

Safety Features and Equipment 7-1

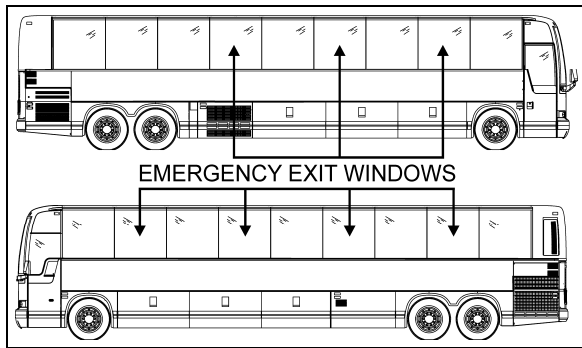
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EMERGENCY EXITS

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

Some side windows can be opened from the inside for emergency exit. A decal located on the bottom of each passenger window indicates the location of the nearest emergency exit. Also, blue lights close to the wall in the overhead storage compartments illuminate the emergency exit decals. These lights illuminate when the general lighting switch is on.

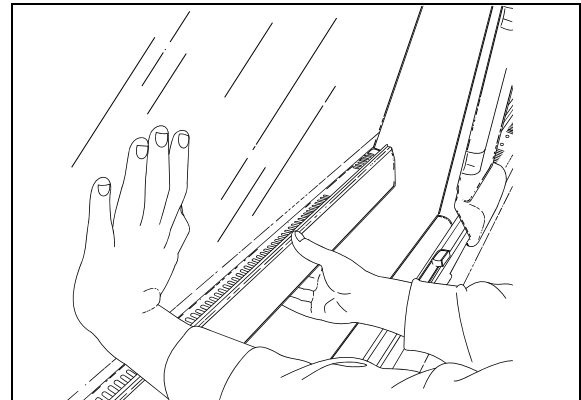


EMERGENCY EXIT WINDOWS (X3-45) 18617

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.

A telltale light on the dashboard illuminates when a window is opened. Refer to Controls and Instruments chapter for more information.

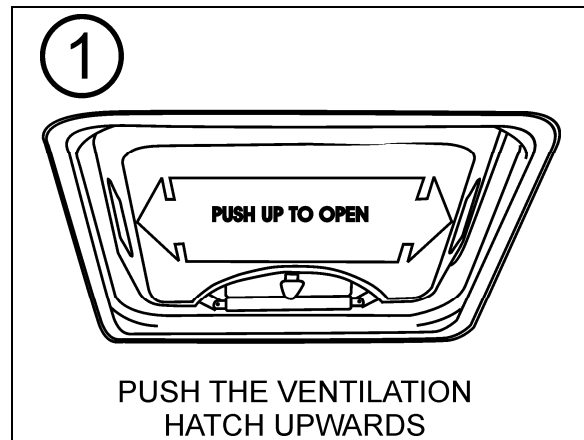
To close the window, tilt up the release bar and pull the window back. Push down the release bar to lock shut.

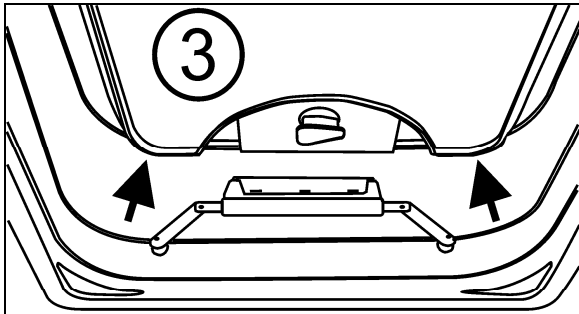


SIDE WINDOW EMERGENCY EXIT 18391

VENTILATION / EMERGENCY EGRESS HATCH

Roof ventilation/emergency egress hatches, designed to be opened by occupants are installed in the ceiling at the front and the rear of the vehicle. The hatches can serve as emergency exits. In case of an emergency, push the ventilation hatch upwards (1). Turn knob ¼ 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.





PUSH THE ESCAPE HATCH OUTWARDS

ROOF VENTILATION / EMERGENCY EGRESS

NOTE

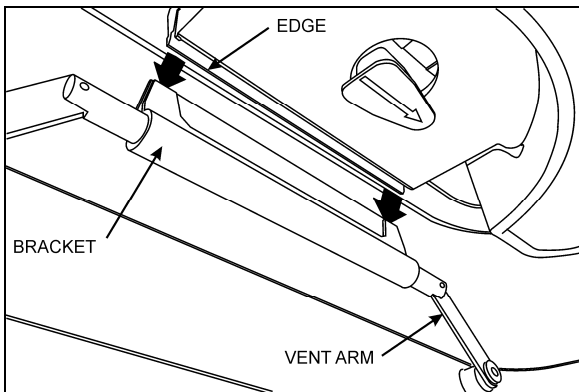
In the event of ventilation blower motor failure, the roof hatch may be used to aid ventilation by pushing the hatch upwards.



CAUTION

Be aware of reduced vehicle overhead clearance when driving under overpasses with the roof hatch open.

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 in to closed position, one side at a time.



ROOF ESCAPE LATCHING

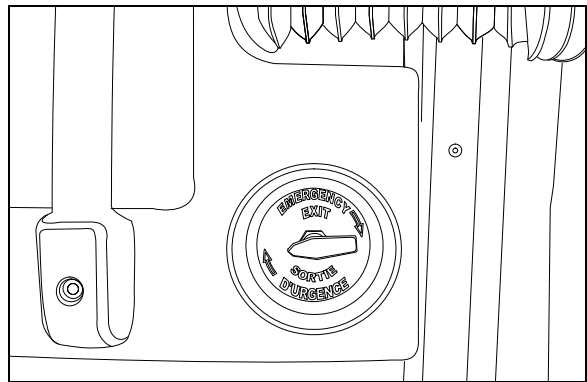
EMERGENCY ENTRANCE DOOR OPENING

An unlatch air valve located on the front wall, close to the entrance door allows emergency depletion of the door and latching cylinders. Another unlatch valve is located in the front

service compartment and allows opening the door from the outside. 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 cylinder, then close the door normally.

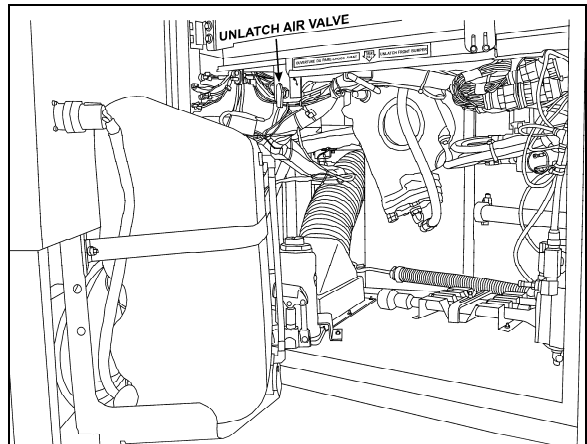
NOTE

To be able to open the entrance door in an emergency situation, the entrance door must first be unlocked using the key or locking lever before unlatching the door from the outside or the inside.



INTERIOR UNLATCH AIR VALVE

12164



UNLATCH AIR VALVE LOCATION

12209

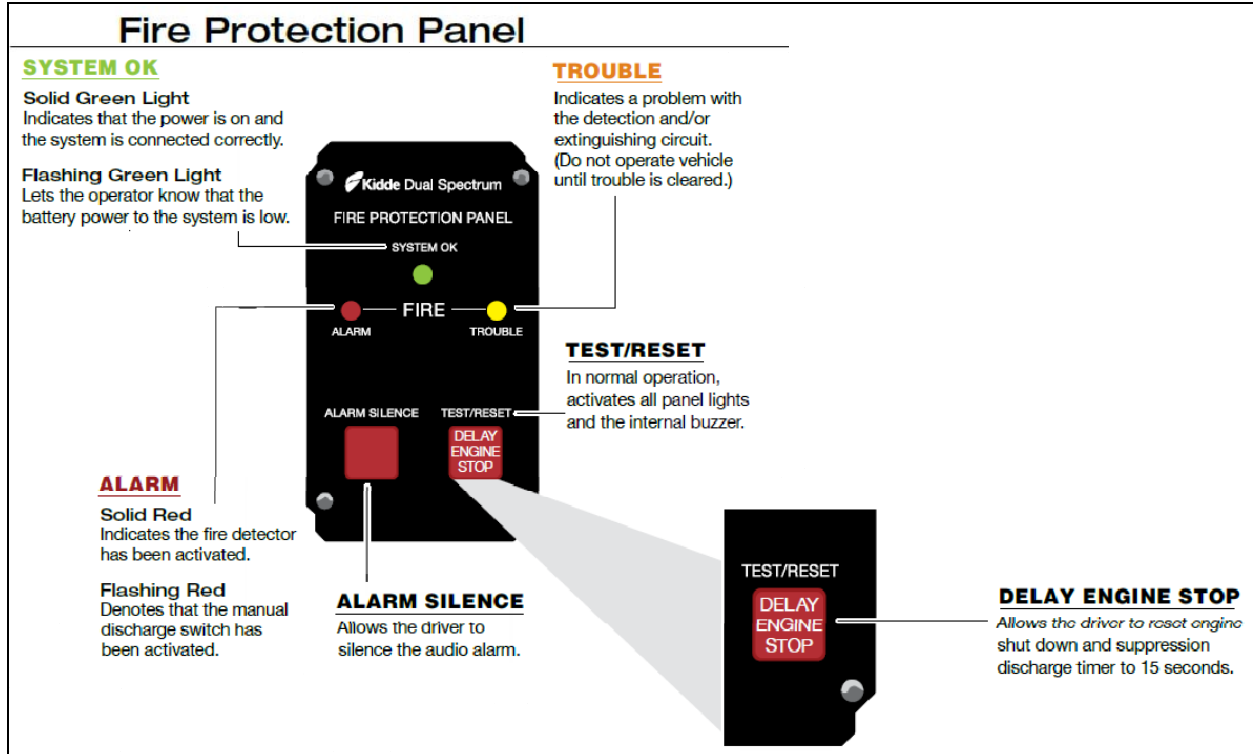
7-4 Safety Features and Equipment

EMERGENCY EQUIPMENT

FIRE SUPPRESSION SYSTEM (AFSS)

The coach is equipped with the Automatic Fire Detection and Suppression System (AFSS).






See below, a brief description of the system, the visual information provided and how it should be operated if a fire is detected.



System Operation

The protection panel and manual discharge is located in the operator's area and displays a number of lights which indicate the status of the system.

If a FIRE is detected:

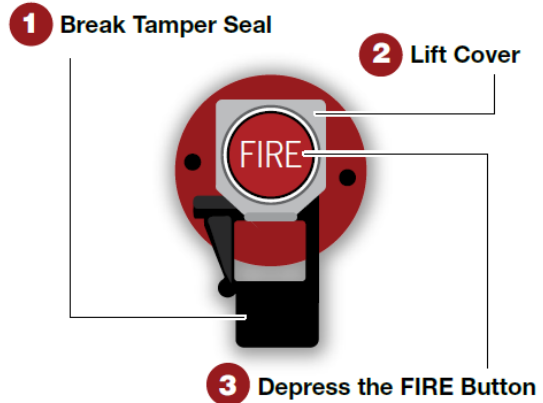
-  ALARM light illuminates
-  The internal buzzer sounds
-  15 second count down begins for engine shut down and suppression discharge
-  Upon expiration of timer, engine shuts down
-  Suppression agent will discharge

NOTE: Activation of the manual discharge button will shut down the engine and immediately discharge the suppression system.

KIDDE IMAGES

Manual Discharge Button

To immediately discharge:



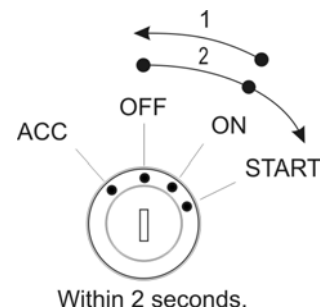
CAUTION: The extinguisher discharge may cause an obscuring cloud behind and near the vehicle.

STARTING THE VEHICLE AFTER A FIRE ALARM

The vehicle may be started after a fire alarm without resetting the system. Refer to ignition switch sequence below. This will not reset the system, rather it will instruct the vehicle's multiplex system to ignore vehicle interface outputs from the Protection Panel. This feature is intended to be used only in emergency situations that require the vehicle to be restarted and moved a short distance prior to system reset. It should not be performed if the cause of the fire has not been clearly identified and corrected.

To start the vehicle, perform this ignition switch (key) sequence.

- From the **ON** position,
- Turn to **OFF**, return to **ON** and **START** vehicle within 2 seconds.



7-6 Safety Features and Equipment

TIRE PRESSURE MONITORING SYSTEM (TPMS)

The coach may be equipped with the optional Tire Pressure Monitoring System (TPMS).

Description

System includes the following elements:

- Special tire valves;
- RF sensor inside each tire, fixed to the valve;
- 3 antennas to receive the sensors RF signal (one in the front spare tire compartment, one above the L.H. side rear wheels and one above the R.H. side rear wheels);
- A TPMS receiver connected to the antennas and located in the front electrical compartment, above the CECM;
- A TPMS display built in the L.H. dashboard panel;
- A "FLAT TIRE" telltale panel indicator.

The section of the special tire valves located inside the tire is dome-shaped to allow fixing the sensor.

Sensors provide continuous tire pressure and temperature reading.

The normal sensor battery lifespan is 5 years. The remaining lifespan is displayed as a percentage in the TPMS display.

NOTE

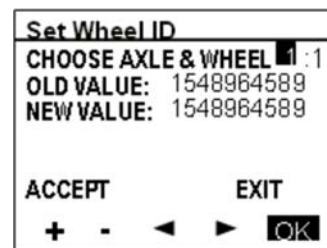
It is recommended to check the remaining battery lifespan when changing the tires in order to replace the sensors at the same time if they are due for replacement before the next change.

The sensor's fixation screw to the valve can only be used once because the threads are powder-coated to lock the sensor in place and prevent unfastening.

The telltale panel indicator illuminates for 3 seconds when the ignition switch is turned ON to check the display operation and the communication between the display and the vehicle multiplex system. This confirms the communication between the TPMS display and CECM.

Settings Menu

- Set Wheel ID



- ◀ ▶ Navigate
- +/- Increase, decrease digits
- OK Navigate forward
- ACCEPT & OK Overwrite "OLD VALUE"; with changes in "NEW VALUE" (sets current)
- EXIT & OK Cancel changes in Progress and exit menu

- Learn Wheel ID

This menu allows learning new wheel sensors ID. The user can learn only one wheel, several wheels or all wheels of the vehicle. The sequence automatically jumps to the next wheel such that a user can initiate all wheels without having to come back to the display between each wheel.

The display uses a pressure change as the criteria to recognize which wheel sensor the operator wants to get assigned to a given location. The amount of pressure change required is established at 2 PSI.

A pressure change of about 3 PSI is needed to wake up a sensor and then an extra amount of pressure change of 2 PSI is needed to trigger the display. The operator has to create a pressure change by at least 6 PSI and then wait for the display to recognize the pressure change. The wait time correspond to the sensor sampling rate.

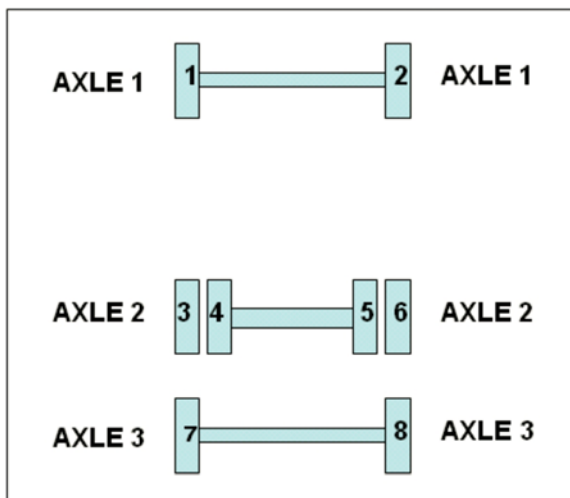
When entering the menu, the axle 1, wheel 1 is selected by default as a starting point for the learning. The user can select another axle with +/- , move the cursor to the wheel number with the right arrow and select another wheel with the

+/- or move the cursor down to the start learning button.

After the start learning button is selected, the display stores the first transmission it gets from each sensor ID into the “initial pressure” for that sensor ID. Then it compares each subsequent pressures received for that sensor ID with the initial one and when the comparison shows a delta pressure exceeding the defined level required, this sensor ID is assigned to the selected tire location.

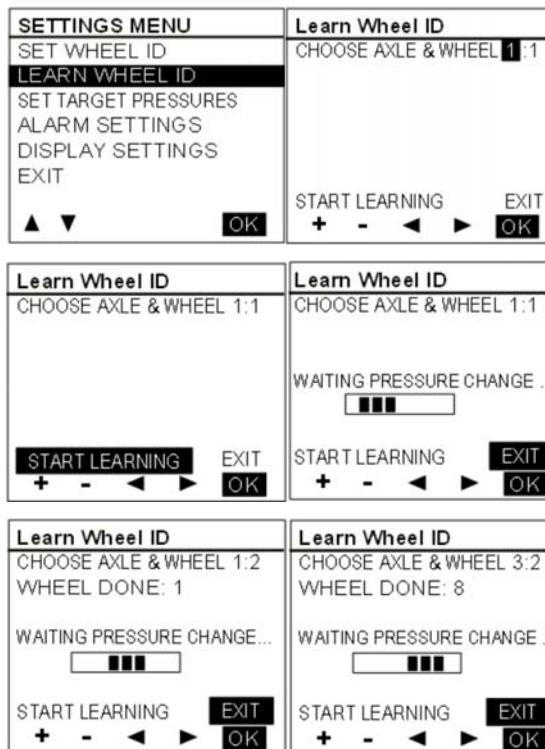
Once a wheel ID has been assigned, the display increments the number of wheels done and it moves to the next axle/wheel in the sequence, waiting for another sensor to come up with a pressure change. Within one learning session, the display remembers which sensor has been assigned and it will not assign it twice.

The sequence increments the display of the next wheel on the same axle, counting wheels from left to right, and then moves to the next axle, counting axles from front to rear.



It activates the next wheel parameter each time a wheel is done. This setting is integrated with the vehicle electronic, activating an audible signal on the vehicle, thus providing a feedback to the user that he can move on to the next wheel.

The spare Tire can be done by selecting the axle/wheel “spare” which is internally encoded to 15:1.



- Set Target Pressures

This menu allows the end user to fine tune the target pressure setting, taking account for the specific operating conditions (cold weather operation or unloaded operation). The end user can readjust the target pressure within +30% and -20% of the factory set target pressure but not outside this range.

The factory set target pressure is always kept in permanent memory into the TPMS display and cannot be edited by the end user.

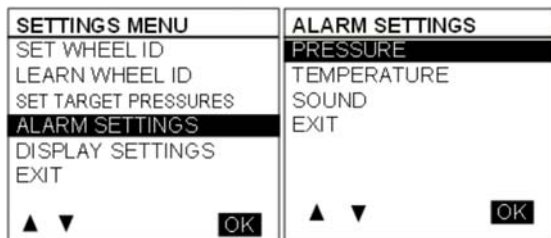
When the user sets a new target value, the selection can't be made outside the valid range.



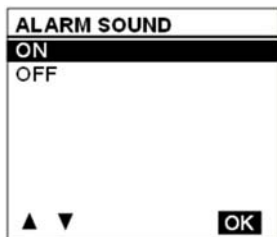
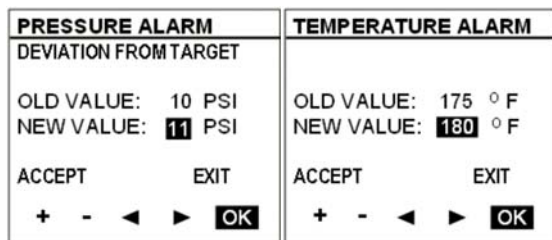
- Alarm Settings

When selecting the *Alarm Settings* Menu, a sub menu containing Pressure Alarm and Temperature Alarm appears.

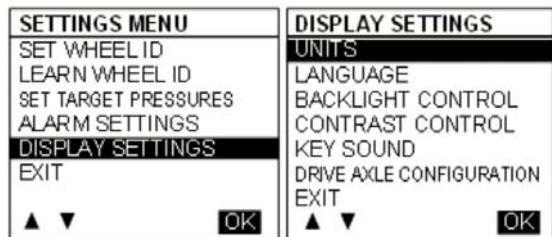
7-8 Safety Features and Equipment



When selecting *Pressure*, the following pressure alarm screen appears. A similar screen is displayed for temperature settings. The cursor can be moved to highlight the data beside “NEW VALUE” and the “ACCEPT / EXIT” option. +/- allows increasing or decreasing the “NEW VALUE” data. Pressure alarm changes are done by steps of 1 PSI, in the range from 5 to 20 PSI. Temperature alarm is done by steps of 5°F (2°C) in the range from 150 to 180 °F (64 to 82 °C). Pressing OK with “ACCEPT” highlighted applies changes and exits to the previous menu, while pressing OK while the “EXIT” option is highlighted exits without changes.

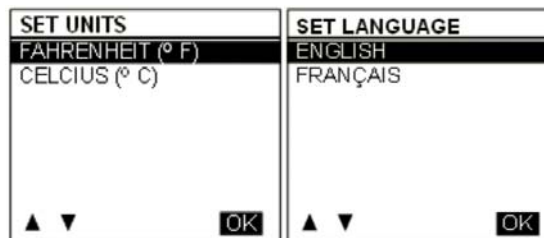


- Display Settings

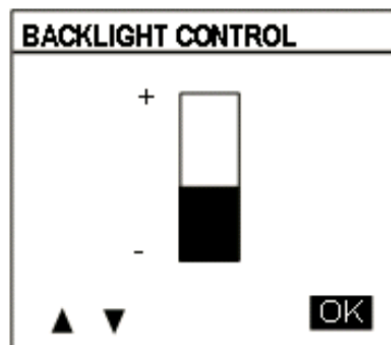


- Units

- Language

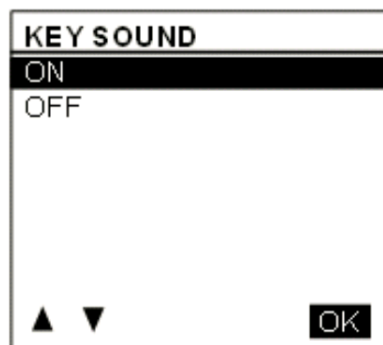


- Backlight Intensity



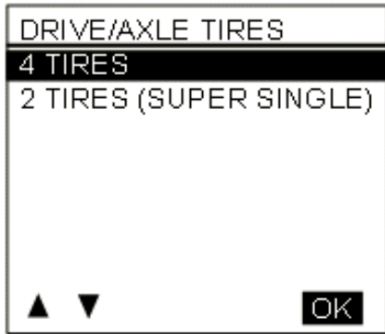
- Key Sound

Turns ON/OFF the sound of keys each time they are pressed.



- Tire / Axle Configuration

Pressing the up / down arrows allows to select the option of 2 or 4 tires, which are the choices for the drive axle on the vehicle.



Refer to “Appendix G” for Troubleshooting Guide on Tire Pressure Monitoring System (TPMS).

20 LBS FIRE EXTINGUISHER

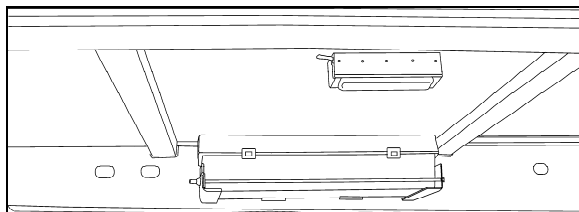
A 20 lbs fire extinguisher is located on the under the first R.H. side passenger seat. side. Instructions for use are found on the extinguishers.



20 LBS FIRE EXTINGUISHER

WARNING REFLECTORS

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



WARNING REFLECTORS LOCATION

23376

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.

“LIMP-HOME” BELT

In case of malfunction 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.

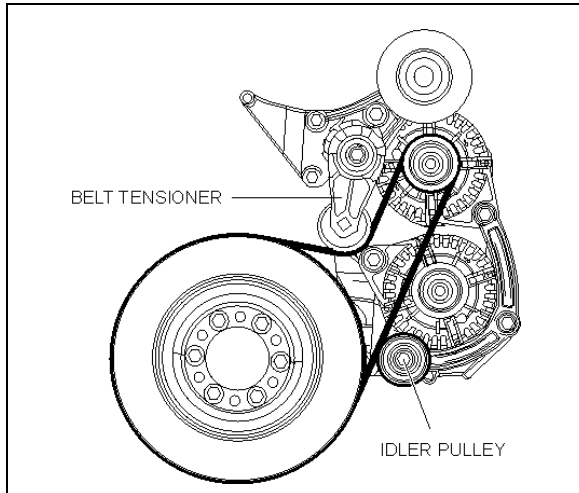
Lower alternator failure:

1. Raise the belt tensioner. Use a breaker bar with a 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 hereafter;
4. Slide the belt on the idler pulley;
5. Gently release the belt tensioner.

NOTE

To prevent the batteries from discharging, the HVAC system is turned OFF when running on a single alternator.

7-10 Safety Features and Equipment



LIMP-HOME BELT ON TOP ALTERNATOR

01194

SPARE WHEEL

The spare wheel and tire is located in a compartment behind the reclining front bumper.

In case of a flat tire:

- Turn ON the hazard flashers;
- Bring the coach to a stop on the side of the road;
- Apply the parking brake;
- Make sure the coach is parked safely away from traffic;
- Set up the triangular reflectors in accordance with applicable highway regulations.

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.

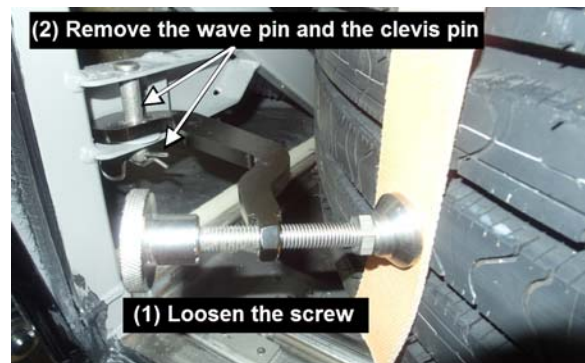
The bumper will lower gradually. When closing the compartment, be sure the bumper is firmly in place.

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.



REMOVING THE SPARE WHEEL

13038

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 (See "Jacking points" in this section);
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;
6. 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.



TIGHTENING SEQUENCE 13018

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.

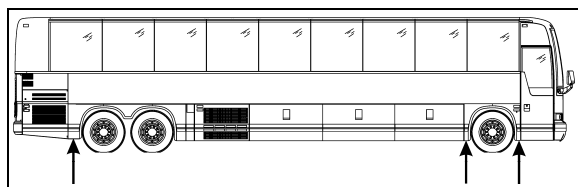


CAUTION

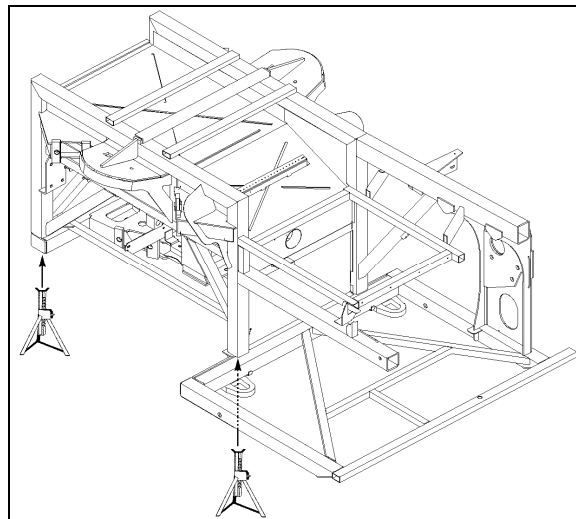
Check that the bumper is securely closed shut before driving.

JACKING POINTS

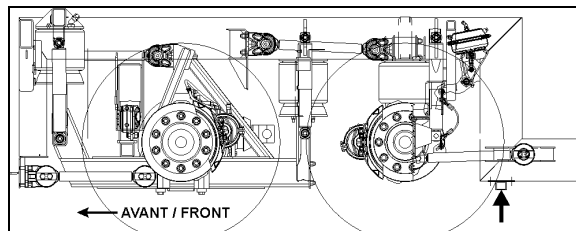
Twelve jacking points are located on the vehicle; three are located on each side of the frame and two are located under each axle. Refer to the following illustrations for the location of jacking points.



JACKING POINTS ON FRAME 18618



FRONT END JACKING POINTS 18592

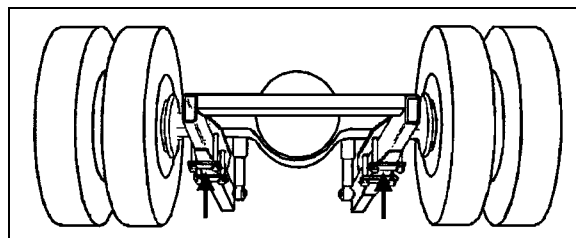


REAR END JACKING POINTS 18593

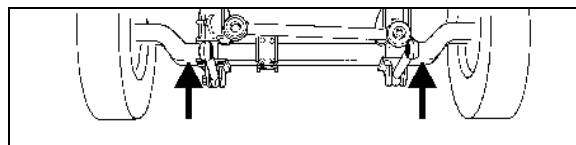


WARNING

The suspension of the vehicle must be in the normal ride position before jacking.

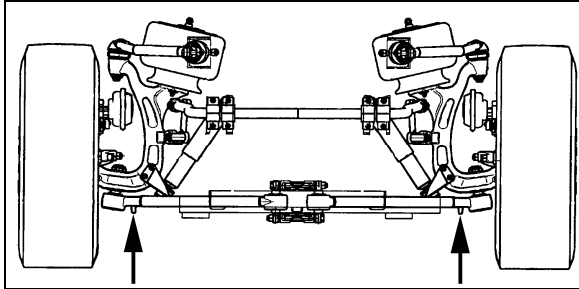


JACKING POINTS ON DRIVE AXLE 11005



JACKING POINTS ON FRONT AXLE 10005

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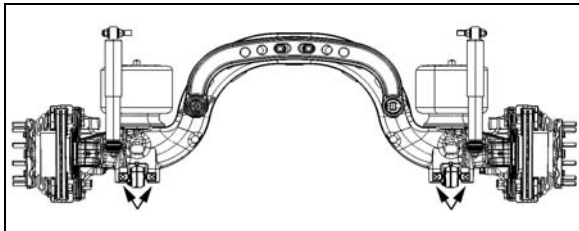


JACKING POINTS ON IND. FRONT SUSPENSION 16139



WARNING

Always unload or retract the tag axle before jacking the vehicle from the front and drive axle jacking points to prevent damage to suspension components.



JACKING POINTS ON TAG AXLE 11029



WARNING

The jacking points on the tag axle must be used for raising the tag axle only.

Several kinds of hydraulic jacks can be used. Only jack at the specified jacking points. Jack must support the following capacities:

Front axle: 20,000 lb (9 100 kg);

Drive axle: 40,000 lb (18 200 kg).

HYDRAULIC JACK

To raise: turn release valve clockwise. Insert handle in socket and raise by pumping.

To lower: remove handle and turn the release valve slowly counterclockwise.

Always keep ram and extension screw retracted when jack is not in use.

Service: Check oil level when jack fails to raise to full height. Lower ram completely with release valve open and jack in upright position, remove filler plug and refill to level of filler hole with hydraulic jack oil. **Never use brake fluid.**



DANGER

Jack is intended for lifting only. Do not get under the vehicle or load for any reason unless it is properly supported with safety stands and securely blocked.



DANGER

Do not load jack above rated capacity. Prevent "side loading", make sure load is centered on ram. Do not push or tilt load off jack.

LIFTING AND TOWING

The towed vehicle must be lifted from the front end only. The tow truck must be equipped with the proper lifting equipment to reach under the front axle or the front tow eyes since no other lifting points are recommended. Lifting and towing from any other point are unauthorized as it may cause serious damage to the structure. Do not unload or raise the tag axle when lifting and towing to prevent overloading the drive axle.

1. Remove both drive axle shafts to prevent damage to the transmission. Plug axle tube to prevent oil loss. Refer to Rockwell's "Maintenance manual no.5" annexed at the end of Section 11: Rear Axle of the maintenance manual.



CAUTION

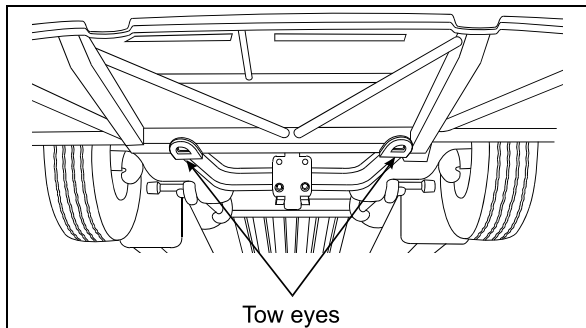
Transmission lubrication is inadequate when towing. With automatic, semi-automatic or manual transmission, the axle shafts or driveshaft must be disconnected to avoid serious damage to the transmission. Do not attempt to push or pull-start the coach.

2. If required, raise the front of the coach then install wooden blocks underneath front tires to allow lifting equipment to reach under the front axle.



Tow eyes as lifting point

- a) Use the tow eyes fixed to the vehicle frame between the front axle and the front bumper.



TOW EYES UNDER VEHICLE 18401

- b) Install axle forks onto tow bar, position axle forks around beam and into tow eyes.



ADEQUATELY SECURE THE TOW EYES TO THE TOW TRUCK LIFTING ATTACHMENT WITH CHAINS



AXLE FORK

Front axle as lifting point

- a) Use axle forks and lift the vehicle from under the front axle, and adequately secure the axle onto the tow truck lifting attachment with chains.



LIFTING FROM UNDER THE FRONT AXLE

- 3. Operate the engine when towing to maintain brake system air pressure. If the engine cannot be operated, connect an external air pressure line from the tow truck to the emergency fill valve in the engine R.H. side compartment. The emergency fill valve in the front service compartment does not supply air pressure to the brake system. The air pressure must be a minimum of 75 psi (520 kPa), and the line should be attached to the air line with a clip-on chuck.
- 4. Observe safety precautions when towing.

CAUTION

Do not tow the vehicle without external air pressure applied to the emergency fill valve if the engine does not operate. Without brake system air pressure, the brakes may apply automatically if system air drops below 40 psi (275 kPa). If failure prevents releasing the parking brakes with air pressure, disengage the parking brakes mechanically.

CAUTION

Make sure a safe distance is kept between the front of the coach and the tow truck. This space ensures that coach does not suffer damages when being towed.

7-14 Safety Features and Equipment



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.

TOWING WITHOUT LIFTING



CAUTION

When towing vehicle without lifting, use only a tow truck with a solid link tow bar and related equipment. All other means of towing are unauthorized. Tow only from the front of the vehicle.

1. Remove both drive axle shafts to prevent damage to the transmission. Plug axle tube to prevent oil loss. Refer to Rockwell's "Maintenance manual no.5" annexed at the end of Section 11: Rear Axle of the maintenance manual.



CAUTION

Transmission lubrication is inadequate when towing. With automatic, semi-automatic or manual transmission, the axle shafts or driveshaft must be disconnected to avoid serious damage to the transmission. Do not attempt to push or pull-start the coach.

2. Operate the engine when towing to maintain brake system air pressure. If the engine cannot be operated, connect an external air pressure line from the tow truck to the emergency fill valve in the engine R.H. side compartment. The emergency fill valve in

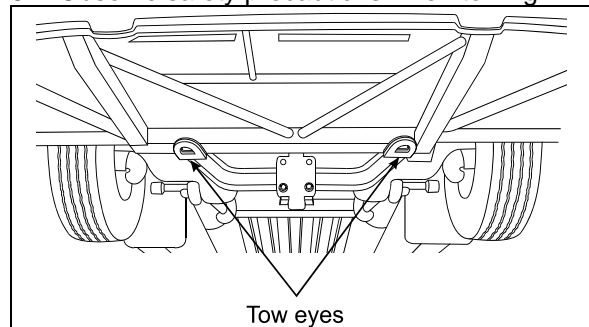
the front service compartment does not supply air pressure to the brake system. The air pressure must be a minimum of 75 psi (520 kPa), and the line should be attached to the air line with a clip-on chuck.



CAUTION

Do not tow the vehicle without external air pressure applied to the emergency fill valve if the engine does not operate. Without brake system air pressure, the brakes may apply automatically if system air drops below 40 psi (275 kPa). If failure prevents releasing the parking brakes with air pressure, disengage the parking brakes mechanically.

3. Position the tow truck so that the tow bar contacts the front bumper of the vehicle.
4. Attach the tow truck chains only in the tow eyes of the vehicle and take up all the slack.
5. Use a safety chain as applicable.
6. Observe safety precautions when towing.



Tow eyes

TOW EYES UNDER VEHICLE

18401



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.


- A. Vehicle must be towed FORWARD only

DAYTIME RUNNING LIGHTS

The inner lamps only also called high beams illuminate automatically when the engine is started and the parking brake is released to serve as daytime running lights. The daytime running lights provide added safety by making the traveling 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.

 WARNING
<p>Do not drive with only the daytime running lights at night because the tail and marker lights are not turned on in that situation and the high beams can blind other drivers. For night driving, turn ON the headlights by depressing the exterior lighting rocker switch to the second position.</p>

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.

<p><i>NOTE</i></p> <p><i>Some states or provinces may restrict the use of fog lights. Verify local state or provincial regulations before using.</i></p>

COMPARTMENT LIGHTING

Baggage compartments and front service compartment lights are automatically turned ON when the corresponding compartment door is opened. A pictogram will appear on the status bar of the Driver Information Display (DID) when the baggage compartment door is open.

MUD FLAPS AND SPLASH GUARDS

Mud flaps are installed behind each front and tag axle wheel in order to minimize dirt on the lower panels of the vehicle and prevent stones and debris from being thrown at vehicles traveling behind the vehicle. Mud flaps are also installed on front of each front axle wheel to reduce water splash on rear-view mirrors. 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 may be mounted on the left side pillar. It 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. Both the alarm and optional camera are automatically activated when the transmission is put in the reverse (R) range.

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,
- 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,
- Headlights: Low beams only,
- Directional signals: Rear and front only,
- Stoplights: 2 upper stoplights + high-mounted stoplight are functional,
- HVAC: Functional with 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 CAN defective 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.