



**NEW FLYER**

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**OPERATOR'S GUIDE**



**SR534  
BC Transit  
Victoria  
D40LF 1998**

# VEHICLE IDENTIFICATION NUMBERS

This operators guide is effective for only those transit vehicles with the following Vehicle Identification Numbers:

<b>Vehicle Identification Numbers</b>	<b>Unit Number</b>
2FYD2LL14WU018618	9881
2FYD2LL16WU018619	9882
2FYD2LL12WU018620	9883
2FYD2LL14WU018621	9884
2FYD2LL16WU018622	9885
2FYD2LL18WU018623	9886
2FYD2LL1XWU018624	9887
2FYD2LL11WU018625	9888
2FYD2LL13WU018626	9889
2FYD2LL15WU018627	9890
2FYD2LL17WU018628	9891

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Printed in Canada

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# 1. INTRODUCTION

This manual describes the operating features and safety equipment of the New Flyer D40LF Transit Vehicle. All personnel involved in the operation of the vehicle should be acquainted with this manual and should familiarize themselves with the D40LF, before providing any public service. Knowing the contents of this booklet and following its recommendations will help to assure safe and trouble-free operation.

It is not the intention or responsibility of this manual to give instruction in the use of common sense, basic skills and rules of driving; therefore, it is assumed that you, the operator, are fully qualified to operate a public transit vehicle.

This manual and any other supplied should be considered a permanent part of the vehicle and remain with the vehicle at all times. The information and specifications throughout this manual are up to date at time of publication. New Flyer reserves the right to change the content of this manual at any time without notice. Any malfunction which interferes with the safe operation of the vehicle should be reported immediately to the appropriate service personnel.



**NOTE:**

*New Flyer urges you the driver to read this publication carefully, as well as the following manuals which are readily available from the respective manufacturer.*

- *Voith D863.3 Voith Transmissions Sacramento, CA*
- *Detroit Diesel Series 50 Engine Operator's Manual 06SE0550*

## **VEHICLE SPECIFICATIONS**

### **D40 Foot Low Floor Transit Vehicle**

<b>ENGINE &amp; FUEL</b>	
Engine .....	<i>Detroit Diesel</i> Series 50
Horsepower .....	250 HP - 890 ft-lb.
Fuel .....	No. 1 Diesel
Fuel Capacity .....	454 Litres (120 US Gal.) usable
<b>TRANSMISSION</b>	
Voith .....	D863.3
Self-Contained Retarder .....	3 Stage/Brake Activated
<b>DIMENSIONS</b>	
Length (over bumpers) .....	40.8 ft. (12.4 m)
Width .....	8.5 ft. (2.57 m)
Height .....	9.2 ft. (2.8 m)
Wheelbase .....	24.4 ft. (7.5 m)
Turning Radius .....	44 ft. (13.5 m)
Vehicle weight (approx.) .....	26,800 lbs. (12,156 kg)
<b>AXLES &amp; SUSPENSION</b>	
Front Axle .....	<i>M.A.N.</i> V8 65L
Front Load-Carrying Capacity .....	14,329 lbs. (6,500 kg)
Rear Axle .....	<i>M.A.N.</i> H 07 11120 07 (4.04:1)
Rear Load-Carrying Capacity .....	25,360 lbs. (11,500 kg)
Suspension .....	Air Springs & Shock Absorbers

**D40 Foot Low Floor Transit Vehicle**

<b>DESTINATION &amp; ROUTE SIGNS</b>	
Front Destination .....	<i>Balios Electronic</i>
Side Destination .....	<i>Balios Electronic</i>
Rear Route .....	<i>Balios Electronic</i>
<b>LIGHTING</b>	
Interior .....	<i>Transmatic - Fluorescent, 24 volt, top lit</i>
<b>HEATING SYSTEM</b>	
Heater Unit .....	<i>Sutrac AC31-HV rooftop unit</i>
Auxiliary Heaters .....	<i>2 Mobile Climate Control floor heaters</i>
.....	<i>1 Mobile Climate Control ramp heater</i>
.....	<i>1 Mobile Climate Control defroster unit</i>
<b>SEATING</b>	
Driver's .....	<i>Recaro B100W</i>
Passenger .....	<i>American Seating 6484</i>
Seating Capacity .....	<i>38</i>
Wheelchair Stations .....	<i>2 (seats fold up &amp; lock)</i>
<b>BRAKE SYSTEM</b>	
Mechanical Components.....	<i>Internal expanded S-cam type</i>
.....	<i>Automatic slack adjusters</i>
Service Brake.....	<i>Full air operated</i>
Parking Brake.....	<i>Spring applied, air released</i>
Emergency Brake.....	<i>Spring brake applied</i>
.....	<i>Brake treadle modulated to control</i>



**D40 Foot Low Floor Transit Vehicle**

**WINDOWS**

General ..... Black anodized frame - single top tip-in  
..... (bottom fixed)  
..... Glazing - laminated glass, 72% grey  
Emergency Escape ..... Four lower section windows  
Driver's Window ..... 2-Piece sliding - interior, exterior handle

**DOORS**

Entrance ..... Vapor slide glide - 31.75" between grabrails  
Exit ..... Vapor slide glide - 37.00" between touchbars  
..... Touchbar controlled operation  
Controls ..... 5-position opening/closing control  
..... Door manual control valve

**SAFETY FEATURES**

Emergency Escape Exits ..... Four lower section windows  
..... Both roof hatches  
Fire Extinguisher ..... 5 lb. ABC rating  
Safety Triangles ..... In destination sign compartment  
Entrance & Exit Doors ..... Emergency air release control valve  
Exit Door ..... Accelerator and brake interlocks  
..... Sensitive edges

**Vehicle Identification**

The New Flyer vehicle identification plate is located on the street side of the interior destination sign panel. The plate lists the Gross Vehicle Weight Ratings (GVWR), the Vehicle Identification Number (VIN) and the Gross Axle Weight Ratings (GAWR) for all axles.

## Warnings & Cautions

Two types of headings are used in this guide to attract your attention. These notations will be highlighted with the icons below.



**WARNING:**



*Used when an operating procedure or practice, if not correctly followed, could result in personal injury or loss of life.*



**CAUTION:**



*Used when an operating procedure or practice, if not strictly observed, could result in damage to or destruction of equipment.*

## Contacting New Flyer

If additional information is required, contact the Customer Service Department of:

New Flyer Industries Limited  
711 Kernaghan Avenue  
Winnipeg, Manitoba  
Canada  
R2C 3T4  
tel: (204) 224-1251  
fax: (204) 224-0551

## **2. SAFETY INFORMATION**

### **Safety Procedures**

- Do not operate the vehicle if any indicators, instruments or gauges show that a major vehicle operating system such as Air, Electrical, Engine or Transmission are malfunctioning in any manner. Immediately report the problem to maintenance and have the vehicle tagged for maintenance or service.
- Do not drive or operate the vehicle without fastening the seat belt.
- Make sure obstructions do not block or interfere with your safe range of driving and operating vision.
- Loose or damaged seating, stanchions and grabrails must be repaired or replaced before the vehicle carries passengers. Have the vehicle tagged out for maintenance or service before putting it into revenue service.
- Have any debris or garbage removed from the passenger area and from around steps, doors and treadles. This is important to eliminate any foot obstructions that could cause tripping or falling.
- Do not drive or operate the vehicle if the driving mirrors are cracked, broken, missing or cannot be properly adjusted to provide clear and safe vision.
- Make sure all exterior and interior lights are working. Have maintenance replace burned out bulbs and any cracked or discoloured light lenses.
- Headlights, stop lights, turn signal lights, park lights, back-up lights and side marker lights must be replaced if burned out. Do not drive or operate the vehicle if any of these major exterior lights are burned out or not working.
- Do not operate the vehicle if the exhaust system malfunctions or if exhaust fumes seep into the passenger compartment. Have the vehicle tagged out for maintenance or service.

- Do not operate the vehicle if coolant, transmission oil or hydraulic fluid leak from these systems. Puddles of fluid under the vehicle indicate problems in the related system. Have the vehicle tagged out for maintenance or service.
- Make sure all exterior and interior access doors and panels are securely shut and latched.
- Do not smoke around the fuel storage areas, the fuel filling area or during refueling. Do not smoke in areas where fuel, hydraulic fluid, transmission oil or any other flammable fluid has leaked.

## **Safety Equipment**

A 5 lb. hand-held fire extinguisher is located behind the driver's seat. Use the extinguisher only after the vehicle is in a safe location, and all passengers are evacuated. Use only if there is no risk to your personal safety.

Safety triangles, located in the destination sign compartment, must be used if the vehicle is parked due to failure. Place the triangles several metres behind the vehicle to warn on coming traffic.

## **Escape Exits**

### **Side Windows**

Four low level windows function as emergency exits and are identified by decals on the window panels.

To operate the emergency window, pull the red handle down and hold. Push out on the bottom of the window frame. The window will open on hinges at the top of the frame. To close, release the handle and slam window shut.

### **Roof Hatches**

Both roof hatches are usable for ventilation and/or as emergency exits.

## For Ventilation

Open the hatch to the desired position by holding the handles and exerting outward pressure toward the end being opened. To close the vent, grasp the handles and pull the hatch downward.

The most effective hatch positions for ventilation are:

- Front hatch - forward end open
- Rear hatch - rear end open or fully open.

This allows fresh air to enter the front vehicle hatches while warmed, stale air escapes through the rear vehicle hatch.

## For Emergency Exit

1. Push the hatch up to the full OPEN venting position.
2. Push back the release tab towards the hinge to unlock.

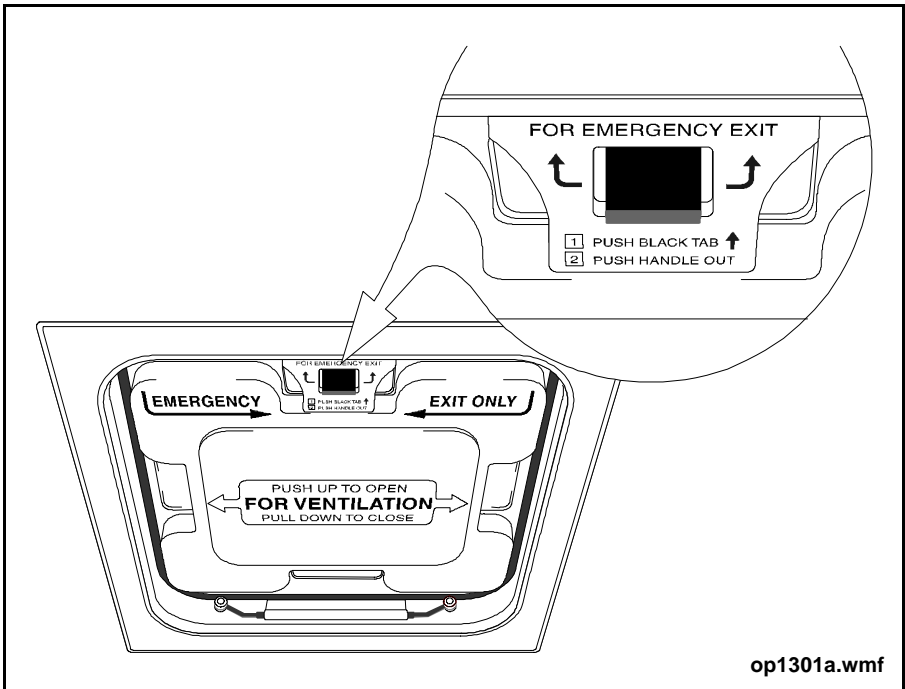


Figure 1: Roof Hatch

3. Push the handle outward so the hatch swings open on the fixed hinge.
4. To close, return the hatch to its full open position. Line up and push the separated hinge halves together.
5. Push up on the hatch to ensure proper engagement. Pull the hatch downwards to close.

### **Entrance Door, Emergency Release Control Valve**

The door emergency exit control valve is located behind a breakable window in the door mechanism access cover. In an emergency, break the window to access the control valve knob. Rotate the knob 90° and push the doors open. As the doors open they activate the header, stepwell, and curb lights.

### **Exit Door, Emergency Release Control Valve**

The door emergency exit control valve is located to the left of the exit door header, behind a breakable window. In an emergency, break the window to access the control valve knob. Rotate the control valve knob 90° and push the doors open. As the doors open they activate; the header, stepwell and curb lights, the interlocks, and the Rear Door Open indicator light.

### **Exit Door Sensitive Edges**

Mounted to the leading edges of the exit door panels are rubber seals that are sensitive to pressure. If, while closing the doors, they strike an object or passenger, a signal from the sensitive edges sounds an alarm and prompts the doors to fully reopen. Once they fully open the doors will again close.



**NOTE:**

*The interlock system prevents the vehicle from moving until the exit doors are fully closed.*

### **Drunk Alarm**

The drunk alarm sounds upon a force open attempt of the exit door. The alarm sounds and the Rear Door Open indicator illuminates until pressure on the door is released.

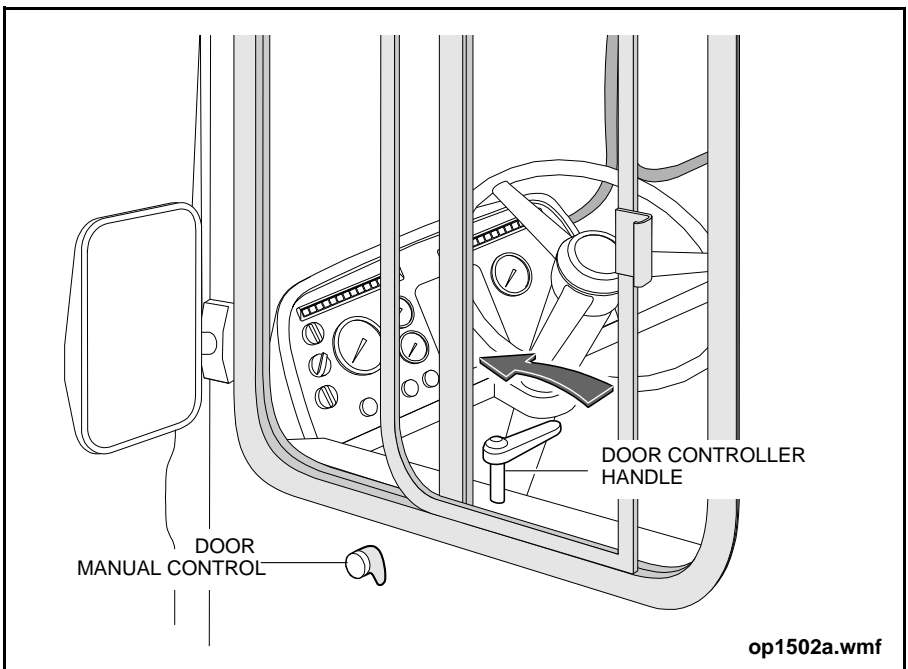
### 3. TO ENTER THE VEHICLE

1. Slide the front portion of the driver's window back to gain access to the door controller handle on the side console.
2. Turn the door controller handle to position #2, #3 or #5 to open the entrance door.
3. If the entrance door does not open, exhaust air by turning the door manual control valve on the side console to the OFF position. Open the door manually by pulling out the door halves at the seal.



**NOTE:**

*Take care not to damage the door seal when pulling the door open.*



**Figure 2: To Enter the Vehicle**



## **4. DRIVER'S CHECK LIST**

Check the following before putting the vehicle into transit service. Any problems discovered should be brought to the attention of the service personnel.

### **Exterior**

#### **General**

- 12V and 24V Battery disconnect switches are in the ON position.
- Engine run switch in engine compartment is in FRONT position.
- Check for any fluid puddles under the vehicle.
- Check for exterior panels with cracks, tears or other damages. No missing rivets.
- No obstructions to the exhaust pipe and air intake vent.
- No damaged or loose bumpers.

#### **Access Doors**

- Are closed and securely latched (where applicable).
- Door panels are not bent, torn or otherwise damaged.
- No missing door bumpers.

#### **Windows**

- Closed and securely retained in their frames.
- Exterior seals are in place and not torn.
- Clean.
- Not broken or scratched.

## **Mirrors**

- Not broken or scratched.
- Securely held in position.
- Clean.
- Clear of obstructions.

## **Lights**

- Lenses are not broken or discoloured.
- No missing lenses or lights.
- Clean and clear of obstruction.

## **Tires**

- Tire air pressure matches the manufacturer's recommended range.
- No uneven or unusual tread wear.
- No tread separations indicated by bulges or large bubbles.
- No large cuts in the tire shoulder and tread area. No pieces of tread broken away from the tire casing.
- No side wall cracks, cuts or abrasions.

## **Wheels**

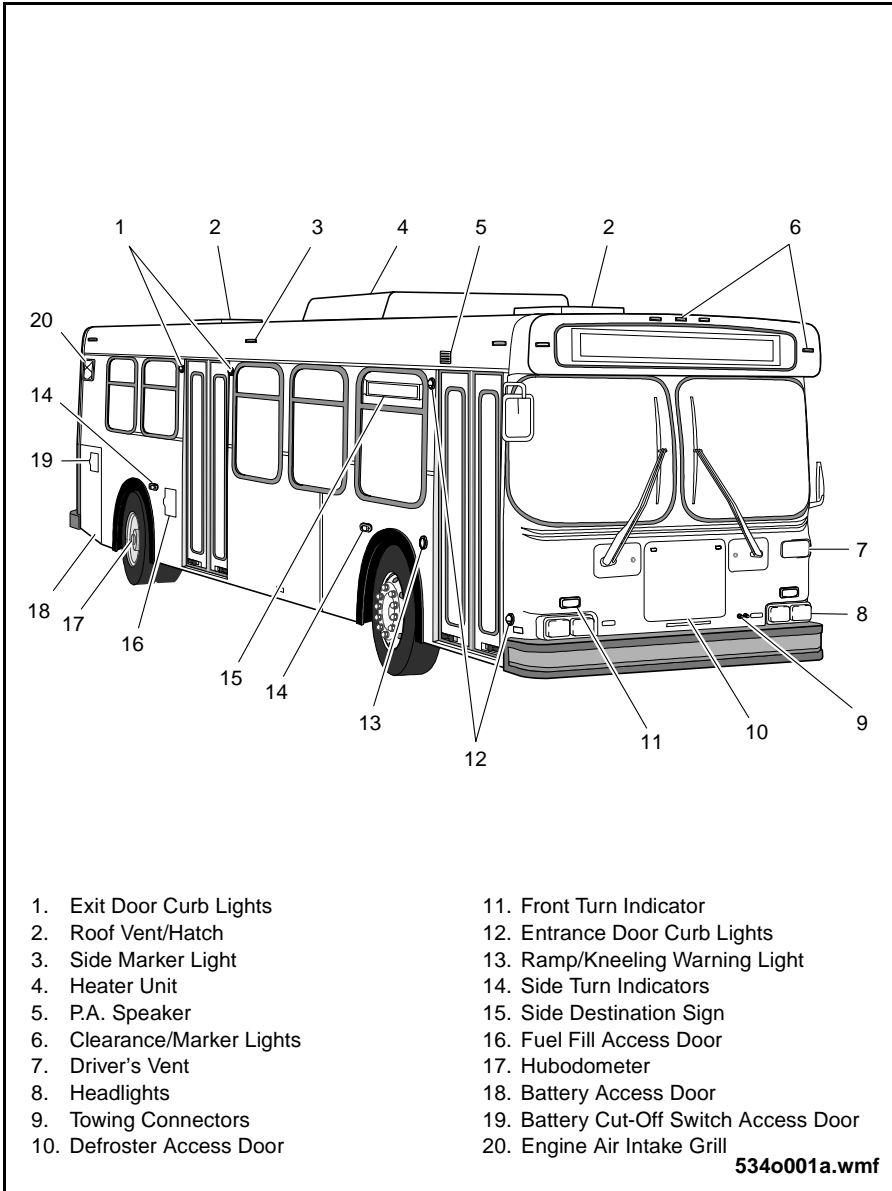
- No missing or loose wheel nuts.
- No cracked or warped wheel rims.
- No existing corrosion.
- No broken or missing wheel nut studs.

## **Interior**

### **General**

- Farebox is secure and operates correctly.
- Interior panel condition.

# DRIVER'S CHECK LIST



**Figure 3: Front Exterior View**

- Side and rear signs are secure.
- Roof hatches open and close easily.
- Signal cord and touch tape in operating condition.
- Door controller moves freely through all 5 positions.
- Door Master switch is in the NORMAL position.
- Driver's seat adjusters operate correctly and maintain positioning.
- Seat belt components function properly.
- Steering wheel turns without restriction or hesitation (engine running).
- Tilt/Telescope lever functions properly.
- Wheelchair ramp alarm functions when stowing or deploying the wheelchair ramp.

### **Access Doors**

- Closed and securely latched.
- Door panels are not bent, torn, or otherwise damaged.

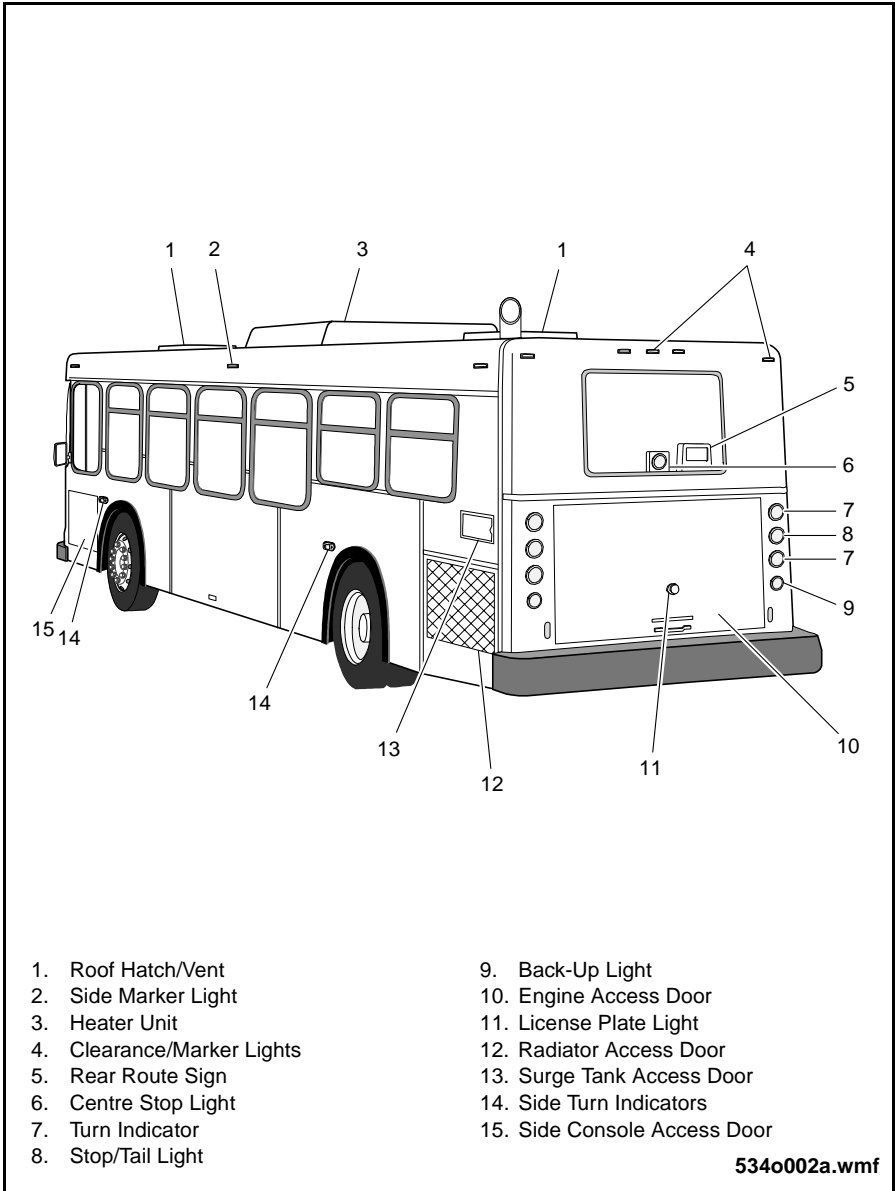
### **Seats**

- Clean.
- Not torn or cut.
- No missing parts.
- Securely fastened to the floor and structure attaching points.

### **Floor**

- Clean, no debris.
- Not loose or lifting.
- Not worn or damaged.
- Ramp fully stowed, no tripping hazards.

## DRIVER'S CHECK LIST



**Figure 4: Rear Exterior View**

## **Windows**

- Gas cylinders are attached and functional.
- Latching mechanism holds window shut.
- Seals are present and not damaged.
- Driver's window slides without restriction.

## **Mirrors**

- Not broken or scratched.
- Securely fastened to mounting brackets.
- Clean and clear of obstructions.

## **Passenger Doors**

- Clean and unobstructed glass.
- No bent or broken door panels.
- Door seals not torn or dislodged.

## **Modesty Panels/Barriers**

- Clean.
- Secure in retainers.
- Not cracked or broken.
- No sharp edges.

## **Stanchions & Grabrails**

- No missing parts.
- Secure in retainers.
- Not cracked or broken.
- No sharp edges.
- No missing hardware.

## **Lights**

- Lenses are not broken or discoloured.
- No missing lights or lenses.

- Clean clear of obstructions.



### NOTE:

*From this point on items on the driver's checklist require activating the vehicle's Programmable Logic Control (PLC) System and starting the engine. Turning the Master Run switch on the side console to DAY-RUN or NIGHT-RUN activates the PLC system after a six-second "wake-up" interval. Wait for the system to activate before starting the engine. For details on engine starting, refer to Section 7: Vehicle Operation.*

### Indicator Lights

- The Next Stop indicator illuminates by activating the passenger signal system.
- The W/C Stop Request indicator illuminates by pressing the wheelchair station touch tape.
- The Parking Brake indicator illuminates when the parking brake is applied.
- The Stop indicator illuminates when the brakes are applied.
- The Turn indicator illuminates and flashes when the Turn Signal switch is activated or the Hazard switch is turned on.
- The Rear Door Open indicator illuminates when the exit door is opened.
- The High Beam indicator illuminates when the high beam headlights are on.
- Activating the kneeling system and the W/C ramp illuminates their respective indicators.
- The No Gen and Stop Engine indicators illuminate momentarily, then extinguish.
- The remaining indicators relate to vehicle operation concerns and should be checked by service personnel.

## **Electrical Control Systems**

- The Master Run switch controls the electrical circuits as listed in Section 6: Instrumentation & Controls, Side Console Switch Panel.
- Service compartment light switches activate service lights in the exit door mechanism, the rear PLC panel, the engine compartment and the engine compartment fuse box.
- Turn signals and hazard circuits function with the Master Run switch in any position.
- Horn sounds when pressed.
- Rear brake lights illuminate when the brake pedal is applied.
- Destination/Route sign circuits function with the Master Run switch in DAY-RUN, NIGHT-RUN, or NIGHT-PARK positions.
- All side console control switches function.
- Passenger signal and chime circuits function.
- Accelerator treadle accelerates the engine.
- Transmission Selector switch functions.
- Back-up lights and the speedometer function.
- The heating system functions when the engine is running.

## **Air Control Systems**

- Normal vehicle operation pressure ranges from 105 to 125 psi (724 to 862 kPa).
- Low Air indicator light illuminates and an alarm sounds if the air system pressure drops below 65 psi (448 kPa).
- Entrance and exit doors open and close smoothly.
- Washers spray washer fluid onto windshield.
- Wipers operate (on wet windshield) without streaks, scraping or noisy operation.
- Brake pedal stops the vehicle (when vehicle is moving).



## **DRIVER'S CHECK LIST**

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- Parking brake valve (when applied) holds the vehicle stationary when level or on a 20% maximum incline grade when on dry concrete.
- Door manual control valve in the side console shuts off the air pressure supply to the entrance door mechanism. When in the OFF position, the doors can be pushed open.
- Splash guards clear the ground (vehicle on level surface) with the air system pressure at or above 105 psi (724 kPa).
- Compressor cuts in when the air system pressure drops to approximately 105 psi (724 kPa) and shuts off at approximately 120 to 125 psi (827 to 862 kPa).

## **5. DRIVER'S AREA**

The driver's area includes the first eight feet of interior space measured from the front windshield.

This section describes the controls and components within the driver's area. A brief outline of the functions and operating procedures of each accompanies the description.

### **Driver's Window**

#### **Front Portion**

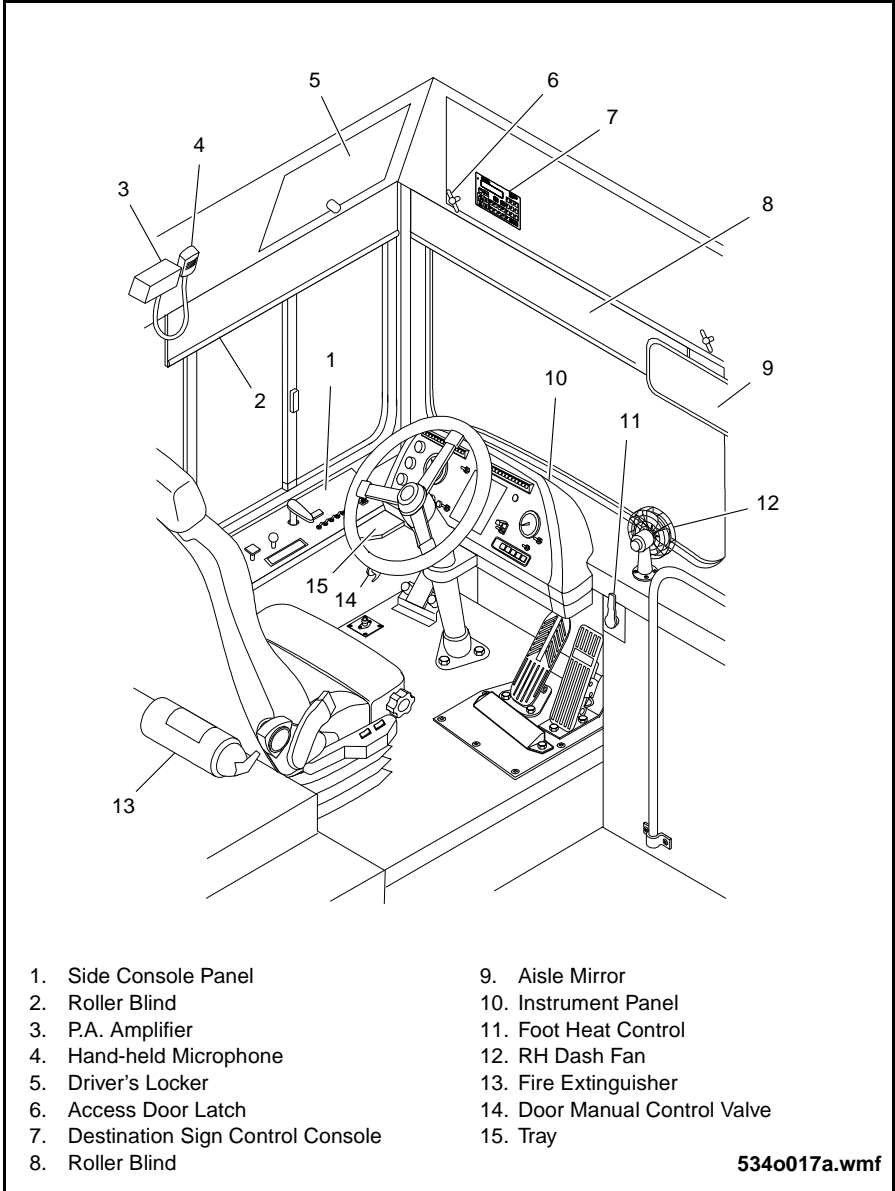
Pull the sash handle back to open the front portion of the window. Push the handle forward to close.

#### **Aft Portion**

Pinch the sash handle to release the lock. Pull the handle forward (keeping handle pinched) to open the rear portion of the window.

Push the handle rearward, pinch and release to close and lock the aft sash.

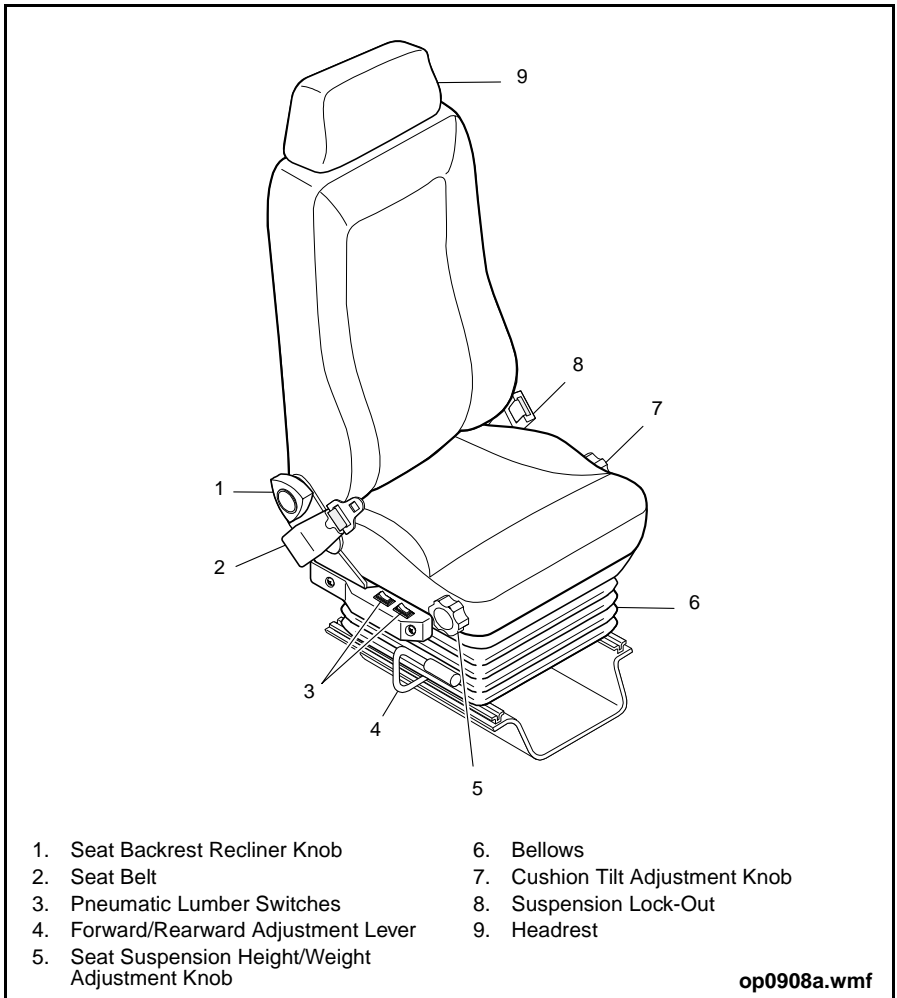
## DRIVER'S AREA



**Figure 5: Driver's Area General View**

## Driver's Seat

The *Recaro B100W* driver's seat is a fully adjustable air suspension seat consisting of a steel frame base and back panel and molded foam cushions. The seat-belt retracts to holders beside the seat cushion.



**Figure 6: Driver's Seat**

Seven controls adjust the positioning of the seat and seat cushions to suit the needs of each individual. Make position adjustments to provide for the best driving visibility and control.

### **Pneumatic Lumbar**

The control panel houses two switches to control pneumatic lumbar support. The forward most switch inflates/deflates the upper lumbar bladder in the seat back. The rearward switch inflates/deflates the lower lumbar bladder. Push the switch forward to inflate its respective bladder and rearward to deflate. Continue this until each bladder is inflated to a comfortable level.

### **Cushion Tilt**

The adjustment knob located on the left side of the seat when sitting in the seat is used to tilt the seat cushion. Turn the knob clockwise to lower the front of the seat cushion.



**CAUTION:**



***Do not over turn knob.***

### **Suspension Lock-Out**

The lock-out handle is used to limit the seat suspension height in three different positions.

- Fully Inward
  - (toward the center of the seat) allows for 102 mm (4 inches) full travel of the suspension system.
- Mid-Position
  - allows for 51 mm (2 inches) half travel of the suspension system — from full down to the mid-position.
- Fully Outward
  - (forward the left side) locks the seat suspension stationary.

 **NOTE:**

*The suspension must be raised 25 mm (1 inch) to engage the handle in this position.*

## **Seat Suspension Weight/Height Adjustment**

Use adjustment knob to raise and lower the seat. Push the knob inward toward the seat to inflate the air spring suspension chamber and raise the seat. Rotate the knob for stepless weight/height adjustment, clockwise to increase weight/height and counter clockwise to decrease.

**CAUTION:**

***Do not over turn knob.***

Seat suspension has 102 mm (4 inches) of travel. For easy exit, pull the knob away from the seat to deflate the air spring suspension chamber to lower the seat.

## **Forward/Rearward Adjustment**

The actuator level is used to adjust the seat forward or rearward. To adjust the seat's position, pull straight up on the lever, slide the seat forward or rearward to the desired position, then release the handle to lock the seat into position.

 **NOTE:**

*The seat track is adjustable in 10 mm (.39 inches) increments.*

## **Seat Backrest Recliner**

To adjust the seat backrest forward or rearward, rotate the recliner handwheel in the direction you wish the seat backrest to travel.

## Steering Wheel & Horn

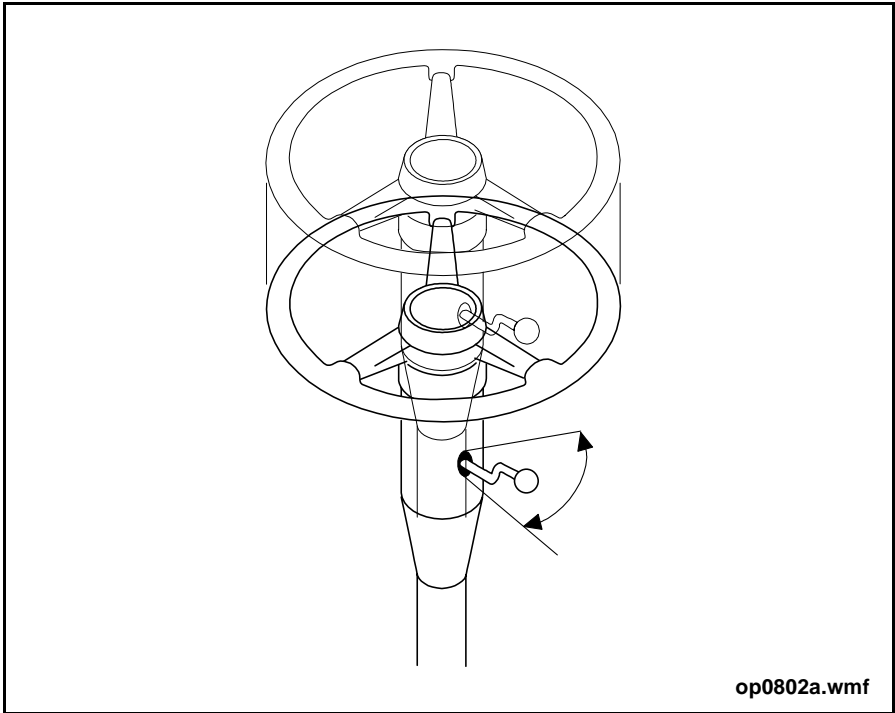
### Steering Wheel



**WARNING:**



***Do not make adjustments to the tilt steering while the vehicle is in motion.***



**Figure 7: Steering Wheel Adjustment**

**CAUTION:**

***DO NOT TURN the steering wheel if the engine is not operating except in emergency situations.***

A hydraulic powered steering system turns the front wheels when moving the steering wheel left or right (the engine must be operating to power the system). The tilt/telescopic steering column offers a range of positions for the steering wheel. A lever on the left of the column controls both tilt and telescopic functions. Push to telescope and pull to tilt.

**CAUTION:**

***DO NOT OPERATE THE VEHICLE if any of the following conditions exist:***

- ***Binding or resistance in the steering wheel operation (with the vehicle in motion).***
- ***Unusual noises related to steering.***
- ***Steering wheel vibration.***
- ***Looseness, binding or resistance in the tilt/telescopic mechanism.***

## **Horn**

The horn button, located in the center of the steering wheel, operates the dual horn.

## **Public Address System**

The Public Address System (P.A.) allows the communication of messages to the public both inside and outside the vehicle. Components of the system include:

- An amplifier and microphone located over the driver's window.

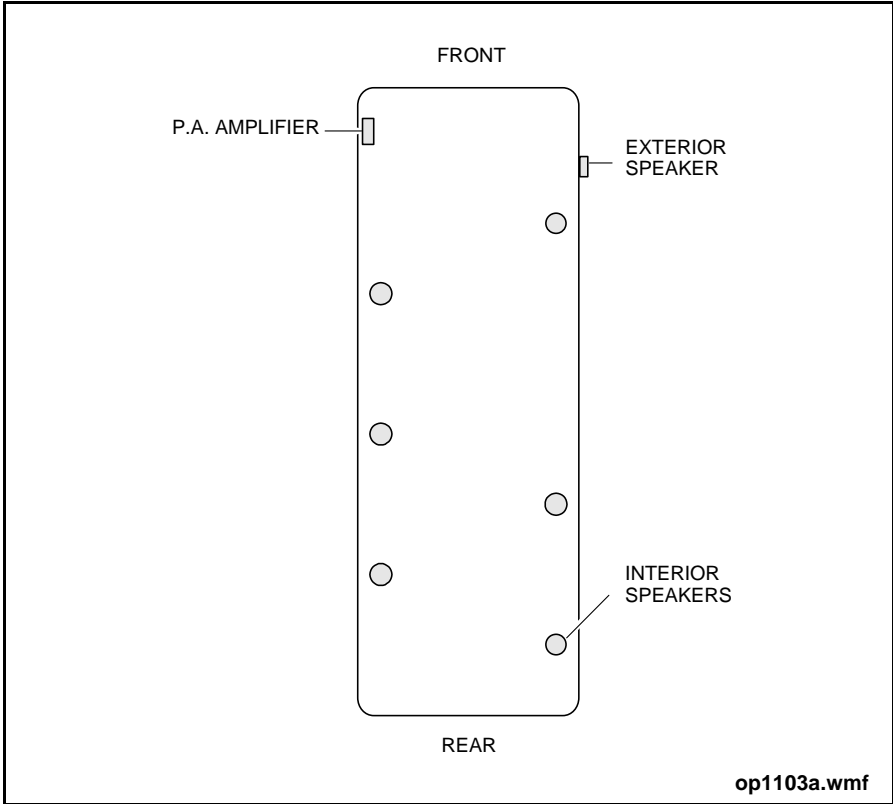


## DRIVER'S AREA

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- Six interior speakers located above the side windows.
- An exterior speaker located above the entrance door.

To use the system first position the Speaker Select toggle switch on the side console to operate the desired speakers. Then use the switch on the microphone to energize the amplifier before speaking.



**Figure 8: P.A. System Layout**

## Destination/Route Signs Control Console



### NOTE:

*The following information provides basic introductory information on operation of the electronic destination sign system. Your transit authority management establishes system operation policies and should be consulted before its use.*

The vehicle's destination/route signs are controlled by an operator's control console located in the panel of the front destination sign access door. The console functions to control and verify the destination/route sign message display. Destination sign message codes are entered into the sign system using the keypad console switches. The codes translate into message writing data pre-programmed into the system's memory. The message writing data then controls the signs to display the selected information. Turning the Master Run switch from STOP ENGINE to DAY RUN or NIGHT RUN will power-up the system. Powering-down occurs when the Master Run switch is turned to STOP ENGINE.

### Operating the Control Console

Basic operation involves presetting transit authority message codes into the sign system using the control console keys. The message codes correlate to reprogrammed destination names, public relations messages, and route numbers unique to each transit authority. If required, multiple sets of message codes may be entered to allow for a quick and complete sign change while in route. Key function and code entry instructions are described in the two sections that follow.

### Control Console Keys

The control console contains 25 keys and their functions are as follows:

- P.M. — press to enter public relations message code.
- A-H group — for sequential entering of message codes that contain letters and numbers.

## DRIVER'S AREA

- 0-9 group — for sequential entering of numerical message codes.
- ENTER — press to activate the keyed in message code.
- MENU group — for service personnel to enter configuration menus.
- ERASE — press to blank all the signs or to erase last the message code entered.
- Symbolized bulb — press to adjust LCD back light intensity (3 levels).

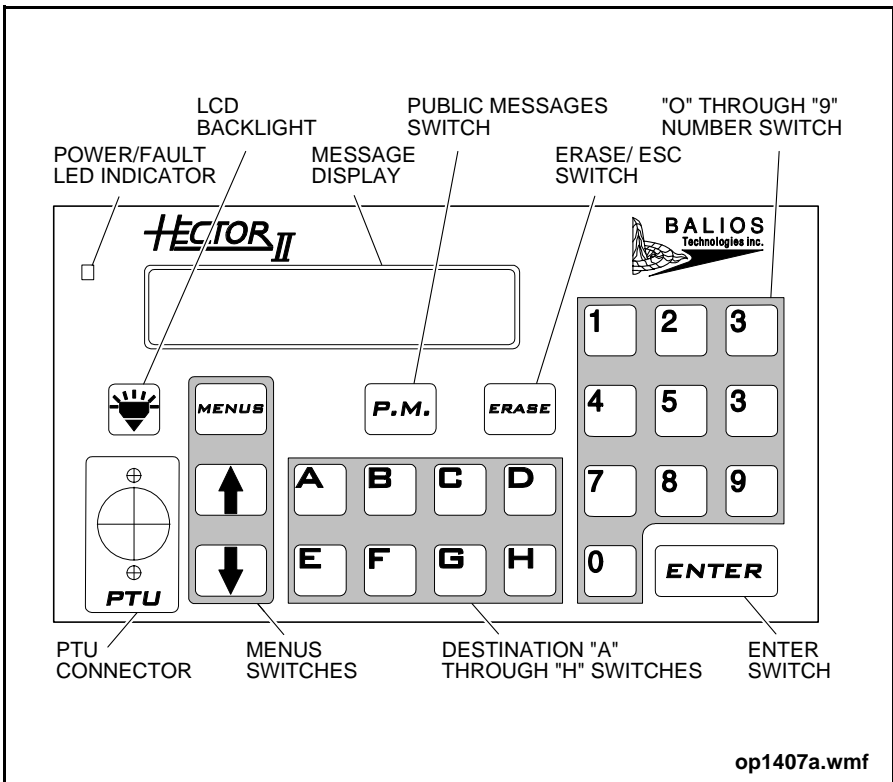


Figure 9: Sign Control Console

**NOTE:**

*Code entry sequences must be followed to set-up destination sign messages.*

**Code Entry**

Powering-up the sign system will display either the messages entered previously or a blank screen. If continuing on the same route re-entering new codes may not be required.

To enter a new set of message codes:

1. Consult the transit authority code list for the code that corresponds to your route.
2. For each message code, press the corresponding keys in the 0 through 9 and/or A through H groupings one at a time and in proper sequence.
3. Press the ENTER key and allow the controller to display the actual message.
4. For public relations messages, press the P.M. key before entering the message code.

**NOTE:**

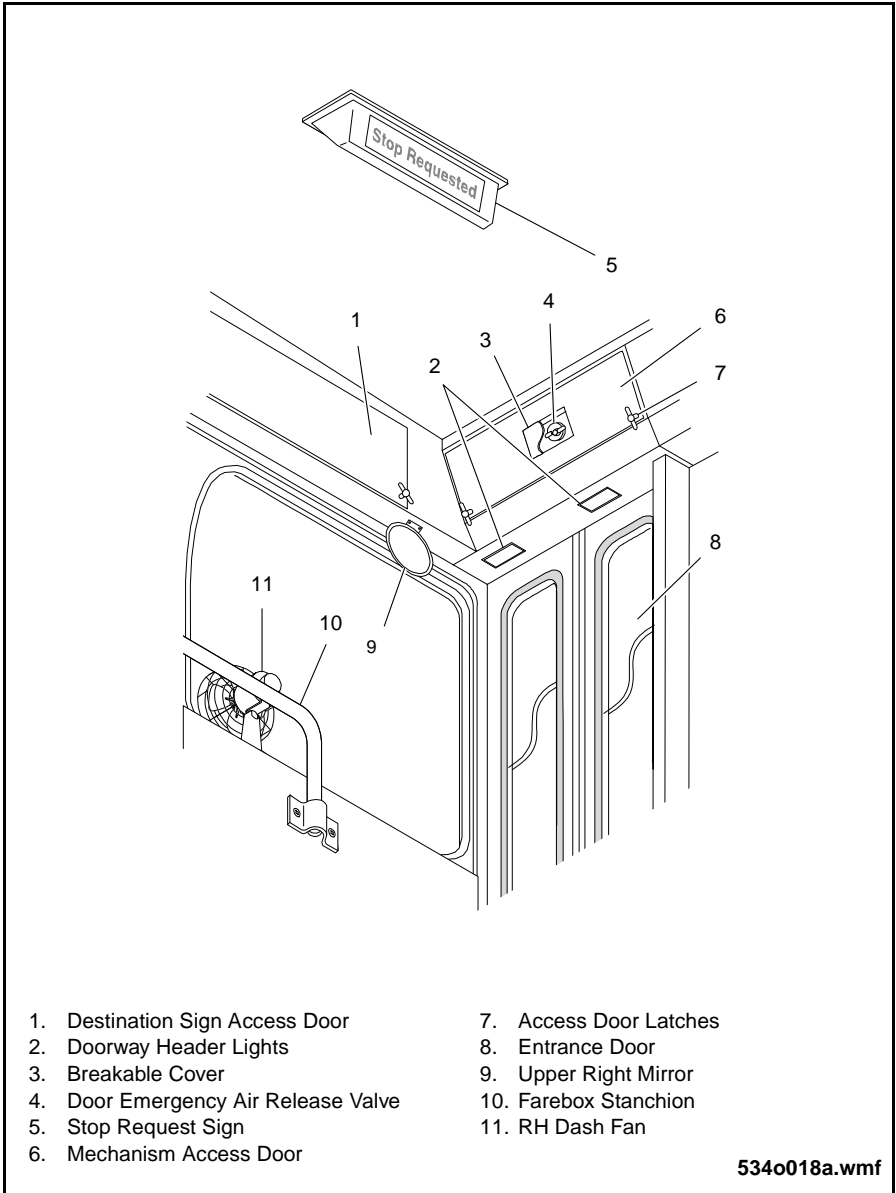
*If a code is entered incorrectly, press the ERASE key and re-enter the message code.*

5. Repeat steps 1-4 for each message code required for the route.

If the set of message codes you have programmed in consist of multiple destination/message groups for turn-arounds or in route sign changes; press the appropriate key in the A through H group to make the signs change when needed.

**Mirrors**

There are three mirrors located throughout the vehicle interior: an aisle mirror, an upper right mirror, and a rear step area mirror.



**Figure 10: Front Entrance View**

## **Aisle Mirror**

The aisle mirror is located under the front destination sign close-out. Its convex glass surface provides a wide view of the entrance door and passenger area.

## **Upper Right Mirror**

Located to the right of the aisle mirror, the upper right mirror is used to view the rear mirror.

## **Rear Step Area Mirror**

The rear step area mirror is located on a stanchion at the exit door. It provides a view of the exit door area when looking through the upper right mirror from the driver's seat.

## **Roller Blinds**

There are two roller blinds in the driver's area; one for the windshield and the other for the driver's window. To extend, pull on the blind and to retract, pull on the release cord.

## **Driver's Locker**

Located above the driver's window, the driver's locker is for storing personal belongings.

## **Radio Box**

The radio box, mounted on the streetside wheelhousing, contains the vehicle's communications equipment.

## 6. INSTRUMENTATION & CONTROLS

### Instrument Panel

#### Turn Indicators (Green)



**WARNING:**



***If Turn Signal indicators do not operate as described, DO NOT OPERATE THE VEHICLE.***

The turn indicators flash on either side of the instrument panel when the right-hand or left-hand floor-mounted turn signal switch is pressed.

When the Hazard switch is activated, both Turn indicators flash together. Failure of these lights to flash normally indicates that the flasher module is not functioning.

#### Check Trans Indicator (Red)

The Check Trans indicator illuminates if the transmission electronics detects a transmission malfunction. Notify service personnel if the light comes on.



**NOTE:**

*Remove the vehicle from service if a fault is detected.*

#### Low Trans Indicator (Red)

The Low Trans indicator illuminates to indicate that the transmission oil level is too low for proper operation. Notify service personnel if the comes on.

**CAUTION:**

***Avoid continued vehicle operation with the Low Trans indicator illuminated. A low oil level results in poor performance and possible transmission damage.***

### **Check Engine Indicator (Amber)**

The Check Engine indicator is wired to the DDEC III control system. Activation of the Check Engine indicator will record a malfunction in the Electronic Control Unit (ECU). When prompted by the Stop Engine Override toggle switch, the DDEC III control system translates malfunctions into error codes flashed by this indicator.

**CAUTION:**

***If the Check Engine warning light illuminates for more than 30 seconds, remove the vehicle from traffic to a safe location, shut the engine down, and apply the parking brake.***

### **Stop Engine Indicator (Red)**

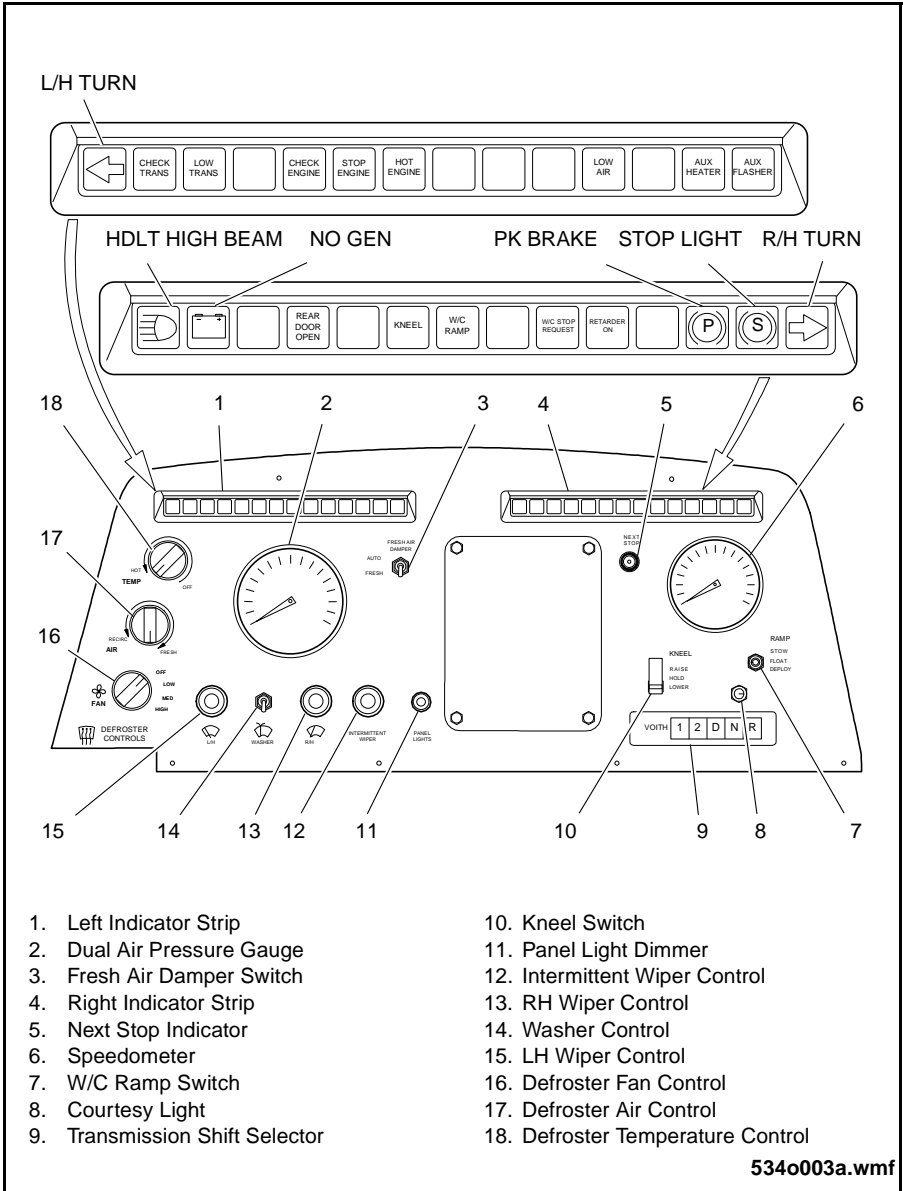
The Stop Engine indicator is wired to the DDEC III control system. The indicator illuminates if the engine protection system diagnoses an unsafe operating condition (such as low engine oil).

As an operation check, the Stop Engine indicator should remain on momentarily when the engine is started.

**NOTE:**

***If this light remains illuminated, the Engine Protection System engages, initiating an automatic engine shutdown sequence.***





**Figure 11: Instrument Panel**

## Hot Engine Indicator (Red)

The Hot Engine indicator will illuminate if the engine exceeds its normal operating temperature and overheats. The Hot Engine indicator is accompanied by a warning buzzer.



### **NOTE:**

*If this light remains illuminated, the Engine Protection System engages, initiating an automatic engine shutdown sequence. Refer to Heading: Engine Protection System, for detailed information on engine shutdown sequence and the shutdown override procedure.*

## Low Air Indicator (Red)



### **WARNING:**



***Do not operate the vehicle while air pressure is below the normal system pressure. If the system pressure drops below 65 psi, the rear brakes apply automatically.***

The Low Air indicator illuminates and a warning buzzer sounds when the air pressure is insufficient for safe vehicle operation.



### **NOTE:**

*Remove the vehicle from service if a fault is detected.*

## Aux Heater Indicator (Amber)

The Auxiliary Heater indicator illuminates when the engine coolant heater functions. It starts automatically in cold conditions to heat the engine coolant to operating temperature.



### **NOTE:**

*The engine coolant heater operates only with the Master Run switch in either the DAY-RUN or NIGHT-RUN position.*

### Aux Flasher Indicator (Amber)

The Auxiliary Flasher illuminates if the back-up hazard light and flasher system activates. The back-up system operates if a malfunction in the primary flasher system occurs.



#### NOTE:

*Advise service personnel if the Auxiliary Flasher indicator illuminates.*

### High Beam Indicator (Blue)

The High Beam indicator illuminates when the vehicle headlights are in the high beam mode of operation. Pressing the dimmer switch returns the headlights to normal low beam operation.

### No Gen Indicator (Red)

The No Gen indicator illuminates when the alternator is not charging. The No Gen indicator illuminates when the Master Run switch is in the DAY-RUN or NIGHT-RUN position and the engine is not operating. The No Gen indicator turns off once the engine is operating.



**CAUTION:**



***If the indicator lamp remains illuminated while the engine is operating, DO NOT OPERATE THE VEHICLE.***

### Rear Door Open Indicator (Red)

This indicator light illuminates when the rear exit door opens.

### Kneel Indicator (Amber)

The Kneel indicator illuminates when the front suspension is in the kneeling mode and is lowering the vehicle to the curb.

**NOTE:**

*The Kneel toggle switch is below the speedometer on the instrument panel*

**W/C Ramp Indicator (Red)**

The Wheelchair Ramp indicator illuminates to indicate operation of the wheelchair ramp.

**NOTE:**

*The Ramp toggle switch is below the speedometer on the instrument panel*

**Next Stop Indicator (Red)**

This indicator illuminates when the passenger signal system has been activated by pulling a chime cord.

**W/C Stop Request Indicator (Amber)**

The Wheelchair Stop Request indicator illuminates when the wheelchair passenger signal system has been activated by pressing a push button in the wheelchair station.

**Retarder On Indicator (Amber)**

The Retarder On indicator illuminates to indicate operation of the transmission retarder.

**Parking Brake Indicator (Red)**

The parking brake indicator light illuminates when the parking brake control valve is applied. Activating the parking brake illuminates the stop lights indicator and all red stop lamps.

### Stop Lights Indicator (Red)



**WARNING:**



***If the stop lights indicator does not operate as described, DO NOT OPERATE THE VEHICLE.***

The stop lights indicator illuminates each time the service brake or parking brake control valve is applied. If under these circumstances the light does not illuminate, then any or all rear stop lights are malfunctioning.

### Speedometer

This gauge indicates the vehicle's forward speed in kilometres per hour.

### Kneel Switch

This three position momentary switch is used to operate the vehicle's kneeling system. The kneeling system lowers the front of the vehicle approximately 3 to 4 inches by exhausting air from the front axle suspension air bags. When the vehicle is in the kneeling position, boarding is easier, particularly for small children and the handicapped.

- LOWER

This position lowers the vehicle activating the interlocks, the audible alarm, and the exterior warning light. The Kneel indicator light illuminates.

- RAISE

This position raises the vehicle illuminating the exterior warning light and activating the audible alarms until the vehicle reaches the normal ride height. The interlocks release at normal ride height.

- HOLD

During the kneeling cycle, this position stops kneeling operations, silences the alarms and extinguishes the exterior warning light. The Kneel indicator light and the interlocks remain activated. Upon cycle completion this becomes an off position.

**CAUTION:**

***The toggle switch is a momentary type. If pressure is removed, the switch returns to the center HOLD position and the mode of operation ceases.***

### **Ramp Switch**

This is a three position switch that controls the wheelchair ramp.

- DEPLOY

This position activates the ramp from the closed position to the open position.

- FLOAT

This position shuts off power to the pump, allowing the ramp to free-fall to either the open or the closed position. Upon cycle completion this becomes an off position.

- STOW

This position is used to move the ramp from the open to the closed position.

Refer to Section 8: Wheelchair System, for operating procedures.

**CAUTION:**

***The toggle switch is a momentary type. If pressure is removed, the switch returns to the center FLOAT position and operation ceases.***

### Transmission Shift Selector



**WARNING:**



***In temperatures below -28°C apply the Fast Idle switch to ON to warm the transmission above -28°C before operating the vehicle.***

The transmission shift selector is located on the lower right hand side of the instrument panel. It has five click-in push button switches that illuminate to indicate transmission range selection. The switches are labeled; [R] for reverse, [N] for neutral, and [D,2,1] for the forward ranges. For operating procedures refer to Section 7: Vehicle Operation.



**CAUTION:**



***Be sure to bring the vehicle to a full stop before shifting from drive [D] to reverse [R] or vice versa.***



**NOTE:**

*A back-up alarm activates when selecting reverse [R].*

### Panel Lights Dimmer Switch

The Panel Lights Dimmer switch controls the brightness of the instrument and the side console panels. Rotating the dimmer knob clockwise increases the brightness of these panel lights. Rotating the knob counterclockwise decreases the brightness of the panel lights.

### Intermittent Wiper Switch

This control allows setting a delay of the wiper sweep in times of light rain. For best results set the wiper control valves at high speed when using intermittent wipers.

## **Wiper Controls**

Two wiper control valves (on left side of instrument panel) operate the left hand and right hand wiper motors by turning the respective control knob

## **Washer Control**

The Washer Control Valve operates the windshield washer-spray system. Pushing down on the knob causes the fluid to spray onto the windshield.



### **NOTE:**

*The windshield washer bottle filler is located near the left headlight.*

## **Dual Air Pressure Gauge**

The dual air pressure gauge displays the operating pressure of the vehicle's front and rear air brake system. Normal operating system air pressure ranges from 105 to 121 psi. If the gauge registers a pressure below 65 psi, the Low Air indicator illuminates and a warning buzzer sounds.

## **Fresh Air Damper Switch**

The Fresh Air Damper toggle switch controls the air being circulated by the rooftop heater unit. In the AUTO position, the heater unit mixes varying proportions of recirculated air and fresh air according to heater unit requirements. Positioning the switch to FRESH fully opens the fresh air ducts to admit only fresh air into and through the heater unit.

## **Driver's Climate Controls**

### **Defroster Fan Control**

The defroster Fan knob on the instrument panel controls the speed of the driver's heater/defroster fan. Turning the knob from the extreme left (OFF position) to the right provides three fan speed settings; LOW, MEDIUM, and HIGH.

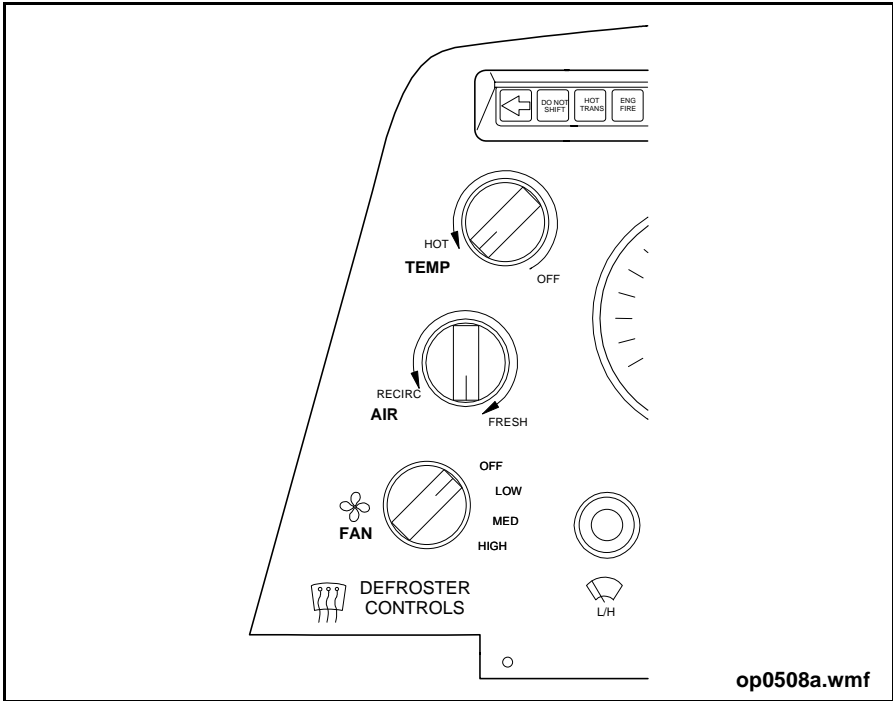


### **Defroster Air Recirculation Control**

The Air knob on the instrument panel controls the amount of fresh air circulated through the driver's heater/defroster system. This knob can be set to recirculate all or a portion of air entering the heater compartment and admit a corresponding amount of fresh air.

### **Defroster Temperature Control**

The Temp knob on the instrument panel controls the temperature of the air blowing from the defroster. Turn the knob from left to right to decrease temperature and from right to left to increase temperature.



**Figure 12: Driver's Area Climate Controls**

## **Driver's Vent**

Located at the left front of the vehicle, the vent allows outside air in during forward motion. It is a foot operated vent that is controlled by a bar located forward and left of the steering column. To open the vent, push with the left foot and pull to close.

## **Driver's Foot Heat**

This control lever is located on the front panel to the right of the instrument panel. It regulates air from the defroster to the foot control area. Moving the lever from its highest position down, gradually increases air flow.



### **NOTE:**

*Use the temperature control knob on the instrument panel to set the foot heat air temperature.*

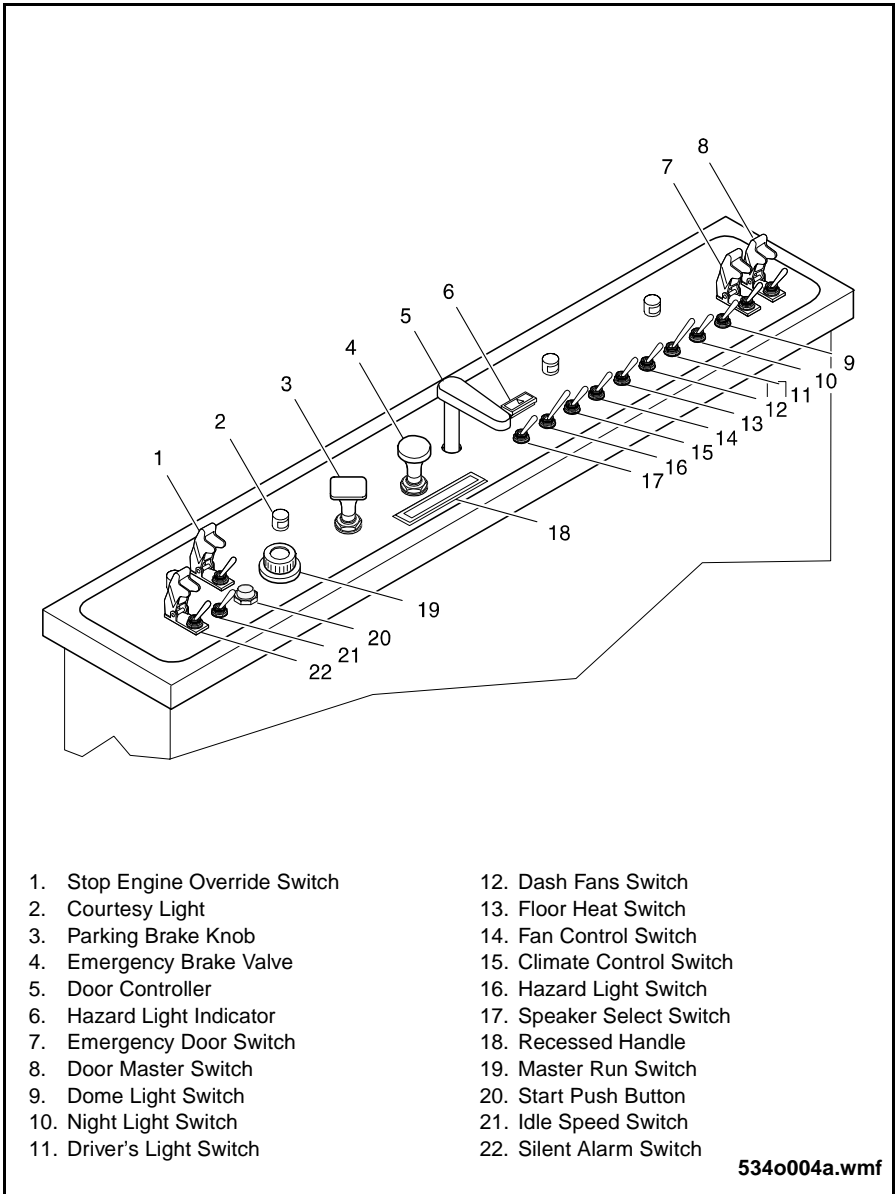
## **Side Console Switch Panel**

### **Silent Alarm Switch**

The silent alarm switch is a guarded three position switch that controls the vehicle's radio and destination signs. Lifting the switch guard up and positioning the switch to RADIO & DEST. SIGN sends a distress signal through the radio system and displays a message on the destination signs. Positioning the switch to RADIO ONLY sends a distress signal through the radio system only.

### **Idle Speed Switch**

The Idle Speed toggle switch is used to activate the preset fast idle to increase the engine RPM. Activating the fast idle allows quicker engine warm up.



**Figure 13: Side Console Panel**

**CAUTION:**

***Do not operate the engine at fast idle longer than 10 minutes.***

### **Stop Engine Override Switch**

The Stop Engine Override guarded toggle switch is used to override the engine shutdown system in an emergency. It is also used to prompt the engine diagnostics system to flash codes on the check engine light located on the instrument panel. Refer to Section 7: Vehicle Operation.

**WARNING:**

***Apply the Stop Engine Override switch only in an emergency. This switch must be recycled to obtain a subsequent override.***

### **Start Push Button**

The Start momentary push button switch turns an electric starter motor that starts the engine.

**NOTE:**

***DO NOT*** crank the engine starter for more than 14 seconds at a time. Allow a sixty second cooling interval before cranking the starter again.

### **Master Run Switch**

This side console switch is marked with the following four (4) operating positions:

STOP-ENGINE

DAY-RUN

NIGHT-RUN

### NIGHT-PARK

The various circuits energized by the Master Run switch positions are as follows:

#### **STOP-ENGINE Position**

- Service compartment lights
- Horns (with button pressed).
- Turn and hazard signals: all respective turn indicators and hazard flashers.
- Brake lights.
- Driver's light.
- Windshield wipers.
- Fare box.

#### **DAY-RUN Position**

All circuits in STOP-ENGINE plus:

- Door mechanisms.
- Speedometer
- Instrument panel indicators.
- Engine and transmission warning system.
- Transmission shift selector (with indicator lights).
- Safety lighting, and back-up lights/alarm.
- Layover signal lights.
- Front, side and rear destination/route signs.
- Passenger signal system.
- Public address system.
- Kneeling alarm system (with entrance door open and wheelchair ramp stowed).
- Wheelchair ramp alarm operation (with entrance door fully open).
- Heating system (with engine running).
- Radio.

- Headlights, (low beam only).
- Interior Step lights.

**NIGHT-RUN Position**

All circuits in DAY-RUN plus:

- License plate light.
- Marker and clearance lights.
- Tail lights.
- Instrument panel backlights.
- Interior fluorescent lights.

**NIGHT-PARK Position**

All circuits in STOP-ENGINE plus:

- License plate light.
- Marker and clearance lights.
- Tail lights.
- Door mechanisms.
- Layover signal lights.
- Front, side and rear destination/route signs.
- Radio.
- Interior Step lights.
- Public address system.
- Interior fluorescent lights

**NOTE:**

*In the NIGHT-PARK mode, the engine should shut down.*

**Parking Brake Control Valve**

This valve controls the application or the release of the parking brake. Pushing down on the control knob will apply the parking brake. Pulling up on the knob will release the parking brake. Applying the park brake with the Master Run switch in DAY-RUN, NIGHT-RUN or NIGHT-PARK will also operate the Layover signal lights.

### Emergency Brake Release Control Valve

This valve supplies the air pressure to release the rear brakes if the air system pressure drops below 45 psi. Pushing down and holding the valve allows the air pressure to release the air brakes. Releasing the valve knob shuts off the air pressure supply, allowing the rear brakes to re-engage.



#### NOTE:

*The emergency brake release is for emergency use only. It allows movement away from a potentially dangerous location if the air system has failed. The brakes will drag at about 65 psi even though the parking brake is in the released position.*

### Door Controller

The door controller opens and closes the entrance door and enables and disables the exit door. The five positions of the controller and their related door functions are as follows:

Position #1: Entrance door closed, rear doors disabled.

Position #2: Entrance door open, rear doors disabled.

Position #3: Entrance door open, rear doors enabled.

Position #4: Entrance door closed, rear doors enabled.

Position #5: Entrance door open, rear doors enabled.

When the exit door is enabled, the brake and accelerator interlocks apply automatically as well as illuminating the green door enabled indicator above the exit doors. Pushing on the touch bars will open the doors and illuminate the Rear Door Open indicator on the instrument panel.



**WARNING:**



***If the Door Master switch is in the DISABLE position, the accelerator and brake interlocks will be disabled.***

## Speaker Select Switch

The Speaker Select toggle switch controls the public address (PA) system's interior and exterior speakers. Position the switch to either INTERIOR or EXTERIOR to direct the PA announcement to the desired audience.

## Hazard Lights Switch

The Hazard Lights toggle switch controls the vehicle's four-way flashing lights. Positioning the switch to ON, controls all the exterior signal lights and the turn indicators on the dash, to flash intermittently. Positioning the switch to OFF, returns the exterior signal lights to the turn signal function. Activate the hazard lights when stopping or parking the vehicle in an area that may block traffic or present a possible hazard to following or approaching vehicles. Also use the hazard lights when towing the vehicle.

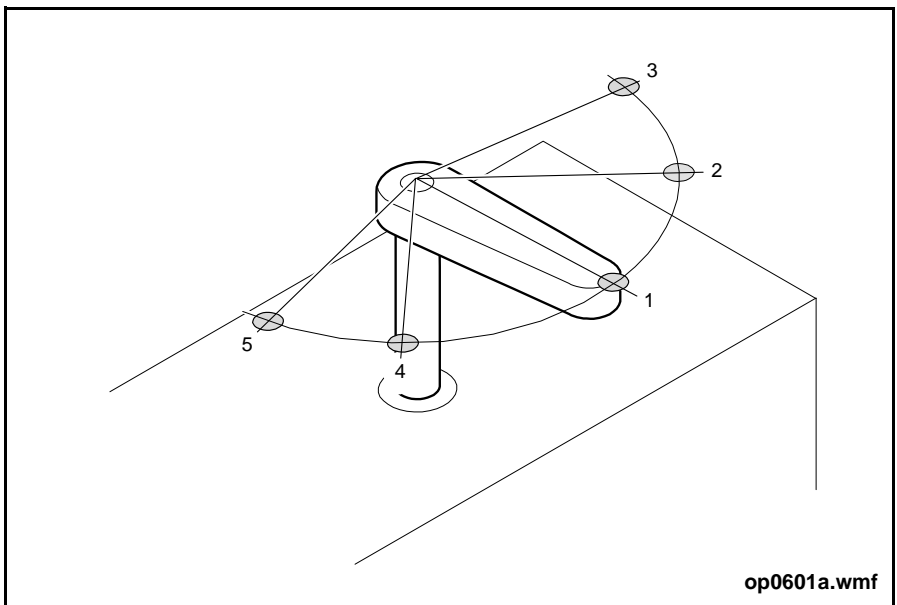


Figure 14: Door Controller



### **Climate Control Switch**

The Climate Control toggle switch is a three position toggle switch that controls the HVAC system. In the AUTO position, the system will maintain a preset temperature. In the VENT position, the system draws fresh air into the vehicle. The OFF position deactivates the system.

### **Fan Control Switch**

The Fan Control toggle switch controls the fan inside the rooftop heater. Position the switch to either HIGH or LOW for a desired speed.

### **Floor Heat Switch**

The Floor Heat toggle switch controls power to the two floor heaters located in front of the rear wheel housings. Positioning the switch to AUTO operates the heaters to warm the vehicle interior to a preset temperature. The OFF position deactivates the floor heaters.

### **Dash Fans Switch**

The Dash Fans toggle switch controls the left and right dash fans. To run the fans, reposition switch from OFF to either HIGH or LOW for desired speed.

### **Driver's Light Switch**

The Driver's light toggle switch is an ON and OFF switch controlling the light above the driver's area.

### **Night Light Switch**

The Night Light toggle switch controls power to two groups of interior fluorescent lights. The last two light panels on each side of the vehicle (4 lights) make up A group. The last light panels on each side of the vehicle (2 lights) make up B group. The lighting function of each group is dependent on the positions of the Master-run and Dome Light switches. See Section 7 Vehicle Operation for details.

## **Dome Lights Switch**

The Dome Lights toggle switch is a three position switch that controls power to the interior fluorescent lights above the passenger seats. The Lights that are illuminated in either ON, OFF or NORMAL switch positions is dependent on the positions of the Master-run and Night Light switches. See Section 7: Vehicle Operation for details.

## **Emergency Door Switch**

The Emergency Door toggle switch is a guarded switch that controls the door operating system. Lifting the switch guard up and positioning the switch to OPEN overrides the five position door controller and opens the exit doors in an emergency. Lowering the switch guard pushes the switch to OFF returning the doors to normal operation.



### **NOTE:**

*Opening the doors in either mode of door operation applies the interlocks.*

## **Door Master Switch**

The Door Master switch is a guarded two-position switch controlling power to the doors and the interlocks. Lifting the switch guard up and positioning the switch to DISABLE to deactivates the interlocks and the door operating system. Lowering the switch guard pushes the switch to NORMAL for regular door controller and interlock operation.



### **NOTE:**

*When in the DISABLE position the doors require manual operation.*



**CAUTION:**



*The **DISABLE** position allows opening the doors while the vehicle is in motion. Use only if the vehicle is in a dangerous position. Give greater attention to passenger safety when operating in this mode.*

## Foot Operated Controls

### Brake Treadle

The brake treadle, located to the left of accelerator treadle, controls the application and release of the service brakes. The brake treadle also controls the retarder function. For specific operating procedures on the retarder refer to Section 7: Vehicle Operation.

Brake application is proportional to the amount of treadle movement applied. Pressing the brake treadle illuminates the tail lights and the Stop Light indicator light.

### Accelerator Treadle

The accelerator treadle, located to the right of the brake treadle, controls the engine throttle. Acceleration of the engine is proportional to the amount of treadle movement applied.

### Headlight Dimmer Switch

The headlight dimmer switch is a heel-activated click-in switch located adjacent to the side console. Pressing the switch changes the headlight operating mode between either high beam or low beam. The blue High Beam indicator on the instrument panel indicates the high beam mode.

## Turn Signal Switches

Two bracket-mounted, momentary-on switches, control the right and left turn signal lights and the exterior light test feature. Pressing one illuminates the respective Turn Signal indicator on the instrument panel. To operate, press and hold the switch down until turn indicating is complete. Vehicle electronics flash lights at regular intervals while applying the switch.

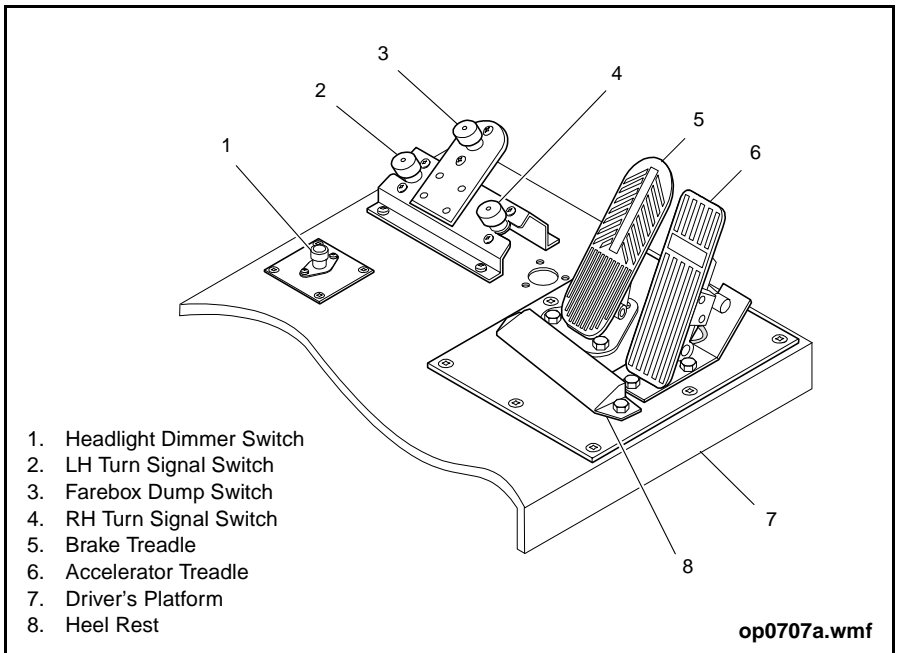


**NOTE:**

*Refer to Section 7 for exterior light test procedure.*

## Farebox Dump Switch

This switch is located between the floor mounted turn signal switches. It operates a fare collection plate inside the farebox. Pressing the switch allows accumulated fares to fall from the plate into the farebox safe. Release the switch to disengage.



**Figure 15: Driver's Foot Controls**

### **Door Manual Control Valve**

Located above the foot-operated controls and on the side of the side console panel, this valve when opened releases the air controlling the doors. This allows the doors to be opened manually.

## 7. VEHICLE OPERATION

### Pre-Start Checks & Adjustments

A daily routine inspection of the vehicle should reveal any required repairs or adjustments. These need to be reported to service personnel to maintain the best operating condition of the vehicle. When it is ready for service perform the following steps upon entry.

- Activate the PLC system by turning the Master Run switch to the DAY-RUN or NIGHT-RUN position.
- Adjust the driver's seat for individual comfort.
- Adjust the tilt/telescopic steering column to suit.
- Adjust all mirrors for unobstructed views.
- Check that the Door Master switch is in the ON position.
- Check horn operation.

### Transmission Operation

Selection of the automatic transmission operating ranges is electronically controlled by the shift selector on the instrument panel. Five click-in push button type switches illuminate to indicate the range selected and are labeled; [R] for reverse, [N] for neutral, and [D,2,1] for the forward ranges. Operate the transmission using the following procedure:

1. Before starting the engine, be sure that the selector is in neutral [N], the service brake treadle is applied and the park brake is on. These conditions must exist for the engine to start.



**CAUTION:**



***In cold conditions (below -28°C) warm the transmission before operating by positioning Idle Speed***

***toggle switch to FAST until the engine reaches operating temperature.***

2. With the engine running apply firm pressure on the brake treadle and make the desired selection. Release the service brake treadle and parking brake to proceed.
3. To change direction; bring the vehicle to a complete stop, apply firm brake treadle pressure and select neutral [N] before making the desired selection.



**CAUTION:**



***Bring the vehicle to a full stop before shifting from drive [D] to reverse [R] or vice versa.***



**NOTE:**

*A back-up alarm activates when selecting reverse [R].*

4. When parking or shutting down the vehicle, bring the vehicle to a complete stop, apply the parking brake and shift into neutral [N]. Release the service brake treadle.

## Retarder Operation

The retarder is used to slow the vehicle and works in conjunction with the service (air) brakes. The retarder, located inside the transmission, is a fluid brake that creates drive-line deceleration. When activated, its housing fills with transmission fluid which impedes output shaft and rotor rotation slowing the vehicle.

The retarder operates at speeds above 16 km/h and engages with brake treadle application. Lightly pressing on the brake treadle (the first 5° - 10° of movement) engages the retarder into the first of three progressive stages of operation. Further brake application engages the remaining stages leading to full retarder operation. Releasing the brake treadle or decreasing speed to below 16 km/h will disengage the retarder.

Situations such as slowing the vehicle from high speeds or traveling down long grades are examples of where the retarder is recommended. Its use will save mechanical wear on the service brakes and improve vehicle control.

## Starting the Engine

### Master Run Switch

Turn the Master Run switch (on side console) to DAY-RUN or NIGHT-RUN position. This activates the vehicle's Programmable Logic Control (PLC) System, after a six-second "wake-up" interval. Illuminated indicator lights and sounding alarms signify an active PLC System.



**NOTE:**

*If re-starting less than 30 minutes after engine shut down, the PLC System responds instantly.*



**WARNING:**



***Put the shift selector in neutral [N] and apply the parking brake before starting the engine. If the Parking Brake indicator does not illuminate DO NOT OPERATE THE VEHICLE.***

### Start Push Button Switch

With the vehicle's PLC System active, push the Start push button switch until the engine starter engages and starts the engine.

When the engine starts, release the push button switch.



**NOTE:**

*DO NOT crank the engine for more than 14 seconds at a time. Allow a 60-second cooling interval before cranking the starter again.*



If the starter fails to operate, check the following:

- The Master Run switch is in the DAY-RUN or NIGHT-RUN position.
- The transmission shift selector neutral [N] switch is pressed down.
- The engine compartment Master Run switch is in the FRONT position.
- The park brake is applied.

### Parking Brake

The indicator light illuminates when the parking brake is applied. If the Parking Brake indicator is not illuminated, apply the parking brake by pushing down on the parking brake control valve knob. If the Parking Brake indicator light does not illuminate, **DO NOT OPERATE THE VEHICLE**.

Press the brake treadle before releasing the parking brake. Release the parking brake by pulling up on the control knob. The Parking Brake indicator light extinguishes.



#### **NOTE:**

*Re-apply parking brake.*

### Stop Lights

The indicator light illuminates when the rear stop lights are on. If the indicator is not on, check for rear stop light failure.

### Low Air

When illuminated, the indicator light warns of an unsafe air system pressure level. A warning buzzer sounds when the Low Air indicator is activated. **DO NOT OPERATE THE VEHICLE** until the alarm system is canceled.

The air pressure gauge indicates the air system pressure levels of the air brake system. The air system will maintain pressure levels above the low operating limit of 105 psi during normal vehicle operation.

 **NOTE:**

*When parking for periods less than 10 minutes, position the Idle Speed toggle switch on the side console to FAST.*

## **Check Engine**

The indicator light on the instrument panel illuminates momentarily. The Check Engine indicator light extinguishes before the engine starts. If the Check Engine indicator light remains illuminated, DO NOT OPERATE THE VEHICLE.

## **Shift Selector**

At engine start-up the shift selector must have [N] selected to ensure the transmission is in neutral. The neutral [N] button will illuminate to confirm the selection.

## **No Gen**

When illuminated, the No Gen indicator signals that the alternator is NOT charging. The indicator stays on until the engine starts. If the indicator fails to stay on until the engine starts, DO NOT OPERATE THE VEHICLE.

## **Rear Door Open Indicator**

Move the door controller to position #3, 4 or 5 and push the exit door touchbars to check that the Rear Door Open indicator light illuminates when the doors open.

 **NOTE:**

*Exit doors will open and the interlocks will be engaged.*

Turning the door controller handle to Position #1 closes the entrance and exit doors and extinguishes the Rear Door Open indicator light. Check that the exit doors are closed. If the exit doors are not closed and the Rear Door Open indicator is still illuminated, DO NOT OPERATE THE VEHICLE.

### Day-Time Operation

When the engine is operating note the following:

- The No Gen indicator light is off when the engine is operating.
- Transmission shift selector neutral [N] indicator light stays on.
- Check that the air system pressure is between 105 and 125 psi (724 and 862 kPa) and the suspension is at full height. The Air System requires a working pressure of 105 to 120 psi (724 to 827 kPa).
- Parking Brake and Stop Light indicator lights stay on as long as the parking brake is applied.
- Check door controller operation.
- Check headlight operation (low beam only).
- Check that the Door Master switch, when placed in the DIS-ABLE position, disables the entrance and exit doors and inhibits the accelerator/brake interlocks.
- Return the Door Master switch to the NORMAL position.
- Check the operation of the wiper and washer controls.
- Check the operation of the defroster/heater controls (on dash).
- Check all the exterior lights by first positioning the hazard light toggle switch to ON and then pressing both turn switches simultaneously. All exterior lights will illuminate for two minutes. Reposition the hazard switch to OFF when the check is complete.

### Night-Time Operation

For night operations ensure that the Master Run switch is placed in the NIGHT-RUN position. Check the following in addition to the day-time checks:

- Instrument panel illumination lights.
- Front, side and rear destination/route sign lights.
- Headlight operation (high and low beams).
- Front and rear identification and marker lights.

- Rear stop and turn tail lights.
- License plate light.
- Panel lights dimmer changes the brightness of instrumentation backlights and panel text.
- Interior fluorescent lights can be turned on using the Dome Lights switch.

**NOTE:**

*The Dimmer switch operates only when the Master Run switch is in the NIGHT-RUN position.*

## Pre-Trip Brake Test

**WARNING:**

***Before driving the vehicle conduct the following test sequence. If the test reveals a fault advise service personnel and DO NOT OPERATE THE VEHICLE.***

Conduct the following test sequence to ensure that the air brake system is functioning properly.

1. Apply the park brake and block the wheels.
2. Start the engine, set the Idle Speed switch to FAST and check the following:
  - a. The low pressure warning devices switch off as the air pressure builds.
  - b. If the air pressure gauge reading was below 90 psi, the reading increases back to 90 psi in less than three minutes.
  - c. The air pressure gauge reading levels off at 120 to 125 psi.
3. Release the park brake.
  - a. Make multiple light brake treadle applications and check the following:

- i. The air pressure gauge reading stabilizes at 105 psi. as the air compressor begins its pumping cycle.
    - ii. After continued multiple light brake treadle applications the low pressure warning devices activate as the air pressure gauge reading falls to 65 psi.
  - b. Release the brake treadle and re-apply the park brake.
4. Allow the air system to fully re-charge.
  5. Stop the engine and proceed as follows.
    - a. Release the park brake.
    - b. Apply the brake treadle fully, hold and check the following:
      - i. Upon treadle application the air pressure gauge reading does not drop more than 18 psi.



**NOTE:**

*Tap the gauge to be sure the needle is not stuck.*

- ii. The air pressure does not drop more than 3 psi per minute.
    - iii. There are no audible air leaks.
  - c. Release the brake treadle and apply the park brake.
5. Re-start the engine.
    - a. Set the Idle Speed switch FAST to re-charge the air system.
    - b. When the reading levels off at 120 to 125 psi, switch off the fast idle.
    - c. Remove the wheel blocks.
    - d. Release the park brake.
  6. Move the vehicle slowly and test brake response.

## Moving the Vehicle

1. Fasten driver's seat-belt (as required by law).
2. Close the doors by turning the door controller handle to position #1. The Rear Door Open indicator light should be off.

3. Apply the brake treadle and release the parking brake. The parking brake indicator light extinguishes.
4. Shift the Transmission Selector switch into the desired gear.

**NOTE:**

*The neutral [N] light extinguishes and the chosen range letter illuminates.*

5. Release the brake treadle and lightly apply the accelerator treadle to slowly move vehicle from the parking area. The Stop Lights indicator light extinguishes.
6. Check the steering wheel for vibrations, looseness or binding while the vehicle is in motion. If any abnormalities are present, **DO NOT OPERATE THE VEHICLE.**

## **Parking the Vehicle**

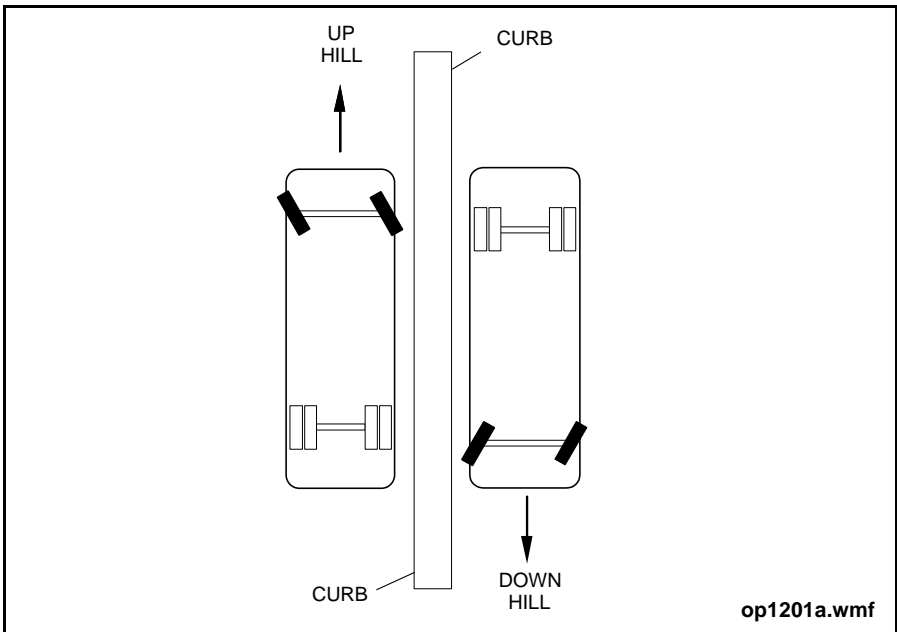
1. Bring the vehicle to a complete stop using the brake treadle. The Stop Lights indicator light illuminates. Shift the transmission selector into neutral [N].
2. Apply the parking brake and release the brake treadle. The Parking Brake indicator light illuminates.
3. Turn the Master Run switch to the STOP-ENGINE position.
4. Open the entrance door by placing the controller in position #2.
5. Exit the vehicle.
6. Slide the front portion of the driver's window back to gain access to the door controller from outside the vehicle.
7. From outside, turn the door controller to position #1. The entrance door closes.
8. Close the driver's window (from outside) by sliding the front portion forward.



**WARNING:**



*The parking brake must be applied when parking the vehicle. When parking downhill, be sure the front wheels are turned into the curb; when parking uphill, be sure the front wheels are turned away from the curb.*



**Figure 16: Parking on an Incline**

## Fluorescent Lights Operation

Three switches on the side console control the operation of the fluorescent lights above the passengers. These switches are:

- Night Light
- Dome Light
- Master switch

The Night Light switch controls an “A” and “B” group of fluorescent lights according to positions of the Dome Light and Master switches.

The last two light panels on each side of the vehicle (4 lights) make up “A” group. The last light panel on each side of the vehicle (2 lights) make up “B” group. The different lighting combinations are as follows:

Side console switch positions illuminating the 4 lights of group “A”:

- Night Light - A, Dome Light - NORMAL, Master switch - RUN
- Night Light - A, Dome Light - NORMAL, Master switch - PARK
- Night Light - A, Dome Light - ON, Master switch - PARK

Side console switch positions illuminating the 2 lights of group “B”:

- Night Light - B, Dome Light - NORMAL, Master switch - RUN
- Night Light - B, Dome Light - NORMAL, Master switch - PARK
- Night Light - B, Dome Light - ON, Master switch - PARK

Side console switch positions illuminating all fluorescent lights.

- Night Light - A, Dome Light - ON, Master switch - RUN
- Night Light - B, Dome Light - ON, Master switch - RUN

## Engine Protection System

The New Flyer vehicle is equipped with an automatic shutdown system to prevent engine damage. The shutdown feature is a part of the DDEC III Control System.

The Check Engine indicator light illuminates and the DDEC III Engine Control System initiates a power reduction cycle.



 **NOTE:**

*Engine shutdown occurs 30 seconds later. Remove the vehicle from service. The Stop Engine Override switch has a limited number of applications before it is rendered inoperative.*

In an emergency, engine shutdown can be delayed for 30 seconds by momentarily activating and releasing the Stop Engine Override switch.

After engine shutdown, an additional 30 seconds of fueling is available by cycling the Master Run switch to STOP-ENGINE then back to DAY-RUN or NIGHT-RUN position and restarting the engine. If the fault corrects itself, the shutdown cycle is cancelled by the engine control unit.

## Kneeling

The vehicle's kneeling operations are controlled by the Kneel switch on the instrument panel. This switch is used to raise, hold, or lower the vehicle.

### Kneeling Procedure

1. Bring the vehicle to a complete stop, apply the park brake and place the door control lever in position 2 to open the entrance door. Kneeling will not work if the door is closed.

 **NOTE:**

*To alert boarding passengers, briefly place the Kneel switch in the RAISE position to sound the warning beeper before placing the switch in the LOWER position.*

2. Hold the Kneel switch in the LOWER position. Boarding passengers must stand clear and wait until the vehicle has lowered, before entering the vehicle.
3. Allow the passengers to board. Hold the Kneel switch in the RAISE position until the vehicle is at full ride height, then release.
4. Releasing the Kneel switch places it in the HOLD position.

5. Place the front door control lever to position 1 to close the doors. The vehicle is now ready for transit operation.

**CAUTION:**

***Ensure the kneeling cycle completes and returns the vehicle to full ride height before continuing transit operation.***

### **Kneeling Exterior Signal**

An amber lamp located beside the front entrance door indicates when the kneeling system is in operation. A warning beep also sounds.

### **Passenger Signal System**

This passenger signal system is activated by the following devices: stop request cord, and wheelchair station push buttons. Activating the signal system causes the following to occur:

- Stop request sign illuminates. The sign extinguishes when the system is reset.
- Stop Request indicator illuminates and remains illuminated until the system is reset.
- A chime sounds once when the stop request cord is used. A different tone sounds if the wheelchair push button is used.

The system is cancelled (reset) and the lights are extinguished by:

- Opening the entrance door with the door controller in position #2, #3 or #5.
- Opening the rear exit doors with the touchbar, once enabled with the door controller in position #3, #4 or #5.

The sign extinguishes when the entrance or exit doors are fully open.

### Stop Request Cord

Stop request cords are located on either side of the vehicle interior. Pulling a cord activates the system.

### Wheelchair Stop Request Push Button

A stop request push button is located under each longitudinal hinged seat in the wheelchair stations. Pushing a button activates the passenger signal system. A chime sounds a different tone to alert of a wheelchair passenger stop request.

### Entrance & Exit Door Lights

The entrance and exit doorways are lit by header lights (above the door), step lights and exterior door lights. Moving the door controller to open a door activates these lights. The lights extinguish as the doors close.



#### **NOTE:**

*The exterior exit door lights extinguish after a delay.*

## 8. WHEELCHAIR SYSTEM

The wheelchair system consists of a wheelchair ramp and wheelchair restraint system.

### Wheelchair Ramp

The New Flyer vehicle is equipped with a wheelchair ramp system to assist passengers in boarding and exiting the vehicle.

The switch to control this feature is located on the instrument panel. The three positions of the switch prompt the wheelchair ramp mechanism to perform the following operations:

- **DEPLOY**

This position activates the ramp from the closed position to the open position.

- **FLOAT**

This position shuts off power to the pump, allowing the ramp to free-fall to either the open or the closed position. Upon cycle completion, this becomes an off position.

- **STOW**

This position is used to move the ramp from the open to the closed position.



**WARNING:**

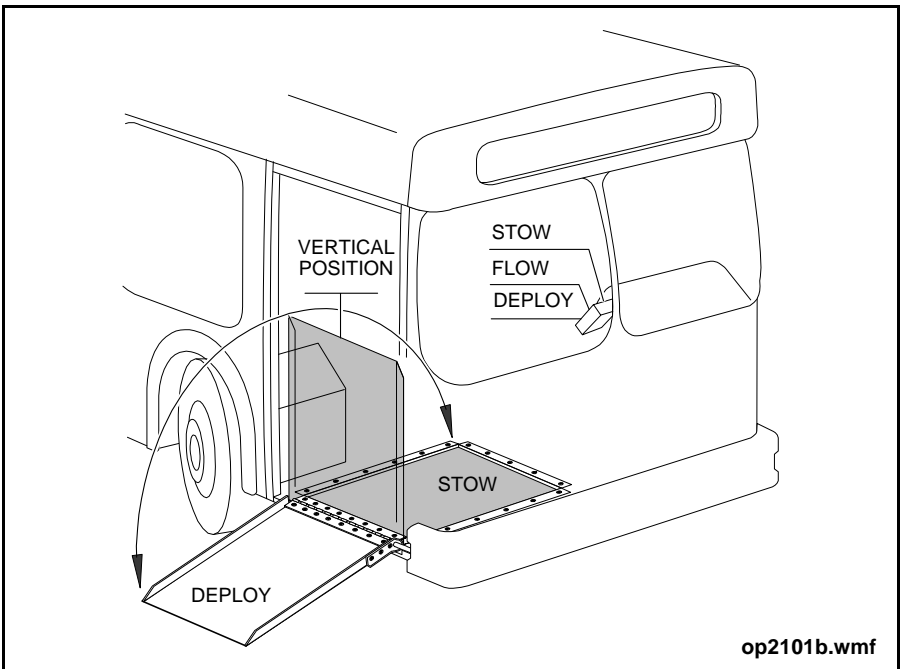


***Before this system can be energized, the following conditions must exist on the vehicle:***

- ***Ensure passenger safety during the wheelchair ramp operations. Monitor the passenger's position during the operation cycle.***

## WHEELCHAIR SYSTEM

- **Loading or unloading the passengers must be performed in a flat open area. Do not deploy the ramp where trees, telephone poles, fire hydrants, or similar obstacles may jeopardize passenger safety or damage the ramp.**
- **Be familiar with ramp functions and operation before operating the equipment.**
- **Do not conduct the “STOW” operation with a passenger on the lift.**
- **Passengers should be allowed to board the ramp only when the platform is at ground level, and the “DEPLOY” cycle is complete.**



**Figure 17: Wheelchair Ramp Operation**

**WARNING:**

***When the ramp is in STOW or DEPLOY, the brake interlocks are activated. The vehicle will not move until the ramp is fully stowed and the switch is in the FLOAT position.***

**CAUTION:**

***Release the switch after the ramp has passed the 90° position. This prevents the oil and pump from overheating.***

**NOTE:**

*When the wheelchair ramp is in motion, an audible alarm sounds, and the exterior lift warning light illuminates and flashes.*

**Deploying the Ramp**

1. Bring the vehicle to a complete stop in a flat, unobstructed area, one to three feet from the curb. Check for obstructions and be certain that there is adequate clearance to deploy the ramp.
2. Apply the parking brake.
3. Kneel vehicle if required.

**NOTE:**

*Parking Brake and Stop Light indicators on the instrument panel will illuminate.*

4. Place the transmission shift selector in neutral [N].
5. Move the door controller to the door open position, (#2, #3 or #5).



**CAUTION:**



***Make sure the area in which the ramp will DEPLOY is clear of people and any obstructions.***

6. Move the Ramp toggle switch to DEPLOY.
7. After the ramp has passed the vertical 90° position, release the switch. The ramp continues to lower until it reaches the ground.

### **Raising the Ramp**



**WARNING:**



***Check for obstructions and be sure that all passengers are at a safe distance. Keep objects and passengers off the lift platform during the STOW operation.***

1. Once the passenger has boarded the vehicle safely and is clear of the ramp, move the toggle switch to the STOW position. An audible alarm sounds when the ramp is moving.
2. Raise the vehicle from the kneeling position.
3. Close the entrance door, disengage the parking brake, and proceed to the next stop.

## **Emergency Procedures**

In case the wheelchair ramp power unit fails, the unit may be hand-operated by using a pull-up strap located on the ramp's corner.

## **Wheelchair Ramp Exterior Signal**

An amber lamp located on the right-hand side (as you enter the vehicle) of the front entrance door indicates when the wheelchair ramp system is operating. A warning alarm also sounds.

## **Wheelchair Restraint System**

The forward seat positions are equipped with a Wheelchair Restraint System for security of handicapped passengers. For optimum passenger safety be sure to follow the operating procedures to complete all the necessary restraint system connections.

## **Operating Procedures**

1. Move the flip-up seat cushion up to the lock position. Two securement straps attached to a securement track should be visible.
2. Reposition the securement straps along the securement track for attachment to the wheelchair. (Adjustment is in 2" increments)
3. Using the hooks on the securement straps attach them directly onto the wheelchair frame or loop the strap material through the frame and back, attaching the hooks onto the securement strap rings.



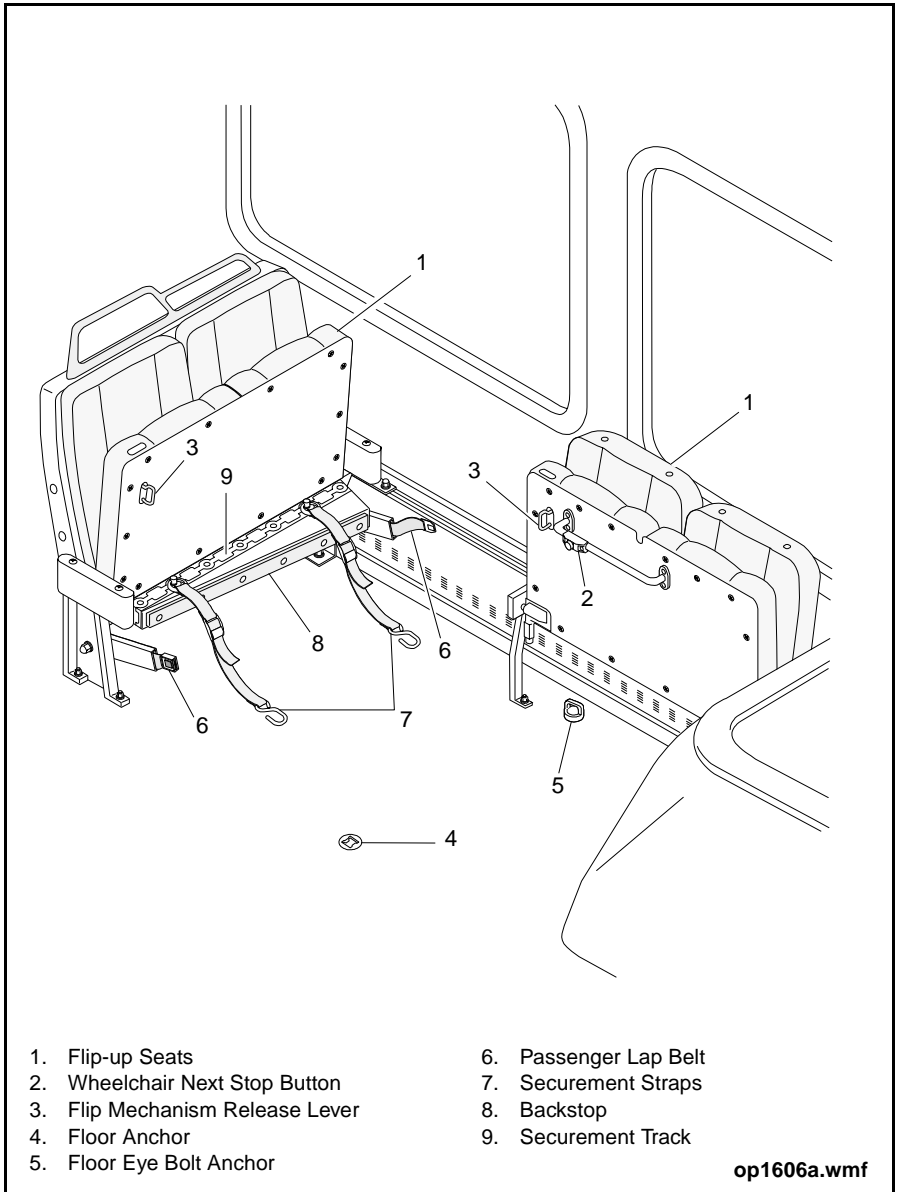
## **WHEELCHAIR SYSTEM**

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4. Pull straps tight to hold the wheelchair firmly against the backstop.
5. Apply the wheelchair brakes.
6. Attach the passenger restraint belt and adjust to a snug fit.

For securing three wheeled scooters follow the 6 previous steps and then proceed as follows:

1. Remove third "scooter" belt from storage compartment.
2. Attach the belt's hook end to the eye bolt under the side flip-up seat.
3. Pull belt strap over the scooter floor and lock the clip end into the anchor plate on the vehicle floor.
4. Pull straps tight to prevent the scooter from tipping.



**Figure 18: Wheelchair Restraint System**

## 9. NOTES



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