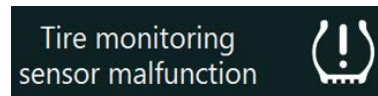
Indicates a high tire temperature condition.

You should stop the vehicle as soon as possible and check your tires.

Other Messages



Indicates a malfunction of an antenna.



Indicates a malfunction of a pressure and temperature sensor.

Tire Pressure And Temperature Readings Through TIRE MONITOR Application

The tire pressure and temperature readings are displayed in the DID. The user can scroll through the menus to get detailed information and inflate or deflate the tires to bring them back to their optimum pressure.

To do so,

1. On the right-hand steering keypad, press the Home button.
2. Press the Application Tray button.
3. Scroll down to TIRE MONITOR using the scroll wheel (rocker type) and press Enter / Select button.
4. Use the scroll wheel (rocker type) to select the appropriate axle and read the values.



FIGURE 34: READING FRONT AXLE TIRE PRESSURE AND TEMPERATURE VALUES

Pressure or temperature irregularities are displayed as shown below.

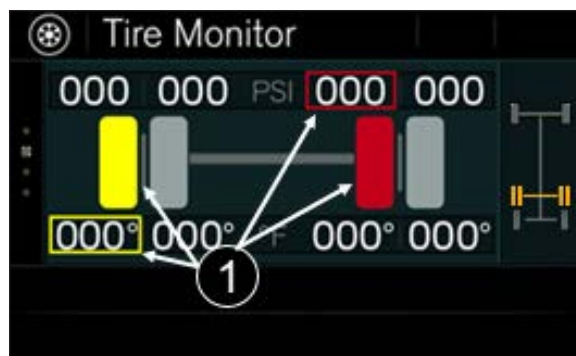


FIGURE 35: READING PRESSURE AND TEMPERATURE ON ON DRIVE AXLE TIRES WITH IRREGULARITIES DETECTED (DISPLAY EXAMPLE)

(1) A higher or lower than normal pressure or temperature value is highlighted by a yellow rectangle surrounding the abnormal value. The corresponding tire will be displayed in yellow.

When a pressure or temperature **critically** exceeds the normal value, a red square surrounds the abnormal value to bring attention. The corresponding tire will be displayed in red.

Changing The Target Pressure On A Specific Axle

To change the target pressure on a specific axle, proceed as follows:

1. On the right-hand steering keypad, press the Home button.
2. Press the Application Tray button.
3. Scroll down to TIRE MONITOR using the scroll wheel (rocker type) and press Enter/Select button.
4. Use the scroll wheel (rocker type) to select the appropriate axle.
5. Press the Application Tray button.
6. Use the scroll wheel (rocker type) to select the PLACARD and then press Enter/Select button.
7. Use the scroll wheel (rocker type) to adjust the target pressure and then press Enter/Select button.

CRUISE CONTROL

The cruise control allows you to cruise the vehicle at a desired speed over 30 mph (50 km/h) without having to use the accelerator pedal.

TURNING THE SYSTEM ON

To operate the cruise control, press the CC button located on the left-hand steering wheel keypad to turn ON the system. The Cruise Control "ON" status pictogram will then appear in the DID. You can now set the vehicle at a desired cruising speed. To turn off the system, press the CC button.



FIGURE 36: CRUISE CONTROL "ON" STATUS PICTOGRAM (WHITE)

NOTE

The cruise switch and RESUME button do not operate at speeds below 30 mph (50 km/h).



FIGURE 37: CRUISE CONTROL BUTTONS

- (1) ON/OFF cruise control toggle (CC button).
- (2) Cancel / Resume set speed.
- (3) Increase speed (rocker type button).
- (4) Set. Select current speed as set speed (push functionality).
- (5) Decrease speed (rocker type button).

SETTING CRUISE SPEED

Accelerate the vehicle to the desired cruising speed using the accelerator pedal. Press and release the SET button (4) then remove foot from the accelerator pedal. This will set the vehicle cruise speed and store it in memory. The set speed will appear in the driver information display.



FIGURE 38: CRUISE CONTROL SET SPEED CONFIRMATION STATUS ICON (GREEN)



FIGURE 39: CRUISE CONTROL SET SPEED CONFIRMATION & CURRENT SET SPEED DISPLAYED IN THE SYSTEM STATUS ZONE

Adjusting The Set Speed

Change the set speed moving the rocker type button (4) to + (3) or - (5). A short press will increase/decrease speed by 1 mph (2 km/h). You can also change the set speed by using the accelerator pedal and then pressing the SET (4) button.

NOTE

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

Canceling The Set Speed

You can cancel the set cruising speed by:

1. Pressing momentarily the CANCEL button (2);
2. Depressing the brake pedal.

4-48 Controls and Instruments

Resuming Set Speed

If the set speed is canceled by pressing the **CANCEL** button (2) or depressing the brake pedal, pressing the **RESUME** button will restore the speed set prior to cancellation.

Automatic Cruise Control Cancellation

The set speed is automatically canceled in any of the following situations:

- The windshield wipers are operating in low or high speed;
- The actual vehicle speed falls below 30 mph (50 km/h).



WARNING

Do not put the transmission in the neutral (N) position while driving with cruise control. This may cause the engine to overspeed and result in a loss of driving control.

NOTE

CRUISE CONTROL AND AUXILIARY BRAKE

When driving downhill with the cruise control on and a set speed, the engine brake or the transmission retarder if previously activated will react as follows:

Engine Brake

The engine brake will be automatically forced in AUTO mode (A), no matter the current control stalk position.

If the driver turns off the cruise control, the engine brake will re-establish according to current control stalk position.

Transmission Retarder

When the vehicle speed exceeds the set speed by 2 mph or 2 km/h, the retarder engages to reduce the vehicle speed in accordance with the retarder control stalk position.

NOTE

When the cruise control is turned off using the CC button (1), the set speed is erased from the cruise control memory.



WARNING

Do not use the cruise control when driving speed must be constantly adjusted, such as in heavy traffic or on icy, snow-covered or slippery roads or on gravel roads.

PREVOST DRIVER ASSIST™

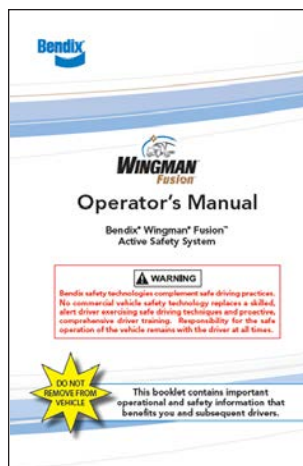
Prevost Driver Assist™ provides what is commonly known in the automotive industry as Advanced Driver Assistance Systems (ADAS). ADAS are meant to assist but not replace the driver. ADAS must be monitored at all times.



WARNING

Even with Prevost Driver Assist™ system, the driver must remain alert, react appropriately and in a timely manner, and use good driving practices. The ultimate responsibility for the safe operation of the vehicle remains with the driver at all times.

Be certain that you have read all safety warnings found in **Bendix Wingman Fusion Operator's Manual BW2681** available on Prevost Technical Publications site.



ASSOCIATED HARDWARE EQUIPMENT

- FLR-21 radar sensor (ACB)
- Head-up display (HUD)
- Lane Departure Warning System (LDW) enable/disable switch
- FLC-20 windshield forward-looking camera (LDW)
- Bendix ESP EC-80 Controller
- Instrument panel DID (telltale, warning pop-ups and system status pictograms)

4-50 Controls and Instruments

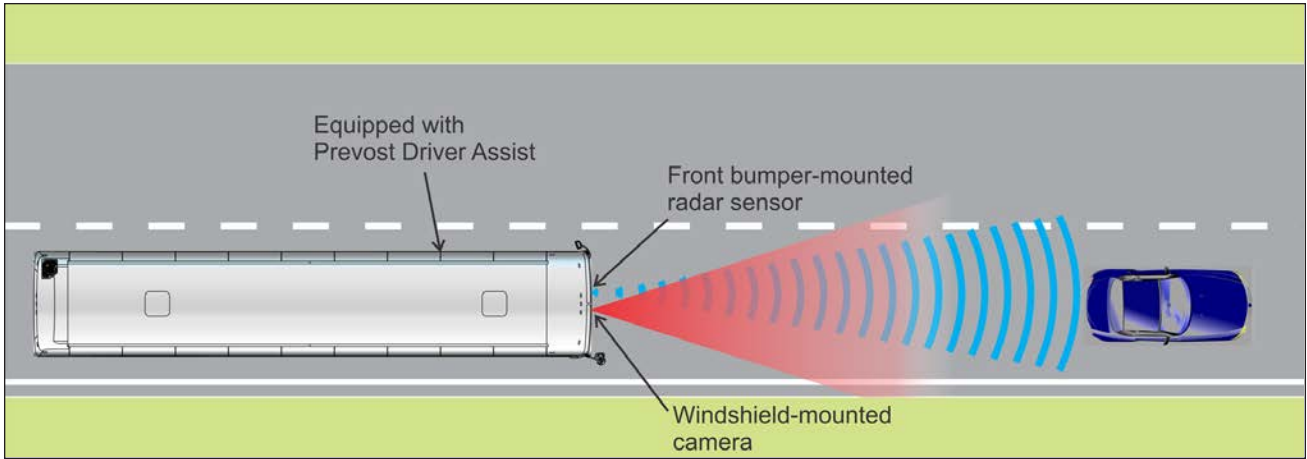


FIGURE 40: PREVOST DRIVER ASSIST™ SYSTEM USES A CAMERA AND RADAR SENSOR

PREVOST DRIVER ASSIST™ CONSISTS OF THE FOLLOWING SYSTEMS AND FEATURES

DRIVING CONTROL ASSISTANCE	
Adaptive Cruise with Braking ACB	Assists with acceleration and/or braking to maintain a prescribed distance between your vehicle and the vehicle ahead in your lane of travel. <ul style="list-style-type: none"> • Following Distance Alert (FDA) • Impact Alert (IA)
COLLISION WARNINGS	
Lane Departure Warning LDW	Alerts the driver as the vehicle unintentionally approaches or crosses lane markers.
Head-Up Display HUD	Projects a visual forward collision warning into the driver's forward line of sight.
COLLISION INTERVENTION	
Forward Collision Mitigation FCM	Detects potential collision with vehicles in the lane ahead while the vehicle is traveling forward, provides forward collision warning and automatically applies the brakes to lessen the severity of an impact.

FEATURES	ACTIVE EVEN IF ACB IS OFF OR CRUISE SPEED NOT SET
Following Distance Alert (warnings only)	Yes If speed above 5 mph (8 km/h)
Impact Alert (warnings only)	Yes If speed above 15 mph (24 km/h)
LDW Lane Departure Warning	Yes If speed above 37 mph (60 km/h)
FCM Forward Collision Mitigation (warnings & braking)	Yes If speed above 15 mph (24 km/h)

WARNING

The Prevost Driver Assist™ system reacts **ONLY** to vehicles that are **moving in the same direction as your vehicle**.

The Prevost Driver Assist™ system **DOES NOT** respond to side-to-side moving traffic or oncoming traffic. The system will not slow your vehicle or provide an alert as you approach vehicles in these circumstances.

Equipped with Prevost Driver Assist

Front bumper-mounted radar sensor

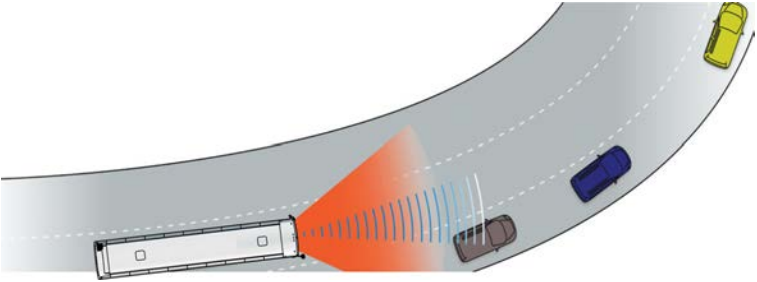
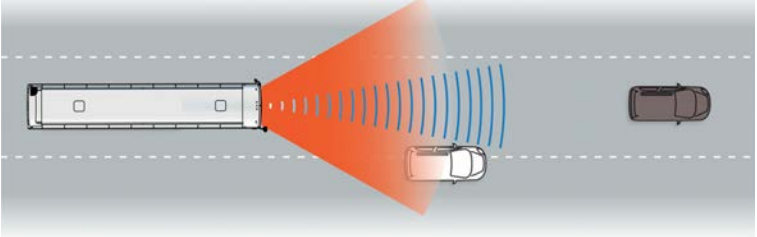
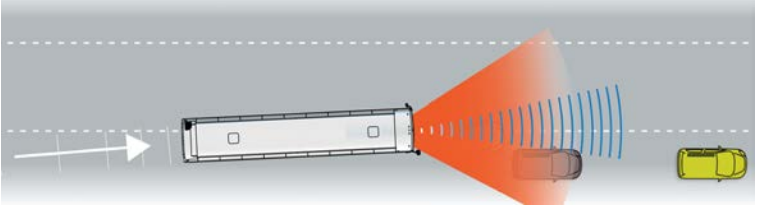
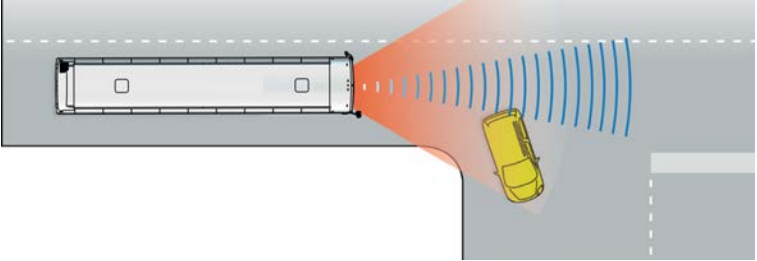
Detected forward vehicle

The system does not brake nor warn for vehicles approaching from the side or oncoming

4-52 Controls and Instruments

POTENTIALLY CHALLENGING SITUATIONS FOR THE PREVOST DRIVER ASSIST™ SYSTEM

The following examples illustrate situations that may issue an alert or braking in a manner not consistent with your expectations. The Prevost Driver Assist™ system may unexpectedly issue warnings, apply braking, or not respond.

CHALLENGING SITUATION EXAMPLES	
	Driving through a curve or an exit ramp
	Other vehicles partially inside your lane of travel
	Lane changes
	Turning vehicles

LANE DEPARTURE WARNING LDW

Using the FLC-20 windshield forward-looking camera, the Lane Departure Warning system (LDW) monitors the vehicle position in its lane and alerts the driver as the vehicle unintentionally approaches or crosses lane

markers thru audible and visual warnings. **The driver should immediately correct the vehicle tracking and maintain position in the lane.**

When changing lanes, the driver must use the turn signals.

LDW Activation

The Lane Departure Warning system is active whenever the vehicle is traveling above 37 mph (60 km/h). LDW is active no matter if the ACB is OFF or speed not set.

Temporarily Disabling The Lane Departure Warning (LDW)

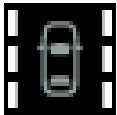


To avoid erroneous LDW warnings in areas such as the work zone where the road markings present might cause false alerts, LDW system can be disabled by the driver using the enable/disable switch. LDW system will reactivate automatically after a delay of 15 minutes or a transition from OFF to ON of the ignition switch or upon pressing of the enable/disable switch a second time.



FIGURE 41: LDW ENABLE / DISABLE SWITCH


LDW System Status Pictograms Description

The following pictograms appear in the DID system status area to confirm that the system is active and currently tracking the driving lane.



PICTOGRAM	DESCRIPTION
	Currently tracking lane markings on both sides of the current lane
	Currently tracking lane marking on the left side only
	Currently tracking lane marking on the right side only

The following pictogram appears in the DID status line to warn that the system IS NOT currently tracking the driving lane.

4-54 Controls and Instruments

PICTOGRAM	DESCRIPTION
	<p>LDW system initializing during the start-up or tracking not available as no lane markings is being tracked.</p>
<p>none</p>	<p>If none of the LDW status pictograms appear on the DID status line and the driver has not pressed the LDW enable/disable switch, this indicates that the system using the FLC-20 forward-looking camera has detected a DTC (diagnostic troubleshooting code) and the system should be serviced at the earliest opportunity.</p>

LDW Pop-up Messages Definition

POP-UP MESSAGE	DESCRIPTION / AUDIBLE ALARM
	<p>The vehicle is about to cross the right lane marker. A yellow vertical bar appears on the right side of the DID.</p> <p>Comes with audible warning</p>
	<p>The vehicle is about to cross the left lane marker. A yellow vertical bar appears on the left side of the DID.</p> <p>Comes with audible warning</p>
<p>Forward Imager malfunction.</p>	<p>Indicates a malfunction of the forward-looking camera. The LDW system tracking might be disabled or not reliable.</p> <p>The driver can acknowledge and turn off this pop-up message. To do so, press and hold Applications/Back button.</p>
<p>Forward Imager obstructed.</p>	<p>Indicates a malfunction of the LDW system camera. The LDW system tracking might be disabled or not reliable.</p> <p>Stop the vehicle and check if something is obstructing the camera.</p> <p>The driver can acknowledge and turn off this pop-up message. To do so, press and hold Applications/Back button.</p>

<p>Lane Departure Warning is disabled. Brake switch malfunction.</p>	<p>Indicates a malfunction of the LDW system brake switch. The LDW system tracking might be disabled or not reliable. The driver can acknowledge and turn off this popup message. To do so, press and hold Applications/Back button.</p>
<p>Lane Departure Warning is disabled. Turn signal malfunction.</p>	<p>Indicates a malfunction of the directional turn signals. The driver can acknowledge and turn off this pop-up message. To do so, press and hold Applications/Back button.</p>
<p>Lane Departure Warning is disabled. Override Switch malfunction.</p>	<p>Indicates a malfunction of the LDW system input switch. The driver can acknowledge and turn off this pop-up message. To do so, press and hold Applications/Beach button.</p>
<p>Network Error</p>	<p>Indicates a loss of communication on the vehicle data network. The LDW system tracking might be disabled or not reliable. The driver can acknowledge and turn off this pop-up message. To do so, press and hold Applications/Back button.</p>
<p>Lane Departure Warning is disabled. Vehicle Speed malfunction.</p>	<p>Indicates the current vehicle speed is unknown. The LDW system tracking might be disabled or not reliable. The driver can acknowledge and turn off this pop-up message. To do so, press and hold Applications/Back button.</p>
<p>Lane Departure Warning System Malfunction</p>	<p>Indicates a malfunction of the LDW system. The LDW system tracking is not available.</p>

FORWARD COLLISION MITIGATION FCM

The Forward Collision Mitigation system (FCM) detects potential collisions while the vehicle is traveling forward, provides warnings to the driver and when needed, automatically applies up to 66% of the braking power to lessen the severity of an impact.

The FCM system is ready to intervene whenever the vehicle is traveling at speed above 15 mph (24 km/h). It operates independently of the vehicle ACB and will intervene even if the cruise control is turned off or there is no cruise set speed.

4-56 Controls and Instruments

The FCM system is enhanced with the use of the FLC-20 windshield forward-looking camera. This camera increases the performance of the collision mitigation system by optically detecting a forward object as a vehicle and confirming with the ACB radar sensor its position within the lane of travel.

If the forward vehicle is stationary, the FCM system will apply up to 66% of the braking power. The maximum speed reduction is about 25 mph / 40 km/h. Note that this feature will not bring the vehicle to a complete stop.



CAUTION

Pedestrians, Animals, Non-metallic, or Limited-metallic Objects

The Prevost Driver Assist™ system **will not** warn or react to pedestrians, animals, and non-metallic objects. The system may not warn or react to limited-metallic objects (such as recreational vehicles, horse-drawn buggies, motorcycles, logging trailers, etc.).

Head-Up Display HUD

The FCM system is enhanced with a Head-Up Display (HUD) LED warning. The HUD project an intensive red light that is reflected in the windscreen to warn the driver when the FCM detects potential collision.

HUD Diagnostic: At startup, the HUD warning LED shall be diagnosed for failures such as open circuit, short to battery and short to ground. This shall be performed by activating the LED for a short time.

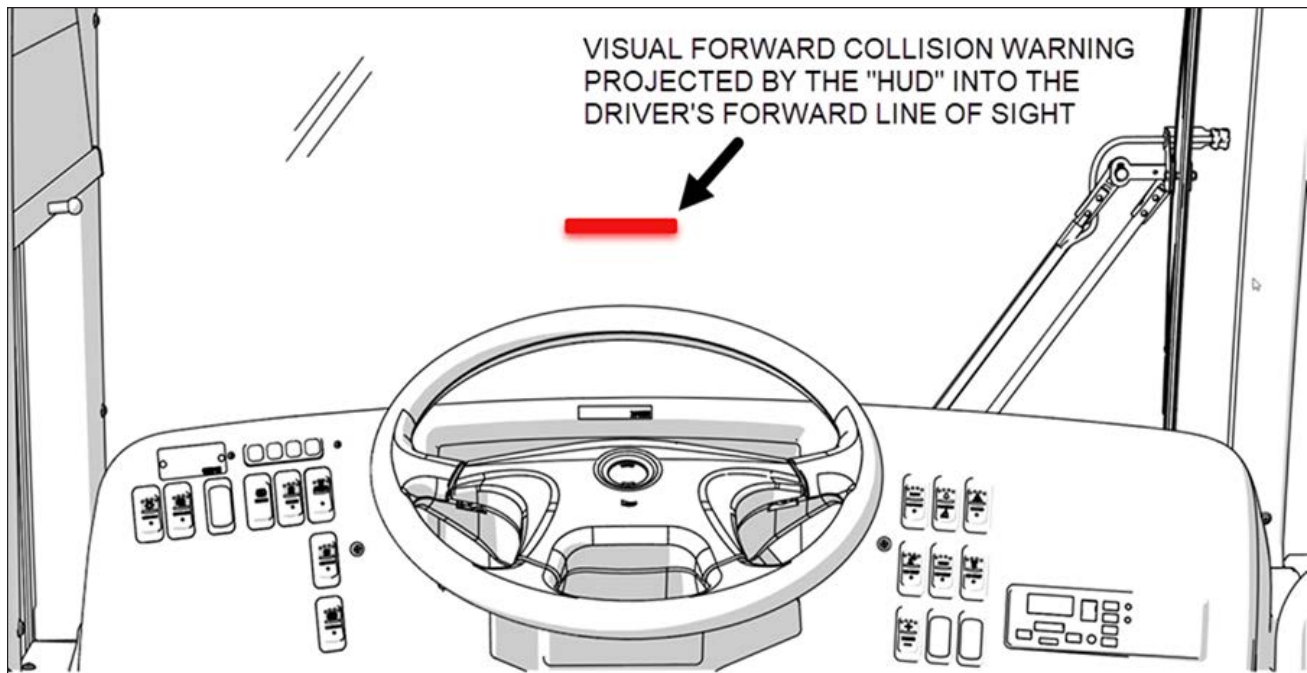


FIGURE 42: HEAD-UP DISPLAY PROJECTED VISUAL WARNING

ADAPTIVE CRUISE WITH BRAKING ACB

Adaptive Cruise with Braking (ACB) is a cruise control that not only maintains the set speed, but will also intervene, as needed, to help the driver maintain a set following distance behind a detected forward vehicle by reducing speed as necessary. As soon as the forward vehicle is at a safe distance, the coach will resume to the cruise set speed.

NOTE

The following paragraphs briefly sum up the information concerning the operation and function of the ACB. Before driving the vehicle, be certain that you have read and that you fully understand each step of the driving and handling information found in Bendix Wingman Fusion Operator's Manual BW2681. The driver should fully understand all the audible alerts and visual indicators that the system provides. Bendix Wingman Fusion Operator's Manual BW2681 (available on Prevost web site).



WARNING

Even with ACB, the driver must remain alert, react appropriately and in a timely manner, and use good driving practices. The ultimate responsibility for the safe operation of the vehicle remains with the driver at all times.

Be certain that you have read all safety warnings found in Bendix Wingman Fusion Operator's Manual BW2681.

The driver will benefit all the audible and visual warnings that the system provides whether or not ACB is turned on. In addition to the audible and visual warnings, when the ACB is turned on and a **cruise speed is set**, the driver benefits from active interventions like engine throttle reduction, engine brake application and service brake application **to help maintain a set following distance**.



WARNING

Adaptive Cruise with Braking must be used only in the same conditions that are normally recommended for ordinary cruise control.

ACTIVATING THE ACB

Activation of the Adaptive Cruise with Braking is similar to the regular cruise control activation. Press the ON/OFF cruise control button (CC) on the steering wheel keypad, the ACB "ON" status pictogram will appear in the DID.

4-58 Controls and Instruments



FIGURE 43: CRUISE CONTROL BUTTONS

- (1) ON/OFF cruise control toggle (CC button).
- (2) Cancel / Resume set speed.
- (3) Increase speed (rocker type button).
- (4) Set. Select current speed as set speed (push functionality).
- (5) Decrease speed (rocker type button).

Accelerate the vehicle to the desired cruising speed and then, press the SET button on the keypad. The ACB "ON" with set speed confirmation status pictogram will appear in the DID.

ACB is now engaged with the set following distance and driver warning features. Whenever the cruise control is engaged, the ACB is also engaged. You cannot engage the cruise control alone, without engaging the ACB features.



FIGURE 44: ACB "ON" STATUS PICTOGRAM (WHITE)



FIGURE 45: ACB "ON" WITH SET SPEED CONFIRMATION STATUS PICTOGRAM (GREEN)

TURNING OFF THE ACB SYSTEM

You can deactivate the ACB system by pressing the ON/OFF cruise control button (CC) on the steering wheel left-hand keypad. Also, you can interrupt the ACB simply by applying service brakes or pressing the cruise control CANCEL button on the steering wheel keypad.

NOTE

Whenever the service brake is applied by intervention of the ACB or by the driver, normal cruise will automatically be canceled. The driver must resume or set the cruise mode in order for the vehicle to throttle up.

MAINTAINING A SET FOLLOWING DISTANCE

Using a radar sensor mounted to the front bumper, the ACB system measures the distance between the coach and the forward vehicle and intervenes to help maintain a safe set following distance behind the vehicle. This feature engages automatically once the driver turns on the ACB and sets cruise speed.

Following distance refers to the time gap, measured in seconds, between the coach and the vehicle ahead. The actual physical distance between the coach and the vehicle ahead will vary based on your set cruise speed; although the set time gap remains the same for all set cruise speeds. Prevost's default set time gap is 1.7 seconds.

With cruise control engaged and a cruise speed set, you are maintaining a set following distance behind the vehicle in front of you (the system DOES NOT respond to side-to-side moving traffic or oncoming traffic.).

If the vehicle in front of the coach slows down below your cruise control set speed, the system will progressively intervene as follows, in this order:

1. Reduce the engine throttle;
2. Apply the engine brake;
3. Apply about 30% of the service brakes available braking power in an attempt to maintain the set following distance.

The driver must apply additional braking power when required, to avoid collision or to maintain a safe distance from the vehicle ahead.

NOTE

If the ACB is actively decelerating or braking the coach in an attempt to maintain the set following distance at the moment when the driver cancels the ACB system, the ACB system will continue deceleration or braking intervention until a safe following distance is established, then will cancel.

Even though the cruise control doesn't operate at speeds below 30 mph (50 km/h), the ACB system will continue deceleration or braking intervention in an attempt to maintain the set following distance if the coach speed reduces to less than 30 mph (50 km/h).

If the vehicle ahead slows below your cruise control's set speed, but then accelerates away, and the ACB system did not need to use the service brakes as it managed the intervention, the coach will automatically accelerate back to the original cruise control set speed, and again maintain a set following distance behind the forward vehicle.

NOTE

The maximum radar range is approximately 500 feet (150 meters). Rain, snow, fog, ice and other severe weather conditions may affect the performance of the ACB system and shorten radar range.

As part of your pre-trip vehicle inspection, check to see that there is no mud, snow, ice build-up or other obstruction in front of the radar sensor. You should inspect the radar sensor mounting and remove any obstruction that may impair the sensor functioning.

DRIVER WARNINGS AND SYSTEM STATUS

Before using the ACB, the driver should fully understand all the audible and visual warnings that the system provides. Any audible warning (beeping or tone) means that your vehicle is too close to the vehicle ahead.

4-60 Controls and Instruments

Forward Vehicle Detected

When ACB is turned on and a valid cruise speed is set, if the forward vehicle is detected (in range) by the radar, the FORWARD VEHICLE DETECTED status pictogram will appear in the DID. This is an indication to the driver that the forward vehicle is being tracked, that the ACB is actively managing the distance between the coach and the vehicle ahead and that the ACB system may automatically intervene to maintain the set following distance.



FIGURE 46: FORWARD VEHICLE DETECTED STATUS PICTOGRAM (WHITE)

There are two conditions with the FORWARD VEHICLE DETECTED status pictogram.

FORWARD VEHICLE DETECTED pictogram	COLOR	DESCRIPTION
	white	The forward vehicle is detected (in range)
	red strike on white	Missing/error state. Fault with target acquisition

Speedometer Leds

With the cruise control engaged and a cruise speed set, a green LED illuminates above the cruise control set speed on the speedometer.

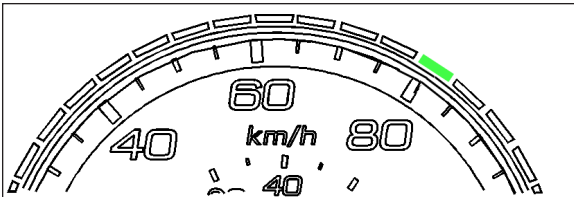


FIGURE 47: THE CRUISE SET SPEED IS 80 KM/H

With a cruise speed set, the vehicle ahead slows moderately. The system will display to the driver the approximate speed of the vehicle ahead with yellow LEDs above the speedometer.

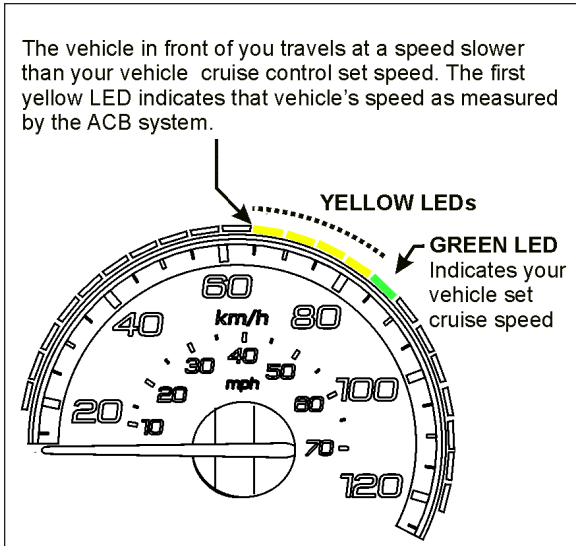


FIGURE 48: EXAMPLE OF THE SPEEDOMETER LED DISPLAY WHEN THE FORWARD VEHICLE IS SLOWER WHILE THE COACH TRAVELS WITH THE ACB CRUISE CONTROL ON AND SET

FOLLOWING DISTANCE ALERT (FDA)

Following Distance Alert is always active whenever the coach is moving to a speed greater than 5 mph (8 km/h), whether or not ACB is turned on.



FIGURE 49: FOLLOWING DISTANCE ALERT WARNING POP-UP

Following Distance Alert provides both audible and visual warnings whenever the distance between the coach and the forward vehicle is less than the set distance and getting closer. **Once the audible warning is given, the driver must increase the distance between the coach and the vehicle ahead until the audible warning stops or maneuver clear of the forward vehicle.**



WARNING

Active interventions of ACB to maintain safe following distance (throttle reduction, engine brake application, service brakes application) are only operational when the ACB is engaged with a cruise speed set.

IMPACT ALERT

Impact Alert is always operational when the vehicle is moving above 15 mph (24 km/h) whether or not ACB is turned on.

4-62 Controls and Instruments



FIGURE 50: WARNING POP-UP OF THE IMPACT ALERT


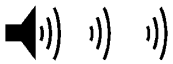
The Impact Alert is the most severe warning issued by the ACB system. This alert indicates that the driver must take immediate evasive action by applying more braking power and/or steering clear of the vehicle ahead to potentially avoid or lessen the severity of a collision. **Collision Mitigation Braking CMB** applies vehicle braking to help avoid or lessen the severity of a collision with a forward vehicle.



WARNING

Active interventions of ACB to maintain safe following distance (throttle reduction, engine brake/retarder application, service brake application) are only operational when the ACB is engaged with a cruise speed set.

FOLLOWING DISTANCE ALERT

CONDITION	The Following DISTANCE ALERT feature is only available when the coach speed is greater than 5 mph (8 km/h), whether or not ACB is engaged.	
SITUATION	The forward vehicle is slowing down and the distance between your vehicle (the coach) and the forward vehicle is less than the set distance.	
ACTIONS BY ACB SYSTEM	DISTANCE ALERT warning pop-up appears on the DID	
	If the vehicles remain too close from each other, an audible warning will sound	

IMPACT ALERT

SITUATION	ACB system detects a risk of collision with a forward-moving vehicle in your lane of travel.
-----------	----------------------------------------------------------------------------------------------

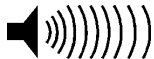
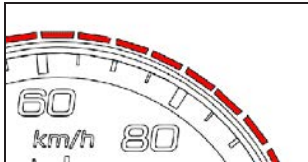
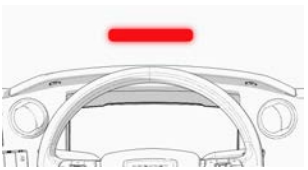
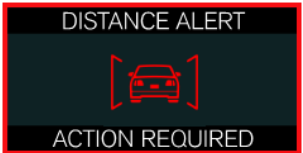
ACTIONS BY ACB SYSTEM

IMPACT ALERT warning pop-up appears on the DID

A flashing visual forward collision warning is projected by the HUD into the driver's forward line of sight in the windshield.

The speedometer LEDs illuminate in red

An audible warning will sound



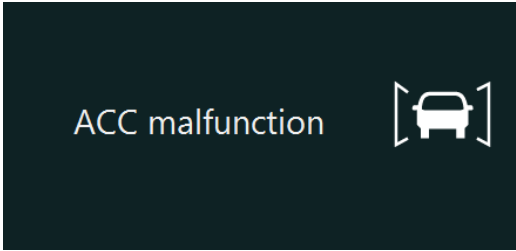
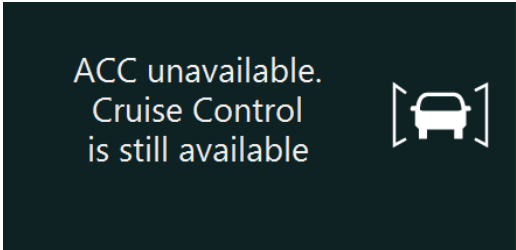
SYSTEM MALFUNCTION

In case of system malfunction, visual warnings will appear in the driver information display (DID) to warn the driver that the ACB is disabled. In that situation, the Impact Alert and Distance Alert functions are not available.

If the ACB is not available, the FORWARD VEHICLE DETECTED- MISSING/ERROR STATE status pictogram may appear and "ACB UNAVAILABLE" pop-up message may appear in the DID.



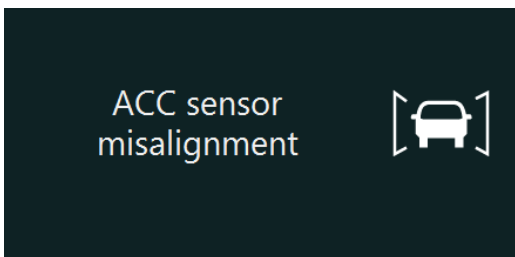
FORWARD VEHICLE DETECTED - MISSING/ERROR STATE pictogram



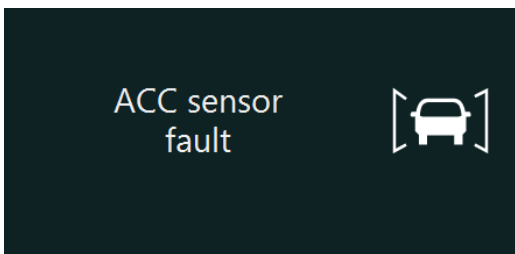
For the proper functioning of the system, the radar must be perfectly aligned and not blocked. If a radar fault condition is detected, one of the following pop-up messages will show in the DID.

4-64 Controls and Instruments

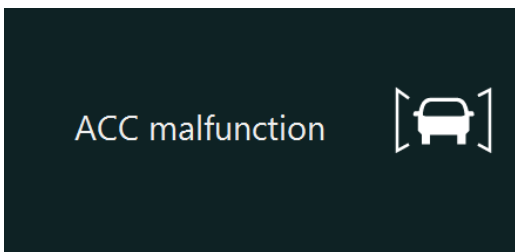
ACB SENSOR (RADAR) MISALIGNMENT



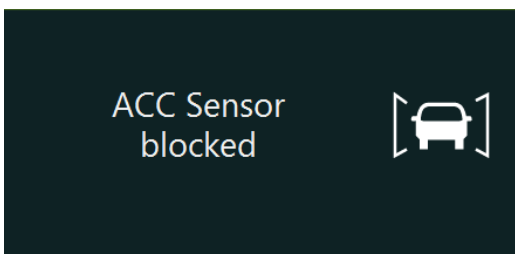
ACB SENSOR (RADAR) FAULT



ACB DATA LINK FAILURE



ACB SENSOR (RADAR) BLOCKED



WHAT TO EXPECT WHEN USING THE PREVOST DRIVER ASSIST™ SYSTEM

PART 1 All driving scenarios (cruise control is either ON or OFF)		
What to Expect		
Situation	Typical system indication/alerts	Typical system actions/cautions
Stationary objects/vehicles ahead in your lane of travel		
A stationary (non-vehicle) object is present ahead in the lane in which the coach is traveling.	none	The driver must immediately act to potentially avoid, or lessen the severity of, a collision.
A stationary motor vehicle is detected ahead in your lane. <i>Factors that can potentially affect the system's ability to identify a vehicle include: if the vehicle is not a licensed motorized vehicle; or certain types of trailers.</i>	none	The driver must immediately act to potentially avoid, or lessen the severity of, a collision. If a collision is likely to occur.
Moving objects/vehicles ahead in your lane of travel		
Your vehicle comes up fast behind a slower-moving detected forward vehicle.	The Following Distance Alert (FDA) will sound and a visual message typically appears on the DID. Depending on how close your vehicle approaches, the system may initiate a Following Distance Alert - Action Required warning.	None. You must respond as needed.
The detected forward vehicle slows rapidly.	The Following Distance Alert (FDA), or Following Distance Alert - Action Required warning will sound and a visual message typically appears on the DID.	You must respond as needed. If a collision is likely to occur, the collision mitigation feature will apply your vehicle's brakes.
A pedestrian, deer, or dog runs in front of your vehicle, or any organic or non-metallic object is in front of your vehicle.	None	None. You must respond as needed.
Another vehicle crosses the road perpendicular to your path of travel – such as intersections.	None	None. You must respond as needed.
A collision mitigation braking event has begun and you, as the driver, steers into an adjacent lane to avoid the forward vehicle.	None	Prevost Driver Assist™ system will continue to apply the brakes if it detects another vehicle ahead in the new traffic lane posing a threat.
Lane Departure Warning System Active (LDW pictogram being displayed)		
Your vehicle signals a lane change and crosses a lane marking.	None	None

4-66 Controls and Instruments

Traveling below 37 mph (60 km/h), your vehicle crosses a lane marker (without the corresponding turn signal activated).	None	None. You must respond as needed.
Traveling above 37 mph (60 km/h), your vehicle departs your lane of travel without the corresponding turn signal activated.	Visual and audible warnings	None. You must respond as needed. (use the turn signal when changing lanes and/or keep your vehicle within the lane markings).
PART 2 ACB cruise control is ON and speed is SET		
What to Expect		
Situation	Typical system indication/alerts	Typical system actions/cautions
Interactions with vehicles ahead in your lane of travel		
With no detected forward vehicle.	None	Your vehicle maintains the set speed.
With a detected forward vehicle.	The ACB "ON" and the forward vehicle detected status pictograms are displayed in the DID.	The Adaptive Cruise with Braking feature will maintain the set speed and following distance.
The detected forward vehicle slows moderately.	The Following Distance Alert (FDA) will sound and a visual message typically appears on the DID.	You must respond as needed. If the system intervenes, the vehicle throttle will be reduced; the engine retarder engaged; and the service brakes applied, in that order to maintain the set following distance. <i>NOTE: When the ACB applies the service brakes, cruise control will automatically pause, and will cancel if vehicle speed falls below the minimum set speed or the driver manually depresses the brake pedal.</i>

<p>The detected forward vehicle slows rapidly.</p>	<p>The Following Distance Alert - Action Required warning will sound and a visual message typically appears on the DID.</p>	<p>You must respond as needed.</p> <p>If the system intervenes, the vehicle throttle will be reduced; the engine retarder engaged; and the foundation brakes applied, in that order to maintain the set following distance.</p> <p><i>NOTE: When the ACB applies the foundation brakes, cruise control will automatically pause, and will cancel if vehicle speed falls below the minimum set speed or the driver manually depresses the brake pedal.</i></p>
<p>A detected forward vehicle cuts in front of your vehicle and speeds away.</p>	<p>Following Distance Alerts (FDAs) may be given to you, depending on the exact system configuration that has been set for the vehicle, and how close the vehicle cuts in front.</p>	<p>You must respond as needed.</p> <p>The system may intervene to maintain the set following distance.</p>
<p>Downhill Grades</p>		
<p>Going down a grade with a detected forward vehicle.</p>	<p>DO NOT USE cruise control on downhill grades.</p>	<p>DO NOT USE cruise control on downhill grades. Brake overuse may occur.</p>
<p>Cruise control should NOT be used on downhill grades.</p>		



WARNING

The section preceding shows examples of situations and typical Prevost Driver Assist™ system responses. However, the chart does not attempt to cover all possible situations.

Due to the inherent limitations of radar and camera technology, the enhanced Collision Mitigation Technology – on rare occasions – may not detect moving vehicles or stationary vehicles in your vehicle’s lane of travel. Alerts, warnings, or brake interventions may not occur.

Due to the inherent limitations of radar and camera technology, the enhanced Collision Mitigation Technology – on rare occasions – may react to moving vehicles not in your vehicle’s lane of travel. Alerts, warnings, or brake interventions may occur.

HOW YOUR ACTIONS IMPACT THE PREVOST DRIVER ASSIST™ SYSTEM

Your Action	Reactions of the Prevost Driver Assist™ system
<p>If you, the driver, do this:</p>	<p>Expect the Prevost Driver Assist™ system to do this:</p>
<p>Step on the brake (during a collision mitigation event).</p>	<p>As the driver, you are always in control and are able to apply full braking power.</p>
<p>Step aggressively on the accelerator (during a collision mitigation event).</p>	<p>As the driver, you are always in control. Your actions override any Prevost Driver Assist™ system actions. NOTE: If cruise control is engaged, it will be overridden until the accelerator is released; then cruise control will resume the original set speed automatically.</p>

4-68 Controls and Instruments

Your Action	Reactions of the Prevost Driver Assist™ system
If you, the driver, do this:	Expect the Prevost Driver Assist™ system to do this:
Step on the brake (when in cruise).	Cruise control will be canceled.
Step on the accelerator (when in cruise).	Cruise control will be overridden until the accelerator is released; then cruise control will resume the original set speed automatically.
Switch ON the cruise control.	Nothing. The Active Cruise with Braking (braking to maintain a set following distance) feature will not engage until the driver sets the cruise control speed.
Switch OFF the cruise control.	The Active Cruise with Braking feature will turn off; the collision mitigation feature remains active and ready to intervene. You, the driver, will continue to hear all alerts as needed.
Set the cruise control speed.	The Active Cruise with Braking feature is automatically activated, and your vehicle maintains set speed and following distance behind the vehicle ahead in your lane of travel.
Cover or block the radar or camera.	<p>The Prevost Driver Assist™ system performance will be diminished, or disabled, when either the radar or the camera becomes blocked. An alert will be issued to alert the driver to indicate this condition.</p> <p>Radar:</p> <p>Radar blocked will be indicated through an alert and will disable the radar-based functions as follows:</p> <ul style="list-style-type: none"> - Loss of forward-moving vehicle braking; - Loss of ACB. The camera based function LDW will remain. <p>Camera:</p> <p>Camera blocked will be indicated through an alert and will disable all camera-based functions as follows:</p> <ul style="list-style-type: none"> - Reduced braking performance on moving vehicle (speed reduction 15 mph / 24 km/h maximum); - Loss of LDW. <p>The radar-based function ACB will remain.</p>
Use normal cruise control “+/-” switch.	Vehicle speed increased (+) or reduced (-) to achieve the new set speed while actively maintaining the following distance with the vehicle ahead, if one is present within 500 feet / 152 meters.

BACK-UP CAMERA AND MONITOR

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

The monitor is mounted on the windshield L.H. side pillar and switches ON automatically when the transmission is in the reverse (R) range.

4-70 Controls and Instruments

SIDE CAMERA REAR-VIEW MONITORS

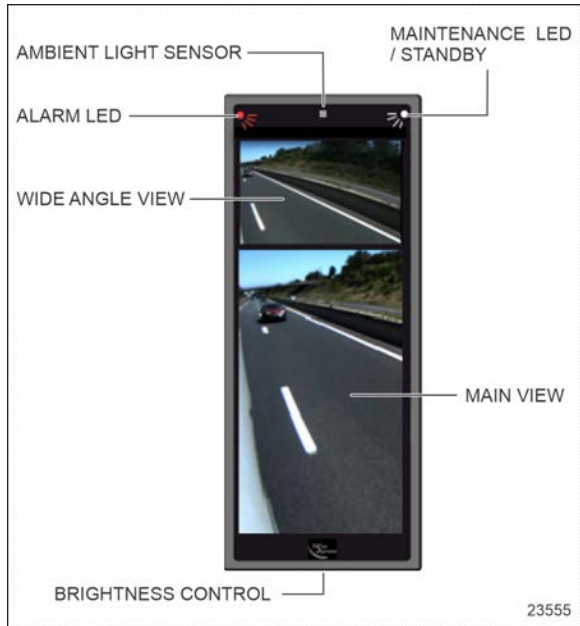


FIGURE 51: MONITOR



CAUTION

Do not cover the cooling vents on the back of the monitor.

REFERENCE LINES

Upon activation of the turn signals, three reference lines appear on the main view of the corresponding monitor (see image below). When in reverse, two reference lines (yellow & red) are displayed on both monitor.



CAUTION

The position of the reference lines is approximate and may differ by a few feet from the actual distance. The driver always remains responsible to ensure a safe distance during maneuvers.

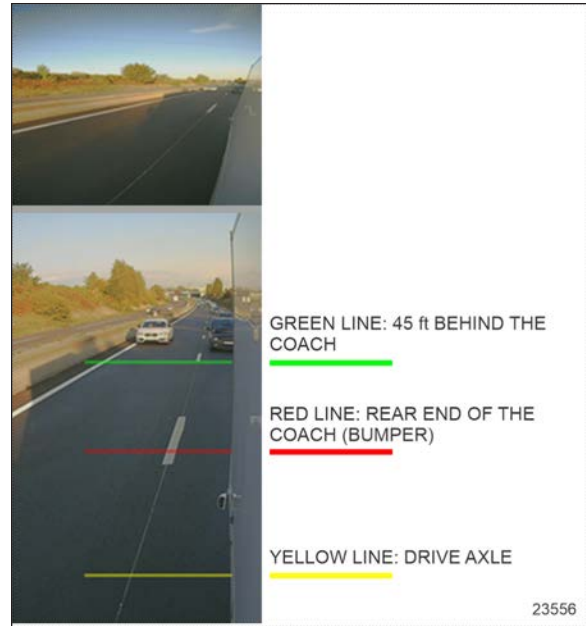


FIGURE 52: REFERENCE LINES IN MONITOR

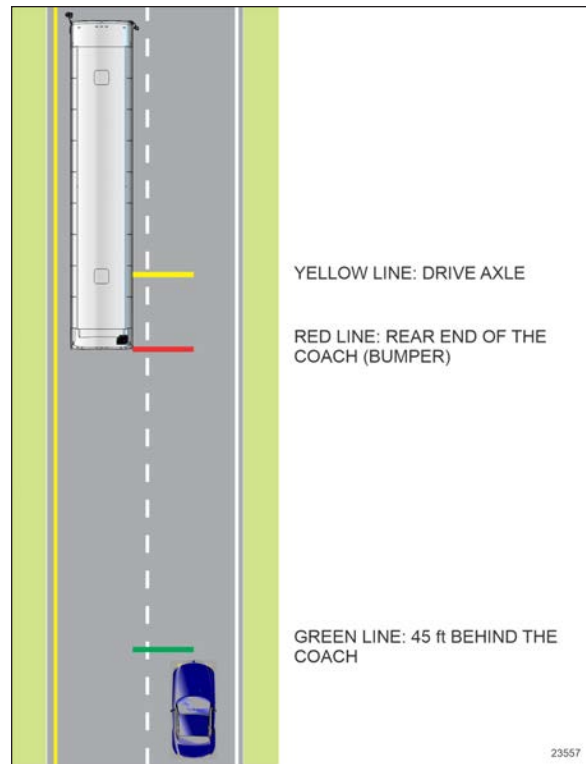


FIGURE 53: REFERENCE LINES


BRIGHTNESS ADJUSTMENT

Each monitor switches automatically and independently between night mode and day mode depending on the actual ambient light. However, the driver can adjust the brightness with the brightness control at the bottom of the

monitor. This manual adjustment will change the brightness of both monitor at the same time.

MONITOR STATE

<p>SYSTEM BOOT</p> 	<p>NORMAL OPERATION</p> 
<p>SLEEP MODE</p> <p>blinking</p> 	<p>MINOR ISSUE</p> <p>blinking</p> 

<p>WIDE-ANGLE VIEW NOT AVAILABLE</p> <p>blinking</p> 	<p>MAIN VIEW NOT AVAILABLE</p> <p>steady</p> 
<p>MAJOR ISSUE</p> <p>blinking</p> 	<p>NOT POWERED</p> 

ALLISON 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 5th & 6th Generation Operator's Manual 3000_4000 Series* available on the Prevost Technical Publications site.

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 lights on the dashboard.

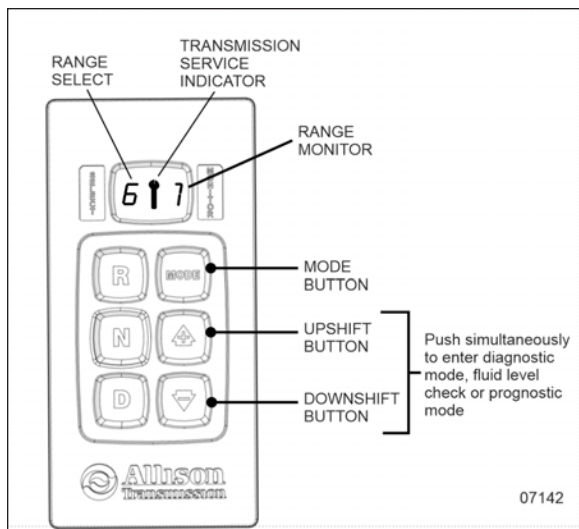


FIGURE 54: ALLISON PUSHBUTTON SHIFT SELECTOR

PUSHBUTTON SHIFT SELECTOR

The pushbutton shift selector has the following elements:

R: Press to select Reverse gear.

N: Press to select Neutral.

D: Press 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.

↑ ↓ : 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: Pressing the MODE button allows the driver to activate the secondary shift schedule that has been programmed into the TCM unit.

PRIMARY AND SECONDARY SHIFT SCHEDULES

The primary shift schedule is the default mode at starting of the engine and is typically specified to accommodate normal vehicle operation. The transmission controller automatically selects between ECONOMY and PERFORMANCE shift strategy, based on the vehicle actual load and the grade on which the vehicle is operating. This is called Load Based Shift Scheduling (LBSS). This can produce improved overall vehicle fuel economy while still enabling high productivity when the vehicle is loaded.

In the secondary shift schedule, only the ECONOMY shift strategy is available. No switching is done between shift strategies. The secondary shift mode is available only if selected by the driver, using the MODE button. When the secondary mode is activated, "MODE" illuminates on the display.

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.

TRANSMISSION SERVICE INDICATOR

I: 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 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 the engine. Select «N» (Neutral) when checking vehicle accessories and for extended periods of engine idle operation; parking brake must then be applied. The pushbutton shift selector automatically selects «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.



WARNING

Before leaving the driver's seat, always put the transmission in NEUTRAL and apply parking brake.



WARNING

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 downshift for a period of time or until normal wheel speed has been restored.

NOTE

IMPORTANT: 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

74 - Controls and Instruments -

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 brakes should not be used to control the speed of the vehicle on long, steep descents. Instead, lower transmission ranges should be used in conjunction with the output retarder.



CAUTION

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

TOWING RECOMMENDATIONS



CAUTION

When towing the vehicle, the transmission output shaft must not be allowed to spin or turn. If the vehicle is towed with the drive wheels still in contact with the road surface, the vehicle axle shafts or driveline must be removed or disconnected. Do not attempt to push or pull-start the vehicle.

Failure to disconnect the driveshaft, remove the drive axle shafts or lift the drive wheels off the ground before towing will cause serious damage to transmission.

Non-compliance with the above requirements will void the warranty.



CAUTION

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.

SECTION 5 - OTHER FEATURES

EXHAUST AFTERTREATMENT SYSTEM	3
FILTRATION AND REGENERATION UNIT	3
PASSIVE REGENERATION	3
ACTIVE REGENERATION	3
STATIONARY (PARKED) REGENERATION	3
DEF CLOGGING SEQUENCE – INSTRUMENT CLUSTER TELLTALE LIGHT	4
SELECTIVE CATALYTIC REDUCTION UNIT	5
DRIVER WARNING AND INDUCEMENT MEASURES	7
INTELLIGENT SLEEP MODE (ISM)	11
TRANSMISSION RETARDER (OPTION)	11
ENGINE BRAKE	11
VOLVO ENGINE BRAKE (VEB)	12
ABS, TRACTION CONTROL SYSTEM (TCS) & ELECTRONIC STABILITY CONTROL (ESC)	12
ANTILOCK BRAKING SYSTEM (ABS)	12
TRACTION CONTROL SYSTEM (TCS)	13
ELECTRONIC STABILITY CONTROL (OPTION)	13
KNEELING SYSTEM	14
HIGH-BUOY	14
LOW-BUOY	14
AUTOMATIC TAG UNLOAD	15
MANUAL UNLOAD	15
AUTOMATIC MODE	15
LOAD & LOCK	15
PREHEATER	15
SWITCHING THE HEATER ON	15
SWITCHING THE HEATER OFF	16
COOLANT HEATER TIMER	16
PREHEATER TROUBLESHOOTING AND MAINTENANCE	18
WHEELCHAIR LIFT SYSTEM	19
INTRODUCTION	19
OVERVIEW	19
GENERAL SAFETY PRECAUTIONS	21
OPERATING INSTRUCTIONS	21
MANUAL LIFT OPERATION	28
SEATS RECONFIGURATION	33
WHEELCHAIR RESTRAINT SYSTEMS	34
4-POINT SECUREMENT WITH FLOOR ANCHORAGE	34
4-POINT SECUREMENT WITH ANCHORAGE TO PASSENGERS SEAT PEDESTALS	35

5-2 Other Features

WHEELCHAIR LIFT SYSTEM - THRESHOLD WARNING SYSTEM (TWS) ADJUSTMENT	36
ADJUST AIMING OF ACOUSTIC SENSOR BEAM	36
TEST AIM OF ACOUSTIC SENSOR BEAM (WHEELCHAIR ACCESS)	37
ADJUST ACOUSTIC SENSOR TIMING	37
WCL CASSETTE INSTALLATION AND REMOVAL	37

EXHAUST AFTERTREATMENT SYSTEM

The exhaust aftertreatment system consists of two units, the filtration and regeneration unit and the selective catalytic reduction SCR unit.

FILTRATION AND REGENERATION UNIT

The main purpose of the filtration and regeneration unit is to capture and oxidize (regenerate) the particulate matter (soot) in the engine exhaust gas. The exhaust gas first enters the Diesel Oxidation Catalyst (DOC) and then flow through the Diesel Particulate Filter (DPF); together they capture and regenerate the soot on a regular or passive basis. Through constant monitoring of the exhaust gas temperature and the system back pressure, the engine control module is able to manage regeneration.

PASSIVE REGENERATION

Passive regeneration is the process by which the particulate matter is oxidized due to the heat generated by the engine internal combustion process. During normal highway operation, exhaust temperatures alone are usually high enough to oxidize accumulating soot. In low ambient temperatures, however, or in some stop-and-go applications, the system needs a little help to regenerate, or clean itself. This process is called “active” regeneration.

ACTIVE REGENERATION

Active regeneration is necessary when the engine internal combustion process alone does not generate enough heat. A dosing system injects a mist of diesel fuel into the exhaust system to increase and maintain the aftertreatment system temperature. Exhaust temperature must be above 572°F (300°C) to initiate the oxidation catalyst, which in turn oxidizes the injected diesel fuel molecules to achieve up to 1200°F (650°C) exhaust temperature at the particulate filter. This process of active regeneration takes place during the normal operation cycle of the vehicle without charges in performance or control for the operator. EPA2010 compliant and later Volvo engines produce less soot, so less active or stationary regeneration will be required.








STATIONARY (PARKED) REGENERATION

In a small number of specific engine duty cycles, engine control module may not be capable of completing an active regeneration. In these situations, the operator will be notified that a stationary or parked regeneration may be required. A DPF telltale light will illuminate indicating the need for user interaction. The lamp gives the operator a grace period to allow this process to take place at a time when most convenient for the operator. This process requires the vehicle to be parked while a driver or maintenance technician initiates the regeneration process using the DID menus. Once initiated, the stationary regeneration process will be complete in about 45 minutes.

The driver will be notified of the need for a stationary regeneration (parked) by illumination of the DPF Regeneration telltale light.

5-4 Other Features

DEF CLOGGING SEQUENCE – INSTRUMENT CLUSTER TELLTALE LIGHT

LEVEL 1	 solid	<p>REGENERATION NEEDED</p> <p>Diesel particulate filter is becoming full</p> <p>The DPF Regeneration telltale light illuminates to notify the driver that a stationary regeneration (parked) will be required soon. When this lamp is lit, initiate stationary regeneration process at an appropriate time of day. THERE IS NO URGENCY AT THIS LEVEL.</p>
LEVEL 2	 flashing	<p>REGENERATION REQUIRED</p> <p>Diesel particulate filter full</p> <p>If no DPF regeneration occurs after the initial DPF Regeneration telltale light illumination, the lamp will begin blinking and a stationary regeneration should be initiated as soon as possible in order to prevent Level 3.</p>
LEVEL 3	 flashing + 	<p>ATD SERVICE REQUIRED</p> <p>ENGINE DERATE ACTIVE</p> <p>Diesel particulate filter overfull</p> <p>If the flashing DPF Regeneration telltale light is still ignored, the CHECK telltale light will illuminate. In that situation, engine performance is limited. Perform a parked regeneration IMMEDIATELY to avoid further derate and prevent Level 4.</p>
LEVEL 4	 flashing +  + 	<p>ATD SERVICE REQUIRED</p> <p>ENGINE SHUTDOWN ACTIVE</p> <p>A serious engine problem has occurred. The DPF may be over its maximum capacity.</p> <p>If a stationary regeneration is still not initiated, a standard Engine Protection Shutdown sequence will occur. All of the following dashboard lamps will be present:</p> <ul style="list-style-type: none"> • Blinking DPF Regeneration telltale light; • Solid CHECK telltale light; • Solid STOP telltale light. <p>Once engine derate and/or shutdown sequence is completed, a stationary regeneration must occur to continue vehicle operation. If the driver continues to operate the vehicle without regeneration, additional measures will be taken to protect the engine and ATD from damage, up to and including engine shutdown. Parked regeneration might no longer be possible.</p> <p>If engine protection has been initiated and forces the engine to shutdown, you can immediately RE-START the engine and perform the necessary steps in order to initiate a stationary regeneration.</p> <p style="text-align: center;"><u>Find and solve the cause of the shutdown</u></p>

Initiating A Stationary (Parked) Regeneration

NOTE

At the starting of the engine, if a stationary regeneration is required, the engine coolant temperature must reach 140°F (60°C) before any stationary regeneration may be initiated and completed. Permit the engine to idle for a short while or drive the vehicle until engine temperature increases sufficiently.



WARNING

Do not initiate a stationary regeneration in a closed area like a garage. Stationary regenerations must be undertaken outdoors only.



WARNING

During stationary regeneration, exhaust temperature may reach up to 1200°F (650°C) at the particulate filter. Before initiating stationary regeneration, make sure that the DPF outlet diffuser is clear of objects and that no one is working near the DPF outlet diffuser.



WARNING

Hot surfaces. Keep yourself clear of all hot Aftertreatment Device components, particularly during and after active or stationary regeneration. Hot surfaces can cause serious burns.

NOTE

STATIONARY REGENERATION

This process requires the vehicle to be parked while the driver or a maintenance technician initiates the regeneration process.

The DPF Regeneration telltale light illuminates to notify the driver of the need and urgency of a manual stationary regeneration.



DPF REGENERATION telltale light

If stationary regeneration is not performed, this telltale light will blink, indicating that a stationary regeneration is required immediately. If stationary regeneration is still not performed, “engine power derate and shutdown” sequence may occur as per level 1 to level 4 sequence.

To initiate a stationary regeneration:

- Park the vehicle in a clear area, vehicle speed must be 0 mph (0 km/h);
- Engine must be on normal idle and fully warmed up (coolant temperature above 140°F/60°C);
- Apply parking brakes and set the transmission to neutral (N).
- Press the DID ENTER button and then get to the DID Aftertreatment menu. Select sub-menu Request Parked REGEN and press ENTER button to confirm and initiate regeneration.

The regeneration will begin. Turn off the air conditioning to reduce engine load. The engine idling speed will increase to 1600 rpm. Once the regeneration is completed, the engine speed will return to normal idle.

Voluntary Interruption Of A Stationary Regeneration

It is possible to interrupt a stationary regeneration at all times. To do so, get to the DID's Aftertreatment menu, select Cancel REGEN and press ENTER button to confirm. You can stop regeneration simply by releasing the parking brake. Use this procedure in order to move the vehicle in a safe area only.

If regeneration is interrupted, it is very important to reinitiate the regeneration as soon as possible.



CAUTION

If an active regeneration is stopped repeatedly, the vehicle may need to be taken to a service facility. The service facility will use a service tool to manually initiate the regeneration. Moreover, the interruption of active regeneration should not be considered as a normal practice. Some components of the aftertreatment system might be damaged in the long term.

SELECTIVE CATALYTIC REDUCTION UNIT

Selective Catalytic Reduction (SCR) is a technology that uses Diesel Exhaust Fluid (DEF) and a catalytic converter to reduce nitrogen oxides (NOx) emissions.

5-6 Other Features

SCR is an exhaust aftertreatment system that injects a small amount of DEF into the exhaust gas between the DPF and the selective reduction catalytic converter. DEF turns to ammonia and carbon dioxide when heated. The exhaust stream then passes over a catalyst, the ammonia reacts with the NOx to form nitrogen and water vapor.

The basic elements of the SCR system consist of a 15.9 gallons (60 liters) DEF tank complete with pump, lines and heating system, a dosing injector, a catalytic converter and the control and monitoring system.

Diesel Exhaust Fluid (DEF)

When handling DEF solution, keep electrical connectors properly connected or well capped, otherwise there is a risk that the DEF will cause oxidation that cannot be removed. Water or compressed air will not help, since DEF quickly oxidizes certain metals. If a disconnected connector comes into contact with the DEF solution, it must be replaced immediately to prevent the DEF solution from creeping further into the copper wiring, which takes place at a speed of about 2.4 in (60 mm) per hour.



CAUTION

Diesel Exhaust Fluid (DEF) is a nontoxic aqueous solution of urea (32.5%) and ultra-pure water (67.5%). Urea is a compound of nitrogen that turns to ammonia when heated. The fluid is non-flammable, and is not dangerous when handled as recommended. However, it is highly corrosive to certain metals, especially copper and brass.

When detaching hoses and components, do not spill DEF on disconnected or unsealed connectors. If DEF is spilled on a disconnected or unsealed connector, the connector must be removed immediately and replaced.

Things to know about spilled diesel exhaust fluid (DEF):

- If urea solution comes into contact with the skin, rinse with plenty of water and remove contaminated clothing.
- If urea solution comes into contact with the eyes rinse for several minutes and call for medical help if necessary.
- If inhaled breathe fresh air and call for medical help if necessary.
- Do not allow the DEF solution to come into contact with other chemicals.
- The DEF solution is not flammable. If the DEF solution is exposed to high temperatures, it breaks down into ammonia and carbon dioxide.
- The DEF solution is highly corrosive to certain metals, including copper and aluminum.
- If the DEF solution is spilled onto the vehicle, wipe off the excess and rinse with water. Spilled DEF solution can form concentrated white crystals on the vehicle. Rinse off these crystals with water.



CAUTION

DEF freezing and expansion

DEF will begin to crystallize and freeze at 12°F (-11°C). DEF expands by approximately 7% when frozen. During freezing weather, do not store a DEF container on the coach unless it is designed to allow for expansion.

Make sure the DEF container is not completely full. DEF expansion may split an inappropriate container, causing a spill and corrosion as a result.



WARNING

DEF spilled onto hot components will quickly vaporize. Turn your face away!

Diesel Exhaust Fluid Consumption

DEF consumption is related to fuel consumption. In order to meet EPA requirements, DEF tanks are sized so one refill will be necessary for every two refills of the fuel tank.

DRIVER WARNING AND INDUCEMENT MEASURES

Auxiliary Emission Control Device (EACD) defines as any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.









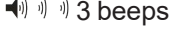



Disconnection of the following EACD produces immediate activation of the Malfunction Indicator Lamp MIL and **25% engine derate** after three (3) hours of a continuous open circuit condition.









- Intake throttle position sensor
- Ambient air temperature sensor
- Vehicle speed
- Engine oil pressure sensor
- Exhaust back pressure sensor
- Camshaft speed sensor
- EGR delta pressure
- Fuel rail pressure
- Engine timing sensor
- Engine coolant temperature
- EGR temperature sensor

Exhaust Aftertreatment System (EATS) components must not be removed, altered or modified in any way. In order to protect the emission control system from tampering, inducement measures will occur if the following states are detected:









- Disconnection of DEF tank level sensor
- Blocked DEF line or dosing valve
- Disconnection of DEF dosing valve
- Disconnection of DEF pump
- Disconnection of SCR wiring harness
- Disconnection of NOx sensor
- Disconnected exhaust temperature sensor
- Disconnected DEF temperature sensor
- Disconnected DEF quality sensor

5-8 Other Features

DEF TANK LEVEL - DRIVER WARNINGS AND INDUCEMENTS				
Conditions / Triggers		DEF Tank LOW LEVEL Indicator, DID Message and audible warning		Inducement
1	Normal DEF tank level sensor reads between 100% and 12%	None		None
2	Low DEF tank warning  DEF tank level sensor reads between 12% and 0.1%	 solid	DEF TANK LEVEL LOW REFILL DEF SOON TO PREVENT ENGINE DERATE  3 beeps	Warning message
3	DEF tank near empty  DEF tank level sensor reads less than 0.1%	 blinking	DEF TANK EMPTY REFILL DEF TO AVOID 5 MPH LIMIT ENGINE IN DERATE  3 beeps	Engine torque reduction of 25%
4	DEF tank empty and one (1) hour of operation in engine derate mode 	 blinking	DEF TANK EMPTY REFILL DEF TO AVOID 5 MPH LIMIT ENGINE IN DERATE  3 beeps	Engine torque reduction of 40%
5	DEF tank empty and either  <ol style="list-style-type: none"> Diesel fuel refueling done with a fuel level sensor reading increase of 15%, or more Vehicle stationary (speed=0) for 20 minutes with engine off or at idle 	 blinking	REFILL DEF TANK VEHICLE SPEED LIMITED TO 5 MPH (8 KM/H)  constant tone	Vehicle road speed limited (RSL) to 5 mph (8 km/h) Note: The vehicle has to be stationary before 5 mph (8 km/h) road speed limit becomes active

DEF QUALITY - DRIVER WARNING AND INDUCEMENT				
Conditions / Triggers		Amber Warning Light & DID Message And Audible Warning		Inducement
1	Good DEF quality	None		None
2	Poor DEF quality detected	 solid	POOR DEF QUALITY DETECTED SERVICE DEF SYSTEM AT NEXT STOP  3 cycles of 2 beeps	Warning message Engine will derate 25% in < 60 mins
3	Poor DEF quality detected and one (1) hour of operation with active diagnostic troubleshooting code	 solid	POOR DEF QUALITY DETECTED ENGINE IN DERATE 5 MPH (8KM/H) LIMIT IN < XXX MINS  3 cycles of 2 beeps	Engine derated 25% Engine will derate 40% in <240 mins
4	Poor DEF quality detected and four (4) hours of operation with active diagnostic troubleshooting code	 solid	SERVICE DEF 5 MPH (8KM/H) LIMIT NEXT 20MIN VEHICLE STOP  3 cycles of 2 beeps	Engine derated 40% 5 mph (8 km/h) limit after next 20 min vehicle stop
5	Poor DEF quality detected Diesel fuel refueling done with a fuel level sensor increase of 15% or more or Vehicle stationary (speed=0) for 20 minutes with engine off or at idle or Key cycle trigger	 solid	SERVICE DEF VEHICLE SPEED LIMITED TO 5 MPH (8 KM/H)  continuous cycle of 2 beeps	Service DEF Vehicle road speed limited (RSL) to 5 mph (8 km/h) Note: The vehicle has to be stationary before 5 mph (8 km/h) road speed limit becomes active

5-10 Other Features

SCR SYSTEM TAMPERING - DRIVER WARNING AND INDUCEMENT				
Conditions / Triggers		Amber Warning Light, DID Message And Audible Warning		Inducement
1	Normal No diagnostic troubleshooting code active	None		None
2	SCR system tampering diagnostic troubleshooting code confirmed	 solid	SCR SYSTEM FAULT ENGINE WILL DERATE IN < XXX MINS  constant tone	Warning message
3	Reached one (1) hour of operation with active SCR system tampering diagnostic troubleshooting code confirmed	 solid	SCR SYSTEM FAULT ENGINE IN DERATE 5 MPH (8KM/H) LIMIT IN < XXX MINS  constant tone	Engine torque reduction of 25%
4	Reached four (4) hours of operation with active SCR system tampering diagnostic troubleshooting code confirmed	 solid	SCR SYSTEM FAULT REPAIR NEEDED 5 MPH (8KM/H) LIMIT NEXT VEHICLE STOP  constant tone	Engine torque reduction of 40%
5	Diesel fuel refueling done with a fuel level sensor increase of 15% or more	 solid	SCR SYSTEM FAULT VEHICLE SPEED LIMITED TO 5 MPH (8 KM/H)  constant tone	Vehicle road speed limited (RSL) to 5 mph (8 km/h)

INTELLIGENT SLEEP MODE (ISM)

The ISM is a battery-saving mode designed to protect the battery State Of Charge (SOC). The ISM will automatically change the vehicle electrical system from normal functional state to sleep mode if the battery SOC falls below 65%.

Once the vehicle has entered into sleep mode, the only actions needed to put the vehicle back into its normal functional state are:

- To cycle the ignition key from OFF to ON;

or

- To open the entrance door;

or

- To turn on the hazard lights.

The ISM forces the vehicle to go into sleep mode if all the following conditions are met:

1. The engine is not running;
2. The parking brake is applied;
3. The ignition switch is at the ON, ACC positions or at the OFF position but the 15 minutes "wake up" period after engine shutdown is not expired;
4. The battery state of charge of 12V or 24V system falls below 65%.

The ALTERNATOR telltale will turn on 30 seconds before activation of the sleep mode.



TRANSMISSION RETARDER (OPTION)

The transmission retarder 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 transmission retarder is a vehicle-slowng device, not a vehicle-stopping device. It is not a substitute for the service braking system. The service brake must be used to bring the vehicle to a complete stop.

NOTE

Extended use will raise the temperature of the transmission fluid.

The retarder helps reduce speed on grades without using the vehicle's 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.

The retarder is provided with a control stalk on the steering column (refer to "["AUXILIARY BRAKE CONTROL STALKS"](#)" on [page 40](#)" in Section 4 Controls and instruments).



WARNING

Do not use the retarder during inclement weather or slippery road conditions.

NOTE

The stoplights automatically illuminate when the vehicle is slowing down after the application of the transmission retarder.

NOTE

For vehicles equipped with the Antilock Braking System (ABS), as the wheels start to lock up on slippery roads, the output retarder automatically deactivates until the wheels roll freely.

ENGINE BRAKE



WARNING

A vehicle speed retarding device (such as engine brake) is not intended to replace the service brake systems on your vehicle nor intended to bring your vehicle to a stop. A vehicle speed retarding device is only intended to reduce the speed of your vehicle under certain conditions.

Several types of engine brake can be installed or are standard on certain engines. All are used to reduce wear on the vehicle brake linings.

5-12 Other Features



WARNING

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

VOLVO ENGINE BRAKE (VEB)

When running in AUTO mode (position A), the engine brake is gradually applied to 100% of the braking power when the driver pushes the brake pedal. Since AUTO mode will not reduce vehicle momentum unless the brakes are applied, it will have no impact on fuel consumption.

The driver can also choose two other modes using the engine brake control stalk;

Position 1 - Engine brake LOW

Position 2 - engine brake HIGH

When set to the engine brake LOW mode, 50% of the engine brake power will be applied when the driver releases the accelerator pedal. Using engine brake HIGH will apply 100% of the braking power.

It must be noted that since engine brake LOW and engine brake HIGH will reduce vehicle speed upon release of the throttle pedal, they may negatively impact fuel consumption if used for extended periods of time.

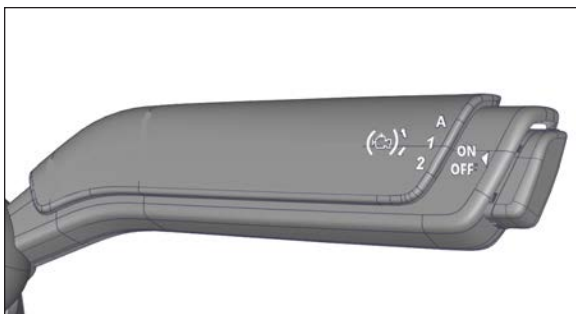


FIGURE 1: ENGINE BRAKE CONTROL STALK




DRIVER PEDALS	ENGINE BRAKE MODE	ENGINE BRAKE FORCE
ANY POSITION	OFF	0%
ACCELERATOR PEDAL RELEASED 	AUTO	0%
BRAKE PEDAL PUSHED 	AUTO	up to 100%
ACCELERATOR PEDAL RELEASED 	1	50%
	2	100%

FIGURE 2: ENGINE BRAKE FORCE APPLIED ACCORDING TO SELECTED MODE AND DRIVER PEDAL POSITION

ABS, TRACTION CONTROL SYSTEM (TCS) & ELECTRONIC STABILITY CONTROL (ESC)

ANTILOCK BRAKING SYSTEM (ABS)

The purpose of the Antilock Braking System (ABS) is to maintain vehicle stability and control during braking and to minimize the stopping distance in any road condition.

On slippery roads and more generally in emergency, over-braking frequently induces wheel locking. Wheel locking greatly increases braking distance on any road surface. Locked wheels also impede directional control and cause

severe tire abrasion. An antilock braking system provides maximum braking performance while maintaining adequate control on slippery roads.

The basis of ABS is constant monitoring of wheel parameters during braking. Sensors on each wheel of the front, drive and tag axles constantly measure wheel speed during braking. This information is transmitted to a six-channel electronic processor which senses when any wheel is about to lock. Modulating valves quickly adjust brake pressure (up to 5 times every second) to prevent wheel lock. Each wheel is therefore controlled according to the available grip.

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



WARNING

Vehicles following ABS-equipped vehicles may not be able to brake as fast on slippery roads.

TRACTION CONTROL SYSTEM (TCS)

TCS controls wheel spin during vehicle acceleration to improve traction.

- The TCS system will intervene automatically and apply braking pressure to a spinning wheel transferring engine power to the other drive wheel that has better traction. This feature is active only at speeds below 25 mph (40 km/h).
- If all of the drive wheels begin to spin, the TCS system will reduce engine throttle to improve traction at all of the drive wheels.

If drive wheels begin to lose traction during acceleration, TCS will engage automatically to assist the driver in accelerating the vehicle. The TCS icon in the DID will flash rapidly to let you know whenever TCS is actively functioning.

ELECTRONIC STABILITY CONTROL (OPTION)

The Electronic Stability Control (ESC) is a feature for ABS-equipped vehicles that reduces the risk of rollovers and loss of control. The ESC system features include the RSP Roll Stability Program and Yaw Control.

The RSP system counteracts the tendency of a vehicle to tip over while changing direction (typically, while turning).

To reduce the risk of rollover, the RSP system detects potential rollover conditions and slows the vehicle both by reducing engine throttle (and hence, engine torque) and by applying service brakes as needed at the appropriate wheels.



WARNING

During an RSP system intervention, the vehicle automatically decelerates. The RSP system can slow the vehicle with or without you applying the brake pedal, and even when you are applying the throttle.

During an RSP system intervention, you can always use your service brake pedal to increase the braking pressure that will be applied. However, if you were to apply less braking pressure than needed or even if you release the brake pedal entirely during an intervention, the RSP system will continue to apply the necessary amount of braking pressure automatically to the appropriate wheels to mitigate a potential rollover.

Yaw Control is a feature that reduces the risk of loss of control. If a vehicle's tires start to slide during a turn, Yaw Control counteracts the tendency of that vehicle to spin (or yaw), thereby reducing the risk of loss of control. Many factors, including road conditions, load distribution and driving behavior, can contribute to the development of a spin.



WARNING

In the case where a vehicle equipped with the ESC system pulls a trailer, the latter must be equipped with ABS.



WARNING

Even with ESC-equipped vehicles, the driver remains responsible for ensuring vehicle stability during operation.

NOTE

For further details, consult "Bendix ABS Operator's Manual"

5-14 Other Features

KNEELING SYSTEM

This system lowers the front end, enabling passengers to get on and off the coach without any difficulty.

To operate:

1. Stop the coach;
2. Apply the parking brakes and set the transmission to neutral (N);
3. Momentarily press the rocker switch downwards to lower the front end of the coach 4 inches (100 mm). Refer to [Kneeling / Front Axle High-Buoy \(Optional\)](#) in Section 4 Controls and Instruments.

A pictogram will appear in the DID status line indicating that the coach is being lowered.

To raise the front of the coach to normal height;

1. Momentarily press the rocker switch upwards. The front end will rapidly rise up.

NOTE

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

NOTE

Kneeling is disabled when the entrance door is open or when the wheelchair lift (WCL) is in function.



CAUTION

Avoid parking the coach too close to the sidewalk or to other obstacles which could damage the coach during kneeling.

HIGH-BUOY

The coach may be equipped with the optional front High-Buoy or full High-Buoy. The front High-Buoy system has the same functions as the front kneeling. In addition it enables passengers to get on or off the coach easily by raising the front end about 4 inches (100 mm), which may prove useful when the dock is higher than usual. The front High-Buoy is combined with front kneeling to increase the flexibility of the system.

The full High-Buoy system raises the whole 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.

See [High Buoy / Low Buoy](#) in Section 4 Controls and Instruments.

NOTE

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

LOW-BUOY

This system lowers the coach about 4 inches (100 mm). It enables the coach to drive under overhead obstacles.

Low-buoy operation is controlled by a rocker switch on the L.H. dashboard panel. Refer to [High Buoy / Low Buoy](#) in Section 4 Controls and Instruments. A pictogram appears in the Driver Information Display if the coach speed exceeds 12 mph (20 km/h) when lowered.



CAUTION

Avoid parking too close to the curb or other obstacles that could damage the coach during low-buoy operation.



WARNING

Use only below 5 mph (8 km/h).



WARNING

The Low-Buoy cannot be activated when the coach is traveling over 5 mph (8 km/h). Consequently, the driver cannot inadvertently operate the Low-Buoy system at higher speeds.

NOTE

The Low-Buoy cannot be activated when the coach is traveling over 5 mph (8 km/h). Consequently, the driver cannot inadvertently operate the Low-Buoy system at higher speeds.

AUTOMATIC TAG UNLOAD

Tag axle unload consists of releasing the air inside the tag axle suspension air springs, fully loading the drive axle suspension. Unloading the tag axle helps cornering at low speed. The tag axle service brakes do not operate when the tag axle is unloaded.

MANUAL UNLOAD

The driver can unload the tag axle manually. This is useful in many situations, such as when the vehicle is stuck on slippery surface. Unloading the tag axle transfers extra weight for better traction to the drive axle wheels.

This self-cancelling mode reverts to Automatic Mode once the vehicle speed exceeds 20 mph (32 km/h) for more than 6 seconds.



FIGURE 3: SYSTEM STATUS PICTOGRAM - TAG AXLE UNLOADED

AUTOMATIC MODE

The tag axle will unload automatically when all the following conditions are met:

1. The ignition is ON;
2. The steering wheel's rotation exceeds one turn;
3. The vehicle speed is below 20 mph (32 km/h).

In service, the tag axle will automatically reload if:

1. The vehicle speed exceeds 20 mph (32 km/h) for more than 6 seconds;

or

2. The steering wheel's rotation becomes less than 3/4 turn.

LOAD & LOCK

This mode locks the tag axle in loaded state, preventing any automatic control activation for a brief period. When selected by the driver by pressing and holding the switch down for 3 seconds, the air pressure will be maintained even

if the conditions for unloading are met. This is useful for keeping the ride height and preventing potential rubbing of the rear bumper on the ground in certain situations.

This self-cancelling mode reverts to Automatic Mode after a delay of 10 seconds or once the vehicle speed exceeds 20 mph (32 km/h) for more than 6 seconds.



FIGURE 4: SYSTEM STATUS PICTOGRAM - TAG AXLE LOADED & LOCKED



CAUTION

Do not leave the tag axle in unloaded position for an extended period. Unloading the tag axle increases load on the drive axle, suspension and tires.

Avoid driving the vehicle with the tag axle unloaded when speed exceeds 12 mph (20 km/h).

In order to prevent damage to the suspension, always unload the tag axle before lifting the vehicle for servicing.

PREHEATER

The optional auxiliary heating system is used for preheating and retaining the heat of water-cooled engines. It can be used before the start-up to ease starting and to provide rapid interior heat. It can also be used with the engine running to maintain coolant heat and interior temperature.


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



WARNING

The preheater uses the same fuel as the engine. Do not operate in a closed building or while refueling. Operate only in a well-ventilated area.

SWITCHING THE HEATER ON

The Heater "On"  symbol appears on the timer display when the heater is switched on. Air is

5-16 Other Features

forced in to flush out the combustion chamber of any residual gases and the water circulation pump begins operating. The fuel metering pump delivers fuel to the combustion chamber, where fuel and combustion air form a combustible mixture which is ignited by the ignition unit.

Once the flame sensor has signaled to the control unit that combustion has taken place, the ignition unit is switched off.

Hot combustion gases are diverted at the end of the flame pipe and are then forced through the indirect heating surfaces of the heat exchanger. The heat exchanger transfers the heat to the coolant water passing through the heat exchanger.

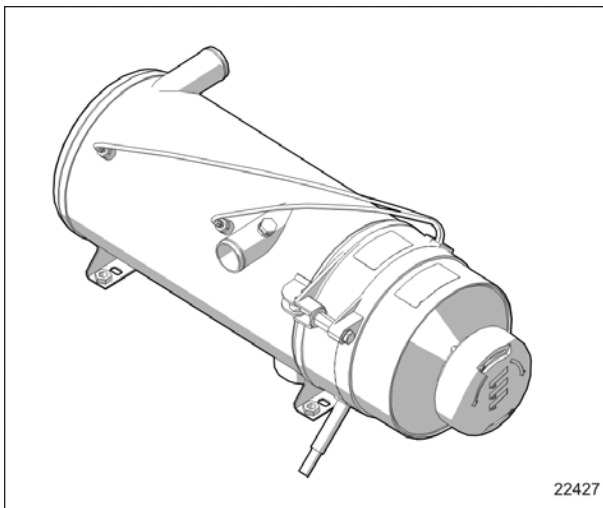


FIGURE 5: COOLANT PREHEATER

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 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 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 THE HEATER OFF

The fuel supply is interrupted when the heater is switched OFF. This causes the flame to go out and 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 heater failure. Refer to section *Technical Information* for additional information.

COOLANT HEATER TIMER

The timer located on lateral control panel is used to program the starting and stopping time of the preheating system and to give Fault Codes. The Heater "On" symbol , located on the timer, appears when the system is in operation.

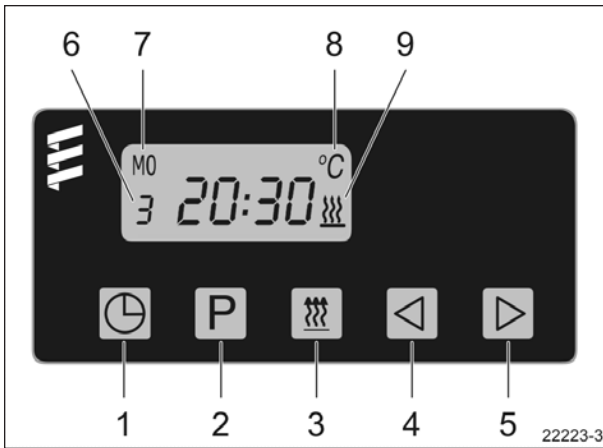


FIGURE 6: FIGURE 1: PREHEATER TIMER

1. Time set
2. Preheat time set
3. Heater "On"
4. Backward scan
5. Forward scan
6. Memory location
7. Time and day display
8. Air temperature display
9. Heater "On" symbol

Refer to the [7 day timer operating instructions](#) found on your Technical Publications USB flash drive, and on the Technical Publications Website for additional information.

TIMER OPERATION

The most common timer operations are described. For additional details, refer to Eberspacher manual [Timer - Operating Instructions](#) found on Prevest Technical Publications site.

Set Time And Day

Push button once. 12:00 will begin to flash (this will occur upon initial hook up to power).

Using or , set the present time of day (24-hour clock).

When the time stops flashing, the time has been stored.

The weekday will now begin to flash.

Use or to set the present weekday.

When the weekday stops flashing, the weekday has been stored.

When the vehicle ignition is turned "on" the time display will appear.

When the vehicle ignition is turned "off" the timer display will go off after 15 seconds.

Changing Time And Day

Push and hold button until the time display begins to flash. Continue to set the time as listed in setting time and weekday.

Using The Timer With The Vehicle Ignition "Off"

Push button.

will appear on the display as well as the operation countdown timer.

The running time is factory set to a maximum of 120 minutes. This

running time can be reset once or permanently as desired.

Adjusting Preheat Time Once

Press button.


The will appear in the display and the preselected run time will appear in the display (maximum time of 120 minutes).

Use the or to adjust the desired run time.

5-18 Other Features

Using The Heater Manually With The Vehicle Accessory “On”



Push  button.


The  symbol will appear in the display next to the time of day.

The time of day will remain displayed during ignition on operation.

The heater will continually function as long as the vehicle ignition is “on” .

When the vehicle ignition is turned “off” the heater will continue to operate for an additional 15 minutes.

The run time can be altered by pressing the  or  buttons.

The heater can be turned off by pressing  button.

To Turn Heater “Off” - All Modes

Press the  button once.

The heat signal to the heater will be turned “off”.




The heater will do a normal cooldown and turn itself “off”.

PREHEATER TROUBLESHOOTING AND MAINTENANCE

Up to five fault codes are stored in the heater control box. They can be displayed on the timer.

Query Fault Memory F1 – F5

Condition: The heater is switched off.


- Press  button → the heater is switched on.
- Press  button and keep it depressed, then press  button within 2 seconds.

The display is as follows:

AF = current fault

3 digit number = fault code

 flashes.

- Press  button once or several times, fault memory positions F1 – F5 are displayed.

For additional details, refer to the Maintenance Manual Section 22, under heading "Auxiliary Preheating System (Option)", also refer to supplier publications [Eberspacher Hydronic LII Troubleshooting and Repair manual](#) and [Eberspacher Hydronic L-II Installation Operating Maintenance manual](#) found on the Technical

Publications Website, and on the Technical Publications USB flash drive delivered with the vehicle.

NOTE

If there are no preheater faults, the preheater will go through a normal start cycle and regulate based on thermostat setting.

NOTE

Switch on the preheating system 10 minutes about once a month, even during the warm season.



CAUTION

To avoid running down the batteries, do not turn on the preheating system for more than one hour before starting the engine. To run the heater for longer periods, connect the vehicle.



WARNING

The preheating system uses the same fuel as the engine. Do not operate in a building or while refueling. Operate only in a well-ventilated area.

WHEELCHAIR LIFT SYSTEM

It is important to passenger safety that the lift operator be familiar with the operating instructions. Read and understand the RICON Mirage F9TF/F9TH Wheelchair lift Operator Manual before attempting to use the wheelchair lift. The instructions below are a quick reference only and not a replacement to the information provided by RICON.

Watch the Prevest Wheelchair Lift Instruction video on Prevest's YouTube channel. To do so, type "Prevest Coach – YouTube" on your web browser and then select the proper link. Once on Prevest channel, select "Video" tab and then look for the video entitled "Prevest Wheelchair Instruction".

INTRODUCTION

Safe and easy access to the coach is provided by the Ricon Mirage F9TF and F9TH Public Use wheelchair lifts. The Mirage F9TF or F9TH is a dedicated entry model, which is intended for installation in a vehicle baggage compartment.

An electric-motor driven hydraulic pump provides a maximum platform lifting capacity of 660 pounds (300 kilograms) for **Mirage Model F9TF** and 800 pounds (363 kilograms) for **Mirage Model F9TH**.

A trained attendant or the vehicle operator operates the lift. For a boarding passenger, the operator uses control switches to withdraw the platform from the vehicle (deploy) and lower it to ground level. The passenger is placed on the platform and then lifted to floor height. After the passenger enters the vehicle, the operator lowers the platform and retracts it back into the vehicle (stow). For an existing passenger, the operator withdraws the platform from the vehicle (deploy) and raises it to floor height. The passenger is placed on the platform and then lowered to the ground. The passenger departs, and the operator returns the platform to the stowed position in the vehicle.

One individual can manually operate the lift when normal power is not present. A manual release mechanism is provided to ease the task of pulling the platform out of its enclosure. The hydraulic pump assembly includes a manually operated back-up pump to raise the platform, and a pressure release valve to lower it. The front platform rollstop, normally power operated, has a manual override knob for back-up use.

OVERVIEW

Major Lift Components

Left, Right, Front, Rear	Reference points from outside vehicle looking inward at lift.
Bridgeplate	Plate bridges gap between platform and vehicle floor when platform is at floor level. Acts as a barrier during up and down platform motions to prevent wheelchair from rolling off rear of platform.
Carriage	Part of traveling frame that is mounted on rollers; moves on rails located inside enclosure. Supports lifting frame and platform.
Controller	Receives electrical input signals from pendant and lift sensors and sends control signals to lift electrical and hydraulic components.
Control pendant	Hand-held device used to control platform motions.
Cycle counter	Located on rear frame of carriage. Visible when platform is fully deployed. It records number of times platform has moved from floor to ground and back to floor.

5-20 Other Features

Deployment system	Located within carriage. Employs an electric gear-motor to propel platform out of enclosure, or pull it back into enclosure.
Enclosure	Travelling frame housing that is rigidly attached to vehicle chassis.
Fluid reservoir	Container holds hydraulic fluid that is used by hydraulic system.
Folding handrail	(left and right) Provides a handhold for standing passenger (standee).
Front rollstop	Front barrier prevents wheelchair from inadvertently rolling off platform during platform movement.
Handrail release button	(left and right) Locks handrail in vertical position. Must be pushed inward to release handrail.
Hydraulic cylinder	Located within carriage and connected to lifting frame. Receives pressurized fluid from hydraulic pump to lift platform.
Hydraulic pump assembly	Electro-hydraulic unit provides hydraulic pressure used to raise platform. Also mounts components for manual operation.
Lifting frame	Assembly is hinged to front of carriage and to center of platform; raised by single hydraulic cylinder attached to carriage.
Manual pump handle	Used to manually operate hydraulic backup pump and pressure release valve when electrical power is not available. Also used to rotate platform release shafts.
Platform	Curbed area where passenger resides while being raised to vehicle or lowered to ground.
Platform release shaft	(left and right) Used during manual operation of lift. Disengages platform from enclosure to facilitate manual deployment. Engage and rotate either shaft with manual pump handle.
Pull box	Houses electrical termination points to lift, and a hydraulic line disconnect point. Also accepts input harness from control pendant.
Rollstop control knob	Provides manual control of rollstop if electrical power is not available.
Safety belt	Safety restraint belt that spans between handrails to help confine passenger to platform area.
Stow Lock	Safety lock retains platform when in stowed position (retracted); releases when stow lock lever is raised.
Traveling frame	(not shown as unit) Assembly comprised of carriage, lifting frame, and platform.

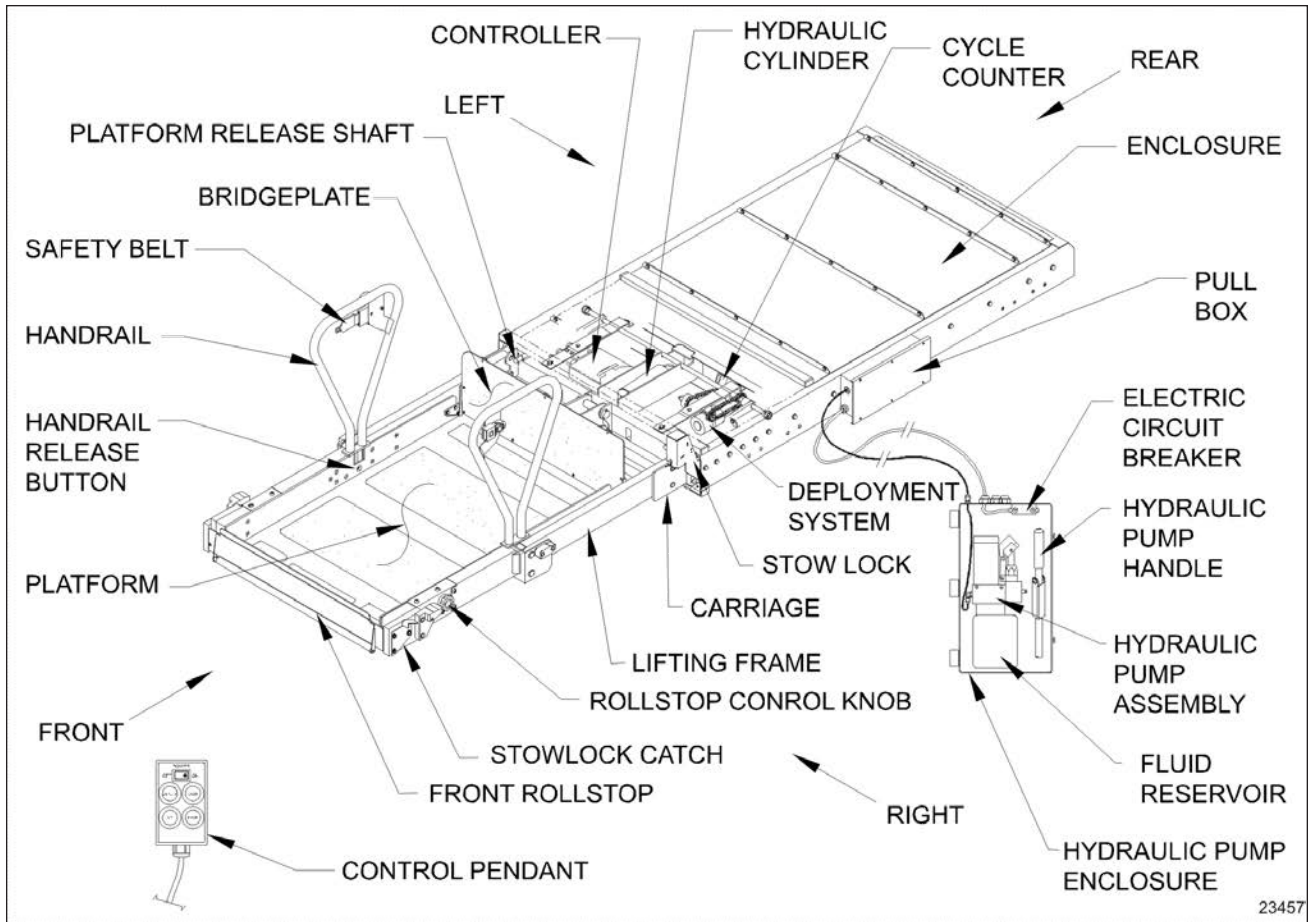


FIGURE 7: MAJOR LIFT COMPONENTS

GENERAL SAFETY PRECAUTIONS

- To avoid injury, always exercise caution when operating and be certain that hands, feet, legs, and clothing are not in the path of product movement.
- Read and thoroughly understand the operating instructions before attempting to operate the wheelchair ramp.
- Inspect product before each use. If unsafe conditions, unusual noises or movements, do not operate lift until the problem is corrected.
- Stand clear of doors and platform and keep others clear during operation.

OPERATING INSTRUCTIONS

Safety Precaution

- To operate the wheelchair lift, the coach must be parked on a flat and level surface, with the parking brake applied.

5-22 Other Features

- Inspect the lift before each use as described in the RICON Operator Manual 32DF9T15 under paragraph “Pre-Operation Lift Inspection”. If any unsafe condition exists, or if unusual noises or movements are noticed, DO NOT use and contact an authorized RICON dealer for repair.
- Read and comply with all warning labels and symbols affixed to the wheelchair lift.
- Wheelchair occupant should face outward when entering or exiting vehicle.
- Do not back onto platform when exiting vehicle. FACE OUTWARD, and verify that platform is at the same height as floor. Check that front rollstop is up and locked.
- The front rollstop is intended to prevent slow, unintentional, rolling off of platform.
- The front rollstop is not intended to stop a quick moving wheelchair. A quick moving wheelchair could tip if the small front wheels collide with the rollstop. Also, the large rear wheels of a quick moving wheelchair could roll over the rollstop. Possible injury to the occupant might occur in either case.
- Verify that wheelchair fits safely on platform; it must not extend beyond edges or interfere with operation of rollstop.
- Do not operate with a load in excess of 660 lbs (300 kg) for Mirage Model F9TF and 800 pounds (363 kilograms) for Mirage Model F9TH.
- Keep arms, legs, and clothing away from moving lift parts.
- The lift is intended for one wheelchair and its occupant, or one standee. Do not overload lift.
- Keep others clear while operating lift.
- Do not allow an untrained person to operate lift.
- Do not allow anyone to stand on bridgeplate. A bent bridgeplate can interfere with the platform as it raises and lowers.
- Lock wheelchair brakes before raising or lowering platform (power chair users should turn off power and set brake).
- Use great care in wet conditions; the wheelchair brakes are less effective if its tires or the platform are wet.
- Do not leave deployed platform unattended. Return to stowed position after use.

Hand-Held Control Pendant And Motion

The lift is operated with a hand-held, hard-wired remote-control pendant. Turn on the POWER ENABLE switch and then control each lift motion by pressing an appropriate button.

The POWER ENABLE switch provides power to the pendant and thereby enables the lift. When turned on, the power switch and each button illuminate.

Pressing the DEPLOY/OUT button extends the platform from the lift storage compartment, and pressing the STOW button retracts the platform back into the storage compartment. Pressing the DOWN button lowers the platform towards the ground, and pressing the UP button raises the platform towards the vehicle floor.

A button must be held depressed until the motion is completed. Movement of the platform can be halted at any time by releasing the button.



FIGURE 8: HAND-HELD CONTROL PENDANT

MOTION		DESCRIPTION
	DEPLOY / OUT	Platform extends out of vehicle, or deploys.
	DOWN	Platform lowers from present height towards ground; front rollstop lowers when platform contacts ground
	UP	Platform rises from present height towards vehicle floor; rollstop rises before platform leaves ground.
	STOW / IN	Platform retracts into vehicle, or stows.

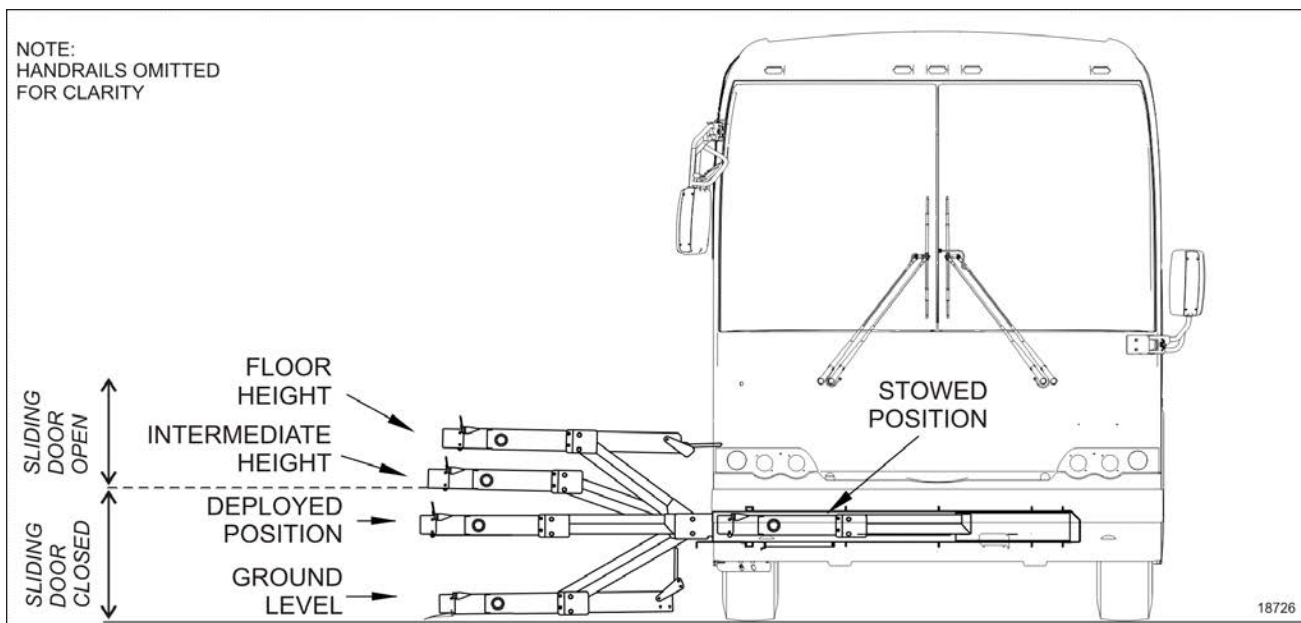


FIGURE 9: PLATFORM POSITION WITH INTERMEDIATE HEIGHT (OPTIONAL FEATURE)

5-24 Other Features

Normal Lift Operation – To Enter Vehicle

- Before operating lift, be certain vehicle is safely parked on a level area away from traffic. Provide at least 10 feet (3 meters) space for lift operation and passenger boarding.
- The lift operator must take special care to ensure that area is clear before deploying platform. Be certain there are no obstacles beneath platform.
- Open lift compartment door completely.

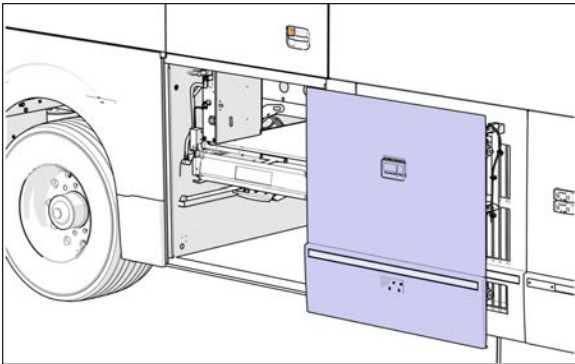


FIGURE 10: LIFT COMPARTMENT DOOR

- Open sliding door directly above lift compartment. This does not apply to models that stop upward platform movement prior to reaching floor level. The sliding door on these models is opened after the platform reaches intermediate height.
- The vehicle and lift are equipped with a safety interlock system (i.e. transmission into neutral, parking brake applied). Be certain that it is in the proper mode before attempting to operate lift. The lift will not operate until this feature has been properly engaged.
- Supply power to the wheelchair lift system first by depressing the power switch located on the dashboard.



FIGURE 11: WHEELCHAIR LIFT POWER SWITCH

NOTE

Whenever the wheelchair lift power switch is in the ON position, an interlock system prevents releasing of the parking brake and a transmission inhibit feature prevents gear selection when either the lift compartment door or the sliding door is open.

- Enable lift control pendant by turning on POWER switch located on pendant.
- A person that uses the wheelchair lift while standing (does not require mobility aid equipment) is referred to in this manual as a Standee.

1. **ACTIVATE INTERLOCK:** Make sure parking brake is set and transmission is in neutral.
2. **DEPLOY PLATFORM:** Press and hold DEPLOY/OUT button until platform is fully deployed. **NOTE:** Platform cannot be moved up or down unless platform is fully extended.
3. **RAISE HANDRAILS:** Lift right handrail to vertical and push firmly down into its socket. Repeat for left handrail. Verify that both handrails are latched in place by attempting to pull upward on them.
4. **BUCKLE SAFETY BELT (to enable lift controller):** Insert belt tongue into buckle and listen for audible “click” then tug belt to confirm belt is securely fastened.

NOTE

The safety belt acts as a safety device and it prevents raising or lowering the lift when not buckled.

5. **LOWER PLATFORM:** Press and hold DOWN button until platform stops at ground level and rollstop opens completely.
6. **BUCKLE SAFETY BELT.**
7. **BOARD PLATFORM:** Position wheelchair in center of platform, facing outward and advise occupant to lock wheelchair brakes. Power must be turned off on electric-powered wheelchairs.

NOTE

Standee must stand near the center of the platform, facing in the direction of travel (into vehicle), and firmly grasp handrails. Do not stand on bridgeplate.

8. **BUCKLE SAFETY BELT (to enable lift controller):** Insert belt tongue into buckle and listen for audible “click” then tug belt to confirm belt is securely fastened.

NOTE

The next two steps apply only to F9TF/F9TH models that stop upward platform movement at an intermediate level. Other models continue at step 11.

9. **PARTIALLY RAISE PLATFORM:** Press and hold UP button until platform stops at intermediate height.
10. **OPEN SLIDING DOOR:** Fully open vehicle sliding door located above lift. The lift operator, or attendant should do this.
11. **RAISE PLATFORM:** Press and hold UP button until platform stops at floor height and bridgeplate lowers onto vehicle floor.



WARNING

Verify that rear edge of bridgeplate lies flat on floor along its entire edge and does not create a tripping hazard.

12. **EXIT PLATFORM:** Advise passenger to carefully enter vehicle.

5-26 Other Features

13. BUCKLE SAFETY BELT.
14. LOWER HANDRAILS: Press release button at base of handrail and lift the left handrail upward out of its socket. Lower handrail to platform. Repeat for right handrail.
15. STOW PLATFORM: Press and hold STOW/IN button. Close sliding door at intermediate height. Press and hold STOW/IN button until platform reaches STOW height and then fully retracts into vehicle.

NOTE

Do not use DOWN button to lower platform partway prior to stowing, and then complete the stowing process by using IN button. This method may not properly stow platform.

16. CLOSE DOOR. Close the lift compartment door.

Normal Lift Operation – To Exit Vehicle

1. ACTIVATE INTERLOCK: Make sure parking brake is set and transmission is in neutral.
2. DEPLOY PLATFORM: Press and hold DEPLOY/OUT button until platform is fully deployed.
3. RAISE HANDRAILS: Lift right handrail to vertical and push firmly down into its socket. Repeat for left handrail. Verify that both handrails are latched in place by attempting to pull upward on them.
4. BUCKLE SAFETY BELT (to enable lift controller): Insert belt tongue into buckle and listen for audible “click” then tug belt to confirm belt is securely fastened.

NOTE

The next two steps apply only to F9TF/F9TH models that stop upward platform movement at an intermediate level. Other models continue at step 7.

5. PARTIALLY RAISE PLATFORM: Press and hold UP button until platform stops at intermediate height.
6. OPEN SLIDING DOOR: Fully open vehicle sliding door located above lift. The lift operator, or attendant should do this.
7. RAISE PLATFORM: Press and hold UP button until platform stops at floor height and bridgeplate lowers onto vehicle floor.



WARNING

Verify that rear edge of bridgeplate lies flat on floor along its entire edge and does not create a tripping hazard.

8. BOARD PLATFORM: Position wheelchair in center of platform, facing outward and advise occupant to lock wheelchair brakes. Power must be turned off on electric-powered wheelchairs.

NOTE

Standee must stand near the center of the platform, facing in the direction of travel (into vehicle), and firmly grasp handrails. Do not stand on bridgeplate.

9. LOWER PLATFORM: Press and hold DOWN button until platform stops at ground level and rollstop opens completely.
10. UNBUCKLE SAFETY BELT.
11. EXIT PLATFORM: Carefully assist passenger off of platform.
12. LOWER HANDRAILS: Press release button at base of handrail and lift the left handrail upward out of its socket. Lower handrail to platform. Repeat for right handrail.
13. STOW PLATFORM: Press and hold IN button until platform reaches STOW height and then fully retracts into vehicle.

5-28 Other Features

MANUAL LIFT OPERATION

The lift can be operated manually if it loses electrical power. The following sections describe important safety preparations to be followed before using the lift, and operating procedures to deploy, raise, lower, and stow the lift. Ricon recommends that manual operation be used only to exit from vehicle, not to enter vehicle.

Preparation

- Park vehicle on a level surface, away from traffic. Allow sufficient space for lift operation and passenger boarding.
- The operator must summon assistance to move vehicle to a safe operating area if a breakdown situation exists and vehicle cannot be moved under its own power.
- Check to be certain obstacles are not in path of platform movement.
- Open vehicle doors by hand and secure.
- Caution people in vicinity that platform is about to deploy.
- Follow the "Safety Precautions".

Manual Lift Controls

Manual operation components used are a hydraulic backup pump and pump handle, platform release mechanism, and a rollstop control knob.

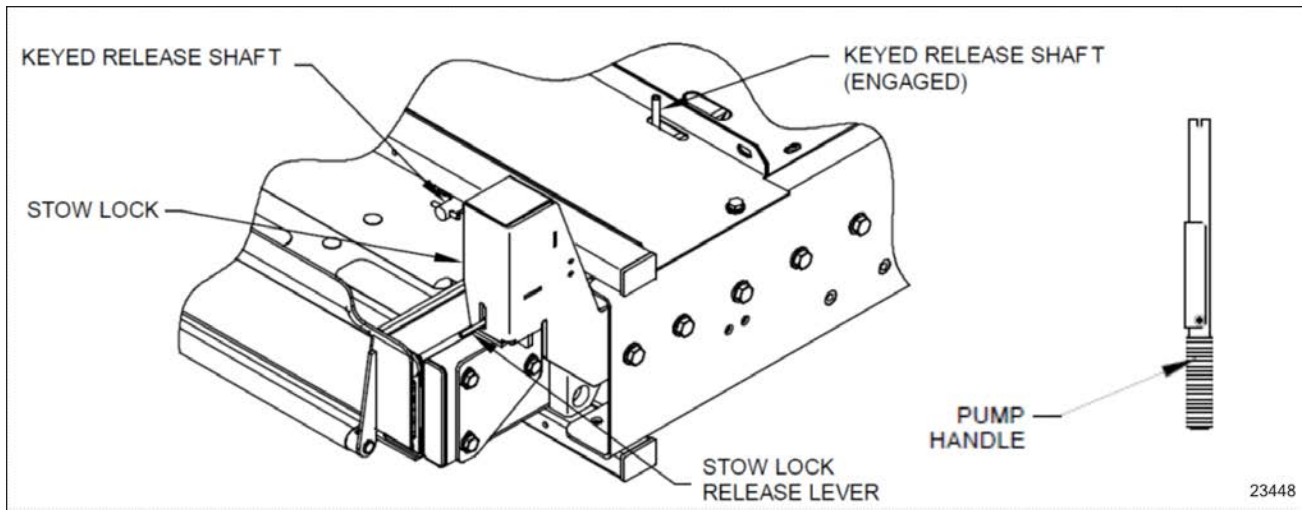
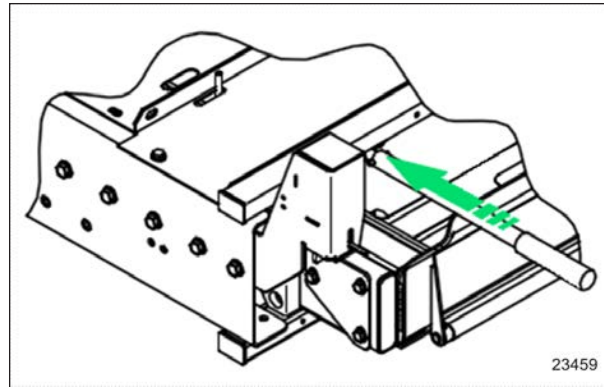


FIGURE 12: MANUAL LIFT CONTROLS

To Manually Deploy The Platform

1. Fully open sliding door and lift compartment door. Ensure that there are no obstacles in the path of the lift.
2. Take the manual backup pump handle attached to the inner side of the lift compartment door.

- Engage either keyed release shaft with the pump handle.



- Rotate the keyed release shaft 1/4-turn (as indicated on adjacent decal) while lifting stow lock lever simultaneously.

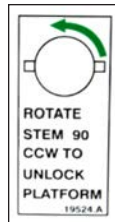
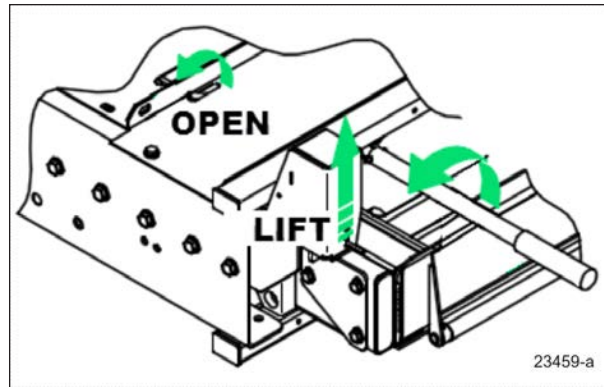
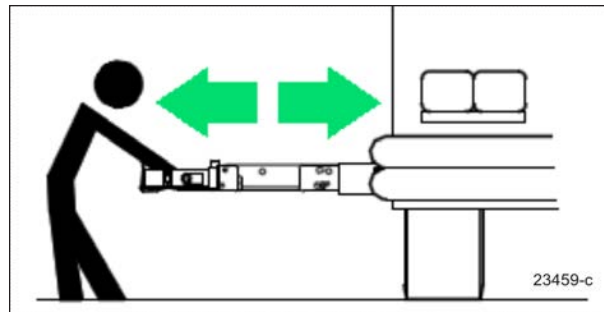


FIGURE 13: DECAL

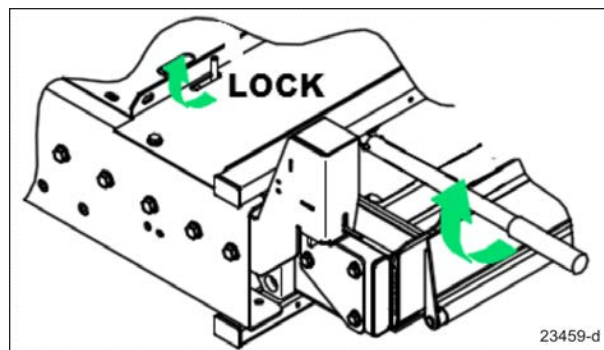


- Grasp the top edge of the front rollstop with two hands and pull firmly. The platform moves smoothly after an initial resistance. Pull platform straight out to the end of its travel.



CAUTION

Ensure that release shaft re-engages and locks when platform is fully extended. If release shaft does not engage, use manual pump handle and turn 1/4-turn (direction opposite to orientation shown on adjacent decal) to re-engage release shaft.

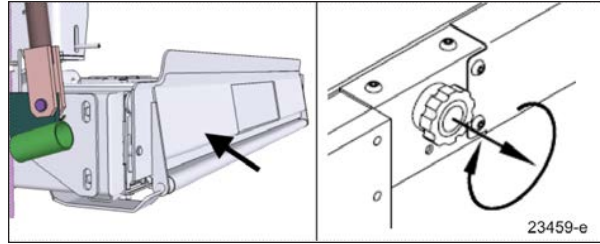


- Lift right handrail to vertical and push firmly down into its socket. Repeat for left handrail.

5-30 Other Features

To Manually Raise The Platform

1. Verify that rollstop is up (closed). Pull rollstop control knob out and rotate fully clockwise, if it isn't up.

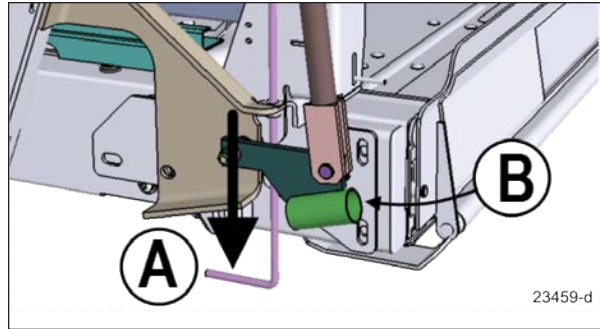


2. Close the backup pump release valve by pushing the actuating rod (A) DOWN (release valve should already be closed).

NOTE

Pumping the handle raises the platform when the release valve is closed.

3. Insert pump handle into backup pump socket (B), then pump handle to raise the platform to the floor level.
4. Position wheelchair in center of platform, facing outward, and advise occupant to lock wheelchair brakes. Power must be turned off on electric-powered wheelchairs.

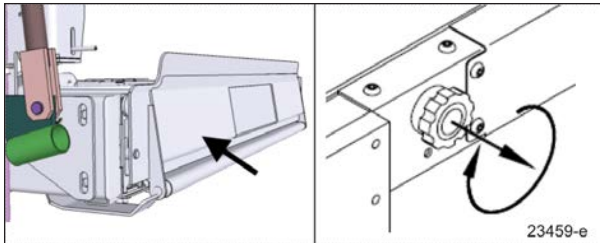


NOTE

Standee must stand near the center of the platform, facing in the direction of travel (into vehicle), and firmly grasp handrails. Do not stand on bridgeplate.

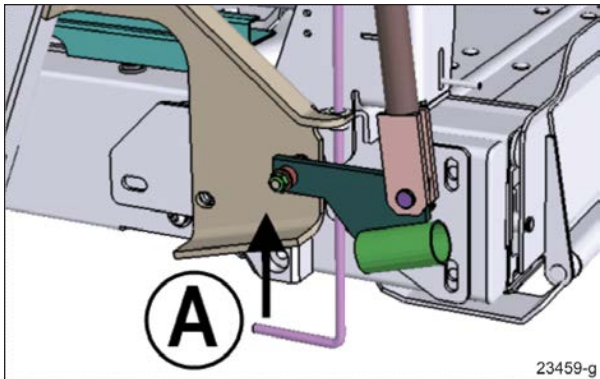
To Manually Lower The Platform

1. Verify that rollstop is up (closed). Pull rollstop control knob out and rotate fully clockwise, if it isn't up.

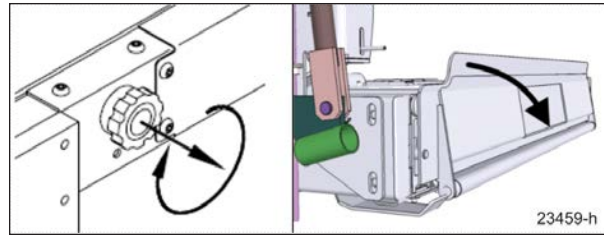


2. Slowly pull the manual backup pump release valve actuating rod (A) UP until the platform begins to lower (opening the release valve lowers platform).

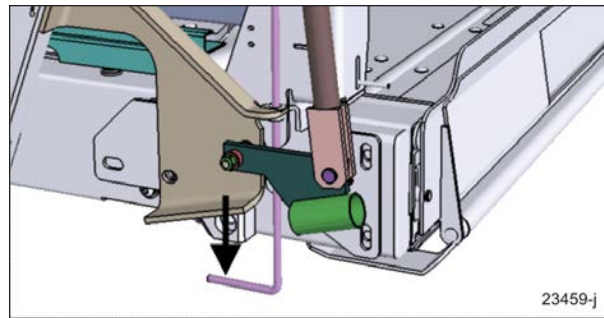
3. Allow the platform to reach ground level.



4. Pull rollstop control knob out and rotate fully counterclockwise. Rollstop must lie flat on ground.

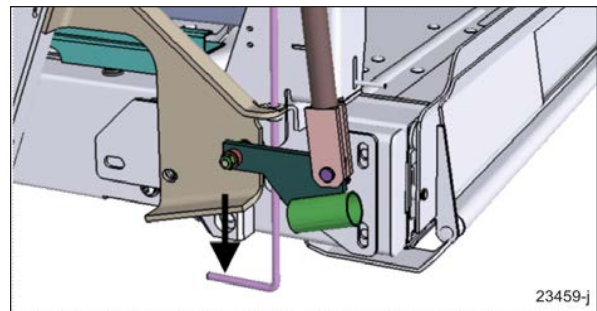


5. Carefully assist passenger off of platform.
6. Push the backup pump release valve actuating rod back DOWN until lightly-snug.



To Manually Stow The Platform

1. Verify that the backup pump release valve is closed (actuating rod (A) pushed DOWN).



2. Raise the platform to stow height; position the top surface of the platform lifting frame arm at the same height as the top surface of the carriage. If the exact height cannot be obtained, a slightly low platform is preferred to slightly high. This alignment eliminates interference between the platform and enclosure when pushing the platform into the enclosure.

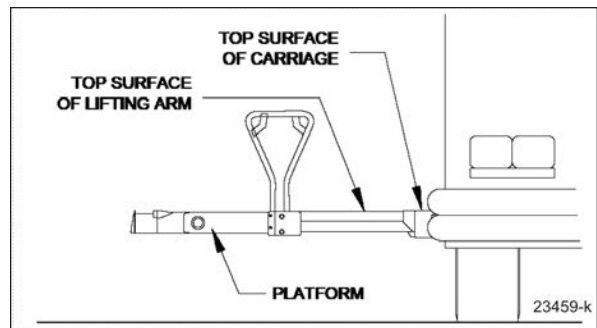
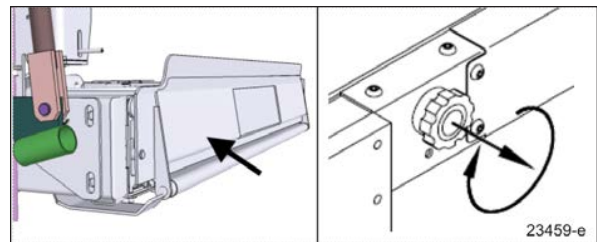


FIGURE 14: LIFTING ARM AND CARRIAGE AT SAME HEIGHT

3. Verify that rollstop is up (closed). Pull rollstop control knob out and rotate fully clockwise, if it isn't up.



5-32 Other Features

4. Lift the left handrail upward out of its socket. Lower handrail to platform. Repeat for right handrail.



CAUTION

An able-bodied person must stow the platform. Use caution and avoid injury.

5. Engage either keyed release shaft with the pump handle.
6. Rotate the shaft $\frac{1}{4}$ -turn (as indicated on adjacent decal).

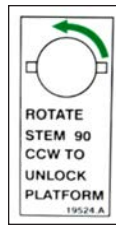
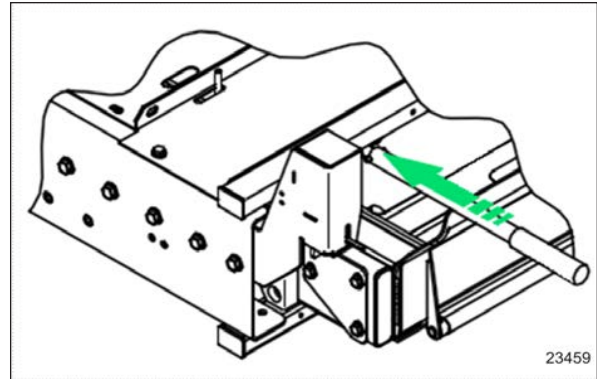


FIGURE 15: DECAL



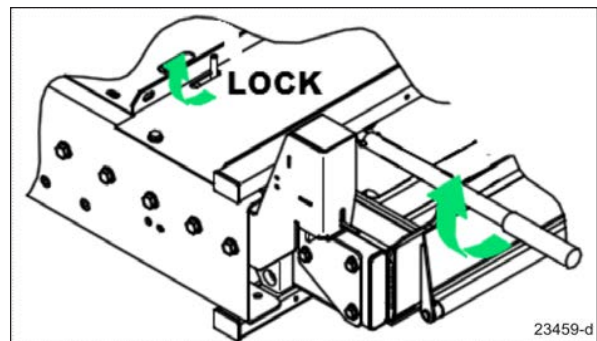
7. Grasp the top edge of the rollstop, or the handrails, with two hands and push firmly. The platform moves smoothly after an initial resistance. Push platform in fully.



CAUTION

The platform must lock in place when fully stowed. Check platform retention by attempting to pull platform outward; it must not move.

8. If platform does not lock, rotate either platform release shaft $\frac{1}{4}$ -turn (direction opposite to orientation shown on adjacent decal) to re-engage (lock) release shaft. Platform must be fully stowed before rotating shaft.
9. Verify that stow lock striker is engaged and platform is securely stowed.



SEATS RECONFIGURATION

To accommodate a wheelchair, one row of seats must be folded and two rows must be folded and slide away. Seats may be folded on both sides of the coach to make room for a second wheelchair.

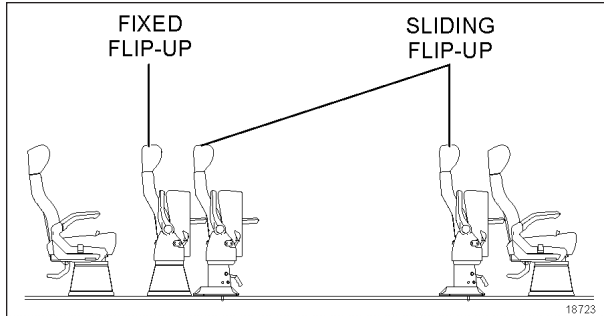


FIGURE 16: POSSIBLE SEATING ARRANGEMENT

Electrical wheelchair or tri-wheeler may require moving the sliding seats on both sides of the coach to allow enough turnaround space.

To fold a set of seats, raise the seat back then lift up the seat cushion by pulling the yellow handle under the cushion.



FIGURE 17: FOLDING AND SLIDING SEATS

To slide a row of seats, remove the black covers from the floor tracks. Pull up both orange levers (items 1), push down the pedal (secondary lock item 2) and move the row of seats until it clicks at the final position.



FIGURE 18: SLIDING THE SEATS

The secondary lock indicator shows that the row of seats is locked at the right position. Push down both orange levers (item 1) before moving to next step.



FIGURE 19: SECONDARY LOCK INDICATOR

5-34 Other Features

WHEELCHAIR RESTRAINT SYSTEMS

Two types of wheelchair restraint systems may be found, depending on the type of seats:

- 4- point wheelchair and occupant securement with floor anchorage.
- 4- point wheelchair and occupant securement with anchorage to passengers seat pedestals.

Refer to Q'Straint publications included in the wheelchair restraint plastic pouches for further details.

4-POINT SECUREMENT WITH FLOOR ANCHORAGE

This securement system includes:

- 4 wheelchair tiedown retractors to secure wheelchair to vehicle floor.
- Occupant securements: lap and shoulder belts that integrate to the rear wheelchair restraints.
- Floor anchorages; installed on the vehicle floor.

Two complete sets of wheelchair restraints are kept in plastic pouches and stowed in an overhead compartment. To secure each wheelchair, four tiedown retractors must be used (at all four corners).

Two of the four tiedown retractors have attaching pins to secure the occupant's lap belt. They must be placed at the rear of the wheelchair. Each tiedown retractor slots into a mounting floor pocket.

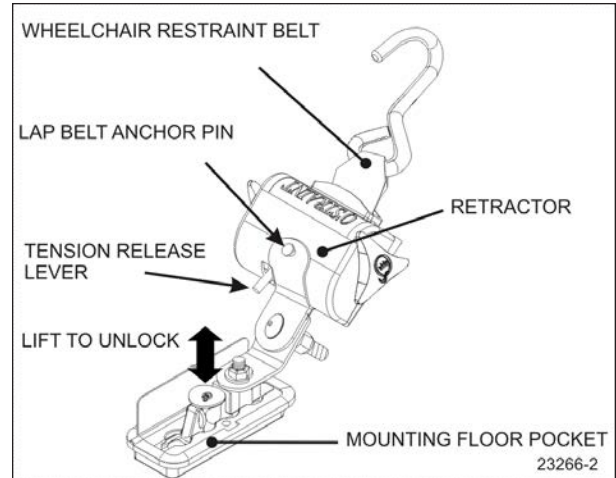


FIGURE 20: WHEELCHAIR ANCHORAGE SYSTEMS

To anchor the retractors, lift the floor pocket cover, push in the retractor anchor then slide it until it locks in place. Hook one wheelchair restraint belt to each corner of the wheelchair frame (not the wheels) and allow the retractors to tension the belts.

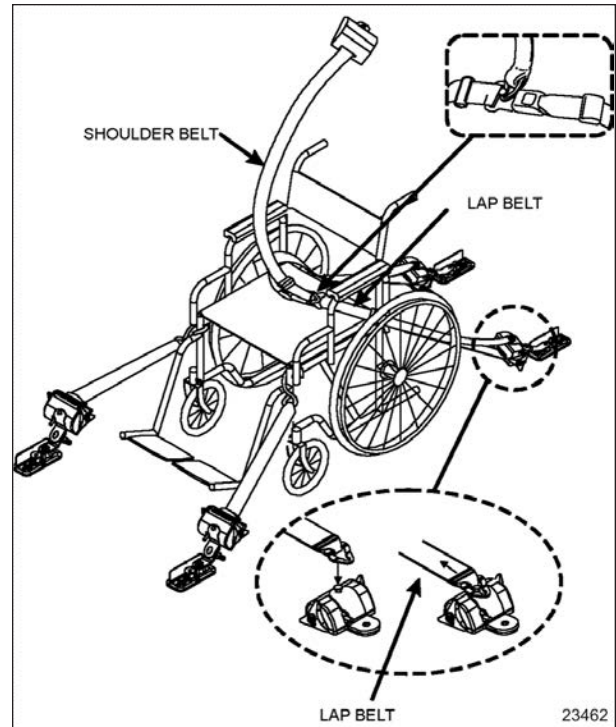


FIGURE 21: WHEELCHAIR RESTRAINTS AND ACCESSORIES

Use the blue webbing loops whenever the wheelchair restraint belt hook cannot reach a stiff member of the wheelchair chassis.

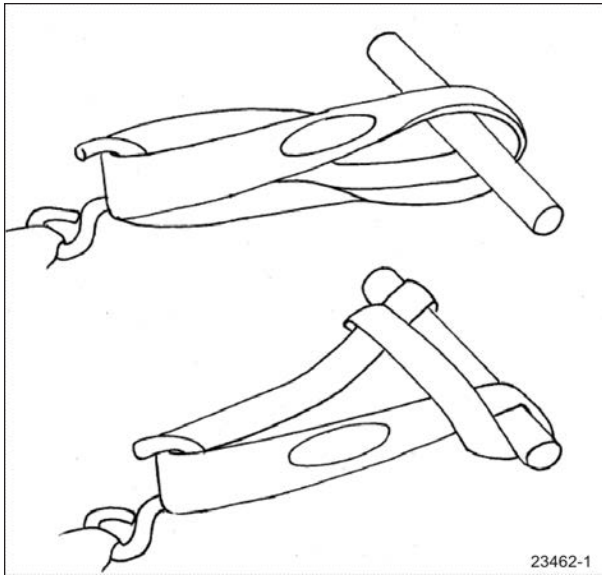



FIGURE 22: TYPICAL USE OF THE BLUE WEBBING LOOPS

To remove the restraint belts, release tension in the locking mechanism by tightening the belt slightly more with the retractor knob before pushing down the tension release lever found on the retractor. Unhook the wheelchair and allow the belts to retract. Guide the belts in, making sure they remain untwisted as they retract.


Release the anchor by lifting the lock pin then sliding out and up the anchor from the floor pocket. Close the lid to prevent dirt from entering the pocket cavity.


	<p>WARNING</p>
<p>Do not let restraint belts or occupant safety belts rub against sharp edges. Do not bleach or dry clean.</p>	

Wheelchair Occupant Restraint

Secure the wheelchair occupant in the following manner:

Fix the lap belt to the pins on the retractors of the rear restraint belts. Adjust the lap belt so it sits snug across the hips. Make sure that you place the lap belt buckle on the center aisle side. Fasten the shoulder belt to the pin on the lap belt buckle. A retractor adjusts shoulder belt length automatically.

	<p>WARNING</p>
<p>A snug fit with the lap belt positioned low on the hips is necessary to maximize safety. The belt should not be worn or twisted. Avoid pinching the belt and/or hardware. Do not wear over rigid or breakable objects such as eyeglasses, pens or keys as these may cause injuries.</p>	

	<p>CAUTION</p>
<p>The safety belt buckle provided with the red release button must always be located on the center aisle side.</p>	

To release the belts, unfasten the shoulder belt then press the red release button found on the lap belt buckle.

4-POINT SECUREMENT WITH ANCHORAGE TO PASSENGERS SEAT PEDESTALS

This securement system includes:

- 4 wheelchair restraint belts and retractors with anchorage to passengers seat pedestals.
- Occupant securements: lap and shoulder belt.

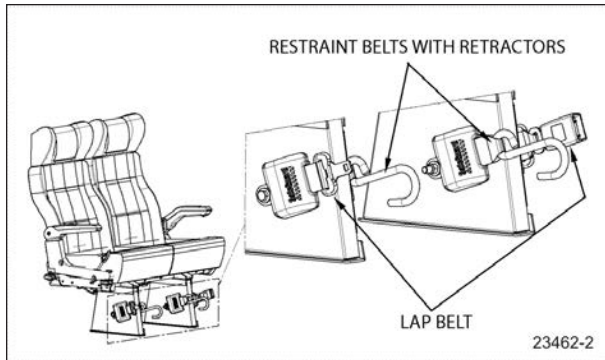


FIGURE 23: WHEELCHAIR AND OCCUPANT RESTRAINT SYSTEM

To secure the wheelchair, four restraint belts must be used (at all four corners). Hook one wheelchair restraint belt to each corner of the wheelchair frame (not the wheels) and allow the retractors to tension the belts.

To remove the restraint belts, push down on the tension release lever found on the retractor. Unhook the wheelchair and allow the belts to

5-36 Other Features

retract. Guide the belts in, making sure they remain untwisted as they retract.

Wheelchair Occupant Restraint

Secure the wheelchair occupant in the following manner:

Fasten and adjust the lap belts so it sits snug across the hips. Make sure that you place the lap belt buckle on the center aisle side. Fasten the shoulder belt by inserting the lap belt tab into the shoulder belt buckle. A retractor adjusts shoulder belt length automatically.



WARNING

A snug fit with the lap belt positioned low on the hips is necessary to maximize safety. The belt should not be worn or twisted. Avoid pinching the belt and/or hardware. Do not wear over rigid or breakable objects such as eyeglasses, pens or keys as these may cause injuries.



CAUTION

The safety belt buckle provided with the red release button must always be located on the center aisle side.

To unfasten the belts, press the red release button on the shoulder belt buckle first and then unfasten the lap belt by pressing the red release button on the lap belt buckle.

WHEELCHAIR LIFT SYSTEM - THRESHOLD WARNING SYSTEM (TWS) ADJUSTMENT

There are three verifications to perform;

1. Adjust Aiming of Acoustic Sensor Beam,
2. Test Aim of Acoustic Sensor Beam, and
3. Adjust Acoustic Sensor Timing.

Adjustment of the sensor timing is done at the factory and should not need to be repeated in the field. Readjustment should only be considered if the sensor aiming could not be adjusted to ignore both the wheelchair in the aisle and the platform during its normal movement.

ADJUST AIMING OF ACOUSTIC SENSOR BEAM

1. Place wheelchair with passenger in center aisle of coach, pointed at doorway where Threshold Warning System (TWS) is installed. The TWS should not detect a wheelchair and passenger when they are located this far from doorway.

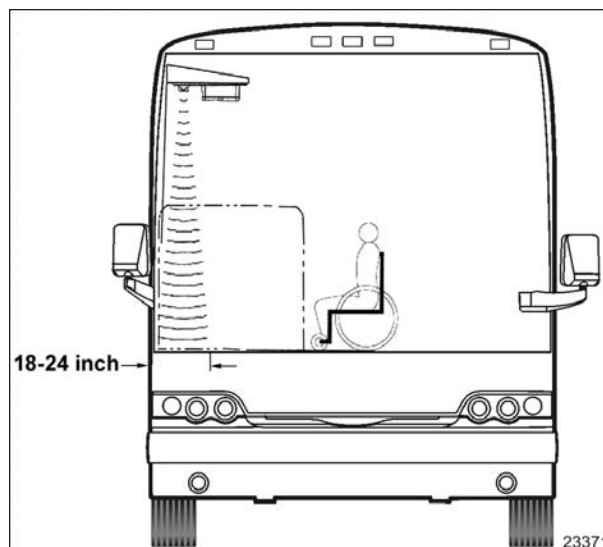


FIGURE 24: TWS AREA

2. Place wheelchair with passenger in center aisle of coach, pointed at doorway where Threshold Warning System (TWS) is installed. The TWS should not detect a wheelchair and passenger when they are located this far from doorway.
3. Place wheelchair with passenger in center aisle of coach, pointed at doorway where Threshold Warning System (TWS) is installed. The TWS should not detect a wheelchair and passenger when they are located this far from doorway.

NOTE

Only in rare instances will adjustment be needed in the counterclockwise direction

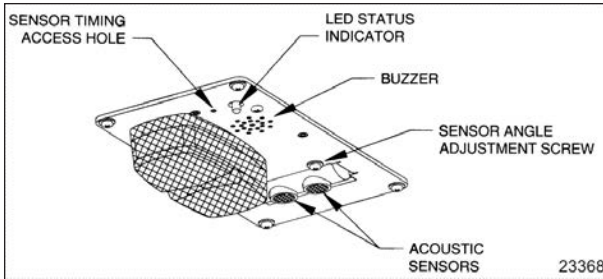


FIGURE 25: TWS MODULE DETAIL

TEST AIM OF ACOUSTIC SENSOR BEAM (WHEELCHAIR ACCESS)

1. Move wheelchair and passenger slowly towards doorway. TWS should detect wheelchair and passenger (LED will flash, buzzer will sound and the module red light will flash) when centerline of front wheels is between 18 and 24 inches from doorway.
2. Open vehicle access door above lift. Lower platform to ground and place wheelchair and passenger at rear of platform. Rollstop (rear barrier) should be up. Raise platform to floor level. This normal platform motion with wheelchair and passenger aboard should not actuate TWS. If LED does flash (buzzer will also sound and module red light will flash), turn sensor adjustment screw slightly counterclockwise.

NOTE

If an adjustment is made, repeat the previous step where wheelchair is between 18 and 24 inches from doorway.

ADJUST ACOUSTIC SENSOR TIMING

1. Support a flat sheet of cardboard, or similar material, directly beneath TWS module at a distance of 4½ feet below module. Sheet must be facing sensors.

NOTE

Before proceeding, visually inspect sensors to verify that they are pointing directly at floor, or nearly, and are not pointing off at an extreme angle.

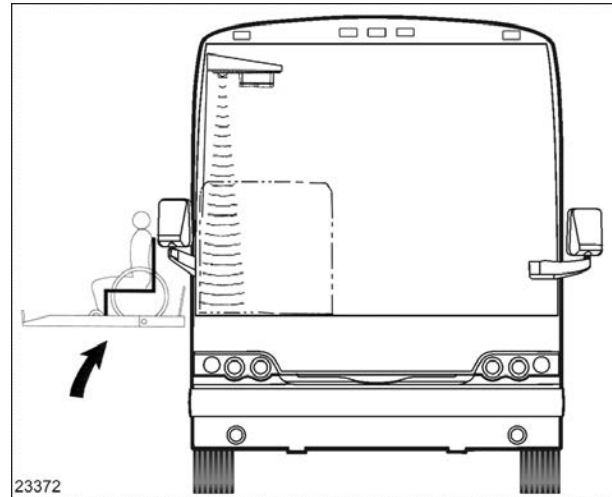


FIGURE 26: CHECKING NORMAL PLATFORM POSITION

2. Note the sensor timing access hole. This hole provides access to a plunger-actuated switch that sets the sensor timing. Insert a 1/16-inch diameter wire-like object into the access hole and press the plunger inward. The LED will flash momentarily while the module establishes the distance and then remain on steady. Release the plunger when the LED ceases to flash.

NOTE

It is important that objects, such as your body, tools, seats, etc, do not interfere with the beam while the adjustment is being made

WCL CASSETTE INSTALLATION AND REMOVAL

Refer to section 23 of the Maintenance manual for the WCL installation or removal procedure.

5-38 Other Features

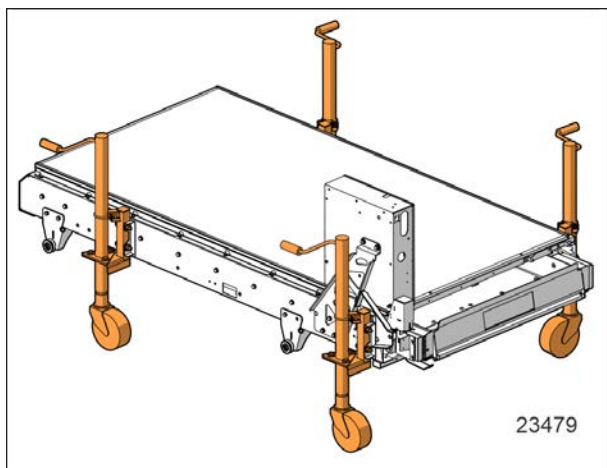


FIGURE 27: WCL CASSETTE WITH JACKS

SECTION 6 - STARTING AND STOPPING PROCEDURES

STARTING THE ENGINE	2
STARTING FROM THE DRIVER'S SEAT	2
STARTING FROM THE ENGINE COMPARTMENT	3
COLD WEATHER STARTING	4
JUMP STARTING	4
ENGINE PROTECTION SYSTEM	6
AUTOMATIC ENGINE SHUTDOWN	6
IDLE SHUTDOWN TIMER	6
ENGINE BLOCK HEATER	7
ENGINE WARM-UP	7
ALLISON TRANSMISSION WARM-UP	7

6-2 Starting and Stopping Procedures

STARTING THE ENGINE

In normal circumstances, the engine should be started from the driver's seat. However, a rear-start panel in the engine compartment allows starting the engine from that location, typically for maintenance operations. See [STARTING FROM THE DRIVER'S SEAT](#).

STARTING FROM THE DRIVER'S SEAT

1. Make sure the engine STOP interlock button located in the engine compartment is reset (twist and pull) to enable starting from the driver's seat and that the main electrical shut-off switch is set to the ON position (see images below).
2. Activate the ignition switch. See ["Ignition Switch" on page 12](#) in Controls and Instruments section.
3. Confirm the parking brake is applied;
4. Confirm the transmission is in neutral;
5. Depress the brake pedal.
6. Press the ENGINE START button. See ["ENGINE START BUTTON" on page 4](#) in Controls and Instruments section.

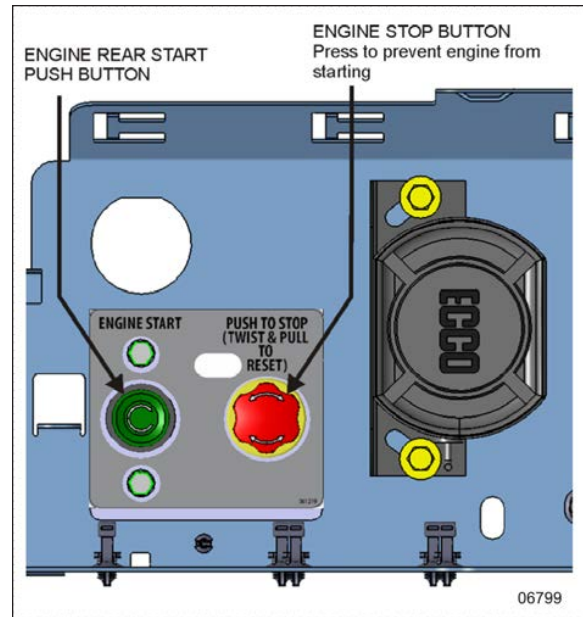


FIGURE 1: TYPICAL ENGINE STOP/IGNITION INTERLOCK BUTTON

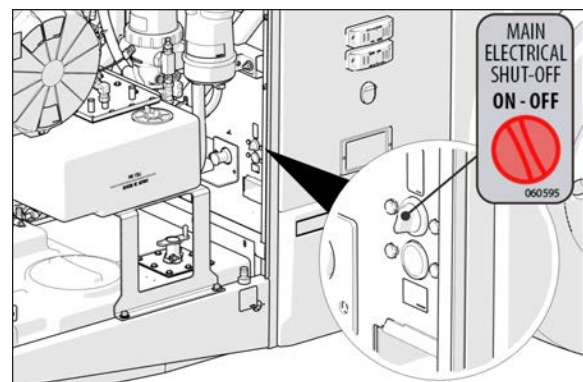


FIGURE 2: MAIN ELECTRICAL SHUT-OFF SWITCH

NOTE

When the ignition is turned to ON, the M32QR ABS Pressure Modulator Valve solenoids are briefly energized. This can be audibly detected by a rapid cycling of the PMVs. If the air system is fully charged and the service brake pedal is depressed when ignition is turned to ON, the modulator valves create a sharp audible "chuff" of air pressure.



CAUTION

Do not press the 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 normal 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 the accelerator pedal is depressed before starting, release and wait 30 seconds before attempting to start.



WARNING

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.

Stopping The Engine

1. Apply parking brake and place transmission in neutral (N);
2. Allow the engine to idle for at least two minutes before shutting down the engine. This ensures that the turbine speed drops and allows time for the engine exhaust gas temperature to drop to about 300°F (150°C);
3. Shut off all electrical loads;
4. Flip the ignition switch to OFF. See [Ignition Switch](#) in *Controls and Instruments* section.

NOTE

If ignition switch is turned OFF by mistake while the vehicle speed is higher than 6 mph (10km/h), the throttle function will be interrupted. The power steering will be maintained, and the transmission will stay in gear. An alarm in the instrument panel will sound to warn the driver.

Normal operation will resume as soon as the ignition switch is set back to ON.



CAUTION

Do not shut off the engine when running above normal idle.



CAUTION

Set the main electrical shut-off switch to the OFF position after parking and when left unattended for an extended period of time.

NOTE

To prevent discharge of the batteries when the engine is not running, some functions are automatically switched off if the battery voltage drops below 24.0 volts for more than 30 seconds. A pictogram and a message will appear in the DID while this protection mode is active. Set the ignition switch to the OFF position and then to the ON position to reactivate the functions for a period of 30 seconds before they switch off again. If a prolonged use of the functions with the engine not running is necessary, connect the battery to a charger.



CAUTION

When the vehicle is parked overnight or for an extended period of time, the main electrical shut-off switch should be set to the OFF position.

STARTING FROM THE ENGINE COMPARTMENT

Push buttons to start and stop the engine from the engine compartment are located on the R.H. side of engine compartment.

6-4 Starting and Stopping Procedures



DANGER

Apply parking brake and place transmission in neutral (N) before starting engine from inside the engine compartment.

1. Set the main electrical shut-off switch and ignition switch to the ON position.
2. Press the rear start push button to start engine from the engine compartment.

When servicing the engine, push the engine stop/ignition interlock button to prevent the engine from being started from the driver's area or the rear start push button.

Once servicing is done, twist and pull the button to allow normal engine start.



CAUTION

Refer to cautions in "STARTING FROM THE DRIVER'S SEAT" in this section.

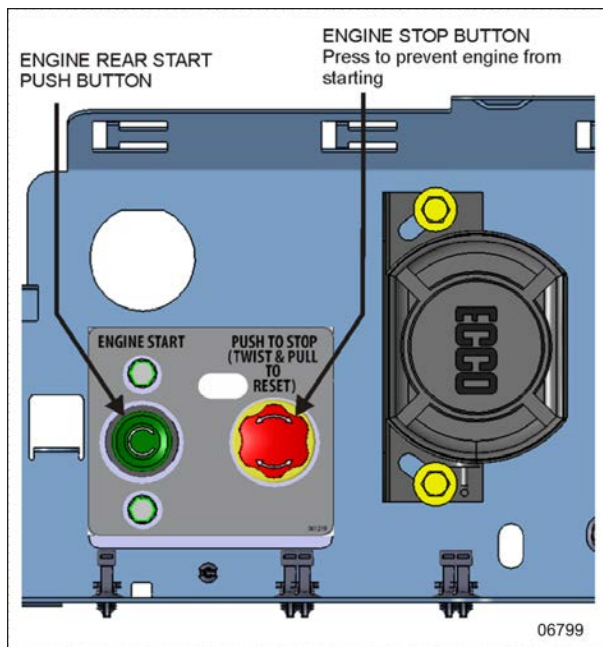


FIGURE 3: REAR START PANEL



DANGER

Do not wear loose clothing when working near engine. Stand clear of rotating components.



DANGER

Rotating shafts can be dangerous. They can snag cloth, skin, hair and hands, causing serious injury or death. Do not work on a shaft or other rotating parts of the vehicles (with or without guard) when the engine is running.

Stopping The Engine

Press the red engine STOP/ignition interlock button while the engine is running to stop the engine from the engine compartment.

COLD WEATHER STARTING

When starting a cold engine, the intake air will be warmed up with the intake air preheater. Turn the ignition switch to the ON position. The intake air preheater will not engage at coolant temperature above 54°F (12°C). If the coolant temperature is below 54°F (12°C), the intake air preheater will engage and will light the preheater telltale between 0 and 50 seconds, depending on the engine coolant temperature. Wait before the preheater telltale has turned off before starting the engine.



Intake Air Preheater Telltale

If necessary, once the engine has started, the preheater will re-engage (post heating) for the same length of time as the preheat time.



WARNING

Volvo D13 Engine

This engine is equipped with an intake air preheater. Never use ether or other combustible starting aid fluid. Introduction of ether or similar starting aids could cause a fire or explosion resulting in severe property damage, serious personal injury or death.

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.



DANGER

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.



DANGER

The battery could rupture or explode if jump started 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.



DANGER

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 clamps do not touch.



CAUTION

Never connect the jumper cable to the negative terminal post of the run-down battery.



CAUTION

Do not jump-start if a maintenance-free battery has a yellow test indicator. Have the battery replaced.



WARNING

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.



CAUTION

Choose a booster vehicle which produces comparable amperage as your vehicle.



CAUTION

Off-board battery charger with a start boost facility must not be used to jump-start the vehicle. This could damage the electrical system.

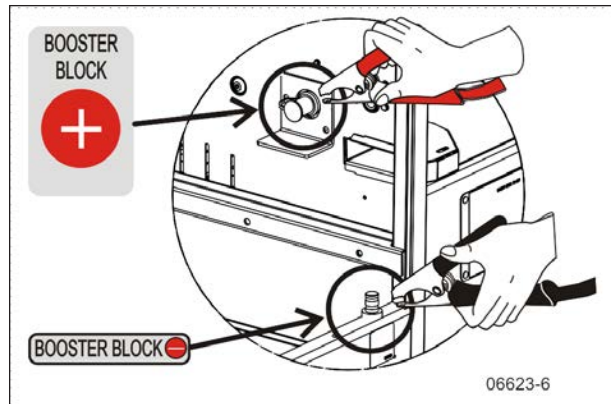


FIGURE 4: BOOSTER BLOCK TERMINALS LOCATION (H3 SERIES)

To jump-start, proceed as follows:

1. Remove the protective cap from the booster block terminal located in the R.H. side engine compartment;
2. If the good battery is in another vehicle, that donor vehicle's engine must be shut off before connecting. Shut off all electrical equipment on both vehicles.
3. Connect one end of the red jumper cable to the positive (+) post of the donor vehicle battery (or booster power source).
4. Connect the other end of the red jumper cable to the positive (+) terminal on the booster block;

6-6 Starting and Stopping Procedures

5. Connect one end of the black jumper cable to the negative (-) post on the donor vehicle battery (or booster power source);
6. Connect the other end of the black jumper cable to the negative (-) terminal on the booster block;
7. Start the engine of the donor vehicle and increase the engine rpm speed slightly and maintain at that level for approximately 5 minutes to recharge dead batteries and then, shut the engine off;
8. Start the vehicle with the dead battery;
9. Disconnect the jumper cables in reverse order given in steps 2 through 5;
10. Install protective cap on the booster block terminal.

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 and 30 feet (6 to 9 m), use 3/0 (AWG) gauge wires.

ENGINE PROTECTION SYSTEM

The engine protection will automatically derate or stop the engine when certain engine conditions reach a critical stage.

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 telltale light indicates a serious problem has been detected, and the driver must respond immediately to the problem. The vehicle must be safely pulled off the road and stopped. In some instances, the engine must be switched off immediately.

AUTOMATIC ENGINE SHUTDOWN

Prior to an actual automatic shutdown, the engine will automatically derate, go to idle, and then stop as the vehicle speed gets below 2 mph (3 km/h).

The engine shutdown protection will automatically derate and stop the engine when one or more of the conditions listed below reaches a critical point:

- High engine coolant temperature
- High engine oil temperature
- Low engine oil pressure
- High crankcase pressure

After the automatic engine shutdown sequence, the engine may be restarted. To do so, turn the ignition switch to the OFF position for 7 seconds and then turn it back to ON. However, it will only operate for 30 seconds unless the problem is resolved.

Use this function sparingly and in order to move the vehicle to a safe parking place only. Excessive use may result in severe engine damage.



WARNING

Failure to take necessary action when the STOP telltale light is on can ultimately result in automatic engine derate and shutdown.

IDLE SHUTDOWN TIMER

The idle shutdown timer (optional) is programmed to shut down the engine after a specific engine idling time. The idling time cannot be changed by the driver but can be changed with the use of a laptop computer and Premium Tech Tool. In this case, the engine idling time can be set from 30 seconds up to 1 hour.

The engine will shut down at the set time under the following conditions:

- Vehicle speed is 0;
- Engine is running at normal idle speed;
- Engine coolant temperature above 120°F (49°C);
- Temperature inside vehicle is between 59°F (15°C) and 81°F (27°C);
- Parking brake applied;
- Transmission into neutral (N);
- Wheelchair lift system is not in use;

Pressing the fuel pedal will prevent engine shutdown and restart countdown.

ENGINE BLOCK HEATER

The vehicle may be equipped with an engine immersion-type electric block heater to assist cold weather starting. A connector is on the rear pillar of the curbside engine compartment door frame. Using an extension cord, connect to a 120-V outlet.



CAUTION

Connect only to a 120-V power source. Use only grounded (three prongs) extension cords with a minimum rated capacity of 15 A. Disconnect the extension cord before starting. Before driving, make sure the extension cord is disconnected.

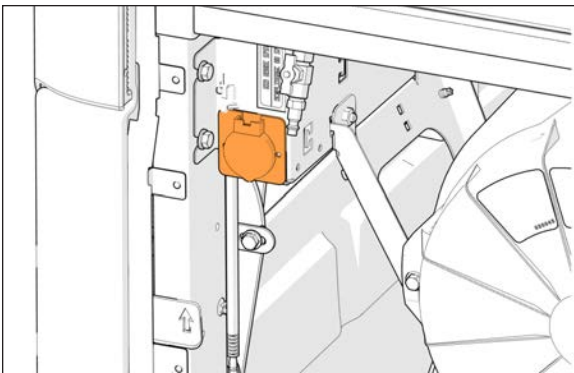


FIGURE 5: ENGINE BLOCK HEATER CONNECTOR (TYPICAL)

ENGINE WARM-UP

After starting the engine, keep the parking brake applied and let the engine run at normal 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 dashboard 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.

NOTE

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



DANGER

Never let the engine run in an enclosed, non-ventilated area. Engine exhaust fumes contain dangerous gases which can be fatal if inhaled. Before warming up the engine, open the door (s) or move the vehicle outside.

ALLISON TRANSMISSION WARM-UP

With an automatic transmission, when the temperature falls below -20°F (-29°C), the CHECK telltale light illuminates after the engine is started, and a reminder tone will sound. In this case, the transmission will be locked in neutral (N) until the transmission temperature rises above -20°F (-29°C) and the CHECK telltale light goes out. The transmission will only operate in first or reverse gears until it reaches normal operating temperature.

SECTION 7 - SAFETY FEATURES AND EQUIPMENT

EMERGENCY EXITS	2
SIDE WINDOWS	2
ROOF HATCH	2
ENTRANCE DOOR OPENING - EMERGENCY SITUATION	3
EMERGENCY EQUIPMENT	4
FIRE EXTINGUISHERS	4
FIRST-AID KIT	5
FIRE HATCHET	5
WARNING REFLECTORS H3 SERIES	5
JACK AND TOOLS H3 SERIES	5
SPARE PARTS KIT	5
AUTOMATIC FIRE SUPPRESSION SYSTEM (AFSS)	5
LIMP-HOME BELT	6
LOWER ALTERNATOR FAILURE	6
SPARE WHEEL	7
CHANGING A WHEEL	7
SUPER SINGLE TIRE REPLACEMENT	8
EMERGENCY AIR-FILL VALVES	8
EMERGENCY AND PARKING BRAKES	9
VEHICLE JACKING POINTS	9
TOWING THE VEHICLE	9
DAYTIME RUNNING LIGHTS	9
FOG LIGHTS	10
COMPARTMENT LIGHTING	10
MUD FLAPS AND SPLASH GUARDS	10
BACK-UP CAMERA	10
BACK-UP ALARM	10
ESSENTIAL FUNCTIONS TO OPERATE THE VEHICLE (BASIC LIMP-HOME FUNCTIONS)	10
AVAILABLE FUNCTIONS	10

7-2 Safety Features and Equipment

EMERGENCY EXITS

Locate and learn how to use all possible emergency exits. It is good practice to inform passengers of the location of exits and how to use them in case of an emergency.

SIDE WINDOWS

Most of the side windows can be opened from the inside to serve as emergency exits. A decal located on the bottom of each passenger window indicates the location of the nearest emergency exit. The emergency exit windows arrangement is slightly different on a vehicle equipped with a wheelchair lift system.

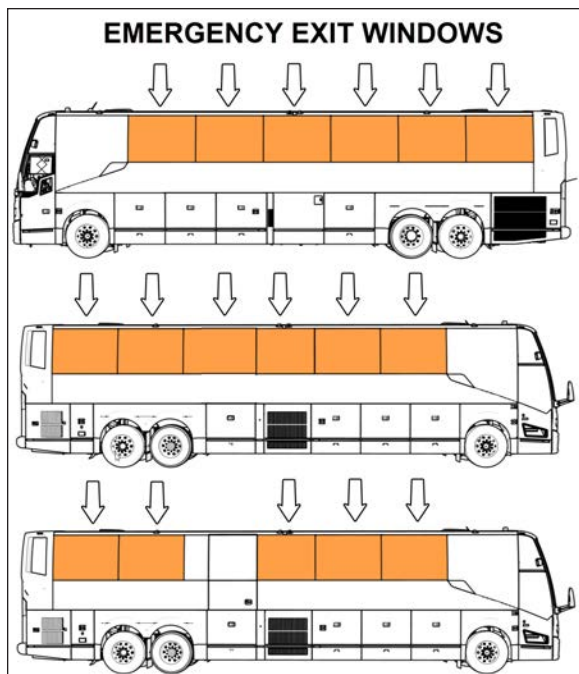


FIGURE 1: EMERGENCY EXIT WINDOWS

To open a side window emergency exit, tilt up the release bar and push the bottom of the window outwards, as illustrated below. The window is hinged from the top and will not fall out.

To close the window, tilt up the release bar and pull the window back. Push down the release bar to lock shut.

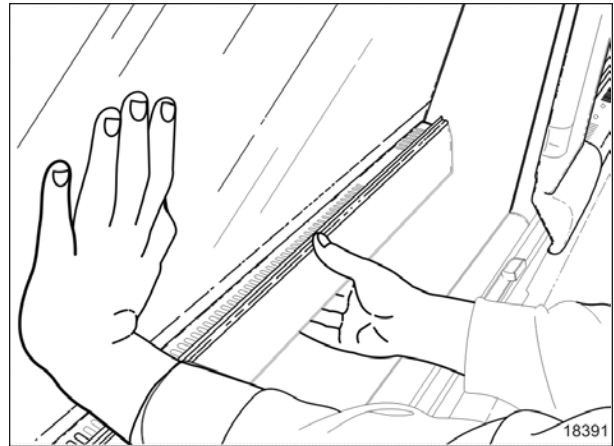
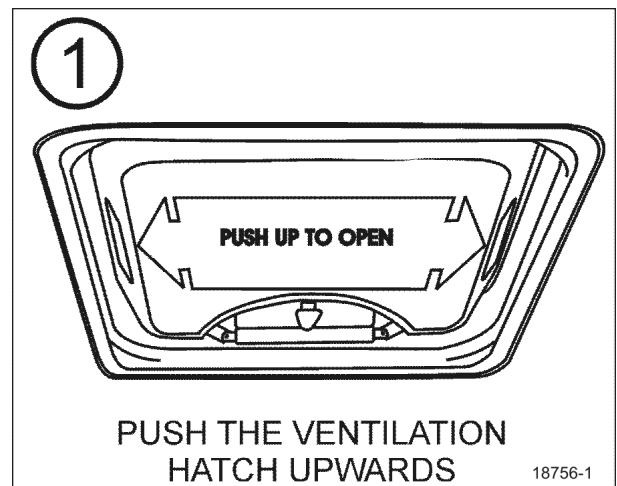


FIGURE 2: SIDE WINDOW EMERGENCY EXIT

ROOF HATCH

Two roof hatches serve as emergency exits. They are designed to be opened by occupants and are installed on the roof at the front and the rear of the vehicle. In case of an emergency, push the ventilation hatch upward (1). Turn knob $\frac{1}{4}$ turn (arrow pointing "TO EXIT") and then push knob to release the hatch (2). Push the escape hatch outwards (3). A decal with operating instructions is located on the hatch.



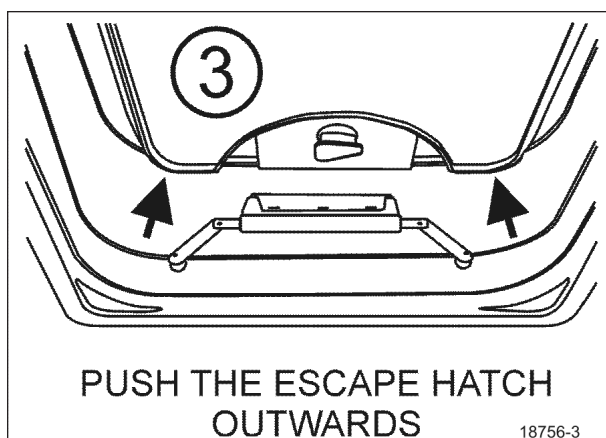
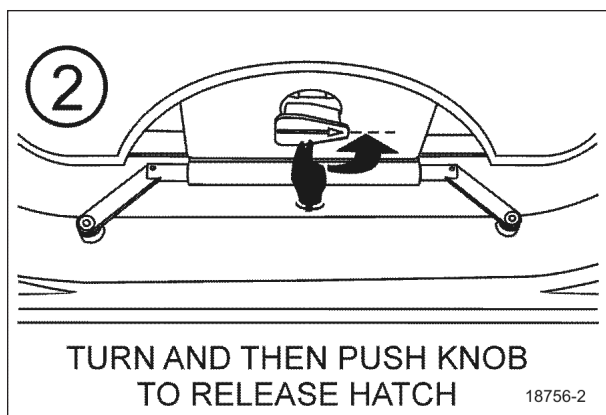


FIGURE 3: EMERGENCY ROOF ESCAPE OPENING

NOTE

In the event of ventilation blower motor failure, the roof hatch may be used to aid ventilation by pushing the hatch upward.



CAUTION

Be aware of reduced vehicle overhead clearance when driving under overpasses with an open roof hatch.

To latch escape hatch after use, vent arms must be pushed upright in FULL OPEN VENT position. Insert edge firmly between the two sections of the bracket and then return knob to original position (arrow pointing "LATCHED") to lock the hatch. Finally, pull the hatch into closed position, one side at a time.

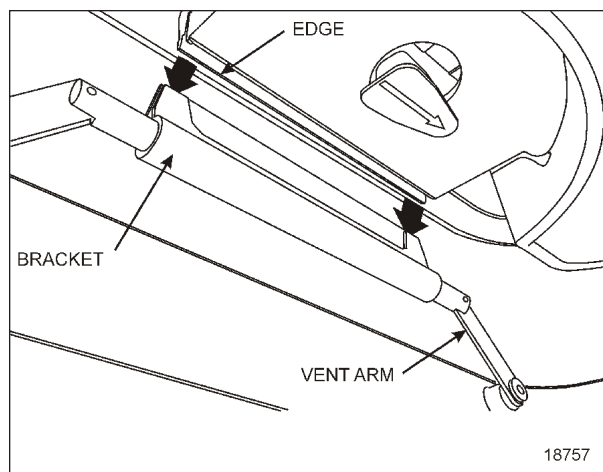


FIGURE 4: ROOF ESCAPE LATCHING

NOTE

Hatches may be equipped with fan. The switch to run the fans is located on the right side of the dashboard. Keep the hatches closed when running the fans.

ENTRANCE DOOR OPENING - EMERGENCY SITUATION

An air valve located above the entrance door allows depletion of the door and locking cylinders in emergency situation. Another valve is located in the front service compartment and allows emergency opening from outside the vehicle. To open the door in an emergency situation, first turn the unlatch valve in the direction of the arrows and push (or pull) the door open. To close the door after emergency opening, return the valve to its initial position, open the door using the door operating switch and close the door normally.

NOTE

To be able to open the entrance door in an emergency, the entrance door must first be unlocked using the key or locking lever before unlatching the door from the outside or the inside.

7-4 Safety Features and Equipment

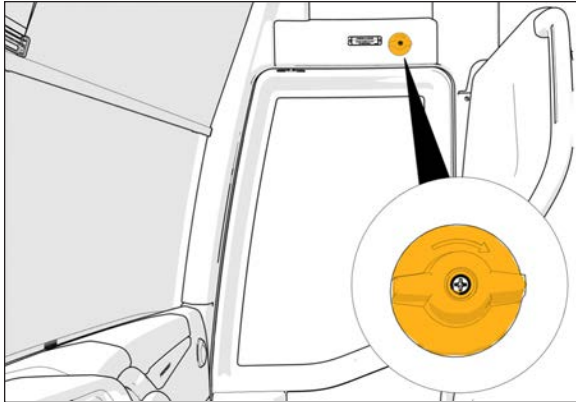


FIGURE 5: ENTRANCE DOOR UNLATCH AIR VALVE

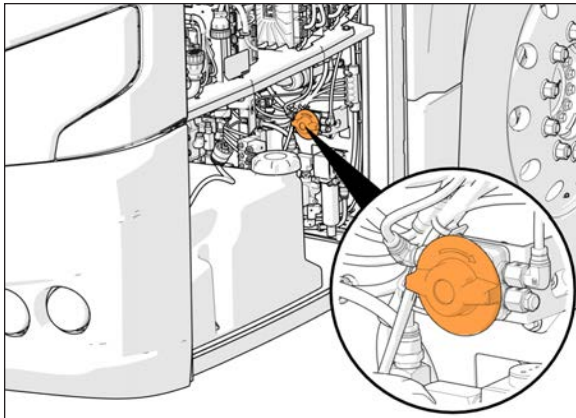


FIGURE 6: ENTRANCE DOOR UNLATCH AIR VALVE IN FRONT SERVICE COMPARTMENT

EMERGENCY EQUIPMENT

The vehicle is equipped with numerous safety features and equipment. Verify the equipment regularly and keep on hand and in good condition at all times. Following is the enumeration and description of safety equipment found on board.

FIRE EXTINGUISHERS

Fire extinguishers can be found at different locations in the coach according to the owner's choice.

Under The First Row Seats

Depending on selected options, two fire extinguishers may be located under the first row seats. A decal at the bottom of each of the trapezoidal windows in the first row indicates the location of fire extinguishers. Instructions for use are found on the extinguishers.



WARNING

Make sure you know how to operate the fire extinguishers in case of an emergency.

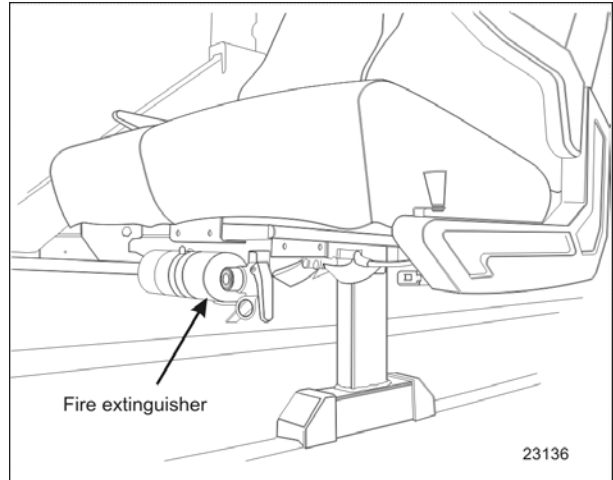


FIGURE 7: FIRE EXTINGUISHER UNDER FIRST ROW SEAT

In The Driver's Personal Compartment

An optional fire extinguisher may be located in the driver's personal compartment located on the L.H. side of the entrance stepwell or inside one of the first overhead compartments. A decal on the compartment door confirms the presence of a fire extinguisher.



WARNING

If a fire extinguisher is located in the driver's personal compartment, the compartment should remain unlocked whenever the vehicle is in operation.



FIGURE 8: A DECAL INDICATES THAT A FIRE EXTINGUISHER (OPTION) IS LOCATED IN THE DRIVER'S PERSONAL COMPARTMENT

In An Overhead Compartment

An optional fire extinguisher can be located in an overhead compartment. A decal on the door of the compartment confirms the presence of a fire extinguisher.



FIGURE 9: A DECAL INDICATES THAT A FIRE HATCHET, A FIRE EXTINGUISHER AND A FIRST-AID KIT ARE LOCATED IN THIS OVERHEAD COMPARTMENT

FIRST-AID KIT

The optional first-aid kit is stored in the first curbside overhead storage compartment. A white cross over red background decal identifies the kit.

FIRE HATCHET

An optional fire hatchet may be installed in the first curbside overhead storage compartment.

WARNING REFLECTORS H3 SERIES

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

JACK AND TOOLS H3 SERIES

A kit for jacking up the vehicle and changing wheels is stored in the first curbside baggage compartment. The kit includes:

1. 12-ton bottle jack
2. Wheel nut wrench and lever
3. Box containing three triangular reflectors

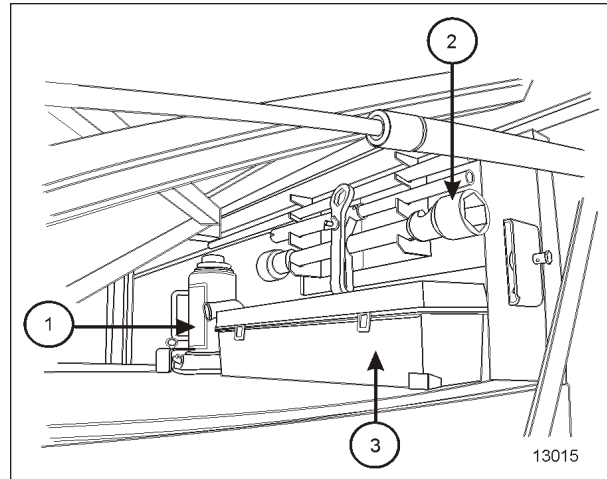


FIGURE 10: FIRST BAGGAGE COMPARTMENT H3 SERIES

SPARE PARTS KIT

The vehicle may be equipped with a spare parts kit (optional). The kit contains parts such as bulbs, circuit breakers, belts, etc. The spare parts kit is stored in the first baggage compartment.

AUTOMATIC FIRE SUPPRESSION SYSTEM (AFSS)

The vehicle may be equipped with the optional Automatic Fire Detection and Suppression System (AFSS).

System Operation

When a fire is detected inside the engine compartment, the system sends a fire alarm signal to the **Protection Panel** located in the driver's area near the lateral control panel. The **Protection Panel** immediately turns on the fire "ALARM" lamp and sounds the audio alarm. After a 15-second time delay the engine is automatically shut down. The fire extinguisher is discharged simultaneously with engine shutdown.

7-6 Safety Features and Equipment

NOTE

The Protection Panel continuously monitors system integrity and displays the information via the "SYSTEM OK" and fire "TROUBLE" indicators.

NOTE

The Manual Activation Switch is used when the immediate discharge of the fire extinguisher and engine shutdown is desired.

Operational Sequence (Fire)

1. A fire detector or linear thermal detector detects a fire in the engine compartment and sends a signal to the **Protection Panel** in the driver's area.
2. The fire "ALARM" lamp on the **Protection Panel** will illuminate solid red and an audible alarm will sound.
3. The operator shall bring the vehicle to a safe stop.
4. The system automatically shuts down the vehicle engine and discharges the extinguisher into the engine compartment 15 seconds after the fire alarm starts unless advanced or delayed by the operator.
 - If the operator presses the **Manual Activation Switch**, all delays will terminate and the engine shutdown and extinguisher discharge will occur immediately.
 - If the operator presses and releases the **Delay Engine Stop** switch once, the engine shutdown and extinguisher discharge will be delayed by an additional 15 seconds.



WARNING

The engine will stop 15 seconds after the fire alarm starts. The operator must be prepared to bring the vehicle to a safe stop as soon as the alarm sounds. Steering may become difficult after engine shutdown. If more time is required, the "DELAY ENGINE STOP" switch may be pressed and released for an additional 15 second delay.



WARNING

The extinguisher discharge may cause an obscuring cloud behind and near the vehicle.

5. The red fire "ALARM" lamp and audible alarm will stay on. The yellow fire "TROUBLE" lamp will also be on indicating a discharged extinguisher.
6. The system must be reset and the fire extinguisher removed and replaced in accordance with the System Reset portion of the Kidde Dual Spectrum Operation & Maintenance Manual.

LIMP-HOME BELT

In case of mechanical failure of the lower alternator, install the limp-home belt on the upper alternator. The installation of the belt allows the coach to be driven to a repair facility after only minor manipulations.

NOTE

Because of the alternators arrangement and the belt tensioner, a limp-home belt on the lower alternator is not possible.

LOWER ALTERNATOR FAILURE

1. Raise the belt tensioner. Use a breaker bar with a $\frac{3}{4}$ inch drive to rotate the tensioner pulley upward and relieve alternator belt tension. Remove belt;
2. Install the limp-home drive belt on the drive and top alternator pulleys first;
3. Complete installation of the limp-home belt as shown;
4. Slide the belt on the idler pulley;
5. Gently release the belt tensioner;

NOTE

To prevent the batteries from being discharged, the HVAC system will turn OFF automatically if the battery state of charge falls below 50%.

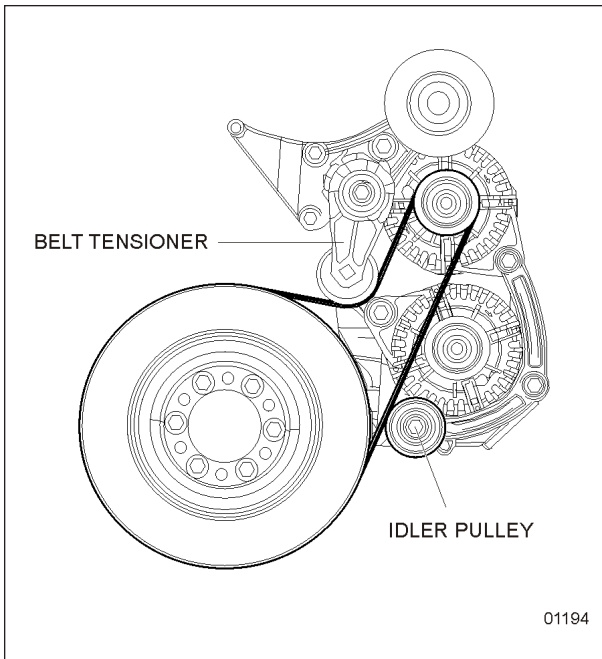


FIGURE 11: LIMP-HOME BELT ON TOP ALTERNATOR

SPARE WHEEL

The spare wheel and tire are located in a compartment behind the reclining front bumper.

In case of a flat tire:

1. Turn ON the hazard flashers;
2. Bring the coach to a stop on the side of the road;
3. Apply the parking brake;
4. Make sure the coach is parked safely away from traffic;
5. Set up the triangular reflectors in accordance with applicable highway regulations.

CHANGING A WHEEL

To access the spare wheel compartment, lower the front reclining bumper.

To do so, pull on the release handle located in the front electrical and service compartment.

The bumper will lower gradually. When closing the compartment, be sure the bumper is firmly in place.

NOTE

The bumper is equipped with spring hinges to allow handling by one person.

To Remove The Spare Wheel From The Compartment:

1. Loosen the screw holding the tire in place (see image).
2. Remove the wave pin and the clevis pin.
3. Pull the spare wheel out of the compartment using the strap.

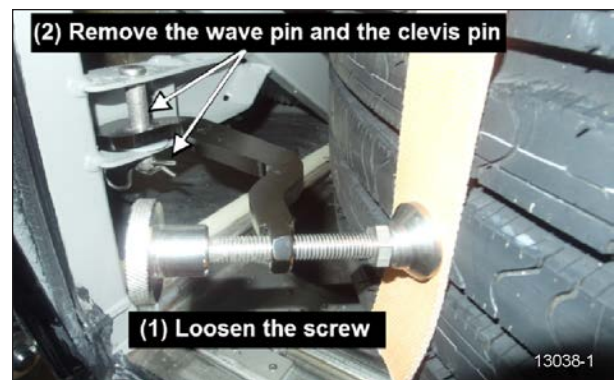


FIGURE 12: REMOVING THE SPARE WHEEL

Installation Of The Spare Wheel

NOTE

The jack and tools are located in the first baggage compartment.

1. Loosen the wheel nuts about one turn;
2. Raise the vehicle by the closest jacking point (refer to Maintenance information [MI18-18](#) for jacking points);
3. Remove the wheel nuts and remove the wheel;
4. Mount the spare wheel over the studs, being careful not to damage the stud threads;
5. Screw in the wheel nuts according to the sequence shown in the following figure and tighten slightly more and repeat the sequence a few times to position the wheel correctly. Once tightening induces wheel spin, lower the coach for final tightening;

7-8 Safety Features and Equipment

- Tighten the nuts progressively in the sequence shown. Final tightening should be done using a torque wrench. Dry tightening torque is 450 – 500 lbf-ft (610 – 680 Nm) for steel as well as for aluminum wheels.



FIGURE 13: TIGHTENING SEQUENCE

FIGURE 14:

NOTE

Periodically check the spare tire inflation pressure. Tire pressure should be the maximum pressure specified in the chart.

NOTE

Periodically check that the spare is securely fastened in its compartment.



CAUTION

Before driving, be sure the flat tire, track, jack and tools are securely reinstalled in their respective compartments.



CAUTION

Check that the bumper is securely closed shut before driving.

SUPER SINGLE TIRE REPLACEMENT

Increase tire pressure to 125 PSI (862 kPa) if you are using the supplied 365/70 R 22.5 spare tire to replace a super single tire on the drive axle.

In this particular configuration, the spare wheel is to be used for emergencies only and for temporary use.



WARNING

- Spare tire pressure should be increased to 125 PSI.
- Do not exceed 80km/h (50 MPH)
- Repair and reinstall original super-single wheel and tire **as soon as possible**.
- While the spare tire is installed, avoid sharp turns, sudden acceleration and braking.



WARNING

Before driving, be sure the flat tire, track, jack and tools are securely reinstalled in their respective compartments. Check that the bumper is securely closed shut before driving.

EMERGENCY AIR-FILL VALVES

The vehicle 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 front service compartment. The other valve is located inside the engine compartment.

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 front service compartment supplies air for accessories only.



CAUTION

Air filled through the two emergency fill valves will pass through the standard air filtering-drying system. Do not fill air at any other location. Do not exceed 120 psi (827 kPa).

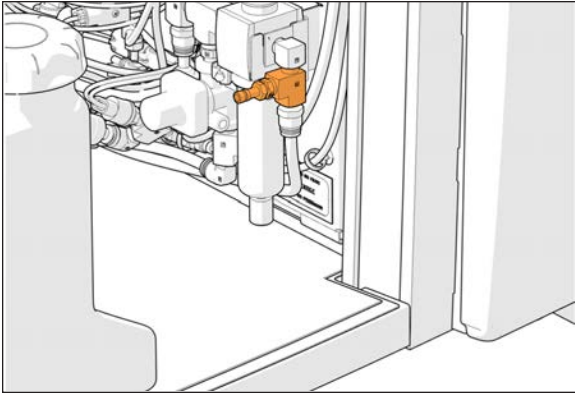


FIGURE 15: FRONT SERVICE COMPARTMENT AIR-FILL VALVE

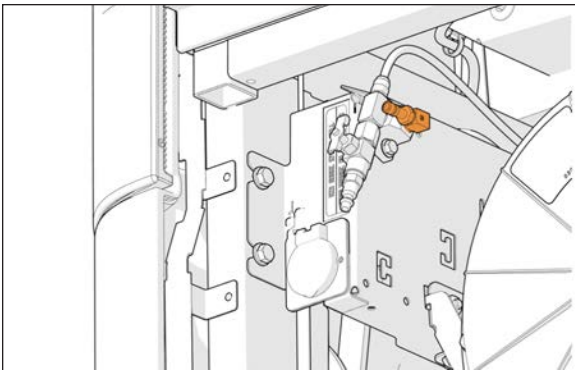


FIGURE 16: ENGINE COMPARTMENT AIR-FILL VALVE

EMERGENCY AND PARKING BRAKES

During normal operation, if air pressure in any brake circuit drops below 60 psi (414 kPa), spring-loaded emergency brake will be immediately applied at full capacity to the drive axle wheels to stop the vehicle.

Spring-loaded parking brake is applied by pulling the control valve knob.

Parking brake is not designed to be used as a service brake. For normal driving conditions, the control valve knob must remain depressed.



WARNING

Always apply the parking brake before leaving the driver's seat.

NOTE

Only use the parking brake to supplement the service brake to stop the vehicle in emergency conditions. The stopping distance will be considerably longer than when using normal service brake.

NOTE

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

NOTE

The alarm will sound if the ignition switch has been turned to OFF without applying the parking brake. The same beep will sound if pressure is still applied to the service brake pedal.

NOTE

The stop lights automatically turn on when the parking brake is applied and the engine is running.

VEHICLE JACKING POINTS

For detailed instructions, refer to Maintenance information [MI18-18](#), available on the technical publications website.

TOWING THE VEHICLE

For detailed instructions, refer to Maintenance information [MI18-18](#), available on the technical publications website.

DAYTIME RUNNING LIGHTS

The daytime running lights system provides added safety by making the front of the vehicle more visible to other drivers during the day.

The daytime running lights system turns the headlights on when:

- Engine is running;
- Parking brake is released;
- The exterior lighting switch is set to the OFF position or pressed to the first position.

7-10 Safety Features and Equipment



WARNING

At night, do not drive using the daytime running lights. When in use, the tail and rear marker lights are not turned on.

For night driving, turn the headlights lighting rocker switch to the second position.

FOG LIGHTS

Optional halogen fog lights are available. They provide better visibility in fog and precipitation. They improve visibility immediately in front of the vehicle. 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.

COMPARTMENT LIGHTING

Baggage compartments and the service compartment lights are automatically turned on when the corresponding compartment door is opened.

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 vehicle and prevent stones and debris from being thrown at vehicles traveling behind the vehicle.

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.

BACK-UP CAMERA

An optional back-up camera is available which provides the driver with visual assistance when backing-up. The monitor switches on automatically when the transmission is in the reverse (R) range.

BACK-UP ALARM

The back-up alarm alerts pedestrians and other drivers when the vehicle is being backed-up. Take extra precautions whenever backing-up. If necessary, use a guide to provide directions when backing-up. The back-up alarm is automatically activated when the transmission is put into reverse gear (R).

ESSENTIAL FUNCTIONS TO OPERATE THE VEHICLE (BASIC LIMP-HOME FUNCTIONS)

Even with a defective CECM (Chassis Electronic Control Module) or a CAN network problem, essential base functions are maintained to rear start the vehicle from the engine compartment and drive in a secure manner.

AVAILABLE FUNCTIONS

- Startup: Turn on the ignition in the driver's area and rear start the vehicle from the engine compartment,
- Headlights: Low beams only,
- Stoplights: 2 upper stoplights + high-mounted stoplight are functional,
- Opening the door: Functions normally,
- Closing the door: Manually pull on the door and it will lock automatically,
- Windshield wipers: Wipers functions at 1st speed only
- Directional signals: Rear and front only,
- Windshiel washer fluid,
- HVAC: Functional with a set point fixed at 70°F (22°C), evaporator and condenser fixed at speed 1, defroster fixed at speed 4.



CAUTION

The following directives must be followed.

- Never connect a battery charger when the ignition is at the ON position on a vehicle with a defective CAN or certain functions will start up by themselves,
- Disconnect the charger before starting the vehicle, if not the default functions will not activate,
- If the default mode does not activate, try to turn the ignition OFF while ensuring that no charger is connected and then restart the vehicle.

SECTION 8 - CARE AND MAINTENANCE

CLEANING	3
SEAT UPHOLSTERY	3
PLASTIC AND VINYL	4
WINDOWS	4
STAINLESS STEEL	4
HIGH PRESSURE LAMINATE	4
CARPET	4
RUBBER COMPONENTS	4
FLOOR CLEANING	4
EXTERIOR SURFACES	5
WINDSHIELD	5
WIPER BLADES	5
LAVATORY MAINTENANCE	5
WASTE WATER RESERVOIR	6
FRESH WATER RESERVOIR	7
FLUID LEVEL VERIFICATION	8
ENGINE OIL LEVEL	8
TRANSMISSION FLUID LEVEL	8
POWER STEERING FLUID LEVEL	9
DRIVE AXLE WHEEL BEARING OIL LEVEL	10
FRONT AND TAG AXLE WHEEL HUBS	10
COOLANT FLUID LEVEL	10
WINDSHIELD WASHER & HEADLIGHTS WASHER RESERVOIRS	11
OTHER VERIFICATION	12
ELECTRIC COOLING FANS	12
FIRE EXTINGUISHERS	12
PRIMARY FUEL FILTER	13
CENTRAL A/C COMPRESSOR BELTS	13
ALTERNATOR DRIVE BELTS	14
BACK-UP CAMERA	14
ENGINE AIR FILTER RESTRICTION INDICATOR	14
A/C AND HEATING SYSTEM AIR FILTERS	14
HOSE INSPECTION	15
LUBRICATION	16
WHEELS AND TIRES VERIFICATION	16
WHEEL BEARINGS	16
SERVICE BRAKE TEST	16
PARKING BRAKE TEST	16

8-2 Care and Maintenance

EXTERIOR LIGHTING VERIFICATION WITH TEST MODE	17
GENERAL RECOMMENDATIONS	19
WALKAROUND INSPECTION (BEFORE EVERY TRIP)	23
APPROACHING THE VEHICLE	24
PREPARATION	24
STEP 1: RIGHT SIDE	24
STEP 2: ENGINE COMPARTMENT RIGHT SIDE AREA	24
STEP 3: ENGINE COMPARTMENT	24
STEP 4: REAR LEFT SIDE	24
STEP 5: FRONT LEFT SIDE	25
STEP 6: FRONT	25
STEP 7: FRONT RIGHT SIDE	25
STEP 8: INSIDE THE VEHICLE	25
WITH ENGINE RUNNING	25

CLEANING

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

NOTE

Use only approved cleaning products such as Prevost A.P.C., all-purpose cleaner (Prevost # 683664). Never use stain protection products on new fabrics. To prevent permanent staining of fabrics, clean stains soon after they occur. Incorrect treatment of stains can worsen them. Get help from a cleaning specialist to remove stubborn stains.



CAUTION

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

SEAT UPHOLSTERY

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

NOTE

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

Removal Of Stains And Marks

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

Method One:

Apply a nonflammable solvent 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 Two:

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 one. If stain persists, repeat method one using methylated spirits instead of solvent.

Alcoholic Beverage Stains

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

Burns

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

Cosmetic Stains

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

Ink Stains

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

Blood, Urine Or Vomit Stains

Remove such stains by following method two.

Copying Ink - Ball-Point Pen Ink

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

8-4 Care and Maintenance

Marking Ink (Felt-tip Pens)

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

Oil, Grease And Paint

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

Rust Stains

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

Tar

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

Chewing Gum

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

PLASTIC AND VINYL

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

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

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

WINDOWS

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

STAINLESS STEEL

Use a stainless steel cleaner and follow the manufacturer's instructions. Stainless steel cleaning solution may be ordered from Prevest quoting part number 680356.

HIGH PRESSURE LAMINATE

Remove stains on laminated surfaces (Formica) with a household detergent, methylated spirits or mineral spirits. Clean with a mild liquid abrasive and water solution if stain persists.

CARPET

Vacuum carpets regularly to prolong carpet life.

RUBBER COMPONENTS

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



CAUTION

Never use solvents on rubber components.

FLOOR CLEANING

To keep its original appearance, wash the floor regularly. Clean vinyl floors with a quality nonionic detergent cleaner or a household all-purpose 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 percent Clorox in warm water.

NOTE

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



CAUTION

Using a water hose to clean the floor is prohibited since it could cause electrical shorts or damage the electrical system.

EXTERIOR SURFACES

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

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

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



CAUTION

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



CAUTION

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



CAUTION

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



CAUTION

Do not aim high-pressure water jet at radiator or condenser doors. This could damage the fins.

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

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

Tar Or Oil

Remove tar or oil as soon as possible with an approved automotive tar and oil remover or

turpentine. Thoroughly clean area with car wash soap and water. Let dry, then wax.

Insects

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

Tree Sap

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

WINDSHIELD

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

WIPER BLADES

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

LAVATORY MAINTENANCE

Flushed water from the lavatory is recirculated from the lavatory waste water tank (if two lavatory waste water tanks are installed, the top tank is the main tank and the bottom one becomes the auxiliary lavatory waste water tank). When the main lavatory waste water tank is too soiled to be recirculated, the driver can dump it into the optional auxiliary lavatory waste water tank until a suitable dump location can be reached. The main lavatory waste water tank is then filled with clean water and the process continues.

NOTE

The fresh water tank also drains into the lavatory waste water tank. This should be taken into account to avoid an overflow.

Routine draining and filling of lavatory tanks should be performed by maintenance personnel only, and should be done before parking the coach overnight in freezing temperatures.

8-6 Care and Maintenance

The lavatory waste water tank may be equipped with a heating element which permits circulating coolant fluid through the tank in cold weather. When not needed, close the valves to bypass the system.

WASTE WATER RESERVOIR

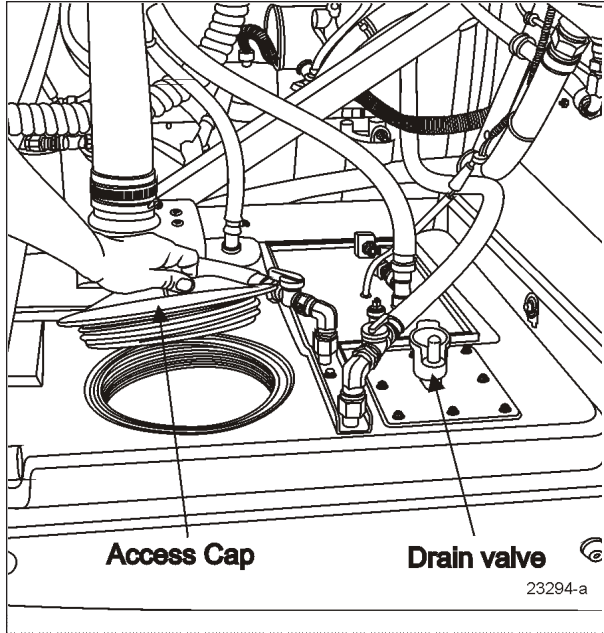


FIGURE 1: SINGLE LAVATORY WASTE WATER TANK OPTION

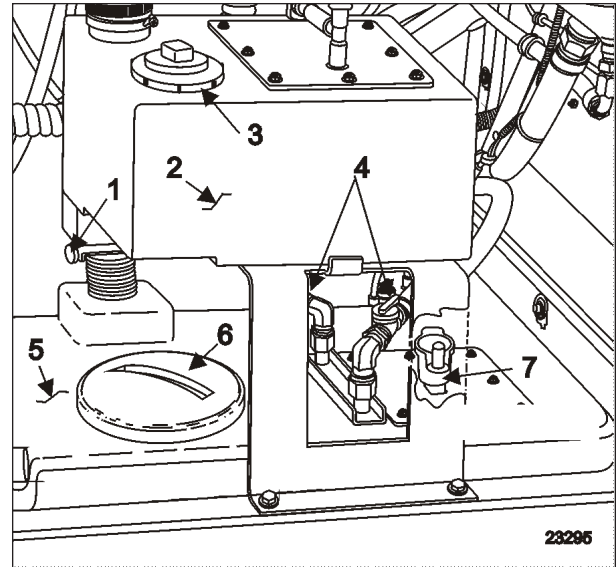


FIGURE 2: DUAL LAVATORY WASTE WATER TANK OPTION

1. Drain valve
2. Main waste water tank
3. Access cap
4. Heating element valves
5. Auxiliary waste water tank
6. Access cap
7. Drain valve

Filling The Lavatory Waste Water Tank

Fill the lavatory waste water tank through the access hole and throw in a packet of commercial toilet deodorant (Prevost part #900329).

Draining The Lavatory Waste Water Tank

When recirculating water in the toilet is soiled, drain the lavatory waste water tank. If equipped with the optional auxiliary lavatory waste water tank, drain the main lavatory waste water tank contents into the auxiliary tank by opening the knife gate valve under the tank. Perform the filling procedure of the main tank.

Draining The Large Lavatory Waste Water Tank

To drain the large lavatory waste water tank contents, remove the cap located underneath the tank then turn the drain valve lever counterclockwise about eight or nine turns and

pull the lever up. Remove the access cap and flush tank with clean water. To close, push the valve down on its seat then turn the drain valve lever several turns clockwise until the rubber bladder seals the drain hole. Reinstall both caps.

CAUTION

Lavatory tanks should be serviced only at suitably equipped stations.

NOTE

It is unlawful to dump lavatory waste water tank contents in any location other than those designated as such.

When a complete tank draining is required, clean main tank by repeating the draining and filling operations while leaving the auxiliary lavatory waste water tank drain valve opened. Close valves and drop in a packet of commercial toilet deodorant (Prevost part #900329) in toilet before starting final filling of the main tank.

WARNING

The toilet deodorant contains compounds which can be very irritating to skin. Use rubber gloves when handling and then clean toilet seat.

CAUTION

When cold weather is expected, both lavatory waste water tanks must be drained if the coach is parked overnight or for an extended period of time.

NOTE

Due to the heat it produces, there is less risk of freezing in the tanks when the engine is operating.

NOTE

New coaches are delivered with the sump and fresh water tanks empty. Fill with water before putting the coach in service.

FRESH WATER RESERVOIR

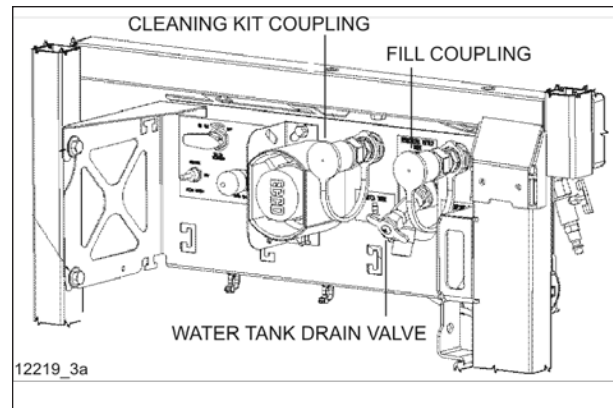


FIGURE 3: LAVATORY COUPLING & DRAIN VALVE

Water from the fresh water reservoir supplies the washbasin in the lavatory.

WARNING

Do not drink water from the fresh water reservoir.

Filling The Fresh Water Reservoir

Connect the fresh water supply hose to the fresh water reservoir fill connection located in the curbside engine compartment. The fresh water tank contains about 17 gallons (66 liters). Fill the reservoir until the overflow tube leaks, signaling that the reservoir is full.

WARNING

Never put antifreeze in fresh water reservoir. Antifreeze is toxic.

WARNING

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

Draining The Fresh Water Reservoir

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

8-8 Care and Maintenance

NOTE

The fresh water reservoir may be equipped with an optional thermal valve which is set to open at about 35°F, thereby automatically draining the reservoir in near-freezing temperatures.

Cleaning Cabinet

A hose connection and valve are located behind a small door in the top curbside corner of the rear lavatory wall. It can be used to attach a garden hose for lavatory cleaning. To use, connect a fresh water supply to the connection in the engine compartment, identified as "Cleaning Kit", located next to the fresh water reservoir fill coupling.

To prevent freezing during cold weather, drain the hose after every use.

FLUID LEVEL VERIFICATION

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

ENGINE OIL LEVEL

WARNING

Check the engine oil level with vehicle parked on a level surface and with the parking brake engaged.

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

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

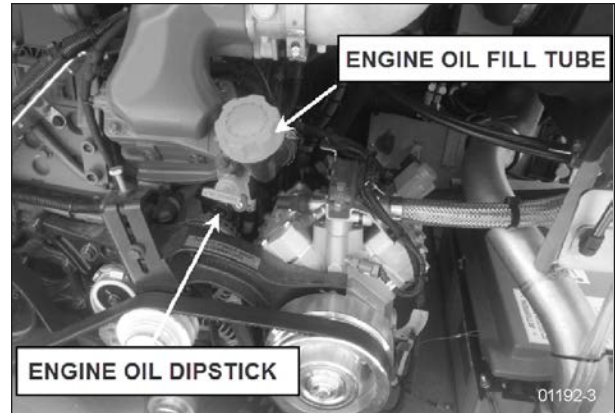


FIGURE 4: ENGINE OIL DIPSTICK - VOLVO D13 ENGINE

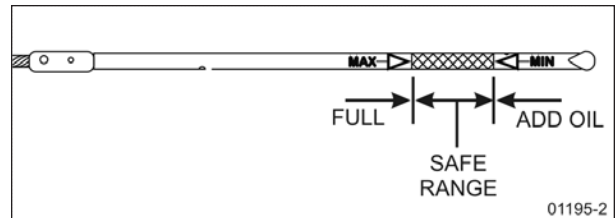


FIGURE 5: VOLVO D13 ENGINE OIL LEVEL DIPSTICK

TRANSMISSION FLUID LEVEL

DANGER

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

CAUTION

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

CAUTION

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

Allison Automatic Transmission Fluid Level

The transmission fluid level can be checked with the dipstick or with the use of the shift selector display. For more information on how to use the shift selector display to check the transmission oil level, refer to "[OIL LEVEL CHECK USING THE PUSHBUTTON SHIFT SELECTOR](#)" on page 1 in Appendix B.

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

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

NOTE

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

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

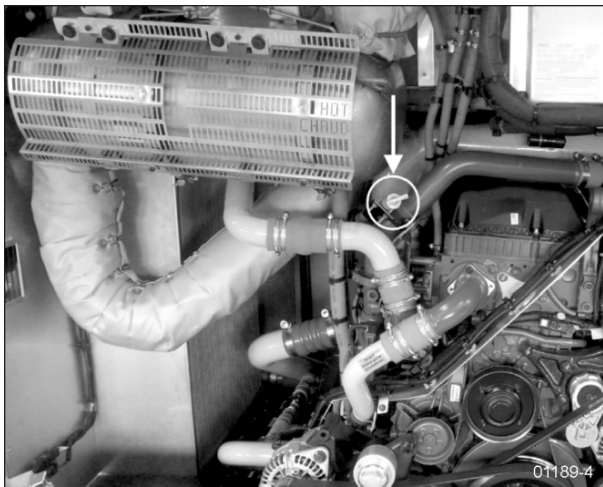


FIGURE 6: TRANSMISSION FLUID DIPSTICK (H3 SERIES)

• **Cold Check**

Run the engine until the transmission fluid temperature is between 60°F and 120°F (16°C and 50°C). With the engine idling, make sure the parking brake is applied and the transmission is in neutral (N). Shift transmission from forward (D) to reverse (R) and back into neutral (N) to fill clutch cavities with fluid. Remove and wipe the dipstick with a clean cloth. Check fluid level. If the fluid level is within the COLD RUN band, the fluid level is correct and a hot check can be performed. If the fluid level is on or below the lower line of the COLD RUN band, add fluid until the level lies within the COLD RUN band. If the

fluid level is above the COLD RUN band, drain fluid until the level is within the band.

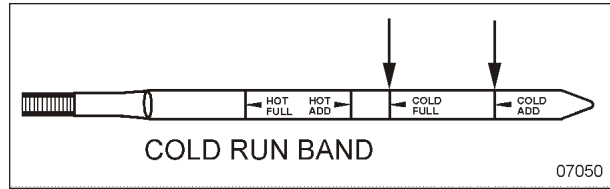


FIGURE 7: TRANSMISSION FLUID LEVEL DIPSTICK (TYPICAL)



CAUTION

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

• **Hot Check**

Make sure the transmission fluid temperature is between 160°F and 200°F (71°C and 93°C) before performing the hot check. With the engine idling between 500 and 800 RPM and the parking brake applied, shift transmission into neutral (N). Remove and clean dipstick, then check fluid level. If the fluid level is on or under the lower HOT RUN line, add just enough fluid to bring up the level to the middle of the HOT RUN band.

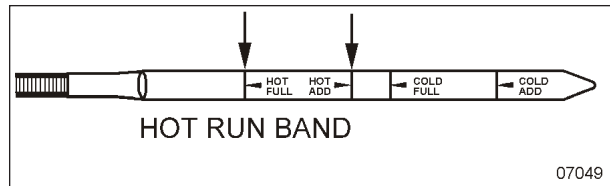


FIGURE 8: TRANSMISSION FLUID LEVEL DIPSTICK (TYPICAL)

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



CAUTION

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

POWER STEERING FLUID LEVEL

The power steering fluid tank is fixed on the main power compartment wall, accessible by the engine R.H. side access door.

8-10 Care and Maintenance

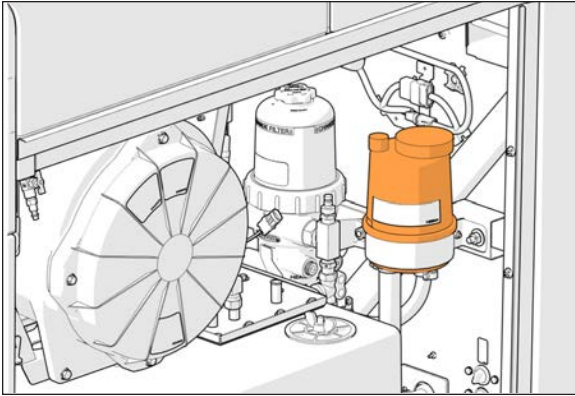


FIGURE 9: POWER STEERING RESERVOIR

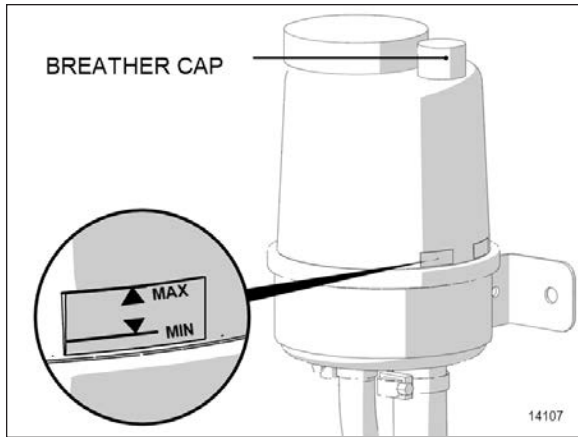


FIGURE 10: POWERSTEERING FLUID TANK

Check fluid level as follows:

1. Stop engine;
2. Open compartment door;
3. Thoroughly clean the reservoir and its immediate vicinity to protect the fluid from being soiled by impurities;
4. Check fluid level through the clear bowl and compare with the MIN & MAX marking affixed on the bowl;
5. Remove the breather cap and top up level to "MAX" mark;
6. Reinstall the breather cap.

DRIVE AXLE WHEEL BEARING OIL LEVEL

Drive axle wheel bearings are lubricated by the differential oil. Maintain differential oil at correct

level to ensure adequate lubrication of drive axle wheel bearings at all times.

FRONT AND TAG AXLE WHEEL HUBS

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

COOLANT FLUID LEVEL

The cooling system has two tanks; the surge tank (A) and the recovery tank (B).

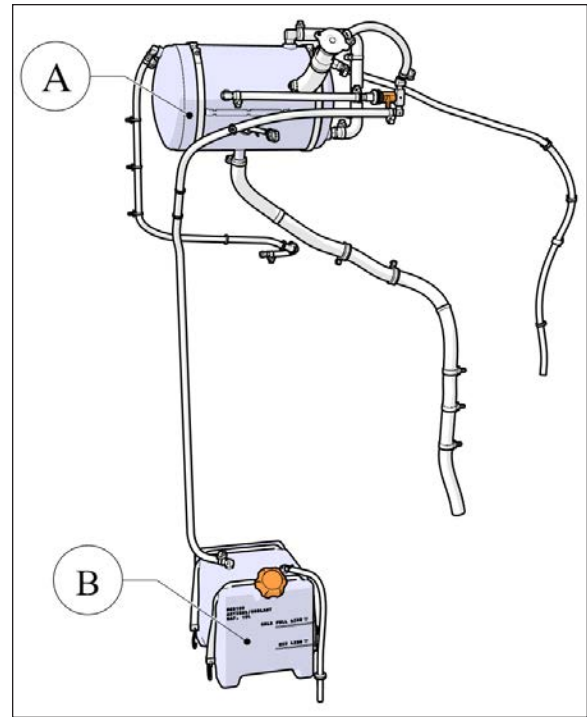


FIGURE 11: COOLANT TANKS ARRANGEMENT

Coolant level is checked through the recovery tank (B) when the engine is cold (ambient temperature). If the coolant level into the recovery tank is lower than the MIN LINE, remove the recovery tank filler cap and add coolant until reaching the FULL LINE.

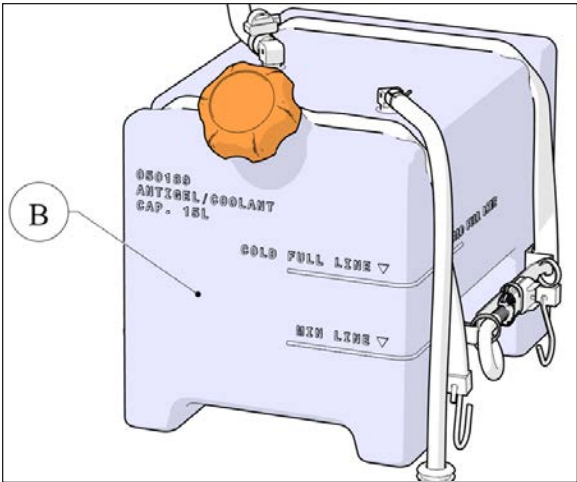


FIGURE 12: RECOVERY TANK

Fill the recovery tank with the same coolant than the one already in the cooling system. Do not mix two different types of coolant. Refer to the Maintenance Manual for proper coolant type specifications or see the label affixed near the coolant surge tank on the vehicle.

Coolant Level Sensor

Both tanks are equipped with a level sensor. A message appears on the DID according to which sensor is activated.

The following table shows the message and the description.

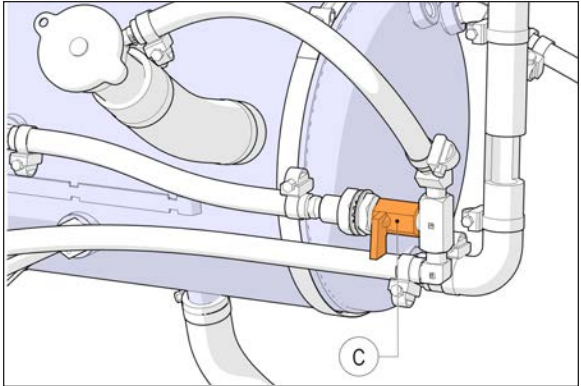
MESSAGE	DESCRIPTION
Check Engine Coolant Level at next stop	Low engine coolant level Warns the driver that the engine coolant level has reached the recovery tank low level sensor. Add coolant whenever possible in the recovery tank.

MESSAGE	DESCRIPTION
Engine Coolant Level critically Low	Critically low coolant level Warns the driver that the engine coolant level has reached the surge tank low level sensor. Stop and add coolant in the recovery tank.

Level from the level sensor does not match with the level lines on the recovery tank.

WARNING

Allow engine to cool down before adding coolant. There is no pressure into the recovery tank. If necessary, use the valve C (image below) to release the pressure into the surge tank and the cooling system. Close the valve after releasing the pressure.



WINDSHIELD WASHER & HEADLIGHTS WASHER RESERVOIRS

The windshield washer reservoir and headlights washer reservoir are located in the front service compartment door. Check fluid level regularly.

8-12 Care and Maintenance

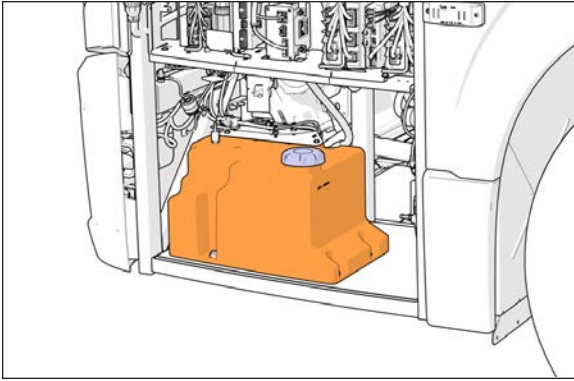


FIGURE 13: WINDSHIELD WASHER FLUID RESERVOIR



CAUTION

During cold weather days, use windshield washer fluid suitable for freezing temperature.

OTHER VERIFICATION

It is good practice to regularly inspect the vehicle for signs of component wear and to perform safety and maintenance routines.

ELECTRIC COOLING FANS

Inspect fan blades regularly, check for dirt or grime accumulations on the blade that could cause vibrations, clean as necessary using water and regular strength degreaser:

Check for cracks and signs of abrasion on the blades that could indicate contact with debris or obstruction during operation;

Check the bottom of the shroud cover and remove debris that could have accumulated. In sub-zero winter area, also check for snow and ice accumulation that could block the fan blades rotation;

Open the fan shroud as necessary (remove top and bottom hex screws) to facilitate cleaning and debris removal;

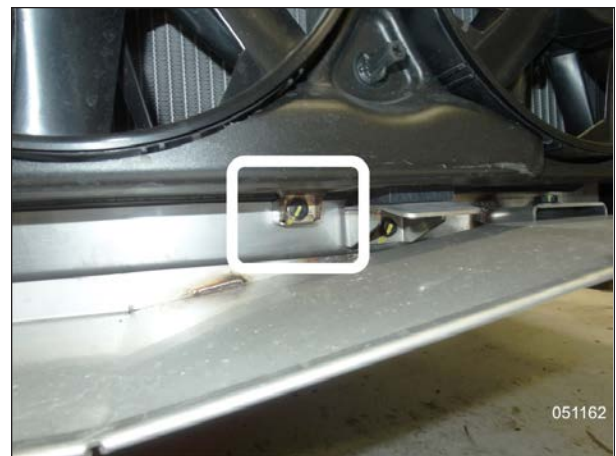


FIGURE 14: FAN SHROUD TOP & BOTTOM HOLD-DOWN SCREWS

NOTE

Electric cooling fan motors are sealed and certified IP6K9K and IP68. They can therefore be safely power/pressure washed.

FIRE EXTINGUISHERS

Inspect fire extinguishers monthly to ensure 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 obstructions;

Keep fire extinguishers clean.

PRIMARY FUEL FILTER

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

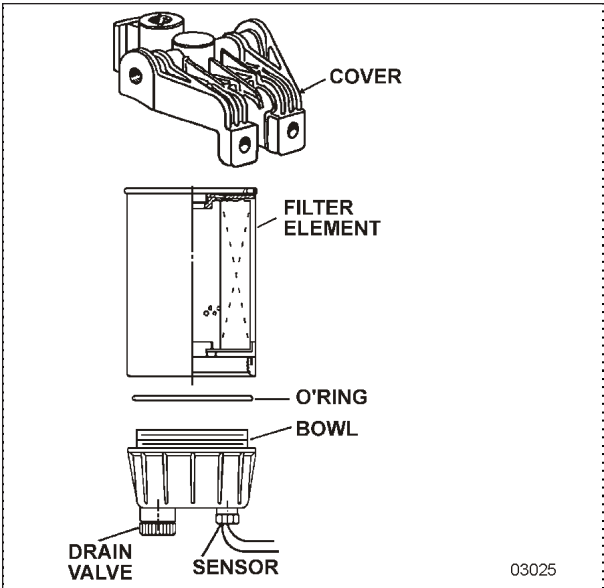


FIGURE 15: FUEL FILTER/WATER SEPARATOR

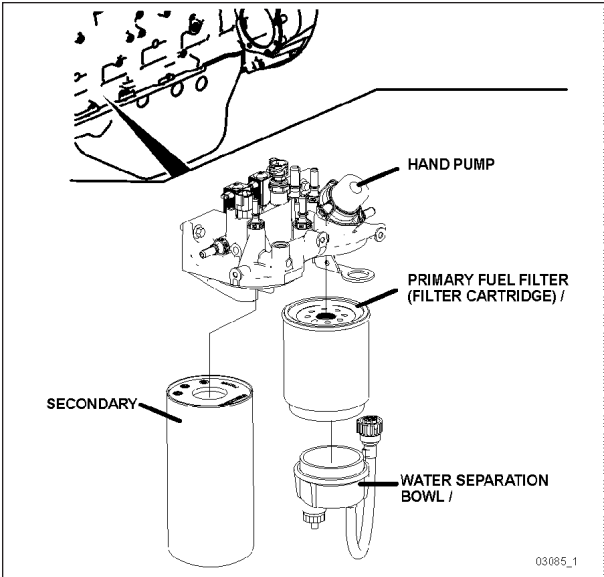


FIGURE 16: FUEL FILTERS WITH VOLVO D13 ENGINE

The optional Fuel Pro diesel fuel filter system consists of a permanently mounted fuel

processor, a replaceable filter element, a filter element cover and collar and a fluid filter base assembly. This system is installed between the fuel tank and the fuel pump and replaces the primary fuel filter. The filter serves as a water separator as well as a fuel filter. To drain water, loosen the drain valve below the separator one quarter turn. Close the drain valve when finished.

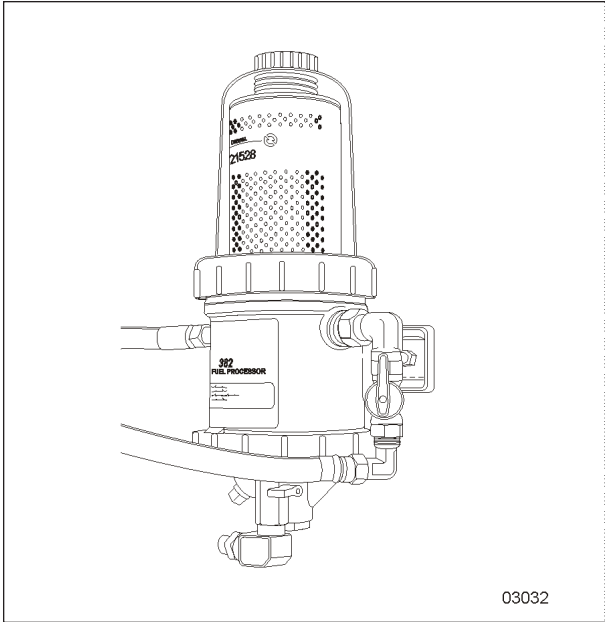


FIGURE 17: DAVCO FUEL PRO INSTALLATION

CENTRAL A/C COMPRESSOR BELTS

The air conditioning compressor is driven by two V-belts.

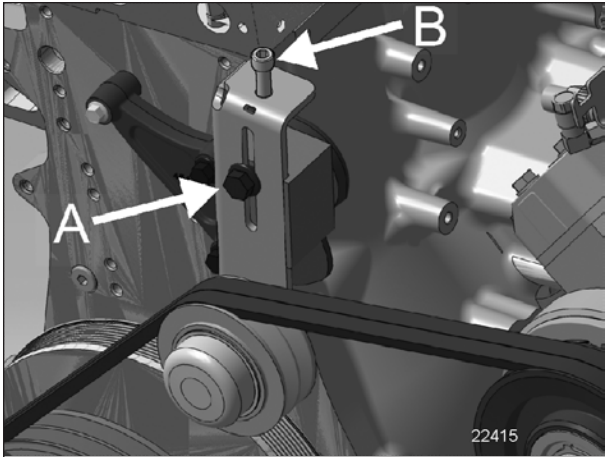


FIGURE 18: BELT TENSIONER

Belt tensioning is applied through the tensioner adjustment screw B. Loosen lock bolt A prior adjustment. Tighten lock bolt A to 43 lbf-ft once completed.

8-14 Care and Maintenance

Belt tension should be within the following values:

- New belts: 90-100 lbs.
- Used belts: 75-85 lbs.

Check belt tension using a belt strand tension gauge.

- Once adjustment completed, allow the engine to run for about ten minutes. Check belt tension and adjust if needed.
- Do not treat belts with any compounds. Keep belts dry.
- Periodically inspect belt and pulleys for wear or damage;

ALTERNATOR DRIVE BELTS

Automatic belt tensioners keep the correct tension so these belts do not require adjustment.

BACK-UP CAMERA

The optional back-up camera is located on the rear cap. As soon as the transmission is put in reverse (R), back-up camera and monitor are turned on automatically. To clean the camera's protective glass, 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.

ENGINE AIR FILTER RESTRICTION INDICATOR

An air filter restriction indicator is used to monitor the vacuum level between the air filter and the turbocharger inlet. A red marker is displayed when the air filter is clogged. Replace the air filter when a red marker is displayed or after a

maximum of two years. Reset by pressing on the indicator's extremity.

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

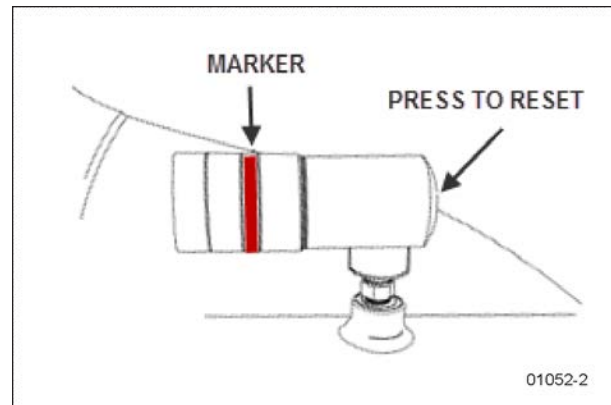


FIGURE 19: AIR FILTER RESTRICTION INDICATOR

A/C AND HEATING SYSTEM AIR FILTERS

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

To clean filters, remove lint using a nylon brush, back flush with water, then dry with air.

CAUTION

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

CAUTION

Be sure not to reverse filter upon installation.

Driver's Area Air Filter

The driver HVAC unit fresh air filter is located in the wiper drive compartment.

NOTE

If the windshield is continuously fogged, check that the driver's area air filter is not clogged

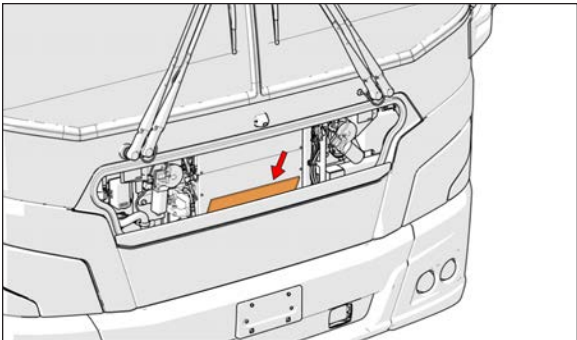


FIGURE 20: DRIVER HVAC SYSTEM FRESH AIR FILTER

Two recirculating air filters are located under the central utility compartment.

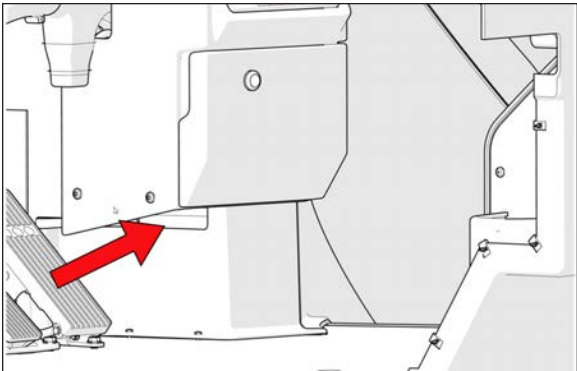


FIGURE 21: ACCESS TO THE RECIRCULATING AIR FILTERS

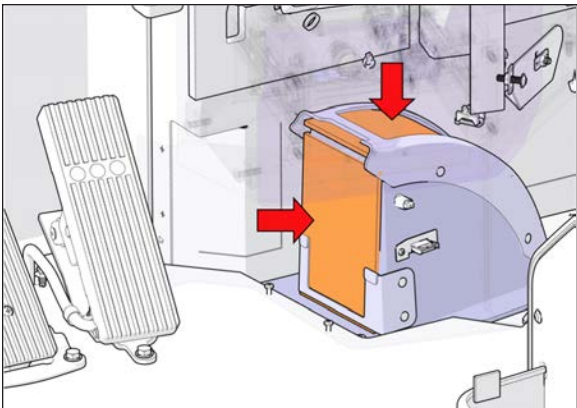


FIGURE 22: TWO RECIRCULATING AIR FILTERS LOCATED UNDER THE CENTRAL UTILITY COMPARTMEN

Cabin Area Air Filter

To access central HVAC system filter, open the baggage compartment on the left of the evaporator compartment. The filter is located behind an access door held shut by three retaining screws. Slide out the filter, clean or replace.

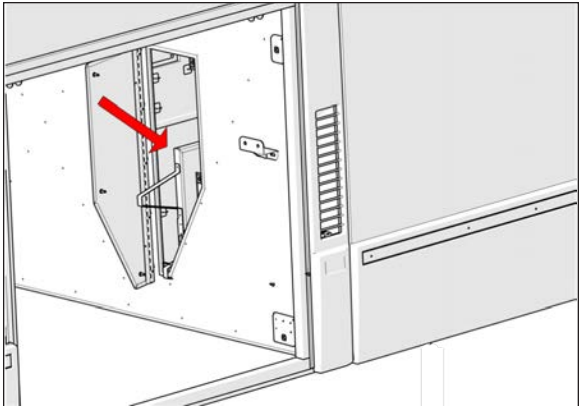


FIGURE 23: PASSENGERS AREA AIR FILTER

Air Filter In The Overhead Compartments

Remove, clean or replace the air filter located in each overhead compartment A/C fan.

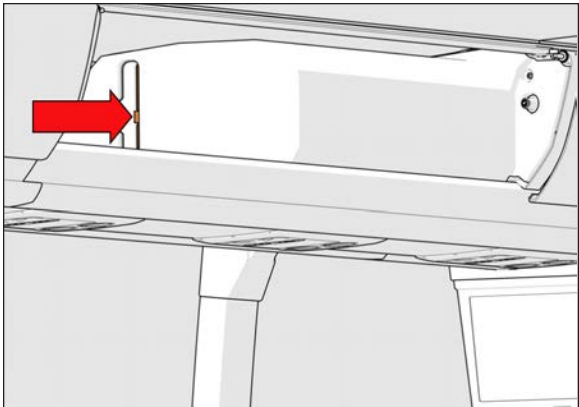


FIGURE 24: OVERHEAD COMPARTMENT FAN AIR FILTER

HOSE INSPECTION

Inspect hoses for leaks regularly to ensure efficient, economical and safe operation of the engine and related equipment. 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, frequently inspect and tighten or replace as necessary.

8-16 Care and Maintenance

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

Personal injury and property damage may result from fire caused by leaking flammable fluids.

Hose Service Life

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

Hoses should be replaced during major overhaul or after a maximum of seven service years. Be certain replacement hoses are matching the original equipment manufacturer's specifications.

LUBRICATION

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

WHEELS AND TIRES VERIFICATION

Check for loose wheel nuts. Inspect all types of rims for cracks. Cracks can appear in many places but typically radiate out from where a load is applied. Both aluminum alloy and steel wheel nuts should be tightened to 450 to 500 foot-pounds (610 to 680 N.m.) torque.

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

NOTE

For coaches, recommended tire inflation pressures are given in the "Coach Final Record", placed in the technical publications package supplied with the vehicle. The cold tire inflation pressures are on the Department of Transport certification plate located on the L.H. console besides the driver's seat. When special tires are installed by PrevoSt on a new vehicle, a special tire inflation chart is added next to the certification plate.



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.



WARNING

If replacement tires are different from those specified on the certification plate, pressure must be adjusted following manufacturer recommendations.

WHEEL BEARINGS

Check wheel bearing cover for overheating (especially after using the service brakes) during fuel stops by touching the wheel bearing cover.

SERVICE BRAKE TEST

Check for correct pressure build-up. Stop engine and check pressure gauge. Pressure loss should not exceed 3 psi/min (21 kPa/min) with engine stopped and without brake pedal applied. Air loss should not exceed 7 psi/min (48 kPa/min) with engine stopped and brake pedal fully applied.

A convenient way to proceed to the service brake test is with the use of the DID menu "Air Brake Leak-Down Test". For more information, refer to *Appendix E*.

PARKING BRAKE TEST

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

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

EXTERIOR LIGHTING VERIFICATION WITH TEST MODE

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

Activating The Test Mode:

When the vehicle is parked and the parking brake is applied, start the lighting check mode using the DID display screen. In *APPLICATIONS*, select *PRE-TRIP ASSISTANT - EXTERIOR LIGHT INSPECTION TEST*. See [PRE-TRIP ASSISTANT - EXTERIOR LIGHT INSPECTION TEST](#) in Appendix E.

This test can be done when the engine is not running, providing that the battery charge is sufficient (above 24.0 volts).

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

Stopping The Test Mode:

To stop the test mode, turn the ignition switch to OFF or remove the parking brake. You can also interrupt this mode by exiting the test mode screen by pressing the APPLICATION TRAY/BACK button.

NOTE

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

8-18 Care and Maintenance

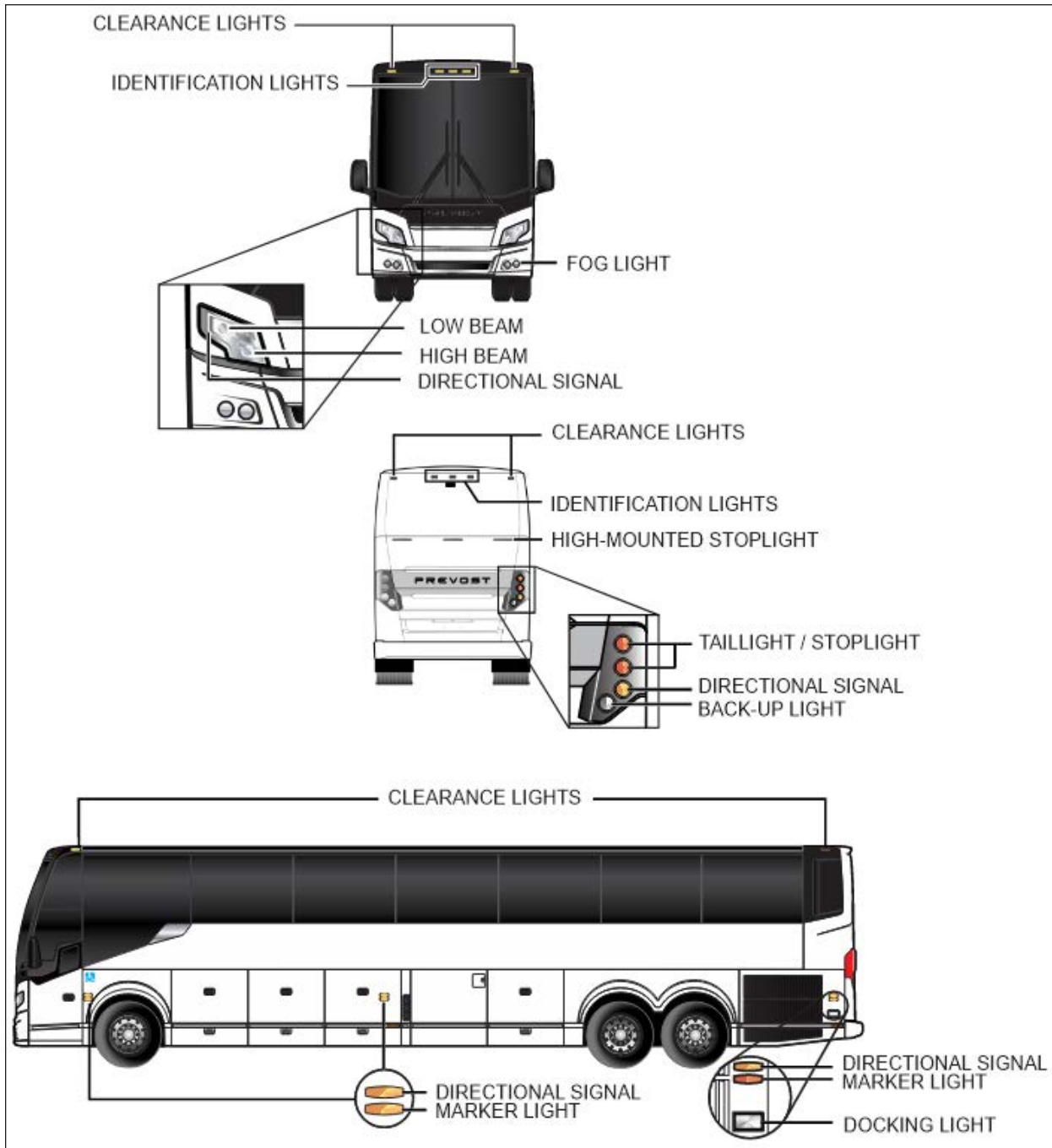


FIGURE 25: EXTERIOR LIGHTING (H3 SERIES)

GENERAL RECOMMENDATIONS

- Understand the basic principles of vehicle operation;
- Always maintain the vehicle in good running condition;
- Do not drive with low fuel. If the fuel tank runs dry, the engine will not start until the air is bled from the fuel system. Refer to "Maintenance Manual" for more information;
- Allow engine to run for at least two minutes at normal idle before shutting off;
- Engine should be at idle when shifting from neutral (N) to forward (D) or from neutral (N) to reverse (R);



CAUTION

Fast idle should always be turned off before releasing the parking brake and putting the coach in gear. Driveline damage can result if the fast idle switch is always left on.

- The automatic transmission does not have a park (P) position. Place transmission in neutral (N) position and apply parking brake when the vehicle is stopped. A warning buzzer will sound if the engine is stopped and the parking brake has not been applied when foot pressure is removed from the brake pedal;
- Always follow the procedures described in this manual;
- Unless stated otherwise, shut off the engine before performing all servicing, lubrication and maintenance tasks;
- Do not attempt to push or pull-start the coach;
- The vehicle may be damaged if towed with the axle shafts or driveshaft connected;

- Two chemical fire extinguishers are provided with the vehicle. Placement may vary depending on options and models. Take a moment to locate them in your vehicle.
- In case of fire, immediately evacuate all occupants. Occupant safety is the first priority. Do not attempt to extinguish the fire if there is immediate danger or risk for personal injury;
- When driving on ice and snow, accelerate and decelerate gradually;



WARNING

Report all problems affecting passenger or driver safety to a Prevost service center. Have problems corrected immediately.

8-20 Care and Maintenance

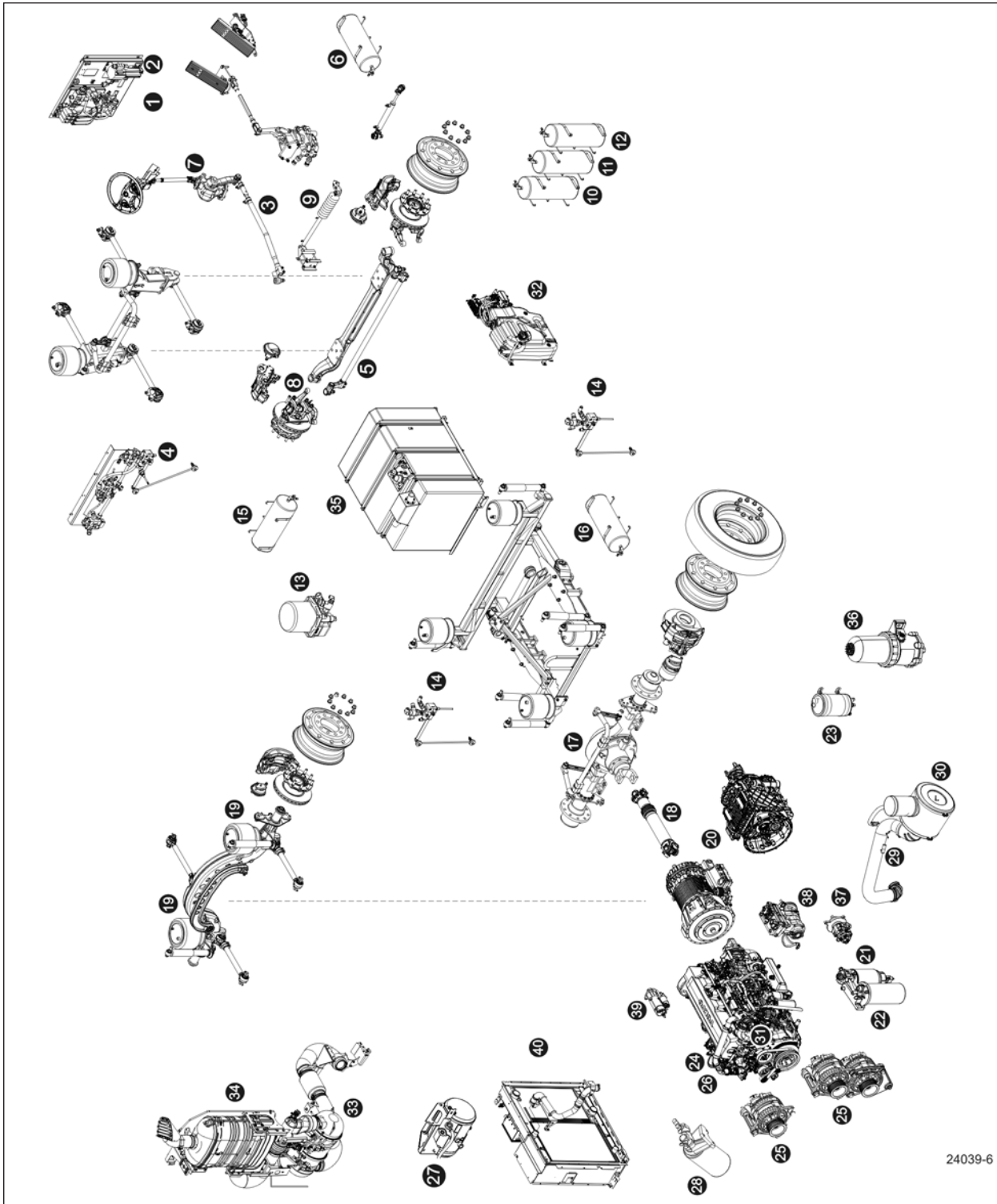


FIGURE 26: H3 SERIES COMPONENTS IDENTIFICATION (MAY DIFFER SLIGHTLY FROM THE ACTUAL VEHICLE)

- | | | | |
|----|-----------------------------------------|----|-----------------------------------------|
| 1 | Accessories air tank drain cock | 21 | Primary fuel filter |
| 2 | Accessories air filter | 22 | Secondary fuel filter |
| 3 | Steering drag link | 23 | Power steering fluid tank |
| 4 | Height control valve (front) | 24 | Engine oil filter |
| 5 | Steering tie rod | 25 | Alternators |
| 6 | Accessories air tank | 26 | Allison transmission oil dipstick |
| 7 | Steering column U-joints | 27 | Engine coolant surge tank |
| 8 | Steering knuckle pins | 28 | Coolant filter & conditioner |
| 9 | Steering damper cylinder | 29 | Engine air filter restriction indicator |
| 10 | Emergency / parking brake overrule tank | 30 | Engine air filter |
| 11 | Secondary air tank | 31 | Engine oil dipstick and filler tube |
| 12 | Kneeling air tank | 32 | DEF tank |
| 13 | Air dryer | 33 | Diesel particulate filter |
| 14 | Height control valve (rear) | 34 | SCR catalytic converter |
| 15 | Wet air tank | 35 | Diesel fuel tank |
| 16 | Primary air tank | 36 | Davco Fuel Pro fuel filter |
| 17 | Differential | 37 | Power steering pump |
| 18 | Propeller shaft | 38 | Air compressor |
| 19 | Tag axle lever pivot | 39 | Starter |
| 20 | Transmission | 40 | Cooling Assembly (Radiator & CAC) |

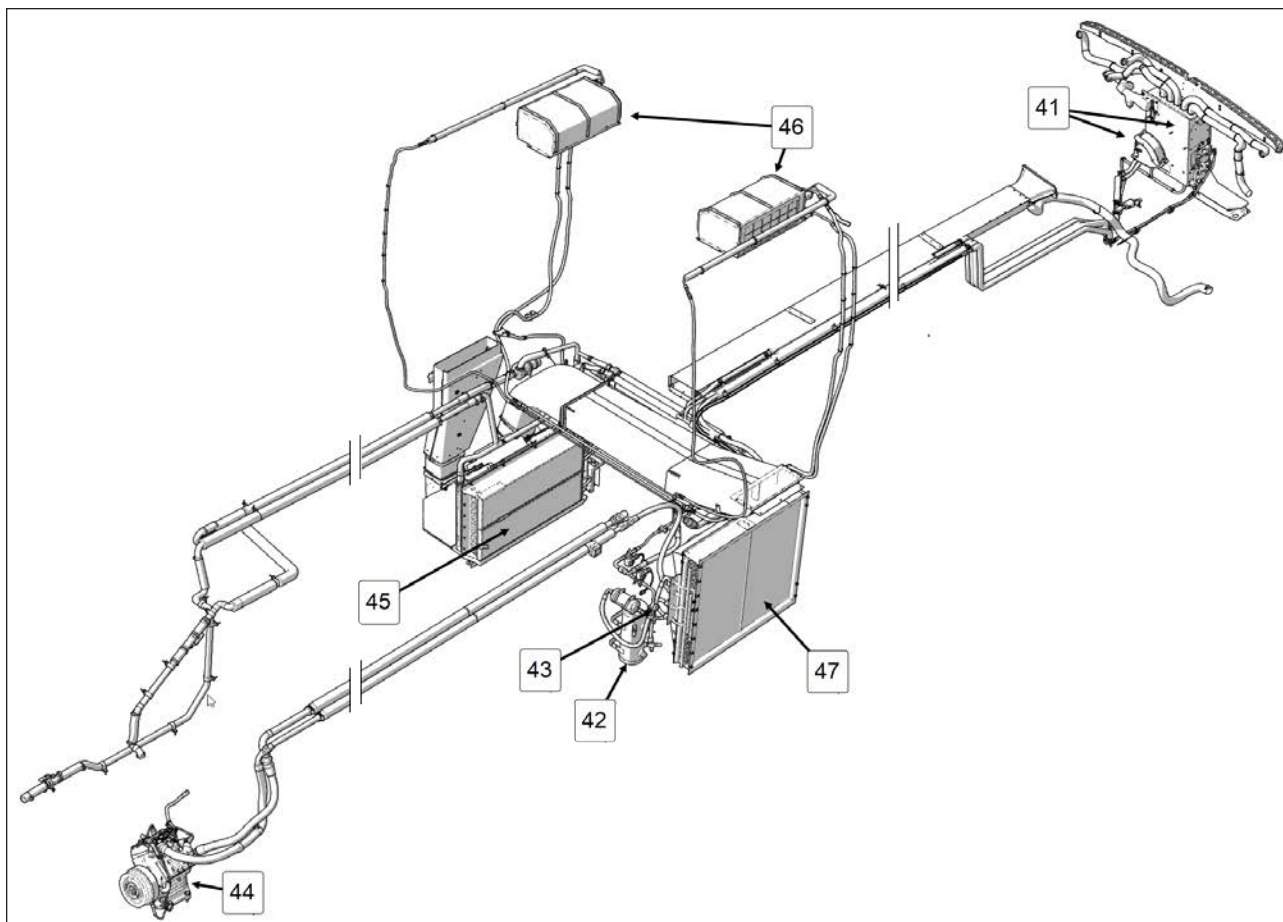


FIGURE 27: HVAC SYSTEM - MAIN COMPONENTS

- | | | | |
|----|--------------------------------|----|------------------------------------|
| 41 | Air filters – driver unit | 45 | HVAC air filter – passenger's unit |
| 42 | Receiver tank | 46 | Overhead compartment evaporator |
| 43 | Refrigerant moisture indicator | 47 | Condenser core |
| 44 | A/C compressor | | |

WALKAROUND INSPECTION (BEFORE EVERY TRIP)

It is good practice to make a visual inspection of key areas on the vehicle every day (or before every trip for private coaches) and to correct any problem found.

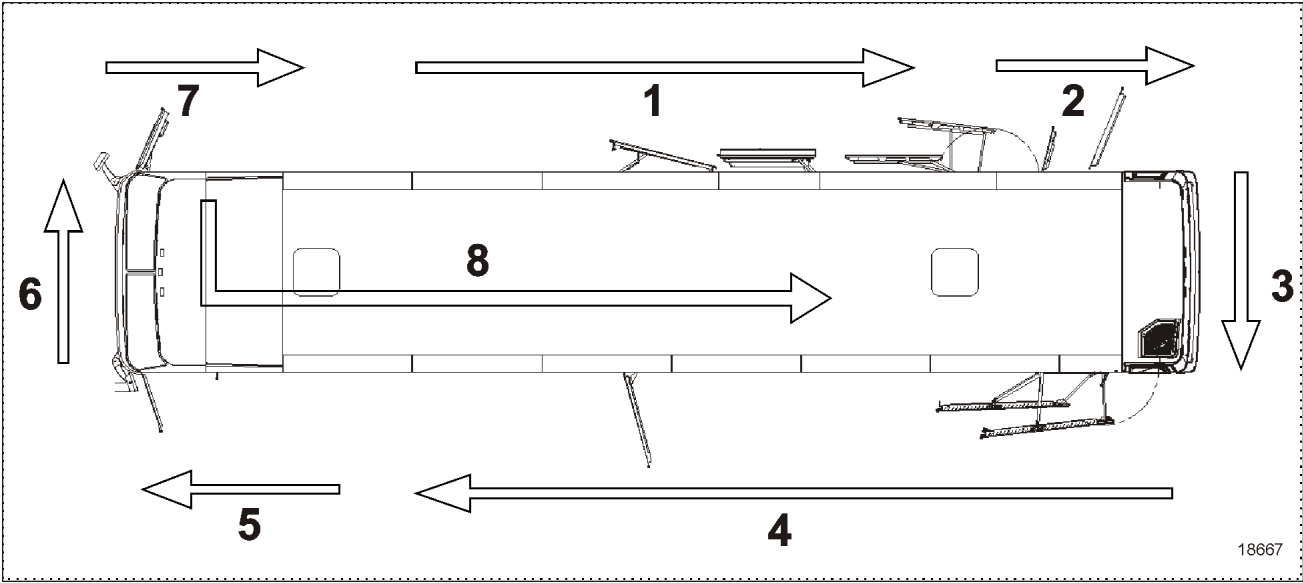


FIGURE 28: H3 SERIES WALKAROUND INSPECTION

<p>NOTE</p> <p><i>Inspect the coach in a circular manner as shown in the illustration.</i></p>

8-24 Care and Maintenance

APPROACHING THE VEHICLE

- Check under the coach for oil, fuel or coolant leaks or other signs of damage.
- Check exterior body surfaces for signs of damage.

PREPARATION

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

STEP 1: RIGHT SIDE

- Check that the vehicle is equipped with a wheel nut wrench, spare door keys, spare belts, reflectors and jack.
- Check that baggage and service compartment doors are properly latched and locked.
- Check condition of wheels and rims. Especially look for cracks, missing nuts, bent or broken studs.
- Check condition of tires: properly inflated, no serious cuts, bulges, tread wear or any signs of misalignment; valve stems not touching wheels or rims; valve caps in place and no objects stuck between the wheels.

STEP 2: ENGINE COMPARTMENT RIGHT SIDE AREA

- Check engine and surrounding areas for coolant, oil and fuel leaks.
- Check primary fuel filter/water separator and drain if necessary. Close drain valve after draining.

- Check power steering reservoir fluid level, add if necessary.
- Check wiring harness for signs of damage.

STEP 3: ENGINE COMPARTMENT

- Check engine and surrounding areas for coolant, oil and fuel leaks.
- Check wiring harness for signs of damage.
- Check for loose, worn or broken belts.
- Check belts tension adjustment.
- Check engine crankcase oil level, add if necessary.
- Check Allison transmission fluid level (can also be checked from push-button shift selector), add if necessary.
- Check coolant surge tank fluid level, add if necessary.
- Check air cleaner restriction indicator, replace air cleaner when red signal locks in full view.
- Check stop light, tail light, directional signal light and back-up light assembly, they should be clean.

STEP 4: REAR LEFT SIDE

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

- Check optional auxiliary coolant heater for fuel leaks.

STEP 5: FRONT LEFT SIDE

- Check condition of wheel rim. Especially look for cracks, missing nuts, bent or broken studs.
- Check condition of tire: properly inflated, no serious cuts, bulges, tread wear or any signs of misalignment; valve stem not touching wheel or rim; valve cap in place.
- Check windshield washer reservoir fluid level and add as necessary.
- If equipped, check headlights washer reservoir fluid level and add as necessary

STEP 6: FRONT

- Check windshield for damage and clean if dirty.
- Check windshield wiper arms for proper spring tension.
- Check wiper blades for any damage, “dead” rubber and attachment to arm.
- Check clearance and identification lights, they should be clean.
- Check high and low beams, they should be clean. If equipped, check fog lights.
- Check left and right directional signals, they should be clean.
- Check to see that there is no mud, snow, ice build-up or other obstruction in front of the ACB radar sensor if applicable.

STEP 7: FRONT RIGHT SIDE

- Check condition of wheel rim. Especially look for cracks, missing nuts, bent or broken studs.

- Check condition of tire: properly inflated, no serious cuts, bulges, tread wear or any signs of misalignment; valve stem not touching wheel or rim; valve cap in place.

STEP 8: INSIDE THE VEHICLE

- Check for proper operation of the entrance door.
- Check steps; clean them if there is any substance that makes them slippery, which makes coach entry/exit hazardous.
- Adjust and clean mirrors for adequate rear view vision.
- Verify proper operation of windshield wiper/washer.
- Check for fire extinguishers to make sure they are ready for operation.
- Check that emergency exit windows and roof escape hatches can be opened then close all windows and hatches securely.

WITH ENGINE RUNNING

- Start engine and check for proper operation of all gauges. Perform a telltale light test (see *Cluster self test* in [Driver Information Display \(DID\) Menu](#)). Indicator lights and buzzers should all be OFF before driving.
- Using the DID, perform a system diagnostic to check if error codes and anomalies were recorded in the vehicle electronic modules (see *View active faults* in [Driver Information Display \(DID\) Menu](#)).
- Check for proper operation of electric and air horns and back-up alarm.
- Check automatic transmission oil level, using the pushbutton shift selector (see "[OIL LEVEL CHECK USING THE PUSHBUTTON SHIFT SELECTOR](#)" on page 1 in Appendix C).

8-26 Care and Maintenance

- Check that there is enough fuel in the tank.
- Perform a parking brake test (refer to [PRE-TRIP ASSISTANT - AIR BRAKE LEAK-DOWN TEST](#) in Appendix E). Check both primary and secondary pressure gauges.
- Perform the exterior lighting verification using the test mode (refer to [PRE-TRIP ASSISTANT - EXTERIOR LIGHT INSPECTION TEST](#) in Appendix E).
- Walk around the vehicle and listen for air leaks.
- Check for leaks and listen for unusual sounds coming from the turbocharger.

SECTION 9 - TECHNICAL INFORMATION

DIMENSIONS AND WEIGHTS	3
CAPACITIES	7
TURNING RADIUS	8
FUEL TYPE	9
BIODIESEL FUEL	9
WHEELS AND TIRES	9
RECOMMENDED TIRE INFLATION PRESSURE AT MAXIMUM COLD LOAD	9
BELTS ROUTING	10
VOLVO D13 ENGINE	10
ALLISON TRANSMISSION	10
GEAR RATIOS	10
PROPELLER SHAFT	10
BRAKES	10
BRAKE CHAMBER EFFECTIVE AREA	10
AIR SYSTEM	10
ANTILOCK BRAKING SYSTEM (ABS)	11
AUTOMATIC TRACTION CONTROL (ATC) – ELECTRONIC STABILITY CONTROL (ESC)	11
STEERING	11
ELECTRICAL SYSTEM	11
AXLES	12
I-BEAM FRONT AXLE	12
FRONT AXLE - INDEPENDENT FRONT SUSPENSION (IFS)	12
DRIVE AXLE	12
TAG AXLE	12
SUSPENSION	12
I-BEAM AXLE FRONT SUSPENSION	12
DRIVE AXLE	12
TAG AXLE	12
ALIGNMENT SPECIFICATIONS	12
COOLING SYSTEM	13
FUEL SYSTEM	13
EXHAUST SYSTEM	14
HEATING AND AIR CONDITIONING	14
OIL SPECIFICATIONS	14
ENGINE	14
ALLISON TRANSMISSION	14
DIFFERENTIAL	15
POWER STEERING RESERVOIR	15

9-2 Technical Information

PRE-HEATING SYSTEM	15
PLATES AND CERTIFICATION	15
SAFETY CERTIFICATION	16
DOT CERTIFICATION PLATE	16
EPA ENGINE LABEL	16
VEHICLE IDENTIFICATION NUMBER (VIN)	17
VIN DEFINITION	18
COACH FINAL RECORD	19

DIMENSIONS AND WEIGHTS

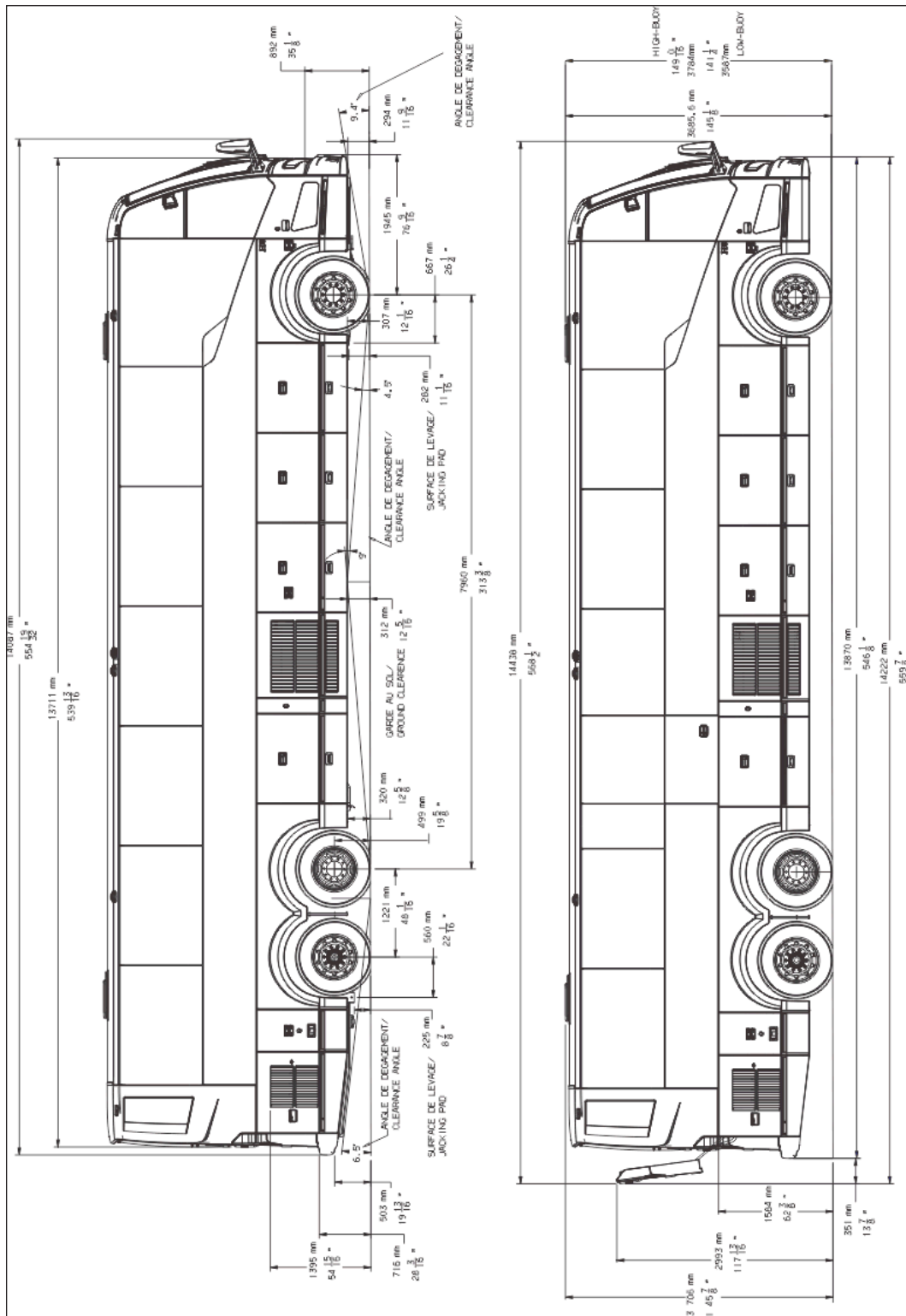


FIGURE 1: H3-45 OVERALL DIMENSIONS

9-4 Technical Information

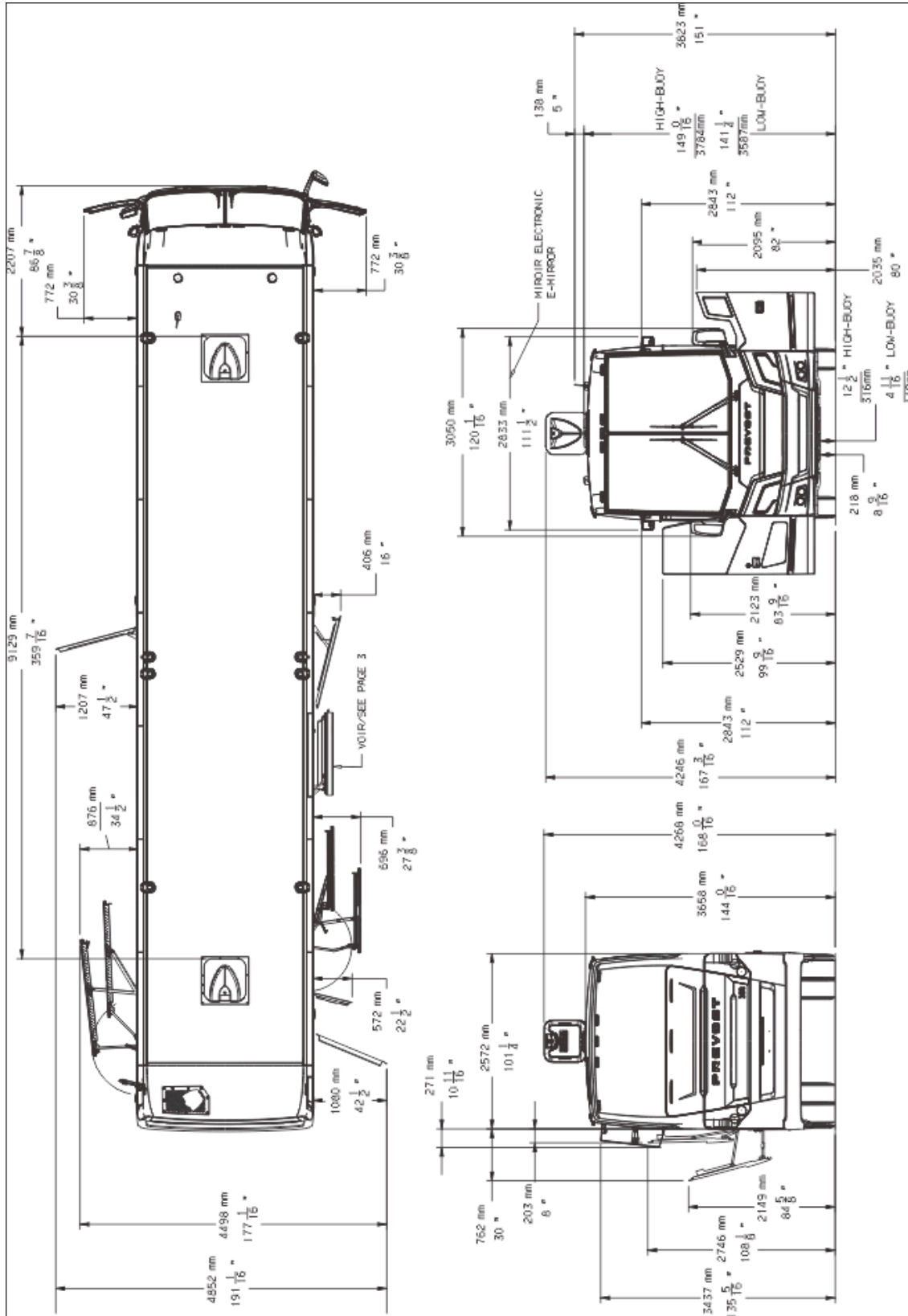


FIGURE 2: H3-45 OVERALL DIMENSIONS

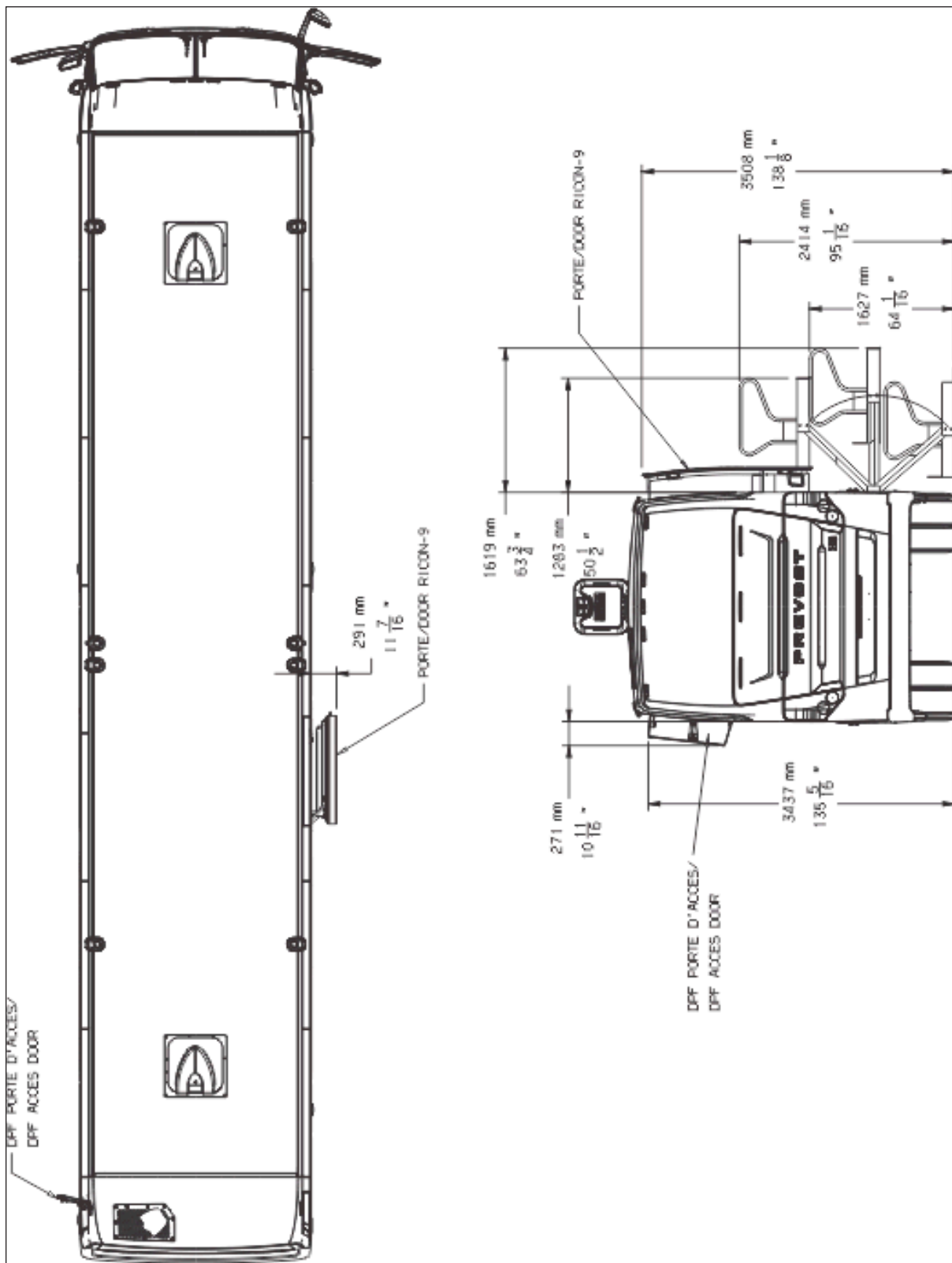


FIGURE 3: H3 SERIES WITH WHEELCHAIR LIFT - OVERALL DIMENSIONS

9-6 Technical Information

DIMENSIONS AND WEIGHTS H3-45		
Overall length (over bumpers)	45'	13 716 mm
Overall width	102"	2 590 mm
Overall height (normal ride height)	148"	3 759 mm
Wheelbase (front axle to drive axle)	313.4"	7 960 mm
Floor height from ground	63"	1 600 mm
Ground clearance	10 3/4"	273 mm
Step height from ground	14"	356 mm
Step height (other steps)	7"	178 mm
Seats	56 - 58	
Headroom	77"	1 956 mm
Entrance door opening width	28"	711 mm
Front overhang	75"	1 909 mm
Rear overhang	108.37"	2 753 mm
Front track	85.5"	2 166 mm
Drive track	74.3"	1 887 mm
Rear track tag axle 22.5x10.5 alum, 365/70R22.5	83.8"	2 128 mm
Rear track tag axle 22.5x9 alum, 365/80R22.5	82.7"	2 100 mm
Curb weight (fuel tank full)	39 600 lbs	18 000 kg
Additional weight - wheelchair lift system	1 100 lbs	500 kg
Fuel Weight (full tank)	1 650 lbs	750 kg
Gross Vehicle Weight Rating (G.V.W.R.)	53 000 lbs	24 040 kg
Front axle Gross Axle Weight Rating (G.A.W.R.)	16 500 lbs	7 500 kg
Drive axle G.A.W.R.	22 500 lbs	10 205 kg
Tag axle G.A.W.R.	14 000 lbs	6 214 kg

NOTE

Curb weight is given as an indication only and is subject to vary from coach to coach, mostly due to optional equipment.

The actual Gross Vehicle Weight Rating (G.V.W.R.) and the Gross Axle Weight Rating (G.A.W.R.) for front, drive and tag axles are listed on a certification plate located on the L.H. control panel in driver's section.

CAPACITIES

CAPACITIES	H3-45
Volvo D13 Engine oil (refill volume with filter change)	40 quarts (38 l)
Fuel tank (legal capacity equal to 95% of volume)	222 US gal (840 liters)
DEF tank	16 US gal 60 liters
Cooling system	27.5 US gal 104 liters
Allison transmission (does not include external circuit)	10.03 U.S. gal (38 l) initial 6 U.S. gal (23 l) refill 6.9 US gal (26.5 l) refill with retarder
Differential oil	20.5 U.S. qts (19.4 l) Meritor 19.5 U.S. qts (18.5 l) ZF A-132 axle
Power steering reservoir	4 quarts (3.7 liters)
A/C compressor oil	2.8 US quarts (2.6 liters)
Windshield washer reservoir	5 US gal (19 liters)
Refrigerant	24 lbs (11 kg) 26 lb (11.8 kg) with parcel rack cooling
Toilet septic tank	Small: 13 US gal (49.5 liters) Large: 30.8 US gal (116 liters)
Baggage compartment	Total volume 470 ft ³ Loading capacity 2500 lbs/compartments

9-8 Technical Information

TURNING RADIUS

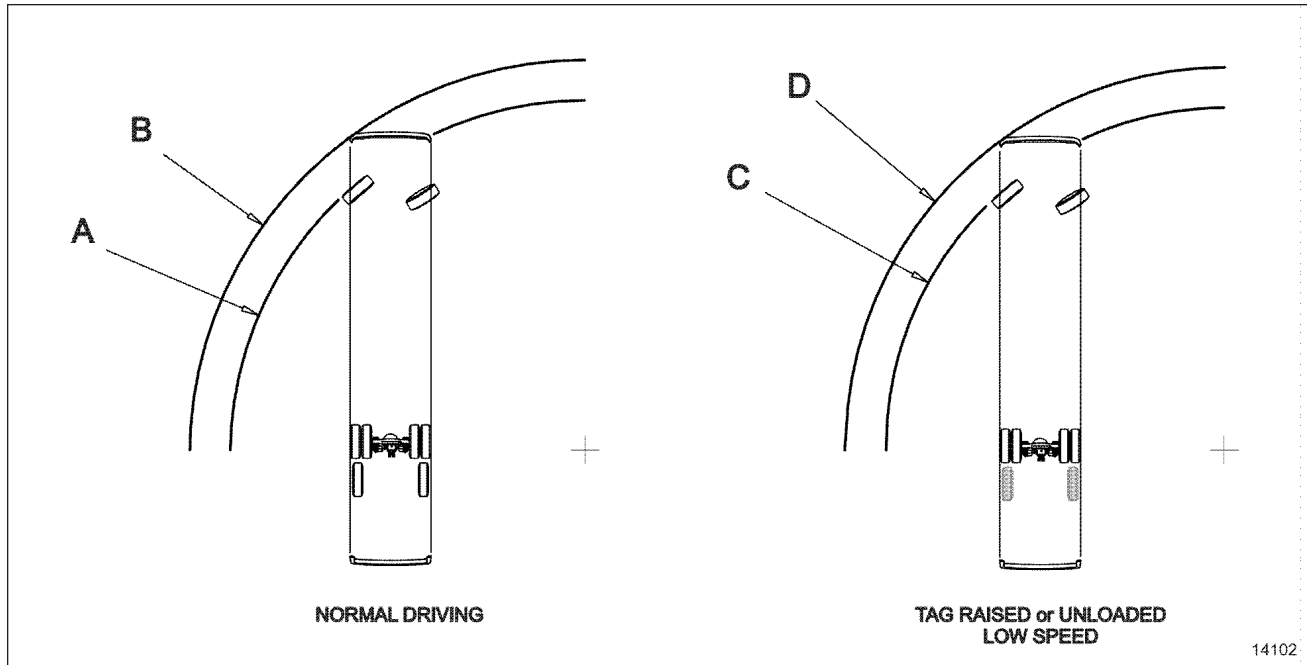






FIGURE 4: TURNING RADIUS DIAGRAM

Table below shows the turning radius values. Values A and B are for normal driving. Values C and D show values for low speed maneuvering where the tag axle is unloaded .

NOTE

Supplied values are theoretical. Factors such as the ground surface, vehicle speed and road conditions may significantly affect the turning radius.

Turning Radius 1, 2	H3-45 w/ I-beam Axle
A (Curb to Curb)	41'4" (12.61m)
B (Wall to Wall)	45'5" (13.84m)
C (Curb to Curb) 	39'7" (12.05m)
D (Wall to Wall) 	43'7" (13.28m)

Turning Radius 3, 4	H3-45, H3-45 VIP with Front Independent Suspension
A (Curb to Curb)	11.34m (37'3")
B (Wall to Wall)	12.64m (41'6")
C (Curb to Curb) 	10.84m (35'7")
D (Wall to Wall) 	12.13m (39'10")

¹Curb to Curb value corresponds to the outer tire's track on the ground.

²Wall to Wall value includes the vehicle's body overhang.

³Curb to Curb value corresponds to the outer tire's track on the ground.

⁴Wall to Wall value includes the vehicle's body overhang.

FUEL TYPE

Your Prevost vehicle is powered by a diesel engine designed to operate only with Ultra Low Sulfur Diesel (ULSD) fuel, which can contain no more than 15 ppm sulfur.



WARNING

ULSD fuel is necessary to avoid fouling the engine's Exhaust Aftertreatment System. Use of fuel other than ULSD will reduce the efficiency and durability of the engine.

BIODIESEL FUEL

Biodiesel with up to a maximum of 5% biofuel (B5) may be used and will not affect the manufacturer's mechanical warranty as to engine and emissions system related components. The biofuel used in the various blends must conform to ASTM D6751; therefore B1 to B5 blends conforming to ASTM D975. Also, any engine performance problem related to the use of biodiesel fuel would not be recognized nor considered as Volvo or Prevost's responsibility.

However, Volvo engines are certified to comply with U.S. EPA and California emissions standards based upon the use of test fuels with specifications established by these regulatory agencies.

Alternative fuels, including biodiesel, that are not substantially similar to the required test fuels may adversely affect engine emissions compliance. As a result, Volvo does not warrant the engine will conform to applicable Federal or California emissions limits when operated on biodiesel or other alternative fuels that are not substantially similar to specified test fuels used for certification.

Additional maintenance is required and is covered in Section 03: FUEL SYSTEM of the maintenance manual.

WHEELS AND TIRES

WHEELS DIMENSION

Accuride steel wheels: 9" X 22½"

Inner drive axle steel wheels : 8¼" X 22½"

Alcoa aluminum wheels (front, drive, tag axles): 9" X 22½"

Alcoa super single wheels (drive axle): 14" X 22½"

TIRE DIMENSIONS

Front & auxiliary axles: 315/80 R22.5 load range L tires on both axles or 365/70 R22.5 load range L tires on both axles

Drive axle: 315/80 R22.5 load range L tires

Drive axle: super single 455/55 R22.5 load range L tire

RECOMMENDED TIRE INFLATION PRESSURE AT MAXIMUM COLD LOAD

The recommended tire inflation pressures are given in the applicable documents supplied with the vehicle. In addition, cold tire inflation pressures are listed on the Department of Transport (DOT) certification plate, affixed on the wall behind the driver's seat.

Vehicles equipped with TPMS: The TPMS target pressures are factory set to equal the prevailing tire pressure at delivery time. When tire pressures are increased to account for higher vehicle weight, the TPMS set point needs to be increased accordingly.



CAUTION

These tire pressures are established in accordance with the maximum allowable load on each axle. A lower pressure is recommended if the axle load is less than the above specifications. Weigh vehicle fully loaded and pressurize according to tire manufacturer's recommendations. For non-standard tire and wheel specifications, see Prevost tire pressure tabulation in "Coach Final Record" or special specification chart affixed next to the DOT certification plate.

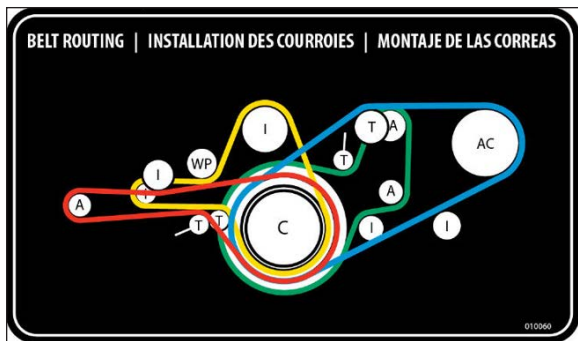
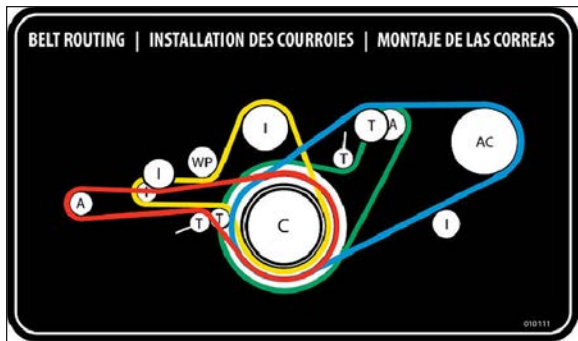


WARNING

Special tire selection may lower the maximum allowable speed limit, even below posted speed limit. For maximum safety, check with the tire manufacturer.

9-10 Technical Information

BELTS ROUTING



A: Alternator I: Idler T: Tensioner
 C: Crank WP: Water pump AC: A/C compressor

NOTE

Belts specifications and configurations may vary. For proper belt selection, always consult your vehicle "Coach Final Record" or Parts Assist.

VOLVO D13 ENGINE

Type: 4-stroke / inline 6-cylinders

Displacement: 12.8 l, SOHC, 4-valve /cylinder

Power: 435 HP

Torque: 1665 lbf-ft (2257 Nm) @1050 TO 1300 RPM

Cruise speed range: 1300-1500 rpm

Full dress, dry weight:2582 lb / 1174 kg

ALLISON TRANSMISSION

Allison B500 (B500R with the optional output retarder) electronically controlled 6- speed automatic transmission.

GEAR RATIOS

1st	3.51
2nd	1.91
3rd	1.43
4th	1.00
5th	0.74
6th	0.64
<i>Reverse:</i>	4.80
<i>Converter:</i>	1.90
<i>Differential ratio</i>	3.91
<i>Differential ratio (optional):</i>	3.58
<i>Differential ratio (ZF A-132 axle):</i>	3.54
<i>Maximum input torque:</i>	1700 lb-ft (2304Nm)

PROPELLER SHAFT

Dana Spicer SPL250 type tubular shaft, provided with heavy-duty universal joints.

BRAKES

The features of the braking system include a dual system where the front and rear circuits are completely independent from each other. The brakes are air operated disc type brakes. The emergency/parking brakes are located on the drive axle. To ensure a constant running clearance between pads and disc, the brakes are equipped with a non-wearing, automatic adjuster mechanism.

BRAKE CHAMBER EFFECTIVE AREA

Front axle: 24 in²

Drive axle: 24/24 in² (service /emergency)

Tag axle: 16 in²

AIR SYSTEM

Compressed air is provided by a twin cylinder, 31.8 cfm Wabco, gear-driven, water-cooled and engine oil lubricated air compressor.

ANTILOCK BRAKING SYSTEM (ABS)

The antilock braking system has one Electronic Control Unit (ECU) controlling a 6-sensor/5-modulator (6s/5m) system. A wheel slip sensor is mounted at each wheel.

The Electronic Control Module (ECM) is maintenance free. Its operating voltage is 24 ± 6 volts DC. The thermal operating range for the ECM is from -40 to 167°F (-40 to 75°C).

The solenoid control valves are maintenance free. Their operating voltage is 24 (+4.8, -2.4) volts DC. The rated current draw is 1.65 amps. The thermal operating range of the solenoid control valves is from -40 to 176°F (-40 to 80°C).

AUTOMATIC TRACTION CONTROL (ATC) – ELECTRONIC STABILITY CONTROL (ESC)

In addition to the ABS function, vehicle is equipped with a Traction Control System (TCS) feature. This feature is provided by the Bendix ESP EC-80 controller. Bendix refers to this feature as Automatic Traction Control (ATC). Bendix ATC can improve vehicle traction during acceleration, and lateral stability while accelerating through curves. ATC utilizes Engine Torque Limiting (ETL) where the ECU communicates with the engine's controller and/or Differential Braking (DB) where individual wheel brake applications are used to improve vehicle traction.

The ESP EC-80 model controller also provides an ABS-based Electronic Stability Control (ESC) feature. Bendix refers to it as ESC Electronic Stability Control.

The Bendix ESC system is an ABS-based stability system that enhances vehicle stability by both reducing engine throttle and by applying vehicle braking based on actual vehicle dynamics.

CAUTION

Even with ESC-equipped vehicles, the driver remains responsible for ensuring vehicle stability during operation.



DANGER

ESC may reduce the vehicle speed automatically.

ESC can make the vehicle decelerate automatically. ESC can slow the vehicle with or without the operator applying the brake, and even when the throttle is being applied

STEERING

ZF 8098 integral hydraulic assisted steering gear

- Hydraulic pump gear driven from engine.
- ZF Servocomtronic variable ratio and variable assistance in function of vehicle speed available.
- Hydraulic reservoir and dipstick accessible from the engine compartment.
- System pressure: 2175 psi (150 bars).
- Steering wheel diameter 18". Tilt steering wheel and telescopic steering column; pneumatically locked with foot-operated switch for adjustment.
- Number of turns: 5¾.

ELECTRICAL SYSTEM

- 24-volt, negative ground;
- 12-volt exterior lighting;
- Three 24 volts, 150 amp, self-regulated, belt-driven, air-cooled HD 10 Bosch alternators;
- Four 12 Volts, group 31 AGM type batteries connected in series/parallel. Each one has a reserve capacity of 200 minutes and a cold cranking capacity of 800 amps.
- 100 amp battery equalizer.

9-12 Technical Information

AXLES

I-BEAM FRONT AXLE

- Dana Spicer model S84U with forged “I” beam
- Reverse Elliot type
- Unitized wheel bearings (maintenance free)
- Factory pre-adjusted caster

FRONT AXLE - INDEPENDENT FRONT SUSPENSION (IFS)

- Prevost independent front suspension with calibrated air springs for improved comfort
- 19 000 lbs capacity (loading limit could be less depending on the wheel and tire selection)
- Wide apart double V -arm design mounted on ball joints with torque link
- Double sealed taper roller bearings bell crank and idler steering arm
- Unitized wheel bearing (maintenance-free bearing)
- Factory pre-adjusted caster

DRIVE AXLE

- Meritor model RC23-165 full banjo type dual tire drive
- Meritor RC23-165 with Allison transmission ratio: 3.91 (standard), 3.58 & 4.10 (optional)
- Oil lubricated wheel bearings on Meritor RC23-165
- Factory pre-adjusted caster

TAG AXLE

- Prevost hollow square beam
- FAG Unitized wheel bearings (maintenance free)
- Tag axle may be unloaded to provide better traction in snow, mud and reduce the turning radius and tire scrub at low cornering speed

SUSPENSION

Goodyear rolling lobe type air springs (bellows) are used throughout.

I-BEAM AXLE FRONT SUSPENSION

- 2 Bellows;
- 2 Shock absorbers;
- 4 Radius rods;
- 1 Transverse radius rod;
- 1 Height control valve;
- 1 sway bar;

DRIVE AXLE

- 4 Bellows;
- 4 Shock absorbers;
- 3 Radius rods;
- 1 Panhard rod;
- 2 Height control valves;
- 1 Anti-roll bar;

TAG AXLE

- 2 Bellows;
- 2 Shock absorbers;
- 3 Radius rods;
- 1 Panhard rod;

ALIGNMENT SPECIFICATIONS

Use static wheel alignment systems which work with angle measurements only, such as Josam or

Hunter systems. Static alignment specifications are listed in the following tables:

FRONT I-BEAM AXLE			
	Minimum value	Nominal value	Maximum value
Right camber	-0.25°	0.125°	0.375°
Left camber	-0.25°	0.125°	0.375°
Right caster	2.0°	2.75°	3.5°
Left caster	2.0°	2.75°	3.5°
Total toe	0.04°	0.06°	0.08°

DRIVE AXLE - MERITOR			
	Minimum value	Nominal value	Maximum value
Thrust angle	±0.11°		
Total toe	0.18° toe-in	0°	0.18° toe-out

DRIVE AXLE - ZF A132			
	Minimum value	Nominal value	Maximum value
Thrust angle	±0.11°		
Total toe	0.15° toe-in	0°	0.15° toe-out

TAG AXLE			
	Minimum value	Nominal value	Maximum value
Thrust angle*	-0.02°	0	0.02°
Total toe	0.12° toe-in	0°	0.02° toe-out
(*) Use the drive axle as reference			

COOLING SYSTEM

- Extra capacity, Aluminum radiator and aluminum charge air cooler arranged side by side.
- Eight 24V speed controlled by ECU electrical cooling fans.
- Radiator fans: pusher type, 6 high power 24 Volts electrical fans, 12-inch diameter.
- CAC fans: pusher type, 2 high power 24 Volts electrical fans, 12-inch diameter.
- Rubber insulated from the body.
- Expansion & recovery tanks above radiator and remote mounted.
- System pressure 15 psi.
- Coolant: -Volvo engine: ELC (Extended life coolant), color red, with No-SCA filter.
- Thermostat: 82 / 92 °C (180 / 198 °F) – (cracking / fully open).
- Full system capacity 27.5 US gal (104 l).
- Coolant filter without Supplemental Coolant Additive (SCA).

FUEL SYSTEM

Polyethylene 222 US gallons (840 liters) fuel tank located in middle of second baggage bay (heating and a/c section)

- Anti-spill device.
- Two safety filler caps providing filling access on both sides of the vehicle.
- Pressure relief valve.
- Electric fuel gauge.
- Low level signal at 22 US gallon (83 liters)
- Primary filter 10 microns (standard).

9-14 Technical Information

- Primary fuel filter with electrical water indicator (Volvo D13).
- Fuel Pro filter available as an optional primary filter.
- Secondary filter 3 to 5 microns.
- Shut-off valve on fuel supply line.

EXHAUST SYSTEM

One all stainless steel exhaust & aftertreatment system including:

- Catalytic converter to reduce NOx.
- Aftertreatment system made of a DPF (Diesel Particulate Filter), DOC (Diesel Oxidation Catalyst) and SCR system. Noise & vibration damped, this ATD is mounted to the vehicle structure and is accessible through an exterior access door.
- Tail pipe diffuser and rain deviation device.
- Exhaust pipe with flexible section.
- Exhaust to rear rooftop.
- Diesel exhaust fluid (DEF) tank (60 liters) and injection system.

HEATING AND AIR CONDITIONING

A large capacity central HVAC system provides enough conditioned and filtered air for all climatic conditions. Fresh air is drawn into the system from the evaporator compartment on driver's side of the vehicle. Return air is taken from the middle of the vehicle. The driver's heater and defogger are controlled separately from the passenger's unit. An air mixture selector enables air to be drawn into the system from outside the vehicle or recirculated.

Optionally, condensers installed in the overhead storage compartments provide cool air to the seated passengers from the overhead registers.

CENTRAL HVAC SYSTEM	
Air conditioning capacity	9 tons
Refrigerant type	134A
Heating capacity	150 000 Btu/h
Air flow	2 600 cfm (73,6 m ³ /min)
Air flow, overhead compartment, opt.	450 cfm (12,7 m ³ /min)

COMPRESSOR (central HVAC system)	
Number of cylinders	4
Operating speed	500 to 3500 rpm
Oil capacity	2.8 US quarts (2.6 liters)
Approved oil	Bitzer BSE55 (POE)

NOTE

The above oils are suitable for use with reciprocating compressors using refrigerant R134a and with evaporator temperatures above 40°F (-40°C).

OIL SPECIFICATIONS

Oil specifications for the vehicle's systems.

ENGINE

Volvo D13N (OBD23)

Recommended: SAE Viscosity Grade 5W-30 meeting Volvo specification VDS-5 or API FA-4.

Minimum requirement: Volvo specification VDS-4.5 or API CK-4 oils

ALLISON TRANSMISSION

Allison Transmission recommends the following fluids:

- Castrol TranSynd™ or TES668 or TES-295 specification equivalent fluid;
- TES-389 specification equivalent fluid.

DIFFERENTIAL

Multigrade gear oil meeting MIL-PRF-2105E: 85W-140 is recommended for use in the Meritor drive axle. This lubricant performs well over a broad temperature range, providing good gear and bearing protection in a variety of climates. If temperature drops below 10°F (-12°C), 80W-90 should be used, and below -15°F (-26°C), 75W-90 should be used. In extreme conditions or for better performance, full synthetic gear oil should be used.

For vehicles equipped with the ZF A-132 drive axle, use ZF Ecofluid 80W-90 (ZF lubricant class 12M) or refer to ZF List of lubricants TE-ML 12 for other approved lubricants.

POWER STEERING RESERVOIR

Use Automatic Transmission Fluid (ATF) Dexron-III (F, G or H) or Dexron-IV for this system.

PRE-HEATING SYSTEM

Depending on options chosen, a coolant heater may be installed on the coolant circuit. The heater can be used as a pre-heater or as an auxiliary heat source.

The heater is controlled by a 7-day programmable timer. Refer to [PREHEATER](#) in *Other Features* for information on how to use the timer.

PRE-HEATER	
Make	Eberspächer
Model	Hydronic L30
Heating output	30 kW
Fuel type	Same as engine
Fuel consumption	0.96 US Gal/hr (3.65 l/hr)
Rated voltage	24 V DC
Operating voltage	20-30 V DC
Electric power consumption without water pump	105 watts
Weight	40 lb (18 kg)

PLATES AND CERTIFICATION

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

The engine data plate is located on the rocker cover. The engine serial and model number and a list of the optional engine equipment are written on this plate. Refer to this information when ordering replacement parts. Also the engine data plate certifies that the engine conforms to federal and any state exhaust emissions regulations.

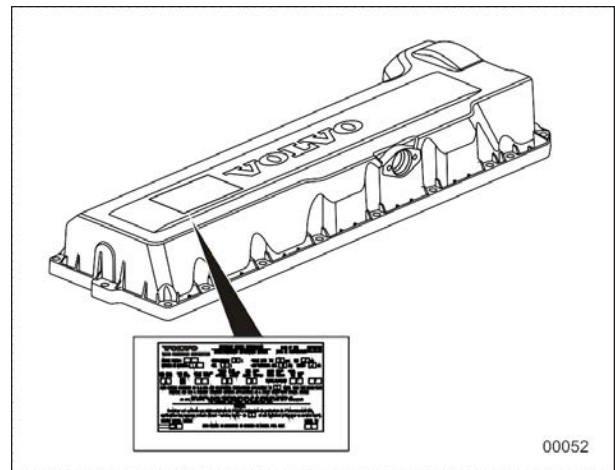


FIGURE 5: VOLVO D13 ENGINE DATA PLATE

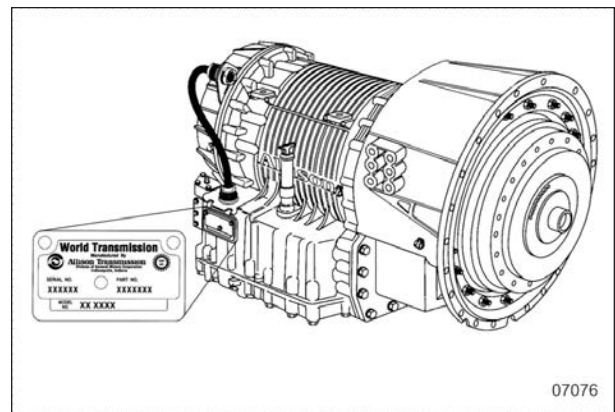


FIGURE 6: ALLISON TRANSMISSION

9-16 Technical Information

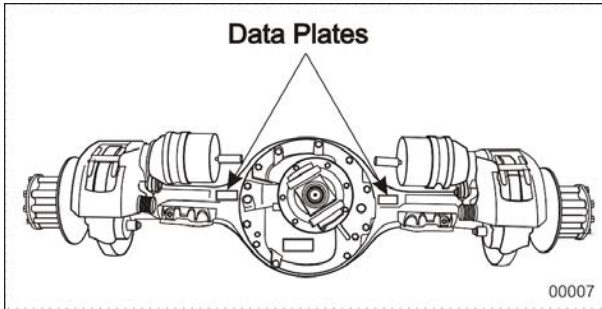


FIGURE 7: MERITOR DRIVE AXLE

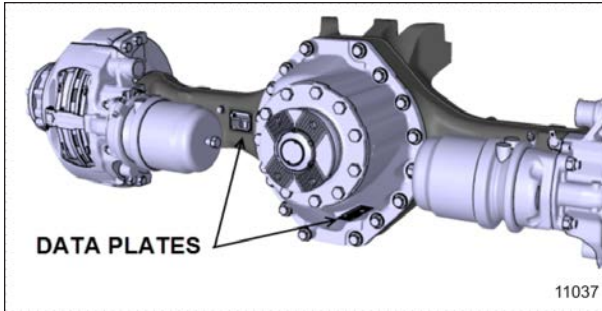


FIGURE 8: ZF A-132 DRIVE AXLE

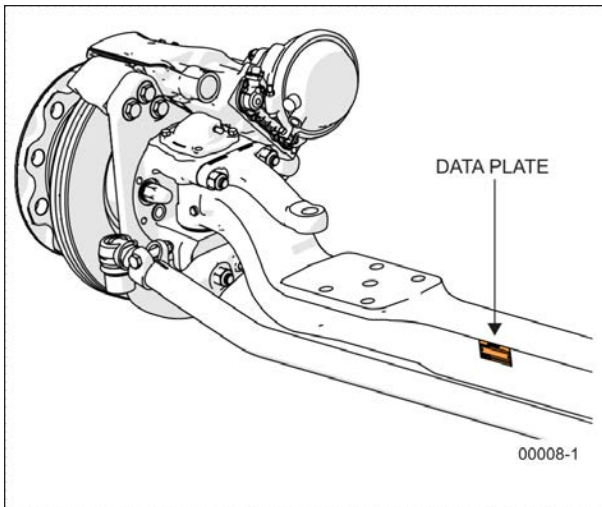


FIGURE 9: I-BEAM FRONT AXLE

SAFETY CERTIFICATION

Vehicle 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 PLATE

This certifies that vehicles manufactured by Prevest comply with all Federal Motor Vehicle Safety Standards at the time of manufacture. Information such as the date of manufacture, model year, gross vehicle weight rating, tire types and inflation pressure is also etched on this plate.

The DOT certification plate is affixed behind the driver's seat.

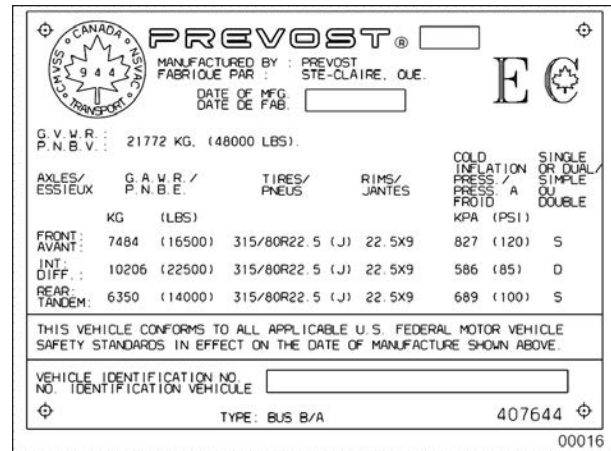


FIGURE 10: EXAMPLE OF CERTIFICATION PLATE

EPA ENGINE LABEL

The emissions certification label affixed in the engine compartment certifies that the engine conforms to federal and any state exhaust emissions regulations.

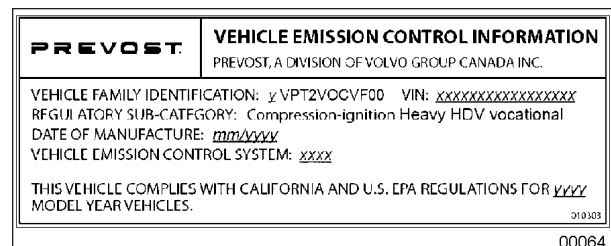


FIGURE 11: EPA CERTIFICATION LABEL

VEHICLE IDENTIFICATION NUMBER (VIN)

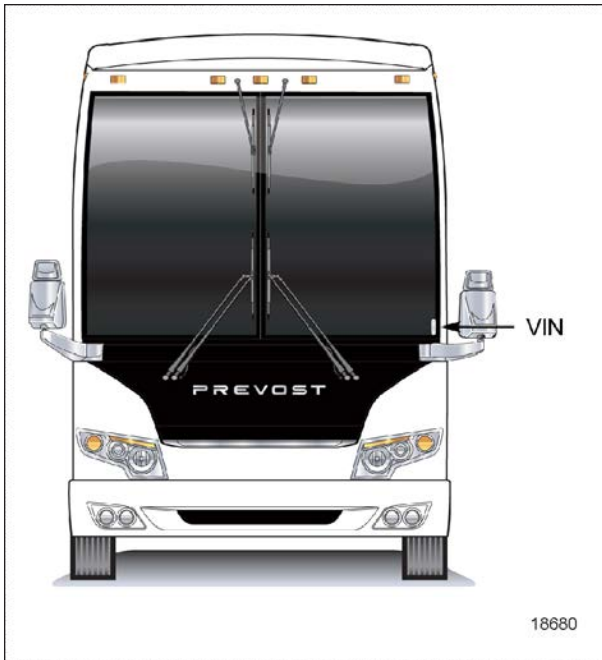


FIGURE 12: VEHICLE IDENTIFICATION NUMBER (H3 SERIES)

The Vehicle Identification Number is stamped on the DOT certification plate and also on a plate located on the windshield frame pillar (driver's side). The VIN is visible from the outside of the vehicle. 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 vehicle documentation and keep with company records. The VIN will normally be used for vehicle registration, service reference needs and for obtaining vehicle insurance coverage.

9-18 Technical Information

VIN DEFINITION

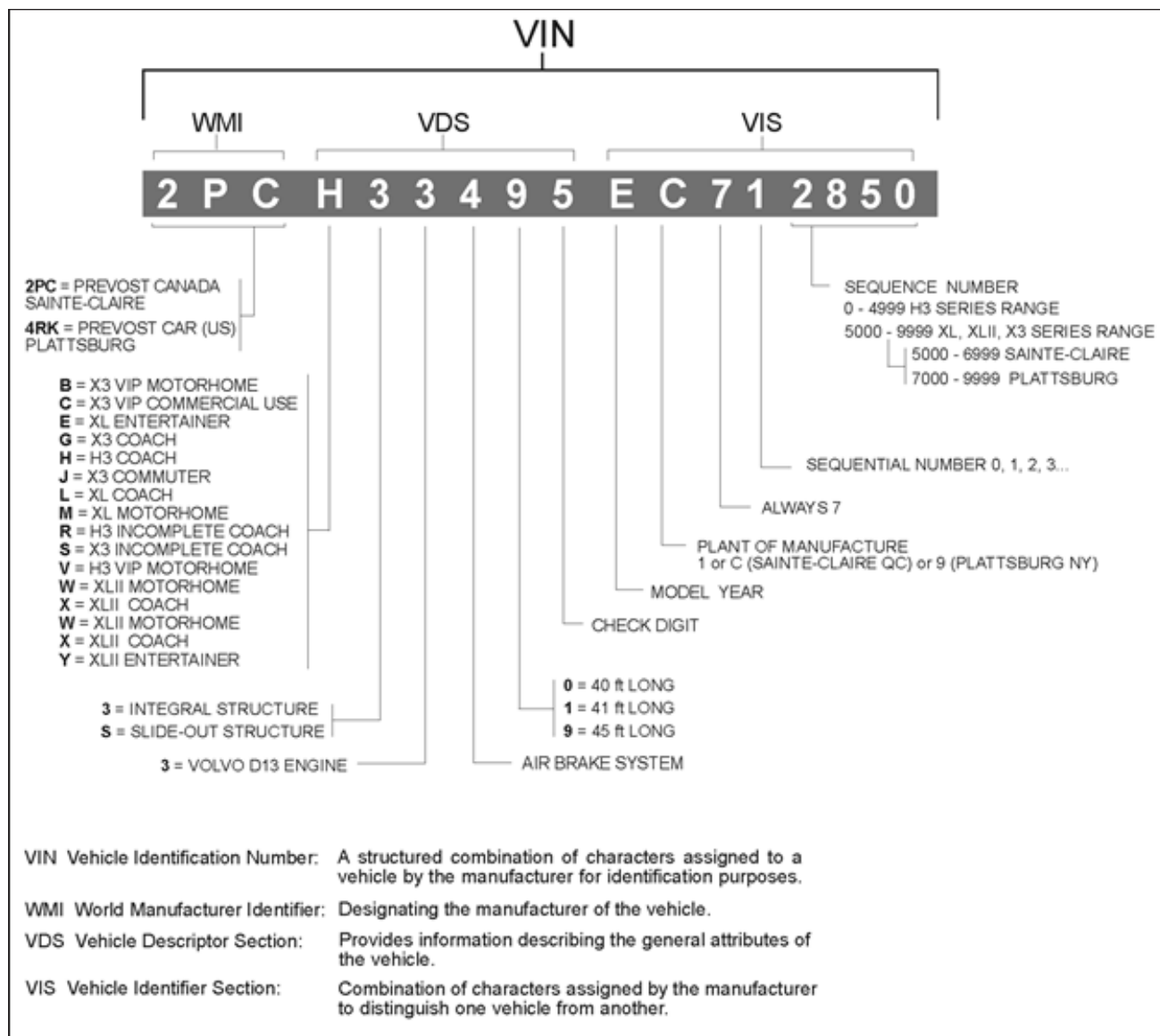


FIGURE 10: VEHICLE IDENTIFICATION NUMBER

00057_5

YEAR	CODE	YEAR	CODE	YEAR	CODE
2001	1	2009	9	2017	H
2002	2	2010	A	2018	J
2003	3	2011	B	2019	K
2004	4	2012	C	2020	L
2005	5	2013	D	2021	M
2006	6	2014	E	2022	N
2007	7	2015	F	2023	P
2008	8	2016	G	2024	R

COACH FINAL RECORD

The Coach Final Record is a record of all data pertaining to the assembly of the vehicle. This record is shipped to the new customer via a courier company. Retain this record in the company records office for reference and safe-keeping.

SECTION 10 - ABBREVIATIONS

ABBREVIATIONS 2

10-2 Abbreviations

ABBREVIATIONS

ABS	Antilock Brake System
A/C	Air Conditioning
ACB	Adaptive Cruise With Braking (also Referenced As ACC)
ACM	Aftertreatment Control Module
AFSS	Automatic Fire Suppression System
APC	Automatic Passenger Counter
ATC	Automatic Traction Control (Bendix)
CC	Cruise Control
CECM	Chassis Electronic Control Module
DCDL	Driver Controlled Differential Lock
DDR	Diagnostic Data Reader
DEF	Diesel Exhaust Fluid
DID	Driver Information Display
D-MIC	Driver Microphone
DPF	Diesel Particulate Filter
DTC	Diagnostic Troubleshooting Code
ECM	Electronic Control Module
ECU	Electronic Control Unit
EECU	Engine Electronic Control Unit
EGR	Exhaust Gas Recirculation
ELD	Electronic Logging Device
ESC	Electronic Stability Control
ESC	Escape
ESP	Electronic Stability Program (Bendix)
E+	Eco-Roll
FCM	Forward Collision Mitigation
FDA	Following Distance Alert
GAW	Gross Axle Weight
GECU	Gear Selector Electronic Control Unit
G-MIC	Guide Microphone
GVW	Gross Vehicle Weight
HVAC	Heating, Ventilation And Air Conditioning
HUD	Head-up Display
IA	Impact Alert
IFS	Independent Front Suspension
LDW	Lane Departure Warning
LED	Light Emitting Diode
LLS	Level Low System
MCM	Master Chassis Module
MPH	Miles Per Hour
PPT	Premium Tech Tool
PRIME	Power Recovery By Intelligent Management Of Energy
PTO	Power Take Off
SCR	Selective Catalytic Reduction
SID	Secondary Information Display
TCM	Transmission Control Module
TCS	Traction Control System

Abbreviations 10-3

TECU	Transmission Electronic Control Unit
TPMS	Tire Pressure Monitoring System
TWS	Threshold Warning System
ULSD	Ultra Low Sulfur Diesel
VCADS	Volvo Computer Assisted Diagnostic Sytem
VEB	Volvo Engine Brake
VECF	Vehicle Electrical Center Front
VECR	Vehicle Electrical Center Rear
VECU	Vehicle Electronic Control Unit
VSS	Video And Sound Selector
WCL	Wheelchair Lift

APPENDIX A - SERVICE LITERATURE

SERVICE LITERATURE 2

NOTICE 2

DECLARATION OF THE MANUFACTURING DEFECTS TO THE GOVERNMENT OF THE UNITED STATES 2

DECLARATION OF THE MANUFACTURING DEFECTS TO THE CANADIAN GOVERNMENT 3

DECLARATION OF THE MANUFACTURING DEFECTS TO PREVOST 3

A-2 Service Literature

SERVICE LITERATURE

Visit our web site at www.prevostcar.com for on-line product information and technical publications!

Additional copies of the following service literature are available on request and at low cost. These can be helpful to mechanics and drivers alike.

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

To order, call Prevost Parts toll free 1-800-463-8876 or write to:

PREVOST PARTS

2955-A Watt Street
Sainte-Foy, (Quebec)
Canada G1X 3W1

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

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 Prevost.

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 Prevost.

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 live in Canada, and if you believe that your vehicle has a safety defect, you should immediately inform Transport Canada and Prevest. You may write to:

**Transport Canada
Box 8880
Ottawa, Ontario, K1G 3J2**

DECLARATION OF THE MANUFACTURING DEFECTS TO PREVOST

In addition to NHTSA (or Transport Canada) notification, please contact Prevest at 1-418-831-2046. Or write to:

**Prevest
After-sales service department
850 ch. Olivier,
Lévis (Quebec)
Canada, G7A 2N1**

APPENDIX B - MULTIPLEX TROUBLESHOOTING

MULTIPLEX TROUBLESHOOTING GUIDE 2

B-2 Multiplex Troubleshooting

MULTIPLEX TROUBLESHOOTING GUIDE

Problem / Symptom	Probable Causes	Actions
Vehicle does not Start from the dashboard	<p>The Engine Stop pushbutton located on the rear start panel is depressed</p> <p>Main electrical shut- off switch is in the OFF position</p>	<ol style="list-style-type: none"> 1. Twist and pull the Engine Stop pushbutton to place it in normal operating position, check that the main electrical shut-off switch is in the ON position and retry cranking from the ignition switch 2. Start the vehicle from the engine compartment using the rear start button
Vehicle does not Start neither from the dashboard nor from the rear	<p>DL0 (BBUS MUX) network problem (Multiplex)</p> <p>Module AE52 not powered or is defective</p> <p>Engine ECM does not receive the ignition signal</p> <p>Engine ECM is not powered</p>	<ol style="list-style-type: none"> 1. Verify that module AE52 is powered: <ol style="list-style-type: none"> a. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message “No Response ModA52, Active”, indicates a power problem on the module or a DL0 (BBUS MUX) network problem. b. Check / reset circuit breaker CB5 c. Check / replace fuse F65 d. Probe gray connector on module to see if it is powered. 2. Verify that the engine ECM is powered and gets the ignition signal <ol style="list-style-type: none"> a. Check / reset circuit breaker CB8 Check / replace fuse F74 b. Check / reset circuit breaker CB2 Check / replace fuse F78

Multiplex Troubleshooting B-3

Problem / Symptom	Probable Causes	Actions
<p>None of the Multiplexed functions are operating, including the basic limp-home functions (door opening, flashers, wipers in speed 1)</p> <p>“FLIP REAR BREAKER TO INITIATE I/O MODULES PROGRAMMING” pop-up message appears in the DID</p> <p>Note: The sunshades are still functioning since these are not multiplexed</p>	<p>The program version in the MCM is different than the program in the I/O modules and the MCM is forcing all I/O modules to stay inactive</p>	<ol style="list-style-type: none"> 1. Engage the auto-programming of the I/O modules: Turn the ignition key to the ON position, trip and reset circuit breaker CB6. 2. The DID indicates "MUX AUTOPROGRAMMING I/O MODULE PLEASE WAIT" until the reprogramming is complete.
<p>Many of the non-essential secondary functions are not functioning (interior lighting, driver's area lighting, wiper speed 2 and intermittent).</p> <p>Marker lights and clearance lights are turned ON when setting ignition to the ON position.</p>	<p>The MCM module does not receive 24 V power.</p> <p>The DL0 (BBUS MUX) network is not working. It could be caused by a short on the network, an open circuit, a problem with the MCM or the MCM being disconnected from the network.</p>	<ol style="list-style-type: none"> 1. Check / reset circuit breaker CB6. Check / replace fuse F1 2. Operate in limp-home mode by starting the vehicle from the engine compartment (REAR START). All functions essential to drive are available <p>To close and lock the door, pull the door manually up to its closed position and it will lock by itself. The door opening button is still functioning</p>
<p>No temperature control in the passenger area</p> <p>Passenger temperature display indicates two dashes "--"</p>	<p>Problem with the temperature sensor located in the evaporator compartment air intake or the sensor wiring</p>	<p>Instruct the driver to manually control the temperature by playing with the passenger set point. Set above 22°C (72°F) to heat and below 22° C (72°F) to cool</p>

B-4 Multiplex Troubleshooting

Problem / Symptom	Probable Causes	Actions
<p>Entrance door does not open nor close using the control buttons</p> <p>Defroster fan not functioning</p> <p>Windshield wipers not functioning in speed 1 or intermittent</p>	Module AE47 is not powered or is faulty	<ol style="list-style-type: none"> 1. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message "No Response ModA47, Active" indicates a power problem on the module. (A DLO (BBUS MUX) network problem would show the same message but doesn't produce these symptoms). 2. Check / reset circuit breaker CB1 3. Check / replace fuse F45 4. Probe gray connector on module to see if it is powered. 5. Use the air release valves near the entrance door and in the front service compartment to lock / unlock the door
Windshield wipers not functioning in speed 1 or intermittent	No power on R27	Check CB48 (VECF)
HVAC condenser fans not functioning in speed 1	Circuit breaker CB7 tripped	Check / reset circuit breaker CB7
HVAC condenser fans not functioning in speed 2	Circuit breaker CB7 tripped	<p>Check / reset circuit breaker CB7</p> <p>Check / replace fuse F135</p>
<p>Windshield washer not functioning</p> <p>Windshield upper section de-icing system not functioning</p>	Module AE44 is not powered or is faulty	<ol style="list-style-type: none"> 1. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message "No Response ModA44, Active" indicates a power problem on the module. (A DLO (BBUS MUX) network problem would show the same message but doesn't produce these symptoms). 2. Check / reset circuit breaker CB1 3. Check / replace fuse F44 4. Probe gray connector on module to see if it is powered.

Multiplex Troubleshooting B-5

Problem / Symptom	Probable Causes	Actions
Defroster fan is functioning but no heat or cooling available in the driver area.	Module AE47 is not powered or is faulty	<ol style="list-style-type: none"> 1. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message "No Response ModA47, Active" indicates a power problem on the module. (A DL0 (BBUS MUX) network problem would show the same message but doesn't produce these symptoms). 2. Check / reset circuit breaker CB1 3. Check / replace fuse F45 4. Probe gray connector on module to see if it is powered.
<p>Low beam headlamps and front flasher on left side not functioning</p> <p>Electric horn not functioning</p>	Module AE46 is not powered or is faulty	<ol style="list-style-type: none"> 1. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message "No Response ModA46, Active" indicates a power problem on the module. (A DL0 (BBUS MUX) network problem would show the same message but doesn't produce these symptoms). 2. Check / reset circuit breaker CB10 3. Check / replace fuse F19 4. Probe gray connector on module to see if it is powered.
Low beam headlamps and flasher on right side not functioning	Module AE48 is not powered or is faulty	<ol style="list-style-type: none"> 1. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message "No Response ModA48, Active" indicates a power problem on the module. (A DL0 (BBUS MUX) network problem would show the same message but doesn't produce these symptoms). 2. Check / reset circuit breaker CB10 3. Check / replace fuse F21 4. Probe gray connector on module to see if it is powered.

B-6 Multiplex Troubleshooting

Problem / Symptom	Probable Causes	Actions
<p>Rear flashers not functioning</p> <p>Stoplights and center stoplights not functioning</p>	<p>Module AE51 is not powered or is faulty</p>	<ol style="list-style-type: none"> 1. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message "No Response ModA51, Active" indicates a power problem on the module. (A DL0 (BBUS MUX) network problem would show the same message but doesn't produce this symptom). 2. Check / reset circuit breaker CB8 3. Check / replace fuse F107 4. Probe gray connector on module to see if it is powered.
<p>Engine is overheating and radiator fans do not engage</p>	<p>Module AE52 or AE49 is not powered or is faulty</p>	<ol style="list-style-type: none"> 1. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message "No Response ModA52/ ModA49, Active" indicates a power problem on the module. (A DL0 (BBUS MUX) network problem would show the same message but doesn't produce this symptom). 2. Check circuit breaker CB5 3. Check / replace fuse F133, F134 4. CB201-CB208
<p>The A/C compressor clutch does not engage</p>	<p>Module AE54 (or AE52) is not powered or is faulty</p>	<ol style="list-style-type: none"> 1. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message "No Response ModA54, Active" indicates a power problem on the module. (A DL0 (BBUS MUX) network problem would show the same message but doesn't produce this symptom). 2. Check / reset circuit breaker CB5 3. Check / replace fuse F135 4. Probe gray connector on module to see if it is powered.

Multiplex Troubleshooting B-7

Problem / Symptom	Probable Causes	Actions
Evaporator fan not functioning	Circuit breaker CB3 tripped Module AE54 is not powered or is faulty	<ol style="list-style-type: none"> 1. Check circuit breaker CB3 2. Check relay R12 3. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message “No Response ModA54, Active” indicates a power problem on the module. (A DL0 (BBUS MUX) network problem would show the same message but doesn't produce this symptom). 4. Check / reset circuit breaker CB5 5. Check / replace fuse F135 6. Probe gray connector on module to see if it is powered.
HVAC condenser fans not functioning in speed 1	Module AE54 is not powered or is faulty	<ol style="list-style-type: none"> 1. Check the DIAGNOSTICS menu of Driver Information Display (DID). Select VIEW ACTIVE FAULTS and ELECTRICAL. The message “No Response ModA54, Active” indicates a power problem on the module. (A DL0 (BBUS MUX) network problem would show the same message but doesn't produce this symptom). 2. Check / reset circuit breaker CB5 3. Check / replace fuse F135 4. Check / replace fuse F141-F144 5. Probe gray connector on module to see if it is powered.
Sound system not functioning	Circuit breaker CB11 tripped	<ol style="list-style-type: none"> 1. Check CB11 2. Check / replace fuse F148, F200

B-8 Multiplex Troubleshooting

Problem / Symptom	Probable Causes	Actions
Fire alarm pop- up and audible alarm always ON and there is no fire or high temperature in the engine compartment	Short-circuited fire sensor or defective sensor	Prior to start the vehicle, cycle the ignition key to the ON position, OFF position and then ON position again and then start the vehicle. This will deactivate the fire alarm function. This has to be repeated each time the vehicle is restarted.
The vehicle is parked and the electrical horn is activated to indicate a fire in the engine compartment but there is no fire	Short-circuited fire sensor or defective sensor	Cycle the ignition key between the ON and OFF position twice within 3 seconds. This will deactivate the fire alarm function. This has to be repeated each time the vehicle is parked
A single light, a group of LED lights or another function of the vehicle is not functioning	The multiplex outputs are protected in current by an internal "soft fuse". When an output is shorted, it turns OFF and stays OFF until the "soft fuse" is reset	turn the ignition key to the OFF position and turn to the ON position again. This resets all "soft fuses"
No backlighting in the instrument cluster	Circuit breaker CB10 is tripped or fuse F10/F29 blown	<p>Check circuit breaker CB2, CB10</p> <p>Check / replace fuse F10, F29</p> <p>Check / replace relay R22, R23</p>
The radiator/CAC electric fans do not function and the engine is overheating		<p>You can manually engage the radiator/CAC fans half-speed (50%) or full speed (100%).</p> <ol style="list-style-type: none"> 1. On the Driver Information Display, select DIAGNOSTICS menu. Select VEHICLE TESTS submenu and then FORCE RADIATOR FAN SPEED 50% or FORCE RADIATOR FAN SPEED 100%. 2. The DID status line will show TEST to confirm the forced activation of the radiator fans. To cancel, turn the ignition switch to the OFF position or press ESCAPE button, select TERMINATE TESTS & FORCED STATES submenu and then press ENTER button twice. TEST will disappear from the DID status line.

APPENDIX C - ALLISON TRANSMISSION OTHER FEATURES

ALLISON 5TH & 6TH GENERATION SPECIAL FEATURES 2

C-2 Allison Transmission Other Features

ALLISON 5TH & 6TH GENERATION SPECIAL FEATURES

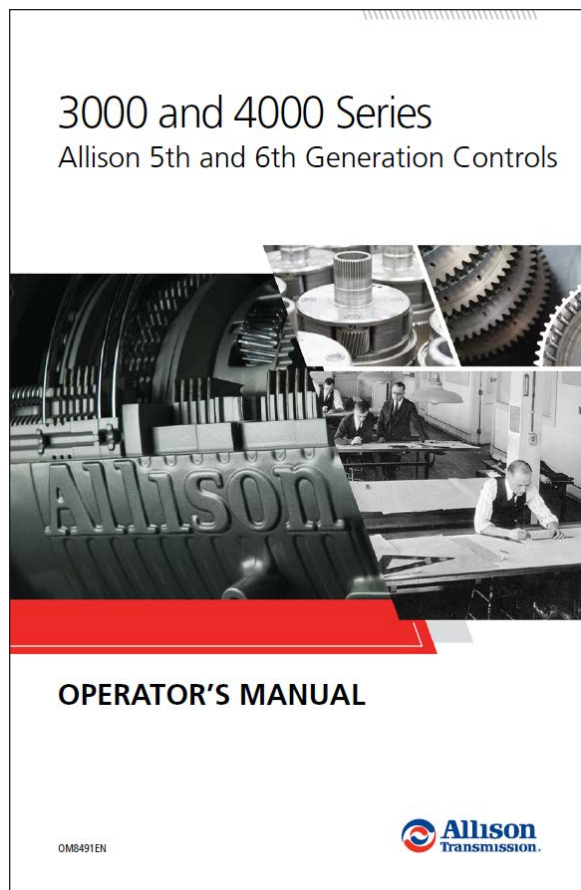
The 5th & 6th generation Allison transmission offer useful special functions for performing checks from the transmission shift selector in the driver's station.

Special functions allow you to do the following:

- Fluid level checks using Allison 5th generation or newer shift selectors.
- Oil life monitor (OM). Displays the percentage of fluid life remaining.
- Filter Life Monitor (FM). Notifies that main and lube filters need changing.
- Transmission Health Monitor (TM). Notifies that one or more clutches, C1-C5, needs replacement.
- Use of the transmission shift selector to get diagnostic troubleshooting codes.

NOTE: You will find the complete transmission operation instructions and driving tips in the **Allison 5th & 6th Generation Operator's Manual 3000_4000 Series** available on the *Prevost Technical Publications* site.

This Operator's Manual contains a variety of information about the Allison 4000 Series Transmission, and its Allison 5th Generation and 6th Generation Controls features. Refer to the Table of Contents to locate information by subject in this publication.



- Fluid level checks using Allison 5th generation or newer shift selectors. Refer to section 5.8.2 of the ALLISON OPERATOR'S MANUAL mentioned above.
- Oil life monitor (OM). Displays the percentage of fluid life remaining. Refer to section 5.9 and more particularly to section 5.9.6 of the ALLISON OPERATOR'S MANUAL mentioned above.
- Filter Life Monitor (FM). Notifies that main and lube filters need changing. Refer to section 5.9 and more particularly to section 5.9.7 du MANUEL DE L'OPÉRATEUR ALLISON mentionné plus haut.
- Transmission Health Monitor (TM). Notifies that one or more clutches, C1-C5, needs replacement. Refer to section 5.9 and more particularly to section 5.9.8 of the ALLISON OPERATOR'S MANUAL mentioned above.
- Use of the transmission shift selector to get diagnostic troubleshooting codes. Refer to section 6.0 of the ALLISON OPERATOR'S MANUAL mentioned above.

APPENDIX D -TIRE INFLATION GUIDE

TIRE INFLATION GUIDE	2
COLD INFLATION PRESSURE	2
PRESSURE AND TEMPERATURE	2
CONSEQUENCES	4
RECOMMENDATIONS	4

D-2 Tire Inflation Guide

TIRE INFLATION GUIDE

This guide is a reference on why and how tires should be maintained at a proper inflation pressure. It covers the notions required to fully understand why tire inflation is important, why it must be verified and what our recommendations are.

COLD INFLATION PRESSURE

Cold inflation pressure, sometimes known as *placard pressure* is the recommended wheel pressures based on the vehicle's load and characteristics. Those numbers specify the proper tire pressure level for each axle.

AXLES/ ESSIEUX		G. A. W. R. / P. N. B. E.		TIRES/ PNEUS	RIMS/ JANTES	COLD INFLATION PRESS. / PRESS. A FROID	SINGLE OR DUAL/ SIMPLE OU DOUBLE
		KG	(LBS)			KPA (PSI)	
FRONT : AVANT :		7484	(16500)	315/80R22.5 (J)	22.5X9	827 (120)	S
INT : DIFF. :		10206	(22500)	315/80R22.5 (J)	22.5X9	586 (85)	D
REAR : TANDEM :		6350	(14000)	315/80R22.5 (J)	22.5X9	689 (100)	S

FIGURE 1: DOT CERTIFICATION PLATE

It is most important to remember that cold inflation pressure refers to the pressure that tires should have when they are cold, which means when the tires have not been driven. Driving always cause the tires to heat up and the pressure to increase, even for short distances, so pressure verification and adjustment should always be done before driving in order to have correct readings.

As temperature has a major impact on tire pressure, outside ambient temperature should also be considered when inflating tires because it will affect tire pressure considerably. **Tire inflation should be made so the pressure meets cold inflation pressure at the outside ambient temperature.**

PRESSURE AND TEMPERATURE

Tire pressure constantly changes with temperature. It changes when it is driven, but it also changes when the ambient temperature changes. The table below shows how the cold pressure of a tire changes according to temperature:

Pressure at 20C/68F (PSI)								Outside Temperature	
85	90	95	100	105	110	115	120	Celsius	Fahrenheit
92	97	102	108	113	119	124	129	40	104
90	95	101	106	111	116	122	127	35	95
88	94	99	104	109	114	119	125	30	86
87	92	97	102	107	112	117	122	25	77
85	90	95	100	105	110	115	120	20	68
83	88	93	98	103	108	113	118	15	59
82	86	91	96	101	106	111	115	10	50
80	85	89	94	99	104	108	113	5	41
78	83	88	92	97	101	106	111	0	32
76	81	86	90	95	99	104	109	-5	23
75	79	84	88	93	97	102	106	-10	14
73	77	82	86	91	95	100	104	-15	5
71	76	80	84	89	93	97	102	-20	-4
70	74	78	82	87	91	95	99	-25	-13
68	72	76	80	85	89	93	97	-30	-22
66	70	74	78	83	87	91	95	-35	-31
65	69	73	77	80	84	88	92	-40	-40

FIGURE 2: COLD TIRE PRESSURE EVOLUTION OF A TIRE INFLATED AT 20°C / 68°F

This table shows that temperature variations will have a significant impact on the tire pressure and that it has to be continuously considered.

For example, if a tire is inflated at 120 PSI inside a garage at 20 °C (68 °F) during winter, while the outside temperature is -20 °C (-4 °F), the actual cold pressure of this tire once outside will now be 102 PSI, which corresponds to a loss of 18 PSI (15%).

So, to make sure that a tire inflated indoors reaches its recommended cold inflation pressure during outdoor operating conditions, temperature variation has to be taken into account and pressure adjusted accordingly.

Here is a table that shows how a tire pressure should be verified and adjusted indoors in relation to outdoor temperature:

Placard Pressure								Outside Temperature	
85	90	95	100	105	110	115	120	Celsius	Fahrenheit
79	83	88	93	97	102	107	111	40	104
80	85	90	94	99	104	109	113	35	95
82	87	91	96	101	106	111	116	30	86
83	88	93	98	103	108	113	118	25	77
85	90	95	100	105	110	115	120	20	68
87	92	97	102	107	112	117	122	15	59
89	94	99	104	109	114	120	125	10	50
90	96	101	106	111	117	122	127	5	41
92	98	103	108	114	119	125	130	0	32
94	100	105	111	116	122	127	133	-5	23
96	102	108	113	119	124	130	135	-10	14
99	104	110	116	121	127	133	138	-15	5
101	107	112	118	124	130	136	141	-20	-4
103	109	115	121	127	133	139	144	-25	-13
106	112	118	124	130	136	142	148	-30	-22
108	114	120	127	133	139	145	151	-35	-31
111	117	123	130	136	142	148	155	-40	-40

FIGURE 3: ADJUSTED INFLATION PRESSURE WHEN INFLATING INDOOR AT 20 °C (68 °F)

The adjusted inflation pressure is a compensated value which takes temperature differences in consideration

If tire pressure is verified and adjusted outside in operating ambient conditions, it can then be done as usual, without compensation, as tires are already at operating temperature.

D-4 Tire Inflation Guide

CONSEQUENCES

Failure to maintain correct inflation pressure may result in improper handling, decreased braking performance and decreased tire lifespan.

But more specifically,

Underinflation can lead to:

- Irregular and accelerated wear
- Higher fuel consumption
- Tire casing fatigue and degeneration
- Tire overheating and sudden destruction

Overinflation can lead to:

- Irregular wear
- Increase in road shocks and vibrations transmitted to the vehicle
- Reduced resistance to impacts

RECOMMENDATIONS

Tire pressure is an extremely important element of vehicle maintenance and should be verified regularly in order to maintain maximum performance and safety of your vehicle. **Driving on improperly inflated tires may lead to tire failure and serious accidents.**

Here are a few recommendations:

- Regularly check tire pressures, ideally once a week or before long trips. All tires are susceptible to loss of pressure.
- Pressure has to be measured and adjusted when tires are cold, which means when they have not been driven for at least 3 hours. Do not adjust tire pressure when they are hot. The ideal time to check tire pressures is early in the morning.
- When measuring your tire pressure, use a properly calibrated pressure gauge and do not rely on a tire appearance.
- To maintain tires in their optimal driving conditions and to ensure maximum safety, we recommend that the tires cold pressures remain under a deviation of 10% of the recommended cold inflation pressure.
- If a tire pressure drops below 20% of the recommended cold inflation pressure, you should stop. Tire should be inspected prior to re-inflation.
- As ambient temperature plays a major role in tire pressure, you should inflate tires accordingly. Realistically, temperature adjustment cannot be done continuously. However, it is important to keep in mind that extreme variations caused by seasons and by drastic environment changes will have a significant impact on tire pressure. Adjust your tire pressure so that you remain as close as possible to your cold inflation pressure in ambient outdoor conditions.

APPENDIX E - DID MENUS SUPPLEMENTARY INFORMATION

APPLICATION MENU	2
SETTINGS - TPMS MANUAL LEARNING	2
VEHICLE TESTS - ALTERNATOR TEST	3
VEHICLE TESTS - ELECTRIC MOTORS TEST	4
VEHICLE TESTS - MUX INPUT TEST	8
VEHICLE TESTS - HVAC PUMP TEST	10
VEHICLE TESTS - FORCE RADIATOR FAN SPEED 50%, 100%	11
PRE-TRIP ASSISTANT - EXTERIOR LIGHT INSPECTION TEST	12
PRE-TRIP ASSISTANT - AIR BRAKE LEAK-DOWN TEST	13

E-2 DID Menus Supplementary Information

APPLICATION MENU

SETTINGS - TPMS MANUAL LEARNING

Manual Learn provides a way for the driver to update the vehicle TPMS sensor configuration without requiring access to Diagnostic Tools. It is a process that can be initiated by the driver whenever a new TPMS sensor has been fitted to a wheel, or when a previously learned TPMS sensor has been moved to a different wheel location on the vehicle.

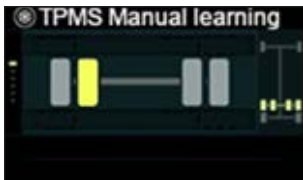
This feature allows the driver to initiate the manual learn process through the DID by selecting a specific wheel unit location where a TPMS Sensor has been changed. Once a location has been selected, the system will monitor for RF transmissions from the sensor. The driver is expected to force RF transmissions from the sensor at the identified wheel location, inducing a pressure change in the tire (positive or negative).

On successful completion of the process, the System will store the new Sensor ID against the selected wheel location. This information will be used by other TPMS System features such as Warning Strategy and displaying pressures/temperatures by position.

In scenarios where a sensor has been moved from an existing vehicle tire location, then on a successful completion of the learn process, the system will automatically remove the association of the sensor ID against the old location.

STEP 1 - In the DID, select **TPMS MANUAL LEARNING** then press ENTER / SELECT button.

STEP 2 - Using the UP/DOWN scroll button on the steering wheel right-hand keypad, select the appropriate wheel.



STEP 3 - Press ENTER / SELECT button.

The wheel selected turns from yellow to red in the display.

To confirm the manual learn sequence is in progress, the selected wheel will start to blink with alternating yellow and red color in the display.

Once a wheel location has been selected for the manual learn, the system waits for a maximum of 5 minutes for a manual learn RF transmission or for the user to exit manual learn.

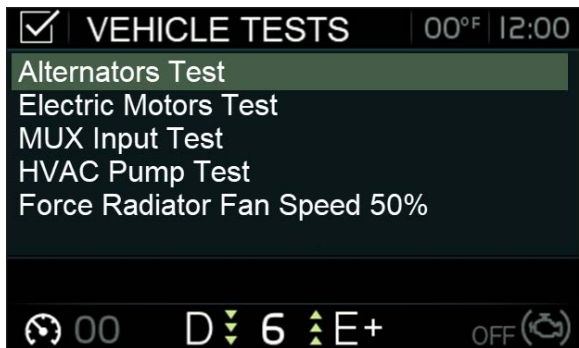
STEP 4 - Go to the selected wheel, inflate or deflate the tire to force RF transmissions from the sensor at the identified wheel location. RF transmissions will be triggered when the wheel sensor detects a pressure change of at least 3 PSI.

Exiting Manual Learn

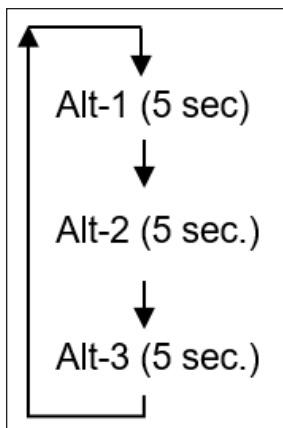
At any point while manual learn is active (i.e. not yet completed successfully or failed) it is possible to exit manual learn using APPLICATION TRAY/BACK button.

VEHICLE TESTS - ALTERNATOR TEST

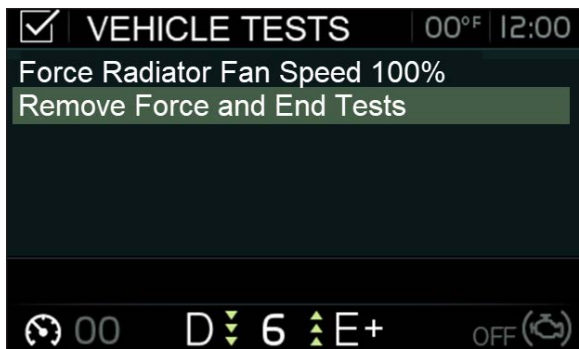
Anytime an alternator is suspected of being defective, this test will help you when performing your own alternator power output test, without the need to disconnect the alternator power cable. A clamp-on current meter is required.



This feature will activate one alternator at a time during 5 seconds, cycling between alternator 1, 2 & 3.



To exit test, press APPLICATION TRAY / BACK button, then select REMOVE FORCE AND END TESTS and press ENTER / SELECT button.



E-4 DID Menus Supplementary Information

VEHICLE TESTS - ELECTRIC MOTORS TEST

This test mode allows testing of the electric motors, the A/C compressor clutch and unloader and the HVAC system solenoid valves without the need to have the engine running. Note that while in test mode, the engine cannot be started.

Prerequisite conditions for the motor test mode:

1. The battery charger must be connected to a 110-120 volt power supply. If not, the test will be interrupted when the voltage drops below 24.4 volts,
2. Engine not running,
3. Parking brake applied.

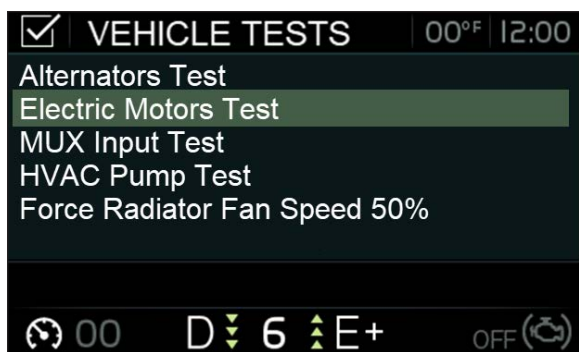


DANGER

Before starting the test sequence, make sure that no one is doing maintenance in the evaporator compartment, the condenser compartment or close to the CAC & radiator electric cooling fans.

NOTE

The back-up alarm will sound (beep) ten (10) times prior the test starts to warn the persons who do work on the vehicle. Moreover, the alarm will beep to tell the person conducting the electric motors test sequence to move to the next test location on the vehicle.



To enter this mode:

1) In VEHICLE TEST, select ELECTRIC MOTORS TEST and press ENTER / SELECT button to initiate the test mode for electrical motors;

Ten (10) beeps can be heard indicating the motor test mode has started.

Using the test mode:

During the entire test, the telltale panel audible alarm gives a signal each second to remind that the motor test mode is underway.

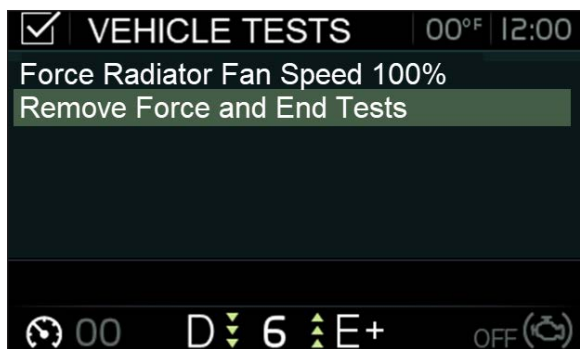
DID Menu Supplementary Information E-5

Test Sequence – Coaches Only

Go to the condenser compartment	<ul style="list-style-type: none"> • The condenser fans start. Speed will gradually increase to maximum speed. • The passenger's unit refrigerant solenoid valve activates. The refrigerant solenoid valve of the overhead compartment A/C system activates.
<i>Then 5 beeps can be heard from the back-up alarm to indicate to go to the engine compartment</i>	
In the engine compartment, the sequence is as follows	<ul style="list-style-type: none"> • The main power compartment fan activates for 3 seconds. • Toilet fan motor starts. • A/C compressor clutch activates 3 times. • The compressor unloader activates 3 times. • The electric cooling fans start running for 20 seconds.
<i>Then 5 beeps can be heard from the back-up alarm to indicate to go to the engine compartment</i>	
In the evaporator compartment	<ul style="list-style-type: none"> • Evaporator fan motor runs at speed 1 for 3 seconds then runs at speed 2 for 2 seconds. • Hot water pump starts running for 5 seconds and hot water pneumatic valve cycles 3 times.
<i>Then 5 beeps can be heard from the back-up alarm to indicate to go to the engine compartment</i>	
Inside the vehicle	<ul style="list-style-type: none"> • The driver's HVAC unit refrigerant solenoid valve cycles 3 times and the hot water pneumatic valve cycles 3 times also. • Left and right overhead compartment fans start running one after the other for 5 seconds.

To exit test, press APPLICATION TRAY / BACK button, then select REMOVE FORCE AND END TESTS and press ENTER / SELECT button.

E-6 DID Menus Supplementary Information



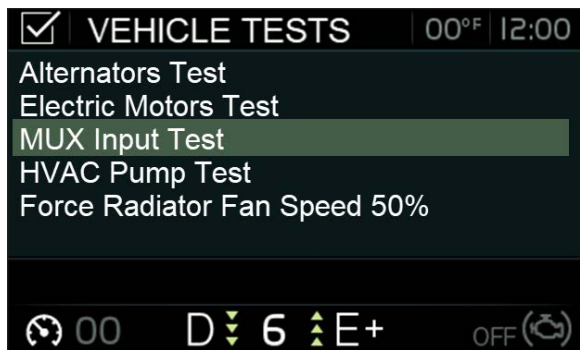
DID Menus Supplementary Information E-7

Go to the condenser compartment	
<i>Then 5 beeps can be heard from the back-up alarm to indicate to go to the engine compartment</i>	
In the engine compartment, the sequence is as follows	
<i>Then 5 beeps can be heard from the back-up alarm to indicate to go to the engine compartment</i>	
Inside the spare wheel compartment	

E-8 DID Menus Supplementary Information

VEHICLE TESTS - MUX INPUT TEST

The multiplex input test provides useful information to diagnose multiplexed input of switches and sensors, complimentary to the electrical system diagnosis.



In VEHICLE TESTS, select MUX INPUT TEST. Press ENTER / SELECT button to start the test.

Instrument panel audible alarm emits a beep each time an OFF/ON transition is detected on a multiplex input. This allows quick verifying if the switches and sensors are detected or seen by the multiplex modules. When the vehicle is parked, the back-up alarm also emits a beep that allows verification of the sensors at the rear of the vehicle.

Certain inputs are doubled (for example, turn signal switch on multi-function lever, door operating buttons) and also other inputs activate at the same time (ex. kneeling switch and Kneeling proximity sensor switch). For these inputs, 2 beeps are emitted. If only one beep is heard, one of the inputs is defective.

SWITCHES AND SENSORS SUPPORTED BY THE SWITCH/SENSOR TEST MODE

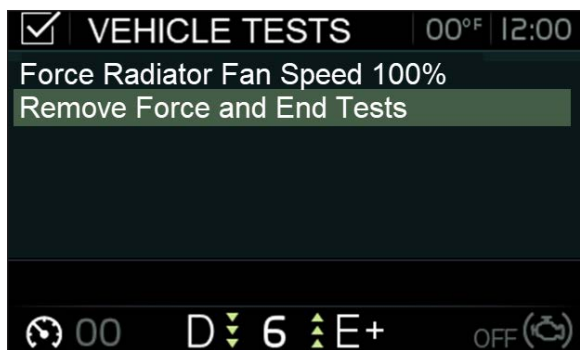
HVAC control unit driver's section ON/OFF	Interior lighting switch
HVAC control unit driver recirculate switch	Driver's area lighting switch
HVAC overhead compartment fan switch	Reading lights switch
HVAC control unit passenger's section ON/OFF	Direction indicator control stalk
Engine rear start selector switch "rear start"	Fog lights switch
Engine rear start selector switch "normal"	Hazard warning flashers switch
Entrance door inside opening /closing switch	Headlighs switch
Entrance door outside opening /closing switch	Baggage compartment door lock/unlock switch
Electric horn button	Tag axle switch load & lock
Kneeling down switch	Wheelchair lift activation switch
Kneeling up switch	Windshield wiper
Baggage compartment locking system switch	Windshield wipers control stalk
Baggage compartment door ajar open sensor	Lower windshield washer switch
Lavatory emergency switch	Upper windshield washer switch

The following inputs, either certain options or sensors which are difficult to activate, are not supported by the switch/sensor test:

- Service chime enable switch,
- Fast idle switch,
- Outside Rear View Mirror & Video Camera Mirror System Heat,

- Traction control system switch,
- Outside rear view mirror heat,
- Mirror control switches,
- Low-buoy switch,
- Driver's power window switch,

To exit test, press APPLICATION TRAY / BACK button, then select REMOVE FORCE AND END TESTS and press ENTER / SELECT button.

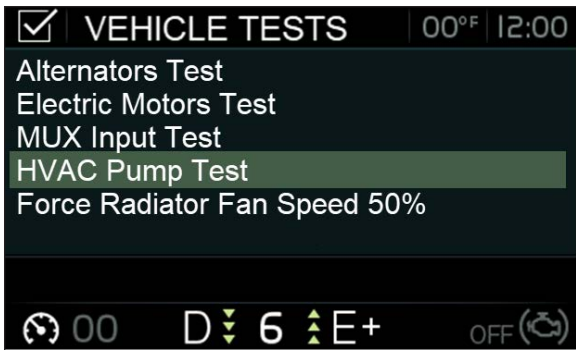


E-10 DID Menus Supplementary Information

VEHICLE TESTS - HVAC PUMP TEST

Forced activation of water circulating pump

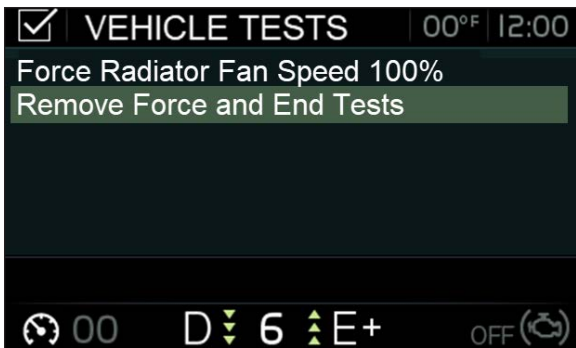
In VEHICLE TESTS, the heating system circulating pump can be turned on manually by selecting HVAC PUMP command. This feature allows verification of the circulating pump when inside a garage. This is also useful when working on the heating system to remove air pockets trapped in the system.



In test mode, with the parking brake applied and the passenger set point set to a value higher than 64°F (18°C), the circulator pump is not set to OFF as it would normally do when the outside temperature gets above 50°F (10°C). This feature allows verification of the pump when inside a garage. This is also useful when working on the heating system to remove air pockets trapped in the system.

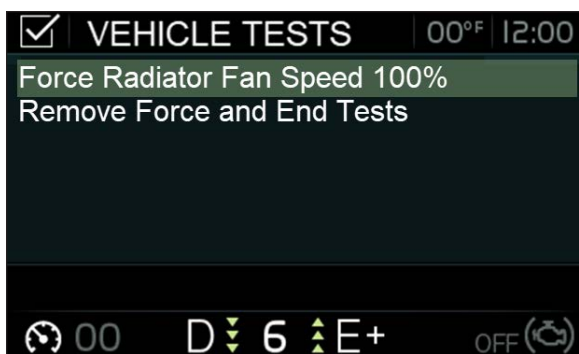
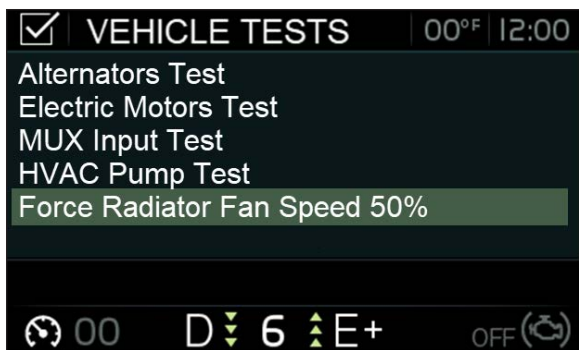
When performing an A/C cooling test and having the water pump shut off is required, initiate the multiplex input test mode. While in this mode, just set the passenger set point temperature to the minimum 64°F (18°C) to shut off the pump.

To exit test, press APPLICATION TRAY / BACK button, then select REMOVE FORCE AND END TESTS and press ENTER / SELECT button.



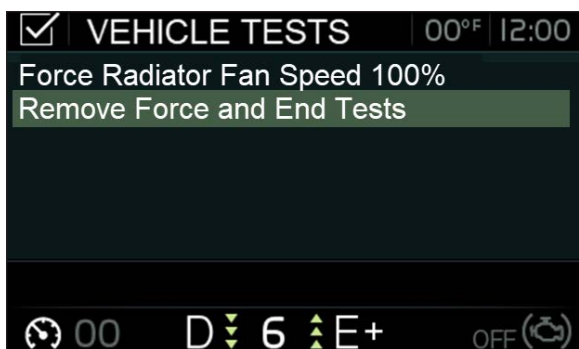
VEHICLE TESTS - FORCE RADIATOR FAN SPEED 50%, 100%

To allow the technicians to visually check if all the cooling fans are in working conditions or to prevent the engine from overheating in case of malfunction of the cooling fans activation system, it is possible to force activation of the CAC & radiator fans.



Prerequisite condition: The engine is running (fast idle if at stand still).

To stop forced activation, press APPLICATION TRAY / BACK button, then select REMOVE FORCE AND END TESTS and press ENTER / SELECT button.



E-12 DID Menus Supplementary Information

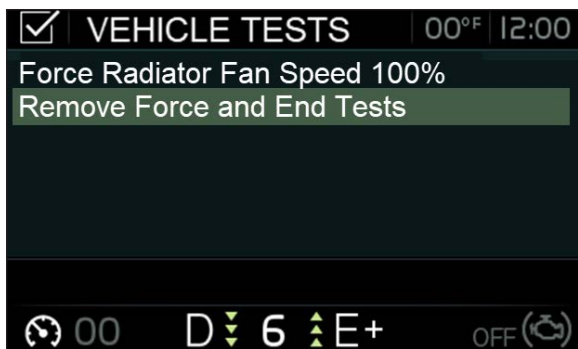
PRE-TRIP ASSISTANT - EXTERIOR LIGHT INSPECTION TEST

The Pre-Trip Assistant helps the driver in completing the pre-trip inspection of the vehicle. This feature is not a substitute for a complete pre-trip inspection. If any system of the vehicle does not pass inspection, the error must be corrected before operating the vehicle.

The Exterior Light Inspection Test turns on all the exterior lights simultaneously. This allows the operator to start the test, exit the vehicle and do a visual check that all exterior lights function properly.

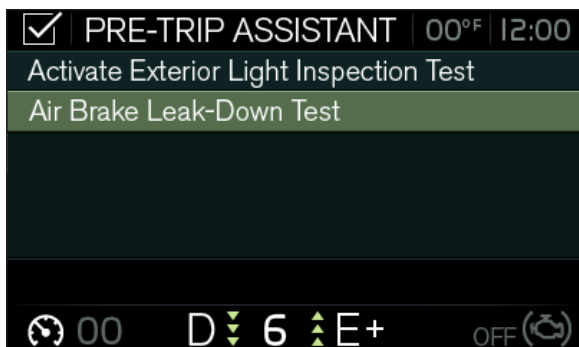


To exit test, press APPLICATION TRAY / BACK button, then select REMOVE FORCE AND END TESTS and press ENTER / SELECT button.



PRE-TRIP ASSISTANT - AIR BRAKE LEAK-DOWN TEST

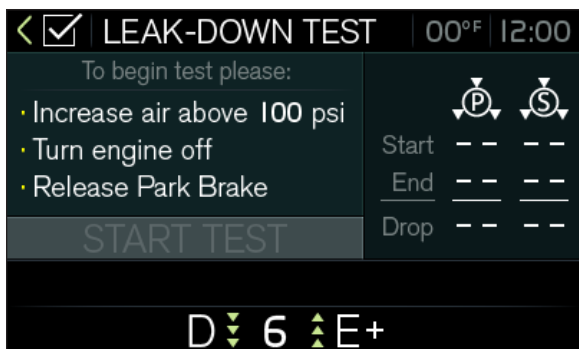
The Pre-Trip Assistant helps the driver in completing the pre-trip inspection of the vehicle. This feature is not a substitute for a complete pre-trip inspection. If any system of the vehicle does not pass inspection, the error must be corrected before operating the vehicle.



The Air Brake Leak-Down Test check allows the driver to accurately measure the amount of air pressure drop in the front and rear brake air systems. After selecting this test from the DID, you are prompted to apply the service brake for 60 seconds. After applying and holding the service brake for 60 seconds, the DID will display the amount of pressure drop in the brake system.

Before starting the test through the DID, chock the wheels to prevent the vehicle from rolling.

- 1) Start the engine and check that the brake systems air pressure is greater than 100 psi.
- 2) Turn engine off .
- 3) Set the ignition switch to ON.
- 4) In PRE-TRIP ASSISTANT menu, select AIR BRAKE LEAK-DOWN TEST and press ENTER / SELECT button.

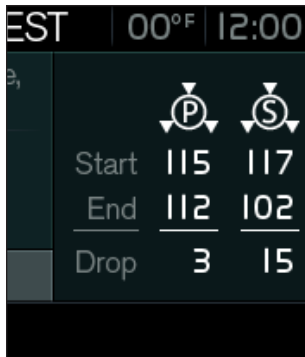


- 5) When prompted, press ENTER / SELECT button the the steering wheel right-hand keypad to start the test.
- 6) Release the park brake.
- 7) Follow the on-screen instructions.

E-14 DID Menus Supplementary Information



8) Once completed, the pressure drop results are displayed.



To exit test, press APPLICATION TRAY / BACK button, then select REMOVE FORCE AND END TESTS and press ENTER / SELECT button.

