KING COUNTY DEPARTMENT OF TRANSPORTATION

OPERATOR'S GUIDE

DIESEL 40FT. LOW FLOOR TRANSIT BUS

This operator's guide is effective for only those coaches with the following Identification Numbers:

SR863

Vehicle Identification Number	Unit Number
5FYD2LV033U024876	3600
5FYD2LV093U025658	3601
5FYD2LV003U025659	3602
5FYD2LV073U025660	3603
5FYD2LV093U025661	3604
5FYD2LV003U025662	3605
5FYD2LV023U025663	3606
5FYD2LV043U025664	3607
5FYD2LV063U025665	3608
5FYD2LV083U025666	3609
5FYD2LV0X3U025667	3610

SR863 continued

Vehicle Identification Number	Unit Number
5FYD2LV013U025668	3611
5FYD2LV033U025669	3612
5FYD2LV0X3U025670	3613
5FYD2LV013U025671	3614
5FYD2LV033U025672	3615
5FYD2LV053U025673	3616
5FYD2LV073U025674	3617
5FYD2LV093U025675	3618
5FYD2LV003U025676	3619
5FYD2LV023U025677	3620
5FYD2LV043U025678	3621
5FYD2LV063U025679	3622
5FYD2LV023U025680	3623
5FYD2LV043U025681	3624
5FYD2LV063U025682	3625
5FYD2LV083U025683	3626
5FYD2LV0X3U025684	3627
5FYD2LV013U025685	3628
5FYD2LV033U025686	3629
5FYD2LV053U025687	3630
5FYD2LV073U025688	3631
5FYD2LV093U025689	3632
5FYD2LV053U025690	3633
5FYD2LV073U025691	3634
5FYD2LV093U025692	3635
5FYD2LV003U025693	3636
5FYD2LV023U025694	3637
5FYD2LV043U025695	3638
5FYD2LV063U025696	3639
5FYD2LV083U025697	3640
5FYD2LV0X3U025698	3641
5FYD2LV013U025699	3642
5FYD2LV043U025700	3643
5FYD2LV063U025701	3644

SR863 continued

Vehicle Identification Number	Unit Number
5FYD2LV083U025702	3645
5FYD2LV0X3U025703	3646
5FYD2LV013U025704	3647
5FYD2LV033U025705	3648
5FYD2LV053U025706	3649
5FYD2LV073U025707	3650
5FYD2LV093U025708	3651
5FYD2LV003U025709	3652
5FYD2LV073U025710	3653
5FYD2LV093U025711	3654
5FYD2LV003U025712	3655
5FYD2LV023U025713	3656
5FYD2LV043U025714	3657
5FYD2LV063U025715	3658
5FYD2LV083U025716	3659
5FYD2LV0X3U025717	3660
5FYD2LV013U025718	3661
5FYD2LV033U025719	3662
5FYD2LV0X3U025720	3663
5FYD2LV013U025721	3664
5FYD2LV033U025722	3665
5FYD2LV053U025723	3666
5FYD2LV073U025724	3667
5FYD2LV093U025725	3668
5FYD2LV003U025726	3669
5FYD2LV023U025727	3670
5FYD2LV043U025728	3671
5FYD2LV063U025729	3672
5FYD2LV023U025730	3673
5FYD2LV043U025731	3674
5FYD2LV063U025732	3675
5FYD2LV083U025733	3676
5FYD2LV0X3U025734	3677
5FYD2LV013U025735	3678

SR863 continued

Vehicle Identification Number	Unit Number
5FYD2LV033U025736	3679
5FYD2LV053U025737	3680
5FYD2LV073U025738	3681
5FYD2LV093U025739	3682
5FYD2LV053U025740	3683
5FYD2LV073U025741	3684
5FYD2LV093U025742	3685
5FYD2LV003U025743	3686
5FYD2LV023U025744	3687
5FYD2LV043U025745	3688
5FYD2LV063U025746	3689
5FYD2LV083U025747	3690
5FYD2LV0X3U025748	3691
5FYD2LV013U025749	3692
5FYD2LV083U025750	3693
5FYD2LV0X3U025751	3694
5FYD2LV013U025752	3695
5FYD2LV033U025753	3696
5FYD2LV053U025754	3697
5FYD2LV073U025755	3698
5FYD2LV093U025756	3699

The information contained in this manual is updated periodically. While great care is taken in compiling the information contained in this manual, New Flyer Industries Ltd. cannot assume liability for losses of any nature arising from any errors and/or omissions.
The information and specifications contained throughout this manual are up to date at the time of publication. New Flyer Industries Ltd. reserves the right to change the content of this manual at anytime without notice.

Printed in Canada

☞ **NOTE:**

The National Highway Traffic Safety Administration (NHTSA) has requested that the following statement be provided for your information.

If the property believes that its vehicle has a defect which could cause a crash or could cause injury or death, inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying New Flyer Industries Limited.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you and New Flyer Industries Limited.

To contact NHTSA either call the Auto Safety Hotline toll-free at 1-888-327-4236 (or 366-0123 in the Washington, DC area) or write to: NHTSA, U.S. Department of Transportation, Washington, DC 20590. Other information about motor vehicle safety can be obtained from the Hotline.

Table of Contents

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.

- Technical Description DIWA.3 Transmissions
- *Cummins* ISL Engine Operation and Maintenance Manual 3666399

VEHICLE SPECIFICATIONS

ENGINE & FUEL	
Engine	*Cummins* ISL
Horsepower	280 HP - 900 ft-lb.
Fuel	No. 2 Diesel
Usable Fuel Capacity	108 U.S. gallons (408 liters)
TRANSMISSION	
Transmission	*Voith* D864.3E
Self-Contained Retarder	100% brake activated
DIMENSIONS	
Length (over bumpers)	40.8 ft. (12.4 m)
Width	8.5 ft. (2.6 m)
Height	9.2 ft. (2.8 m)
Wheelbase	24.4 ft. (7.4 m)
Turning Radius	44 ft. (13.4 m)
Vehicle Weight (approx.)	26,800 lbs. (12,156 kg)
AXLES & SUSPENSION	
Front Axle	*M.A.N.* V8 65L
Front Load-Carrying Capacity	14,329 lbs. (6,500 kg)
Rear Axle	*M.A.N.* HO7 - 11120 - 07 (5.22:1)
Rear Load-Carrying Capacity	25,360 lbs. (11,500 kg)
Suspension	Air springs & shock absorbers
DESTINATION & ROUTE SIGNS	
Front Destination	*Luminator* electronic
Side Destination	*Luminator* electronic
Front Route	*Luminator* electronic
Rear Route	*Luminator* electronic
LIGHTING	
Interior	*Transmatic* fluorescent 24 volt

HVAC SYSTEM	
HVAC Unit	*Thermo King* T-11 rear mount unit
Auxiliary Heaters	1 *Mobile Climate Control* defroster unit
SEATING	
Driver's	*USSC* Q91
Passenger	*American Seating* 6466
Seating Capacity	35
Wheelchair Stations	2 (seats fold up & lock)
BRAKE SYSTEM	
Mechanical Components	Internal expanded S-cam type
	Automatic slack adjusters
Service Brake	Full air operated
	ABS/ATC controlled
Parking Brake	Spring applied, air released
Emergency Brake	Spring brake applied
	Brake treadle modulated to control
WINDOWS	
General	Black anodized frame
	(single top tip-in, bottom opening inward)
	44% grey laminated glass
Emergency Escape	7 lower & 2 upper section windows
Driver's Window	2 piece sliding interior & exterior handle
DOORS	
Entrance	*Vapor* slide glide - 31.32" between grab rails
Exit	*Vapor* swing door - 32.00" between door panels
	Driver controlled operation
Controls	5 position opening/closing control
	Door manual control valve

SAFETY FEATURES	
Emergency Escape Exits	7 lower & 2 upper section windows
	Both roof hatches
Fire Suppression System	*Amerex*
Entrance & Exit Doors	Emergency air release control valve/handle
Exit Door	Accelerator & brake interlocks
	Sensitive edges
Silent Alarm	Driver's area

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
25 DeBaets Street
Winnipeg, Manitoba
Canada
R2J 4G5
tel: (204) 934-4874
fax: (204) 224-0248

2. SAFETY INFORMATION

Safety Procedures

Do not drive the vehicle if:

- Indicators, instruments or gauges show that a major vehicle operating system is malfunctioning.
- Exhaust fumes seep into the passenger compartment.
- Beneath the vehicle, puddles of engine oil, hydraulic fluid, or coolant have formed.
- Seating stanchions and grab rails are loose or damaged.
- Driving mirrors are broken, missing or cannot be properly adjusted.
- Any exterior or interior light is broken, discolored, or malfunctioning.

Report the occurrence of any of the above to maintenance personnel so the vehicle can be serviced before beginning revenue service.

- Do not 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.
- Have any debris or garbage removed from the passenger area and the doors. This is important to eliminate any foot obstructions that could cause tripping or falling.
- 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.

Escape Exits

Side Windows

Seven lower level and two upper 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.

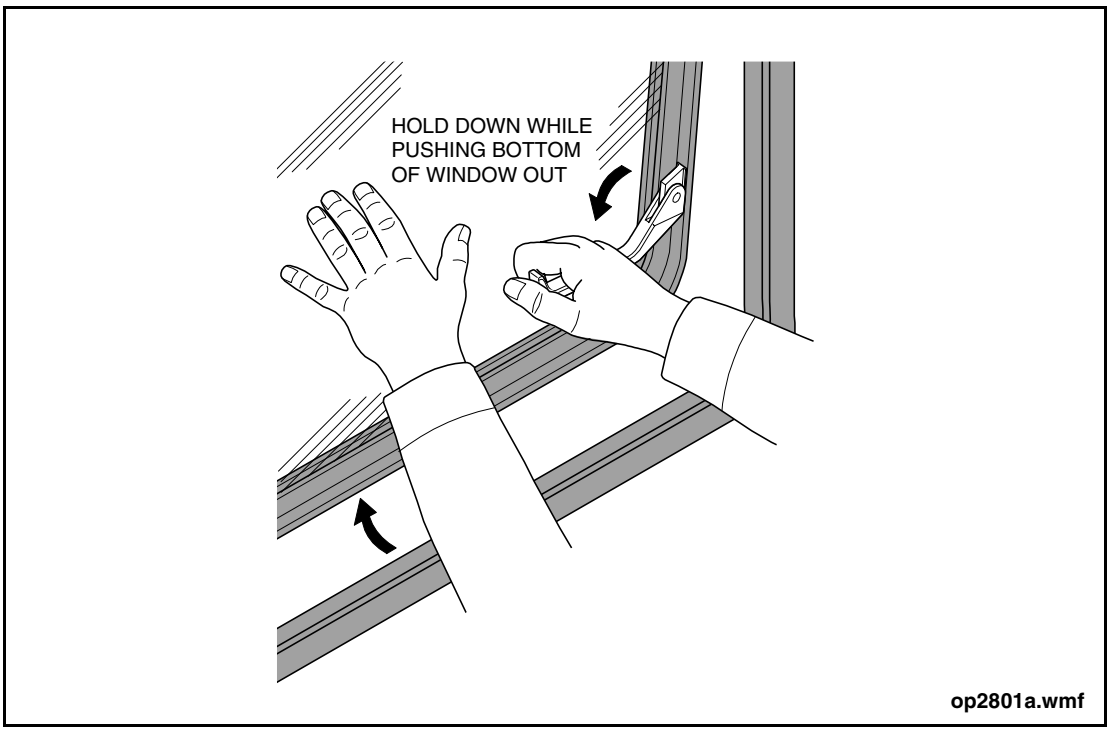


Figure 1: Window Emergency Handle

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.

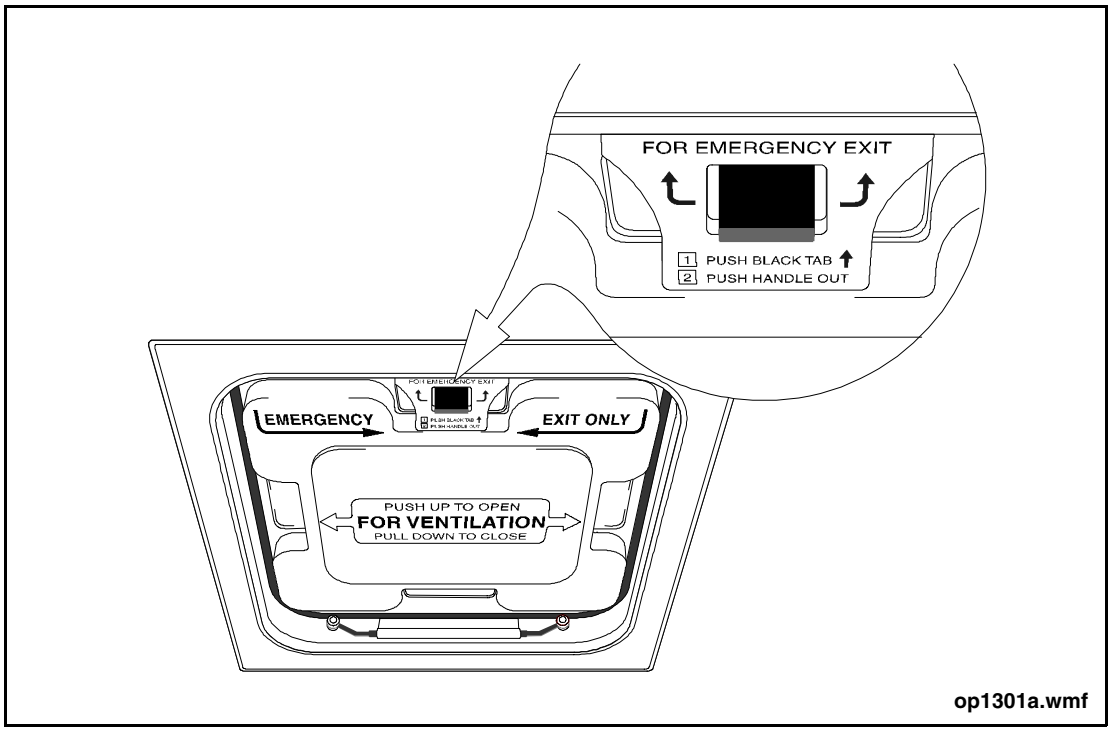


Figure 2: Roof Hatch

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.
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 Handle

The door emergency exit control handle is located to the left of the exit door header, behind a breakable window. In an emergency, break the window to access the handle. Pull the handle 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.

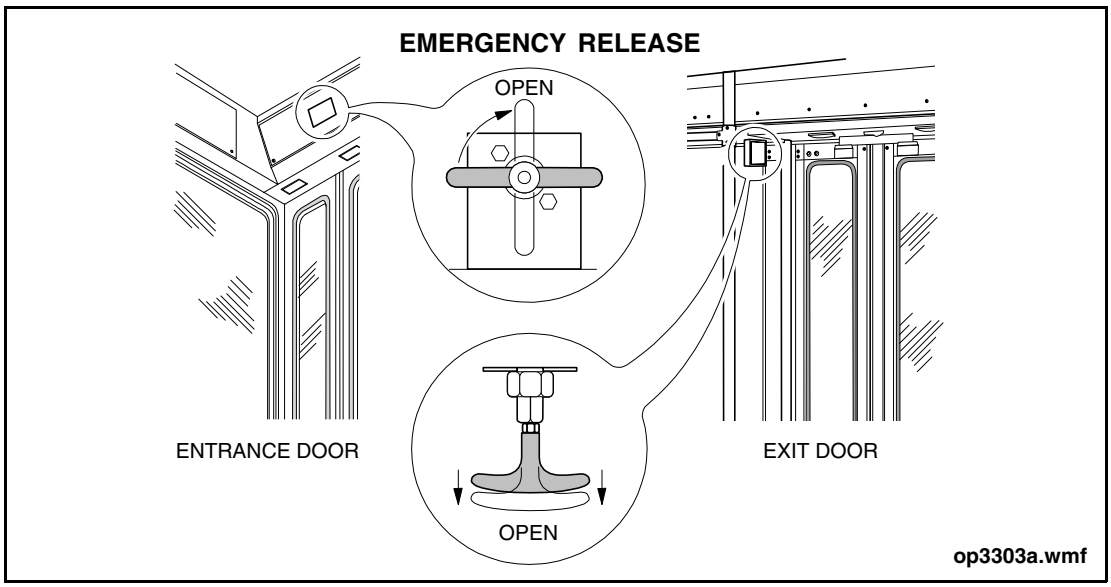


Figure 3: Passenger Door Emergency Release

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.

Interlock System

This system applies the brakes and disables the accelerator treadle when any of the following occur:

- Opening the exit doors.
- Kneeling the vehicle.
- Operating the wheelchair ramp.

The Interlock System is intended to protect passengers from an inadvertent vehicle movement. Located behind the front destination sign access door is the Door Master switch. Use this switch to disable the system for maintenance purposes or in an emergency.

3. IMPORTANT ACCESS POINTS

While operating the vehicle, quick response to warning indicators may avoid a break down or an emergency condition. Be familiar with the following important access points if instructed by the control center to conduct corrective measures to important vehicle components.

Side Console Components

There are two access points to components of the side console.

The exterior side console access door, located under the driver's window, allows access to air lines, pressure switches and electrical harnesses connected to side console controls. It is held open by (2) gas struts and closed by (2) 5/16" square key latches.

The side console switch panel lifts for access to electrical and PLC components beneath the panel. Two captive screws on either side of the panel turn to release it. Lift at the center handle.

Destination Panel Control Switches

Located behind the destination sign door, are three control switches. The switches and their basic function are:

- The Retarder switch — to enable or disable the retarder.
- The Door Master switch — to enable or disable the Door and Interlock Systems.
- ABS switch — to initiate ABS System diagnostics.

Normal vehicle operating conditions do not require activation of these switches but emergency or fault situations may require their use. For further details refer to the same headings in Section 7: Instrumentation & Controls.

PLC Components

A computer based Programmable Logic Control System (PLC) controls the vehicle's electrical system. Vital PLC components called input-output blocks (I/O blocks) are located at:

- the rear of the vehicle, above the bench seat,
- above the exit door inside the mechanism compartment,
- behind the instrument panel,
- below the side console panel.

Access the I/O blocks for diagnostics purposes in cases of electrical difficulties and only with the guidance of authorized service personnel. Consult with the control center before accessing PLC components.

Fuel Filler Access Door

The fuel filler access door is located on the curbside of the vehicle ahead of the rear wheels. It is spring-loaded to remain either open or closed. Open the access door for fuel filling or tank inspection.

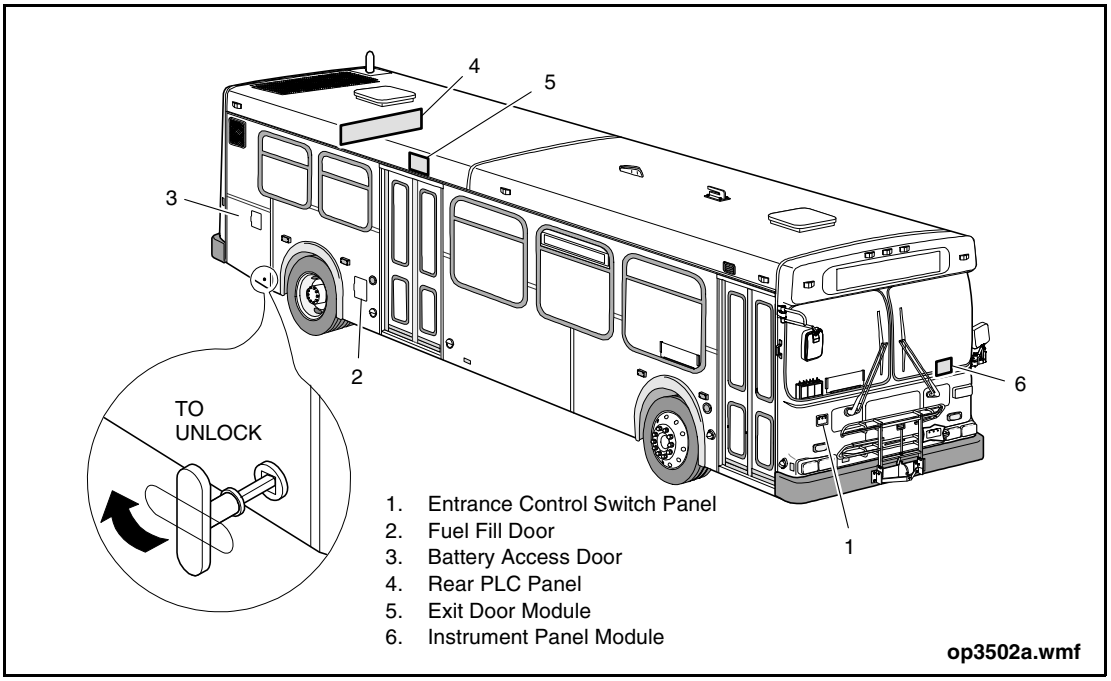


Figure 4: Streetside Access Points

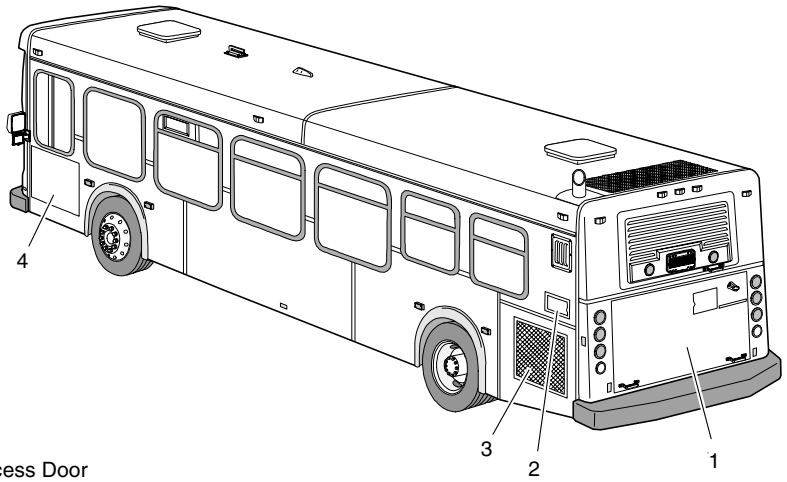
Engine Access Doors

Engine access doors are located at the back, the rear curbside, and behind the rear bench seat. The doors provide access to the engine assembly, fan drive/power steering reservoir, alternator, and engine rear switch panel. Quarter-turn latches hold the access doors closed.

The engine access doors at the back and the rear curbside each use two gas cylinders to hold them up.

Wheelchair Ramp Mechanism Access Door

The access door to the wheelchair ramp hydraulics is located on the right-hand lower dash panel. Open the access door to access its hydraulic components by turning the two spring latches.



1. Engine Access Door
2. Surge Tank Access Door
3. Radiator Access Door
4. Side Console Access Door

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Figure 5: Curbside Access Points

Surge Tank Access Door

WARNING:

NEVER open the surge tank cap with the engine running or hot. Consult with the control center before removing the cap.

The surge tank access door is located above the radiator access door. Open the access door for engine coolant filling or coolant level checks at the sight glass. The door is spring loaded to remain either open or closed.

Battery Access Door

The battery access door is located on the streetside in front of the rear axle. It allows access to; the batteries, the battery cutoff switch, the jump start connector, and the fuse panel. It is held open by (2) gas struts and closed by (2) square key latches. A smaller spring-loaded door on the battery door provides quick access to the battery cutoff switch and the jump start connector.

Quarter-Turn Latches

Access doors that are not spring loaded are held closed by quarter turn latches which require a T-handle to operate. The T-handle is a squared key that fits into the square opening of the latches. To lock or unlock a latch, insert the T-handle key into the latch and turn it 90°.

Towing Connections

An electrical connector and two towing adapter sockets are located at the front of the vehicle to permit towing. Refer to the General Information section of your New Flyer Service Manual for towing procedures and applicable caution notes.

4. TO ENTER THE VEHICLE

1. Locate the front door open switch compartment.
2. Open the access door and move the switch to open the door.

If the entrance door does not open, exhaust air from the entrance door cylinder as follows:

1. Slide the front portion of the driver's window back to gain access to the door manual control valve.
2. Reach over the side console to the valve handle and turn it to the OPEN position.
3. Open the door manually by pushing on the door panels outside edges.

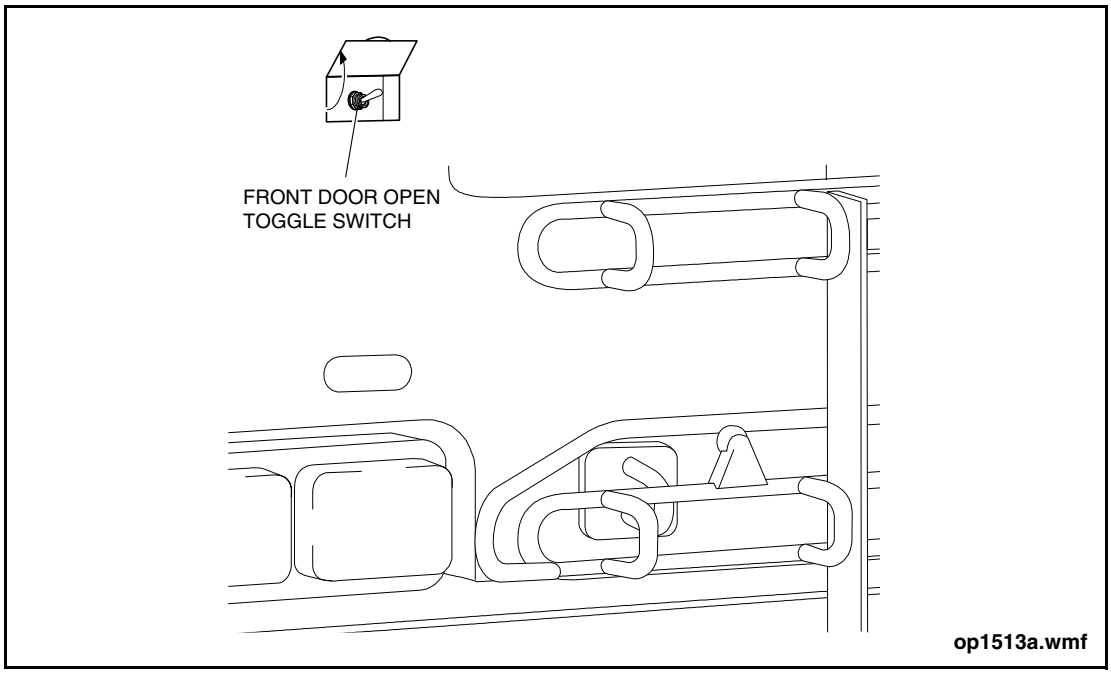


Figure 6: To Enter the Vehicle

5. 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

- Battery Disconnect switch is in the ON position.
- Engine Run switch in engine compartment is in the 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

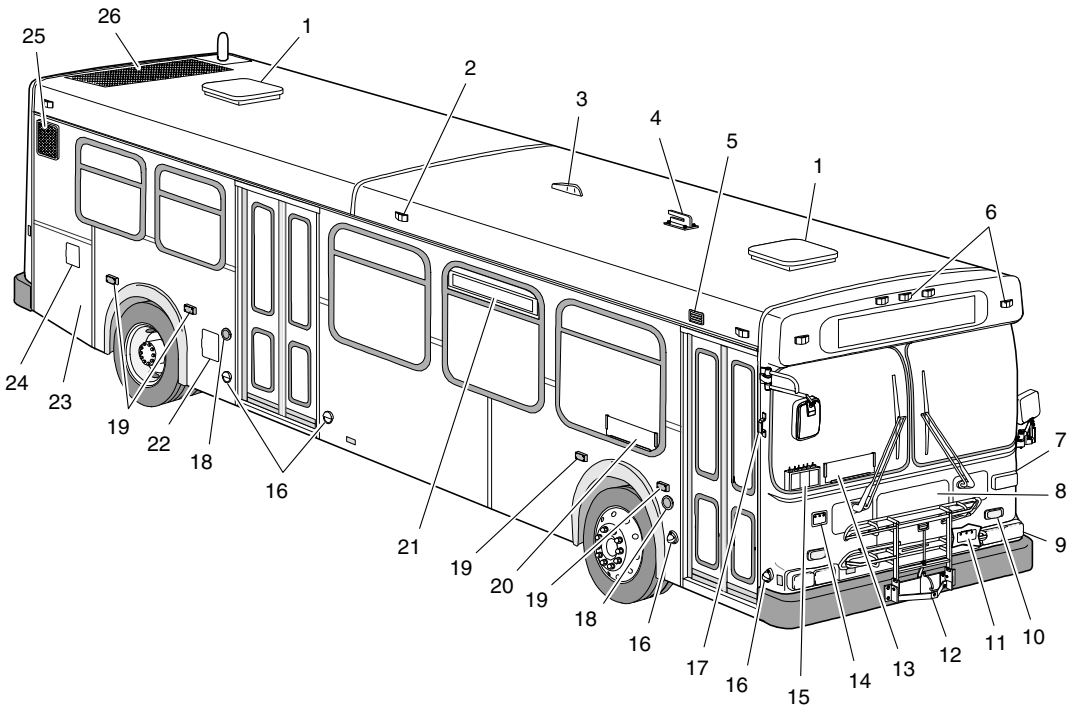
- Clean and clear of obstructions.
- Lenses are intact.
- No missing lenses or lights.

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.



1. Roof Vent/Hatch
2. Side Marker Light
3. AVL Antenna
4. Radio Antenna
5. P.A. Speaker
6. Clearance Marker Lights
7. Driver's Vent
8. Defroster Access Door
9. Headlight
10. Front Turn Indicator
11. Towing Connections
12. Bike Rack
13. Dash Card Holder
14. Entrance Door Control Switch Panel
15. Front Route Sign
16. Curb Light
17. Grab Handle
18. Kneeling/Ramp Warning Light
19. Side Turn Indicator
20. Side Sign Holder
21. Side Destination Sign
22. Fuel Filler Access Door
23. Battery Access Door
24. Battery Disconnect Access Door
25. Engine Air Intake Grille
26. HVAC Condenser Grille

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Figure 7: Front Exterior View

Interior

General

- Farebox is secure and operates correctly.
- Interior panel condition.
- Roller blinds, side signs and front route box are secure.
- Roof hatches open and close easily.
- Passenger signals condition and operation.
- Door controller moves freely through all 5 positions.
- Door Master switch is in the ON 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 levers function properly.
- Wheelchair ramp alarm functions when stowing or deploying the wheelchair ramp.

Access Doors

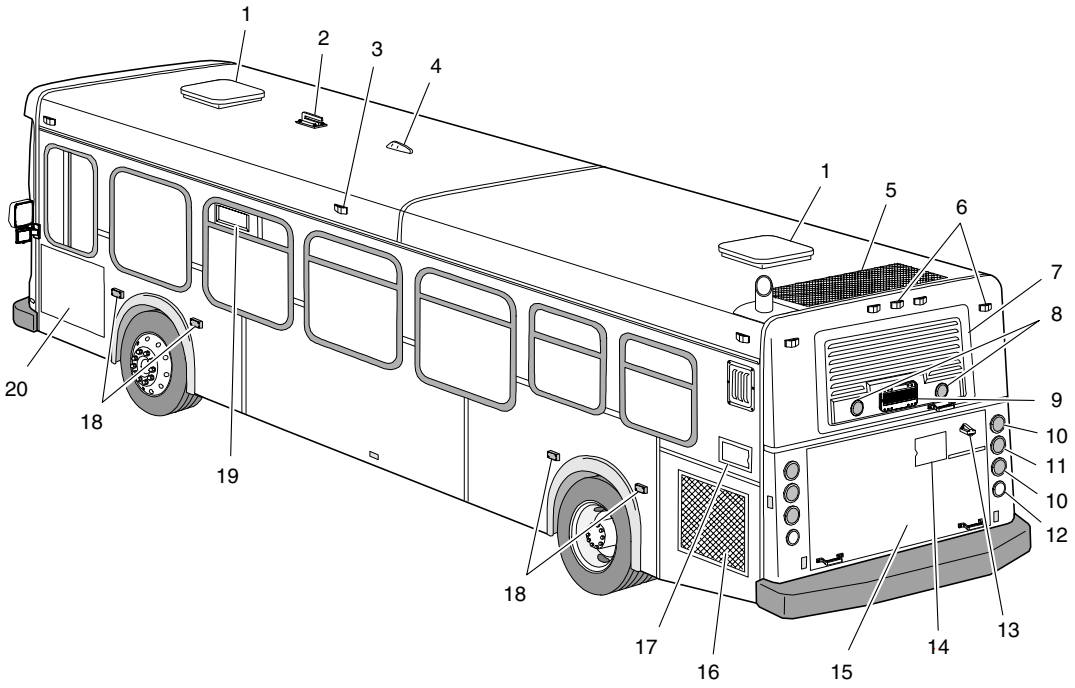
- Closed and securely latched.
- Door panels are not bent, torn or otherwise damaged.

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.



1. Roof Vent /Hatch
2. Radio Antenna
3. Side Marker Light
4. AVL Antenna
5. HVAC Condenser Grille
6. Clearance Marker Lights
7. HVAC Unit Access Door
8. Center Stop Lights
9. Rear Route Sign
10. Stop/Tail Light
11. Turn Light
12. Backup Light
13. License Plate Light
14. Engine/Transmission Oil Check Access Door
15. Engine Access Door
16. Radiator Access Door
17. Surge Tank Access Door
18. Side Turn Indicator
19. Streetside Route Sign
20. Side Console Access Door

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Figure 8: Rear Exterior View

Windows

- Do not rattle in slide frames.
- Slide locks operate correctly.
- Windows unlatch and slide without restriction.
- Seals are present and not damaged.

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 & Grab Rails

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

Lights

- Lenses are not broken or missing.
- No missing lights.
- Clean.

☞ **NOTE:**

From this point on, items on the driver's check list 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 interval. Wait for the system to activate before starting the engine. For details on engine starting, refer to Section 9: Vehicle Operation.

Indicator Lights

- The Stop Request indicator illuminates when the passenger signal system is activated.
- The W/C Stop Request indicator illuminates when the wheelchair restraint area touch tape is activated.
- 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 open.
- The high beam indicator illuminates when the high beam headlights are on.
- The Kneel indicator illuminates when the kneeling system is activated.
- 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 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.
- HVAC 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 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).
- 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).

6. 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.

Mirrors

There are six mirrors located throughout the vehicle interior: an aisle mirror, an upper right mirror, two stepwell mirrors, a bike rack mirror and a rear step area mirror.

Aisle Mirror

The aisle mirror is located under the front destination sign closeout. 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.

Stepwell Mirrors

The mirrors are located on the entrance door access panel. Adjust the mirrors to provide a view of the entrance and the curb outside. This will provide the operator with a view to check for any obstructions when kneeling a vehicle or when closing the door.

Bike Rack Mirror

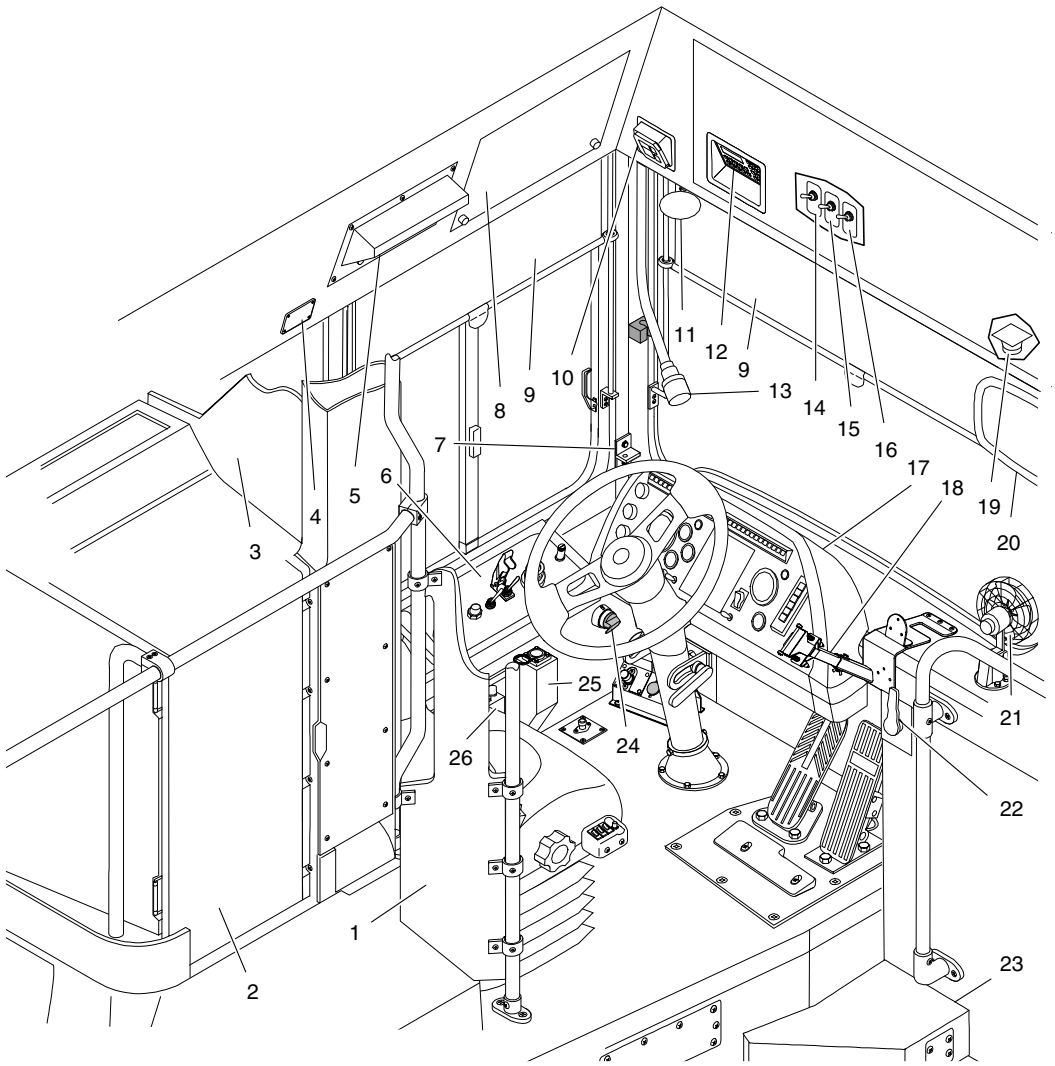
The bike rack mirror is located at the left windshield pillar. Its convex glass surface provides a view of the bike rack located on the vehicle front exterior.

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 front windshield and the other for the driver's window. To extend a blind, pull on its leading edge; to retract, pull on the release cord.



1. Snowball Shield
2. Electronic Equipment Enclosure
3. Driver's Barrier
4. HVAC Control Panel
5. Driver's Booster Fan
6. Side Console Panel
7. Radio Handset Bracket
8. Driver's Locker
9. Roller Blinds
10. Fire Suppression Monitor Panel
11. Bike Rack Mirror
12. Destination Sign Controller
13. Gooseneck Microphone
14. Door Master Switch
15. Retarder Switch
16. ABS Blink Code Switch
17. Instrument Panel
18. Transfer Cutter
19. Farebox Light
20. Aisle Mirror
21. Dash Fan
22. Foot Heat Control
23. Farebox Pedestal
24. Door Manual Control Valve
25. Fire Suppression Manual Actuator
26. Parking Brake Control Valve

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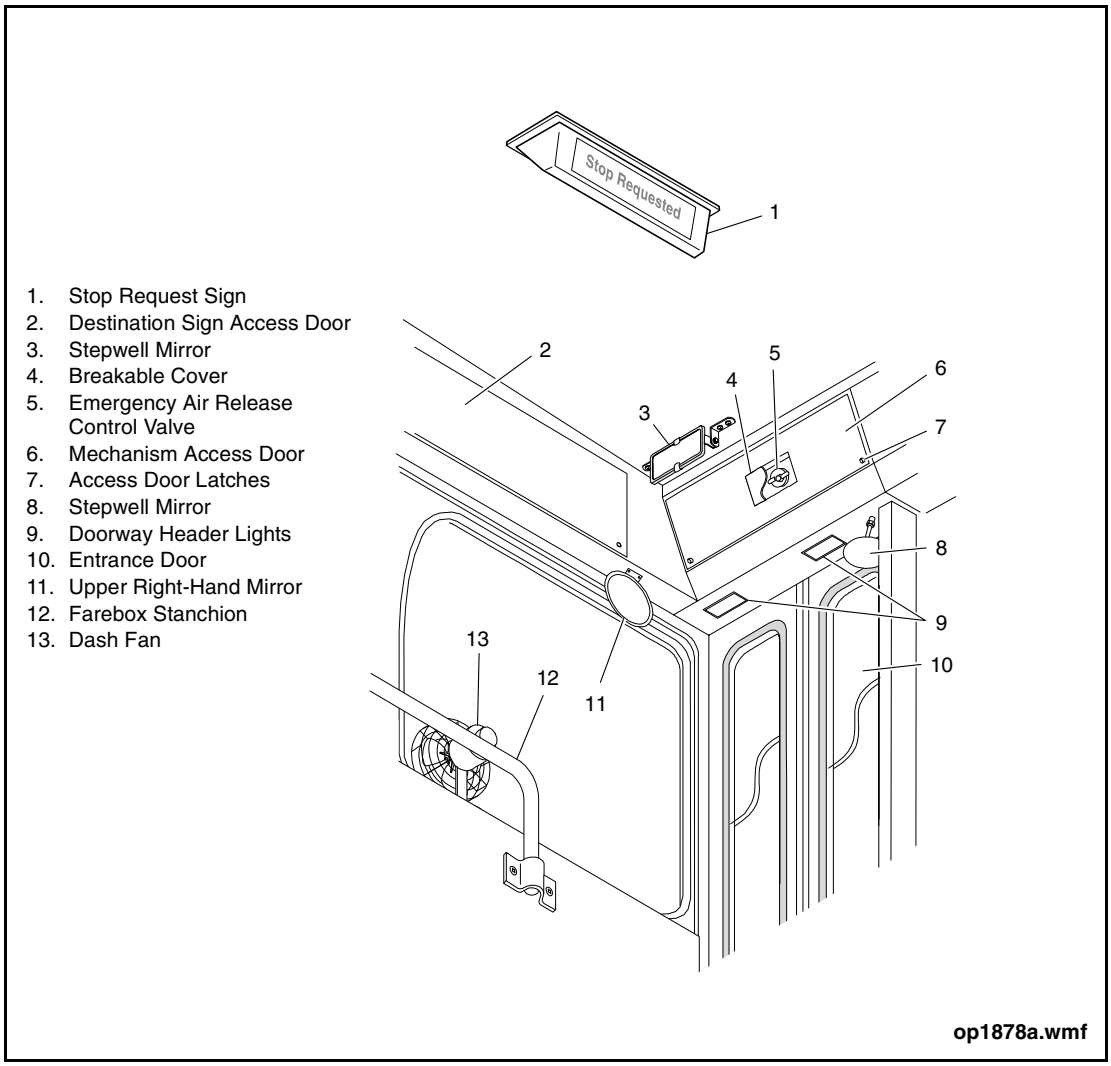
Figure 9: Driver's Area

Radio Box

The radio box, mounted on the streetside wheelhousing, contains the vehicle's communications equipment. A lockable latch can prevent unauthorized access and keep the contents secure.

Driver's Locker

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



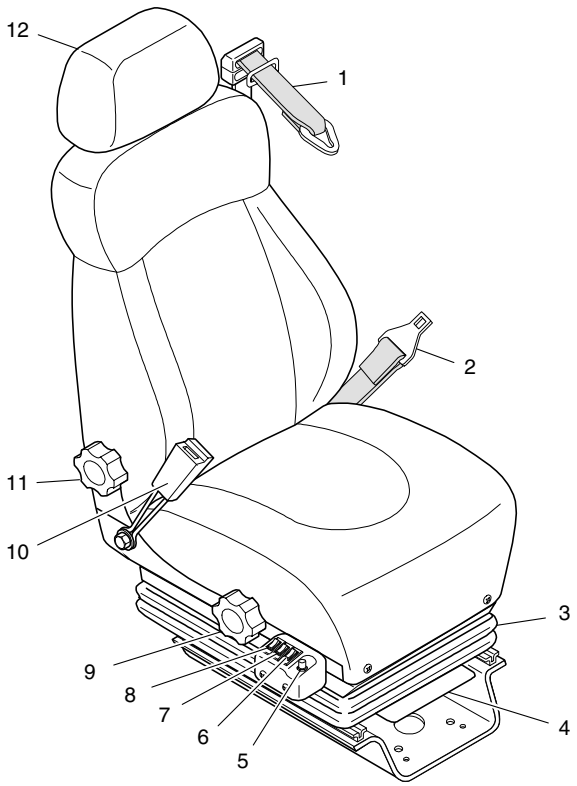
1. Stop Request Sign
2. Destination Sign Access Door
3. Stepwell Mirror
4. Breakable Cover
5. Emergency Air Release Control Valve
6. Mechanism Access Door
7. Access Door Latches
8. Stepwell Mirror
9. Doorway Header Lights
10. Entrance Door
11. Upper Right-Hand Mirror
12. Farebox Stanchion
13. Dash Fan

Figure 10: Front Entrance View

Driver's Seat

The USSC Q91 driver's seat is an 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.

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



1. Shoulder Belt
2. Lap Belt
3. Bellows
4. Fore/Aft Locking Device
5. Fore/Aft Adjustment Button
6. Bottom Lumbar Adjustment
7. Middle Lumbar Adjustment
8. Top Lumbar Adjustment
9. Seat Tilt Control
10. Seat-Belt Clip
11. Backrest Adjustment
12. Adjustable Headrest

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Figure 11: Driver's Seat

Lumbar Adjustment

Three rocker switches on the right side of the seat adjust the top, middle and bottom lumbar. The rocker switches admit or release air pressure to three air bags in the seat back. When making adjustments, momentarily hold the switches in position to allow time for air movement.

Height Adjustment

The knob on the front left corner of the seat adjusts the height. Turn the knob counter-clockwise to raise the seat and clockwise to lower it. Pull the knob out to dump air pressure and reset to the previous adjustment by pushing the knob in.

Tilt Adjustment

Adjust the seat's fore and aft tilt with the large control knob on the side of the seat. Turn the knob clockwise to tilt forward and counter-clockwise to tilt rearward.

Fore & Aft Track Adjustment

The fore and aft track adjustment has nine position settings. Push the button located in front of the lumbar adjustment switches to unlock and slide the seat to the desired position. Release the button and move slightly fore or aft to set lock. Raising the slide handle below the bellows at the front of the seat will release the slides and allow the seat to move front or back.

Back Recline Adjustment

Adjust the backrest to the desired recline position by turning the control knob located at the bottom of the backrest.

Suspension Lockout/Limiter Control

Located on the left rear of the seat is a three-position lever to control seat suspension movement. The outward position allows full seat suspension movement; the middle position limits the suspension and the inward position locks the suspension.

Steering Wheel & Horn

Steering Wheel

WARNING:

DO NOT make adjustments to the tilt steering while the vehicle is in motion.

CAUTION:

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

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.**

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.

A lever at the steering column to instrument panel attachment point allows additional tilt adjustment of the steering column. To adjust, operate the lever to loosen the pinch bolt and move the steering column to the desired position. Lock column in position with adjusting lever.

Horn

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

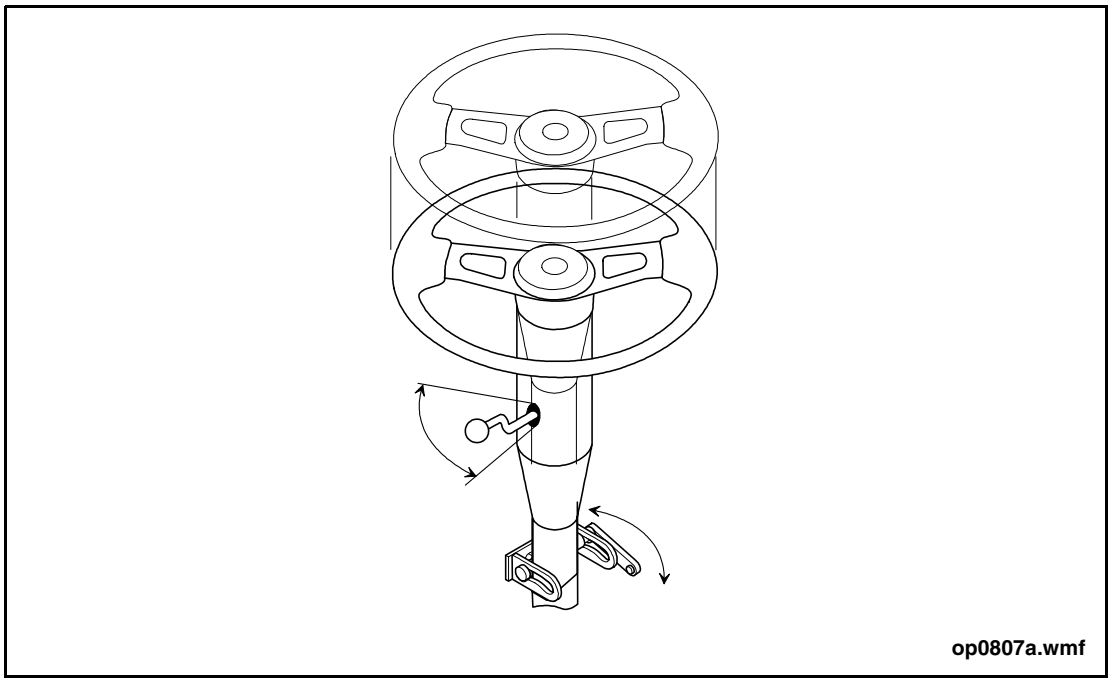


Figure 12: Steering Wheel Adjustment

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:

- A gooseneck microphone located above the side console.
- 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.

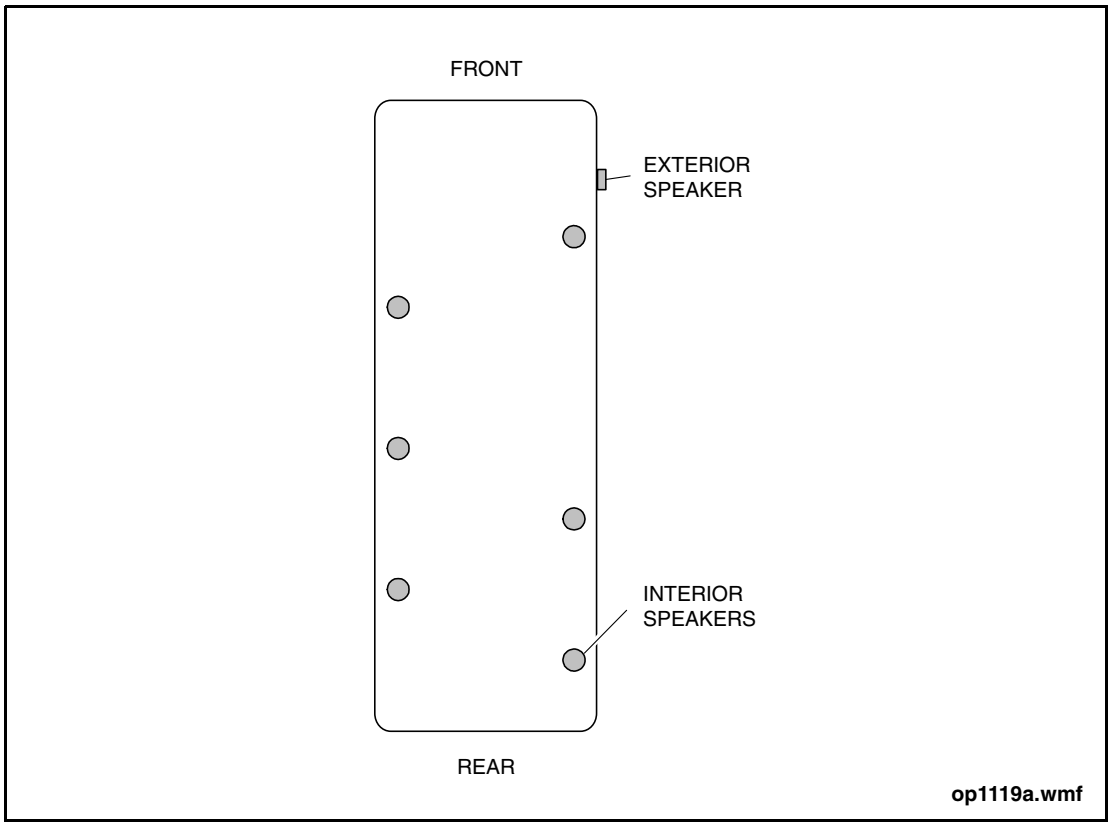


Figure 13: P.A. System Layout

Destination/Route Signs

☞ **NOTE:**
The following information provides basic introductory information on ODK and Luminator Destination Sign System operation. Your transit authority management establishes policies about system operation and should be consulted before its use. Manuals are available from Luminator which provide more information about the GTI® Operator's Display Keyboard and the Luminator Destination Sign System.

System Description

The vehicle's destination/route signs are controlled by an Operator's Display Keyboard (ODK) located in the panel of the front destination sign access door. The ODK functions to control and verify the destination/route sign message display.

Destination sign message codes are entered into the system data processor using the keypad switches on the front panel of the ODK. The codes translate into message writing data preprogrammed into the system's memory. The message writing data then controls the signs to display the selected information.

The system data processor begins sending and updating message writing data for the ODK to display when the system is powered-up. Turning the Master Run switch from STOP-ENGINE to DAY-RUN or NIGHT-RUN will power-up the system. Boot and application code versions momentarily display when power is applied to the ODK, followed by a brief system initialization message. The last message entered before power shutdown then displays on the ODK.

Powering-down occurs when the Master Run switch is turned to STOP-ENGINE. Upon powering-down, front and side destination signs will blank immediately or after a preset delay.

Operating the ODK

Basic operation of the GTI® Sign System involves presetting transit authority message codes into the sign system using the ODK. The message codes correlate to preprogrammed 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.

ODK Keypad Switches

The ODK contains 28 keypad switches. Certain keypad switches, or groups, may not function if they are not needed for coded entry procedures. Switches that are not enabled either have no effect when pressed, or indicate that particular function is not available. Keypad switch functions are as follows:

- P/R — press to enable public relations message code entry.
- ROUTE — press to enable route number entry. Route number entry may be either coded or be the actual route number for display.
- DEST A, DEST B — press the appropriate key (A or B) to enable destination message code entry and/or message display change.
- 0-9 Group — key switches are for sequential entering of message codes. These keys function only after a destination (DEST A, DEST B) or enabled public relations
  (P/R) switch is pressed.
- A-F Group — key switches are for sequential entering of message codes that contain letters and numbers. Normally these keys will only enable if they are part of an existing message code.
- ENTER — press to activate the selected message during code entry and during operation.
- MENU — press to access advanced programming options. Consult your transit authority before use.
- SELECT — press to select additional characters G-Z when entering message code(s).
- MESSAGE TEXT — key switch is not currently in use.

☞ **NOTE:**
Code entry sequences must be followed to set-up destination sign messages. A "beep" sounds and a visual read-out appears on the ODK display when pressing any enabled keypad switch.

Code Entry

When powering-up the sign system it will display the messages entered previously. 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. Press the switch DEST A, DEST B, P/R, or ROUTE for the message code you are about to enter.

3. For each code press the corresponding switches in the 0 though 9 and/or A through F groupings one at a time and in proper sequence.

   ☞ **NOTE:**
   If the message code contains letter(s) G-Z, press the SELECT key for access.

4. Press the ENTER key switch and allow the ODK to display the actual message.
5. Repeat steps 1 to 4 for each code required for the route.

To change from one preset message to another for a turn-around or while in route press the appropriate DEST A or DEST B switch.

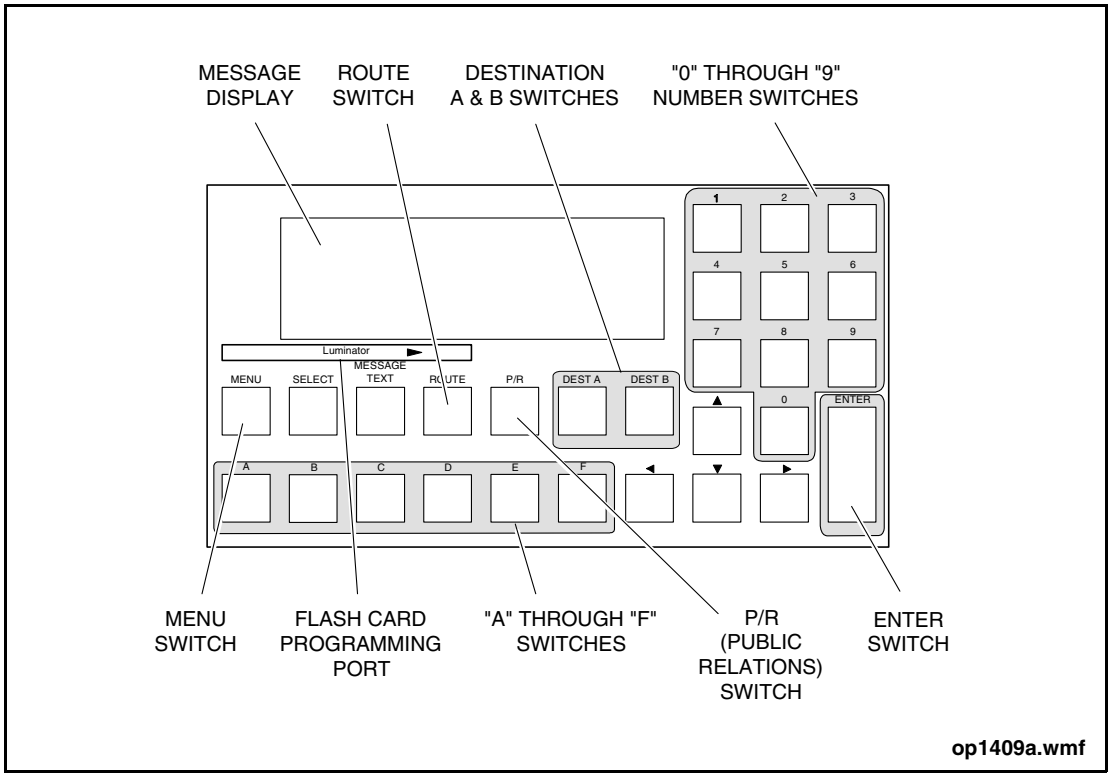


Figure 14: Operator's Display Keyboard (ODK)

Fire Suppression System

This vehicle is equipped with a fire suppression system. When operated, the system releases a dry chemical agent to extinguish fires which are detected in the engine compartment. Driver's area components of this system include a fire suppression control panel and a manual actuator. Refer to Section 8: Fire Suppression System for a description of this system and the operation of these components.

7. 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, symbolized by directional arrows, 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 has detected a potentially serious problem in the transmission. If this indicator illuminates, DO NOT OPERATE THE VEHICLE.

Low Trans Indicator (Red)

CAUTION:

DO NOT drive the vehicle for extended periods with the Low Trans indicator illuminated. Poor transmission performance and eventual transmission damage will result.

The Low Trans indicator illuminates if the oil level within the transmission reaches a level too low for proper transmission operation. Advise service personnel if this indicator illuminates.

ATC Indicator (Amber)

The ATC indicator illuminates when the Automatic Traction Control System is operating to limit drive wheel spin on slippery surfaces.

Check Engine Indicator (Amber)

⚠ CAUTION: ⚠

If after engine start-up the Check Engine indicator remains illuminated, advise service personnel. Avoid extended periods of operation with this indicator illuminated.

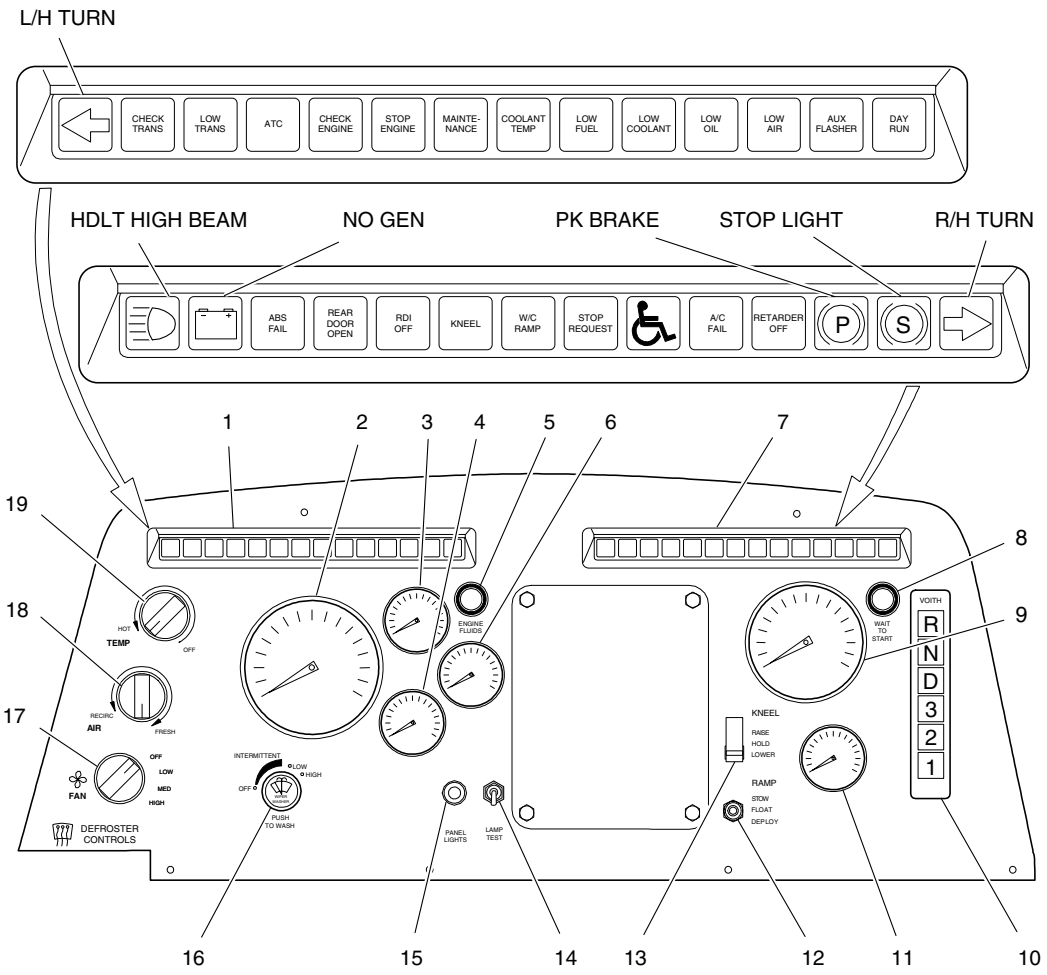
The Check Engine indicator illuminates if the engine requires service. The indicator is controlled by the vehicle's PLC System which monitors engine sensor output. The PLC System will illuminate the indicator if sensor output signals fall outside of a predetermined range.

Stop Engine Indicator (Red)

The Stop Engine indicator illuminates if an engine operating condition occurs that will result in damage to the engine. The indicator is controlled by the vehicle's PLC System which monitors engine sensor output. If the PLC System illuminates the indicator it also initiates an engine shut-down sequence.

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

☞ **NOTE:**
If this indicator remains illuminated, the engine will continue running for 30 seconds. Use the time to drive out of traffic to a safe area.



1. Left Indicator Strip
2. Dual Pressure Air Gauge
3. Auxiliary Air Gauge
4. Transmission Temperature Gauge
5. Engine Fluids Indicator
6. Engine Temperature Gauge
7. Right Indicator Strip
8. Wait to Start Indicator
9. Speedometer
10. Transmission Shift Selector
11. Oil Pressure Gauge
12. Ramp Switch
13. Kneel Switch
14. Lamp Test Switch
15. Panel Lights Dimmer Switch
16. Wiper/Washer Control
17. Defroster Fan Control
18. Defroster Air Recirculation Control
19. Defroster Temperature Control

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Figure 15: Instrument Panel

Maintenance Indicator (Amber)

CAUTION:

If the Maintenance indicator illuminates, advise service personnel to schedule the vehicle for regular maintenance before its next operating cycle.

The Maintenance indicator illuminates at engine start-up if a regular engine maintenance interval is overdue. The indicator will flash for 12 seconds upon positioning the Master Run switch to DAY-RUN or NIGHT-RUN for engine start-up.

Coolant Temperature Indicator

The Coolant Temperature indicator will illuminate if the engine coolant exceeds its normal operating temperature. The indictor is accompanied by a warning buzzer and the Maintenance indicator.

Low Fuel Indicator (Amber)

The Low Fuel indicator illuminates when the level of diesel fuel in the tanks has reached the minimum level for reliable vehicle operation.

Low Coolant Indicator (Amber)

The Low Coolant indicator illuminates if too little coolant is in the engine to maintain normal engine operating temperature.

☞ **NOTE:**
If this indicator remains illuminated, the Engine Protection System engages to initiate an automatic engine shutdown sequence.

Low Oil Indicator (Red)

CAUTION:

If the Low Oil alarm continues and the indicator lamp remains illuminated, DO NOT OPERATE THE VEHICLE.

The Low Oil indicator illuminates if the engine oil pressure is too low for proper engine lubrication. The Low Oil indicator is accompanied by a warning buzzer.

Before starting the engine, positioning the Master Run switch to DAY-RUN or NIGHT-RUN illuminates the Low Oil indicator and sounds its alarm. This occurs momentarily and is a normal electrical system test.

☞ **NOTE:**
If this indicator remains illuminated, the Engine Protection System engages to initiate an automatic engine shutdown sequence.

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 (448 kPa), 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.

Auxiliary Flasher Indicator (Amber)

The Auxiliary Flasher indicator 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.

Day Run Indicator

The Day Run indicator illuminates when the engine is running and the Master Run switch is in the DAY-RUN mode.

Dual Pressure Air Gauge

The dual pressure air gauge has two needles that register the operating pressure of the vehicle's front and rear air brake system. The red needle represents the front brakes and the green needle represents the rear brakes. Normal operating system air pressure ranges from 105 to 121 psi (724 to 834 kPa). If the gauge registers pressures below 65 psi (448 kPa), the Low Air indicator illuminates and a warning buzzer sounds.

Auxiliary Air Gauge

The auxiliary air gauge indicates the air pressure in the accessories tank.

Transmission Temperature Gauge

The transmission temperature gauge indicates the transmission oil temperature in °F. The gauge will read between 160 to 200°F during normal operating conditions.

☞ **NOTE:**
Notify service personnel if the readings fall consistently outside of this range.

Engine Fluids Indicator

The Engine Fluids indicator illuminates if any or all of the following indicators illuminate: Low Oil, Low Coolant, Coolant Temp.

Engine Temperature Gauge

The engine temperature gauge indicates the engine coolant (water) temperature in degrees Fahrenheit (°F). The gauge will read 190° during normal operating conditions.

☞ **NOTE:**
Notify service personnel if the reading is consistently above or below the normal level.

High Beam Indicator (Blue)

The high beam indicator, symbolized by a lit headlight, 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)

CAUTION:

If the no gen indicator remains illuminated while the engine is operating, DO NOT OPERATE THE VEHICLE.

The no gen indicator, symbolized by a battery, 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.

ABS Fail Indicator (Amber)

The ABS Fail indicator illuminates if the ABS System requires service. Engine start-up illuminates the indicator momentarily as part of a system check. It is also used during diagnostics to display the blink code. For more information refer to Section 9: Vehicle Operation.

Rear Door Open Indicator (Red)

The Rear Door Open indicator illuminates when the door controller is turned to position #3, #4 or #5 and the exit door opens.

RDI Off Indicator

The Rear Door Interlock (RDI) off indicator illuminates when the interlock control for the rear doors is disabled. Positioning the Door Master switch to OFF will disable the rear door interlock control.

Kneel Indicator (Amber)

The Kneel indicator illuminates when the 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.

Stop Request Indicator (Red)

The Stop Request indicator illuminates when the passenger signal system has been activated by pulling a chime cord or pressing the exit stanchion stop request switch.

W/C Stop Request Indicator (Amber)

The Wheelchair Stop Request indicator illuminates when the wheelchair passenger signal system has been activated by pressing a touch tape strip.

A/C Fail Indicator (Red)

The A/C Fail indicator illuminates if the heating, ventilating and air conditioning (HVAC) unit malfunctions.

Retarder Off Indicator (Red)

The Retarder Off indicator illuminates to indicate that the control switch in the destination sign compartment is in the OFF position disconnecting power from the transmission retarder.

Parking Brake Indicator (Red)

The parking brake indicator, symbolized by a circled letter P, 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, symbolized by a circled letter S, illuminates each time the service brake or parking brake control valve is applied. If under these circumstances the indicator does not illuminate, then any or all rear stop lights are malfunctioning.

Wait to Start Indicator (Amber)

The Wait to Start indicator illuminates before engine start-up with the Master Run switch in the DAY-RUN or NIGHT-RUN position. The indicator will remain illuminated for up to 45 seconds while the intake air heater system operates.

☞ **NOTE:**
The Wait to Start indicator and the intake air heater system will only operate in temperatures below 66°F (19°C).

Speedometer

This gauge indicates the vehicle's forward speed in miles per hour and accumulates the distance traveled.

Transmission Shift Selector

CAUTION:

In temperatures below -20°F (-29°C), set the Idle Speed switch on the side console to FAST to warm the transmission. Reset the switch to NORMAL before shifting from neutral [N], to reverse [R] or drive [D].

CAUTION:

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

The transmission shift selector is located on the lower right-hand side of the instrument panel. It has six click-in push button switches that illuminate to indicate transmission range selection. The switches are labeled; reverse [R], neutral [N] and for the forward ranges [D, 3, 2, 1]. For operating procedures refer to Section 9: Vehicle Operation.

☞ **NOTE:**
A back-up alarm activates when reverse [R] is selected.

Oil Pressure Gauge

The oil pressure gauge indicates the engine oil pressure level in pounds per square inch (psi). The normal engine oil pressure ranges between 12 and 50 psi (82 and 344 kPa) depending on engine speed.

☞ **NOTE:**
Notify service personnel if the gauge consistently registers pressure levels outside of the normal range.

Ramp Switch

⚠ **CAUTION:** ⚠

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

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 10: Wheelchair System, for operating procedures.

Kneel Switch

⚠ CAUTION: ⚠

When placed in the RAISE position, the Kneel toggle switch will latch and continue to raise the vehicle until full ride height is reached at which point the raising action will automatically stop. In order to interrupt the raising operation during its cycle, the toggle switch must be set to the HOLD position.

This three-position momentary switch is used to operate the vehicle's kneeling system. The kneeling system lowers the front and curbside rear of the vehicle approximately 3 to 4 inches by exhausting air from both front suspension air springs and then the curbside rear air springs. Boarding the vehicle becomes 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 instrument panel Kneel indicator also illuminates.

☞ **NOTE:**
The Kneel toggle switch is a momentary spring loaded switch that will operate in the LOWER position only as long as pressure on the switch is maintained.

RAISE

This position raises the vehicle automatically to its full ride height. Once the vehicle has reached normal ride height, the interlocks will release (with doors closed), the alarm will silence and the exterior warning light and Kneel indicator will both extinguish.

☞ **NOTE:**
Closing the switch guard locks the switch in the RAISE position.

HOLD

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

Lamp Test Switch

The Lamp Test toggle switch allows testing of the indicator lights of the instrument panel and side console.

Panel Lights Dimmer Switch

The Panel Lights Dimmer switch controls the brightness of the instrument and the side console panel lighting. Rotating the dimmer knob clockwise increases the brightness and counter-clockwise decreases the brightness of the panel lights.

Wiper/Washer Control

The wiper control knob provides simultaneous control of both windshield wipers. Turning the knob from the OFF position sets a delayed wiper sweep for light rain. Turning the knob further to the right gradually increases the sweep intervals up to full operation at the LOW position. The extreme right, or HIGH, position is the fastest wiper speed setting. Returning to the OFF position stows the wipers to one side of the windshield. For a spray of windshield washer fluid, push down on the control knob.

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

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.

Driver's Vent

Located at the left front of the vehicle, the vent allows outside air in during forward motion. It is operated by a lever located left of the steering column. To open the vent, pull the lever up and slide it forwards. To close, slide the lever back until the rollers engage the detents.

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.

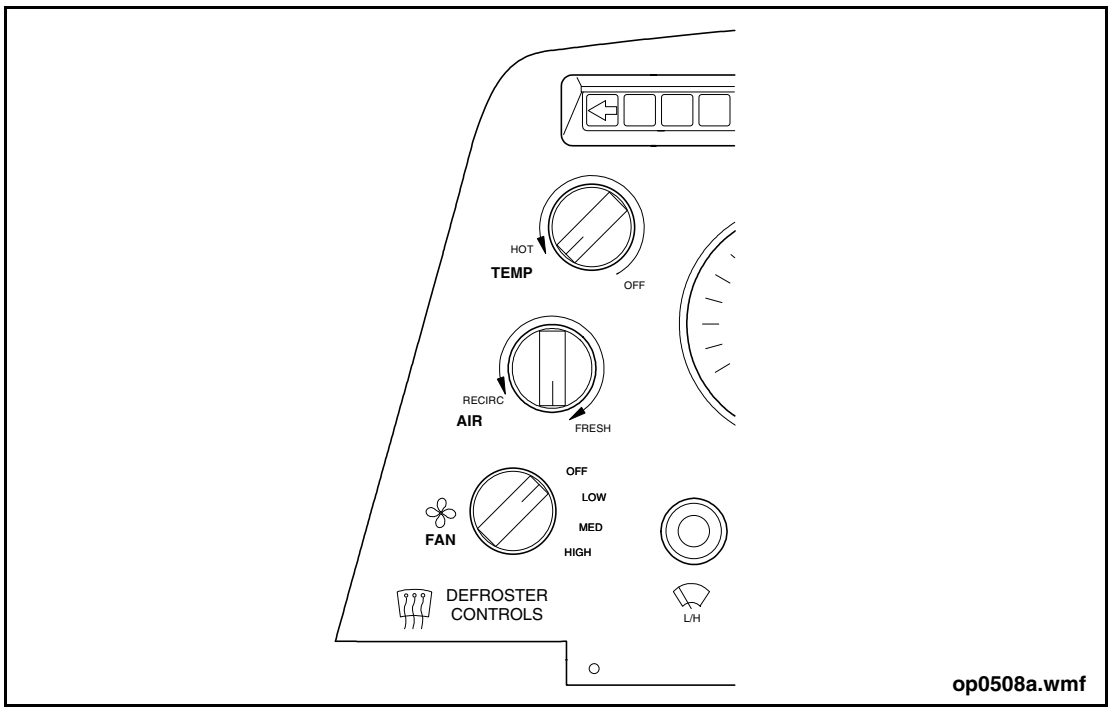


Figure 16: Driver's Area Climate Controls

Driver's Booster Fan

Located above the side window, the driver's booster fan draws air from the vehicle's streetside air duct. A knob on the assembly provides variable fan speed control and a movable flap directs the air flow.

Side Console Switch Panel

Fan Speed Switch

The Fan Speed toggle switch controls the main heater fan speed. Position switch to either HIGH or LOW for desired speed.

Dash Fan Switches

The Dash Fan toggle switches control the left and right dash fans. To run a fan, reposition the switch from OFF to either HIGH or LOW for desired speed.

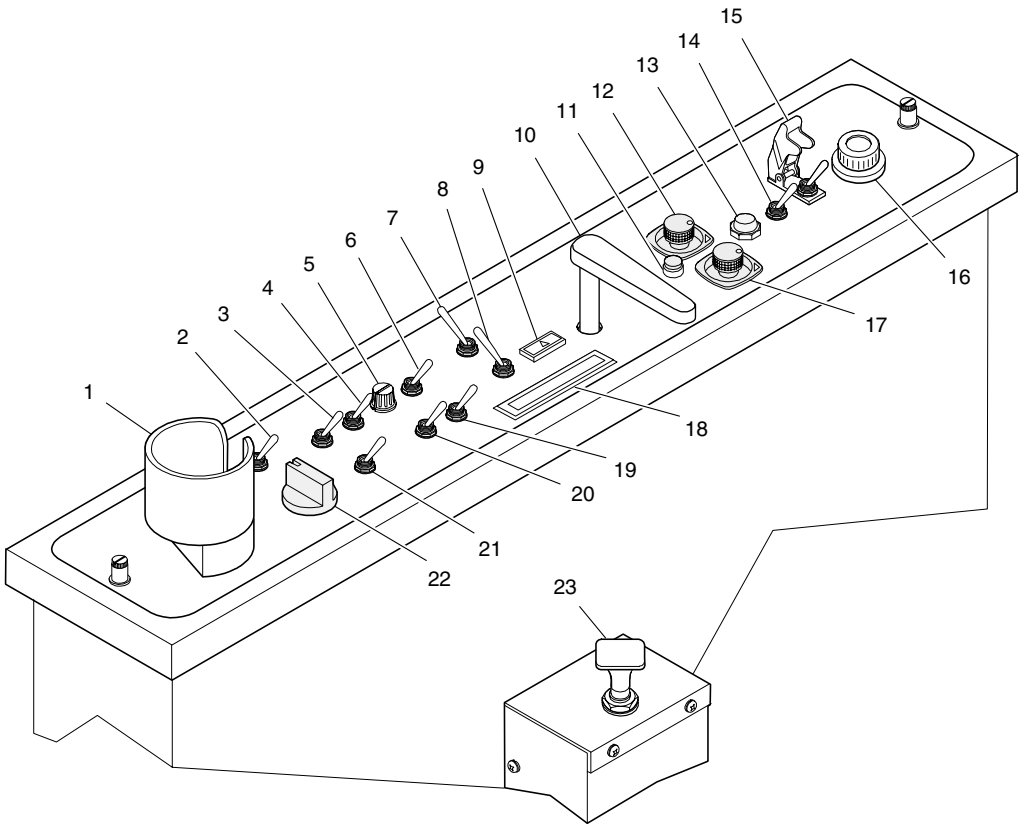
Aisle Lights Switch

The Aisle Lights toggle switch is a three-position switch controlling the lights above the passenger seats. With the PLC active, positioning this switch to PARTIAL illuminates the left side aisle lights. Use the ON position to illuminate both right and left side lights. The OFF position deactivates the lights.

☞ **NOTE:**
The front two light panels illuminate only when the entrance doors are open.

Driver's Light Control Knob

The Driver's Light knob controls the light above the driver's area. Turning the knob from the extreme right [OFF] to high [H] activates the light. Setting the knob to a position between high [H] and low [L] adjusts the light's brightness.



1. Coffee Cup Holder
2. Fan Speed Switch
3. Left-Hand Dash Fan Switch
4. Aisle Lights Switch
5. Driver's Light Control Knob
6. Stop Request Switch
7. Hill Holder Switch
8. Four-Way Hazard Lights Switch
9. Hazard Lights Switch Indicator
10. Door Controller
11. Mirror Heater Button
12. Left-Hand Remote Mirror Controller
13. Start Push Button
14. Idle Speed Switch
15. Stop Engine Override Switch
16. Master Run Switch
17. Right-Hand Remote Mirror Controller
18. Recessed Handle
19. Speaker Select Switch
20. Farebox Light Switch
21. Right-Hand Dash Fan Switch
22. Climate Control Switch
23. Parking Brake Control Valve

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Figure 17: Side Console Panel

Stop Request Switch

The Stop Request toggle switch controls the stop request indicators of the passenger signal system. Pushing the toggle switch OFF deactivates the stop request sign, the instrument panel indicator and the chime.

Hill Holder Switch

The Hill Holder switch is a momentary toggle switch that operates the vehicle's brakes. Positioning and holding the switch to ON applies the brakes. Release the switch when the transmission system torque can move the vehicle in the desired direction. Use the switch to prevent unexpected motion when starting on a hill.

Four-Way Hazard Lights Switch

The Hazard Lights toggle switch has an ON and OFF position. When the switch is ON, the instrument panel turn indicators and the exterior signal lights flash.

When the switch is OFF, the exterior signal lights function only as turn signals. The exterior signal lights and instrument panel turn indicators flash when the left or right turn signal foot-switch is pushed and held.

Activate the four-way hazard lights when the transit vehicle is stopped or parked in an area and may block traffic or present a possible hazard to following or approaching vehicles. Also use the four-way hazard lights when the vehicle is being towed.

Hazard Lights Switch Indicator

The Hazard Lights Switch indicator illuminates when the Master Run switch is in the NIGHT-RUN or NIGHT-PARK position. It serves only to highlight the position of the Four-Way Hazard Lights switch.

Door Controller

WARNING:

Positioning the Door Master switch to OFF disables the brake interlocks and the exit door controller.

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

- Position #1: Entrance door closed, exit doors disabled.
- Position #2: Entrance door open, exit doors disabled.
- Position #3: Entrance door open, exit doors enabled.
- Position #4: Entrance door closed, exit doors enabled.
- Position #5: Entrance door open, exit doors enabled.

When the exit door is open, the brake and accelerator interlocks apply automatically and the stop lights indicator illuminates.

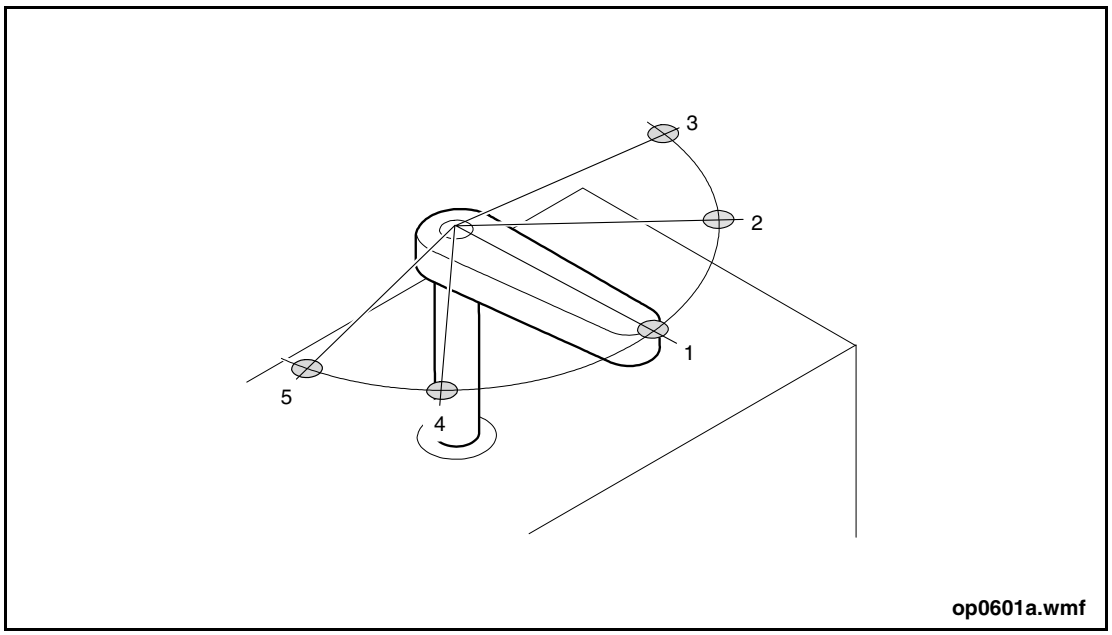


Figure 18: Door Controller

Mirror Heater Button

This push button powers the heater elements behind the right and left exterior mirrors. The button illuminates to confirm heater element operation.

Remote Mirror Controllers

The switches allow the operator to adjust the streetside and curbside mirrors from the driver's seat. Use the four directional tilt function of the dial on the appropriate switch to move the mirror into the desired position.

Start Push Button

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.

This momentary push button on the side console allows the operator to start the engine without leaving the driver's seat.

☞ **NOTE:**
The PLC limits continuous starter operation to 14 seconds; the starter circuit is then disconnected for 60 seconds to allow the starter to cool down.

Idle Speed Switch

CAUTION:

Excessive engine idling is not recommended by the engine manufacturer. Operate engine at fast idle speed if idling for periods longer than 10 minutes. Consult your local transit authority for operating policy.

The Idle Speed toggle switch activates the preset fast idle to increase the engine RPM to maintain optimum engine operating temperature during periods of extended idling. Activating the fast idle following a cold engine start also allows quicker engine warm-up.

☞ **NOTE:**
The FAST position on the Idle Speed switch only operates if the engine is running, the transmission shift selector is in the neutral [N] position and the parking brake is applied.

Stop Engine Override Switch

⚠ WARNING: ⚠

Apply the Stop Engine Override switch only for emergencies, such as moving the vehicle from traffic to a safe stopping area. The override interval is 30 seconds. Repeat the switch cycle to activate a repeat override sequence, if necessary.

The Stop Engine Override toggle switch is used to override the engine shutdown system in an emergency. The switch also prompts the engine diagnostics system to flash codes on the Check Engine indicator located on the instrument panel. Refer to Section 9: Vehicle Operation.

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 following table provides a list of circuits energized by the various Master Run switch positions:

MASTER RUN SWITCH OPERATION				
CIRCUIT OR SYSTEM	**STOP-ENGINE**	**DAY-RUN**	**NIGHT-RUN**	**NIGHT-PARK**
Daytime running lights		x		
Headlights (high & low beam)			x	
Four-way hazard lights	x	x	x	x
Turn lights	x	x	x	x
Stop lights		x	x	
Clearance/marker lights			x	x
Tail lights			x	x
License plate light			x	x
Back-up lights & alarm		x	x	
Aisle lights (normal)	x	x	x	x
Aisle lights (on)	x	x	x	x
Instrument panel illumination			x	x
Instrument panel dimmer			x	x
Driver's lamp	x	x	x	x
Service compartment lights	x	x	x	x
Entrance & exit door lights with door open **		x	x	x
Instrument panel warning indicators		x	x	
Transmission shift selector		x	x	
Brake & accelerator interlocks		x	x	
Destination sign operation		x	x	x
Door controller		x	x	x
Horns	x	x	x	x
Retarder *		x	x	
Driver's alarm		x	x	
Fire suppression & alarm	x	x	x	x
Parking brake alarm	x			x

MASTER RUN SWITCH OPERATION				
CIRCUIT OR SYSTEM	STOP-ENGINE	DAY-RUN	NIGHT-RUN	NIGHT-PARK
Kneeling operation & alarm		x	x	
Wheelchair ramp & alarm		x	x	x
HVAC system *		x	x	
Intermittent wiper control		x	x	
Remote mirrors		x	x	
Heated mirrors		x	x	
* Engine must be running ** DAY-RUN also requires W/C ramp deployed				

Speaker Select Switch

The Speaker Select toggle switch controls the exterior speaker of the public address (P.A.) system. Position this toggle switch to INTERIOR or BOTH to direct the P.A. announcement to the desired audience.

Farebox Light Switch

The Farebox Light toggle switch controls the operating mode of the light above the farebox. When in the ON position the light illuminates constantly. In the OFF position, the light illuminates only when the entrance door opens.

Climate Control Switch

The Climate Control toggle switch is a five-position rotary switch that controls the HVAC System. In the VENT position, the system draws fresh air into the vehicle. The HEAT position commands the heating system to warm the vehicle interior to a preset temperature. In the AUTO position, the system will maintain a preset temperature. The COOL position commands the air conditioning system to cool the vehicle interior to a preset temperature. The OFF position deactivates the system.

Parking Brake Control Valve

WARNING:

If the air pressure is below 45 psi (310 kPa), the parking brake valve will return to the applied position.

The parking brake control valve controls the application or the release of the parking brake. Pulling up on the control knob applies the parking brake. Pushing down on the knob releases the parking brake.

Foot Operated Controls

Brake Treadle

The brake treadle, located to the left of the 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 9: Vehicle Operation.

Brake application is proportional to the amount of treadle movement applied. Pressing the brake treadle illuminates the stop lights and the stop lights indicator.

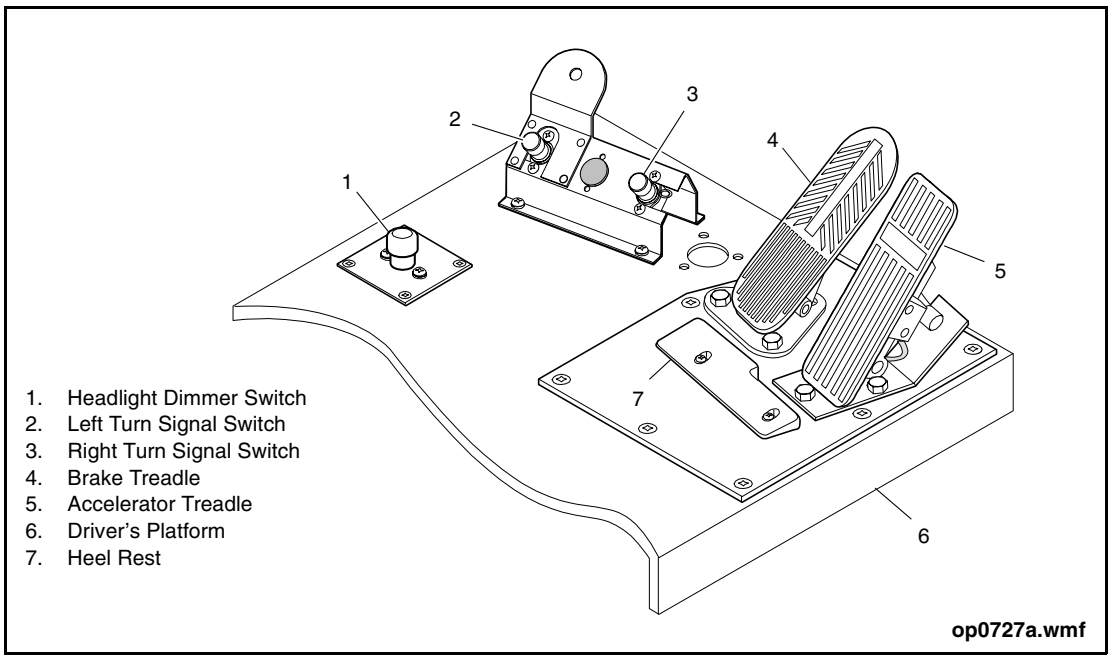


Figure 19: Driver's Foot Controls

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 when held depressed. Left or right turn signal indicators on the instrument panel illuminate when respective floor switch is activated.

Miscellaneous Controls

Retarder Switch

The Retarder toggle switch is located in the destination sign compartment and controls power to the transmission retarder. Positioning the switch to ON enables the retarder. The OFF position disables the retarder and illuminates the Retarder Off indicator on the instrument panel.

☞ **NOTE:**
Consult your transit authority for specific operating conditions during which the Retarder switch should be used.

ABS Switch

The ABS switch, located in the destination sign compartment, is used by service personnel to troubleshoot the ABS System. Pulling the switch to BLINK CODE and releasing activates the blink code diagnostic capabilities. The blink code sequence displays on the instrument panel ABS Fail indicator.

Door Master Switch

WARNING:

Greater attention to passenger safety must be given whenever operating the vehicle with the Door Master switch in the OFF position, as this position disables several safety features and will allow the following conditions to occur:

- **Vehicle can be moved with entrance and/or exit door open (brake interlocks disabled).**
- **Transmission can be shifted without foot on brake treadle.**
- **Transmission can be shifted and vehicle moved with wheelchair ramp deployed.**
- **Exit door can be opened at any speed using the door emergency release control handle.**

The Door Master toggle switch, located in the destination sign compartment, controls power to the brake interlocks and exit door. When the switch is in the ON position, the entrance and exit doors are fully functional. In this mode, opening the exit door, kneeling the vehicle or operating the wheelchair ramp engages the interlocks. Engaging the interlocks applies the rear brakes and deactivates the accelerator.

When the switch is in the OFF position, the brake interlocks are released (interlocks will not engage). The entrance door remains fully functional and the exit door does not function. A warning buzzer sounds and the Rear Door Open indicator illuminates on the instrument panel. In this mode, the exit door only opens if the emergency release control handle is activated. The control handle is located behind the breakable window to the left of the exit door.

Door Manual Control Valve

This air control valve is located above the foot operated controls and on the side of the side console panel. Turning it to the OFF position releases the air controlling the entrance door. This allows manual operation of the door for initial vehicle entry. For normal entrance door operation, position the door manual control valve to ON.

8. FIRE SUPPRESSION SYSTEM

Description

The Fire Suppression System protects the passengers and vehicle against fire. A dry chemical extinguishing agent discharges through four fixed nozzles to suppress a fire. Driver's area components include:

Manual Actuation Switch

The manual actuation switch is located to the left of the driver's seat and is used to manually initiate the discharge of the extinguishing agent. Pulling the safety ring out and pressing down on the switch button initiates the discharge. Check that the safety pin is installed before operating the vehicle.

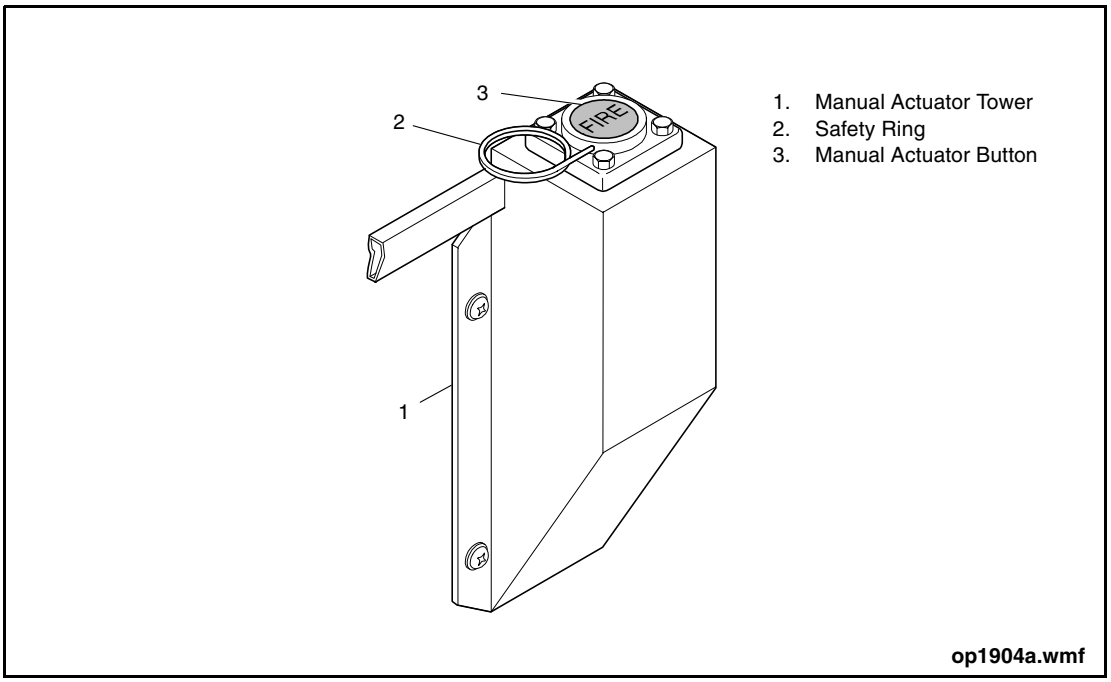


Figure 20: Manual Actuator

Fire Suppression Control Panel

The fire suppression control panel provides supervision of the system. In the event of a fire or component failure, the control panel provides warning via LED system status indicators and audible alarm. Check that the “System OK” green LED is illuminated before operating the vehicle.

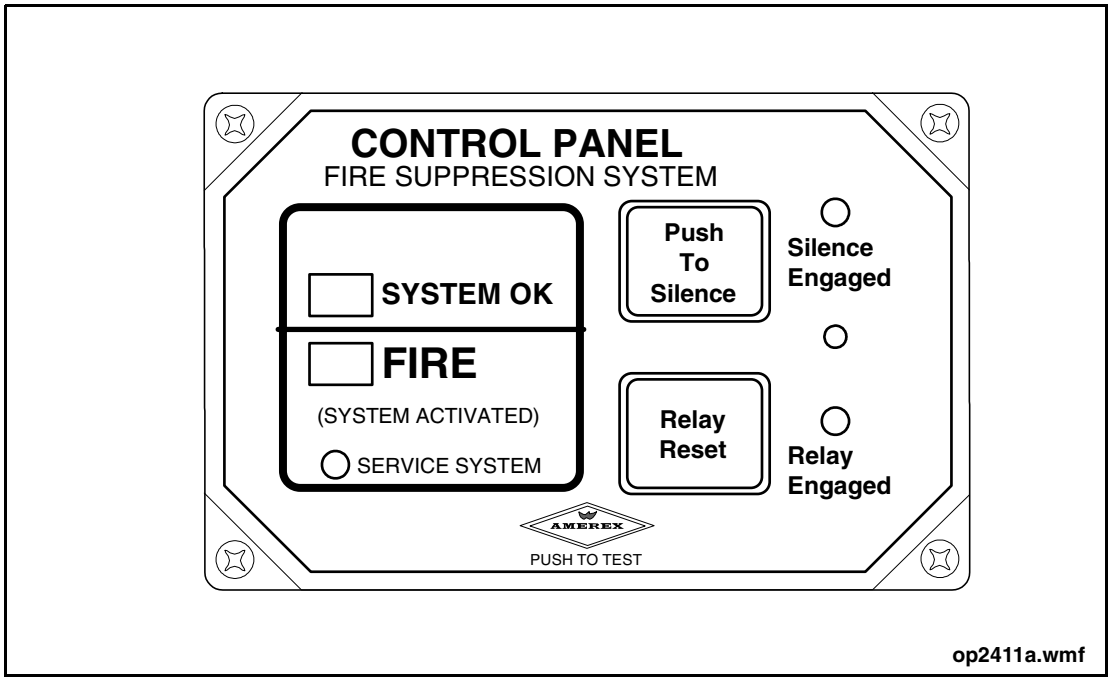


Figure 21: Fire Suppression Control Panel

Operation

If no fire is detected, all circuits are intact and a green LED indicating “System OK” is illuminated on the fire suppression control panel. The control panel located to the left of the destination sign compartment is a connection point for all fire suppression system electrical circuits and serves as a vital source of information. System status LED indicators and an audible alarm provide warning of fire or component failure.

If a fire is detected, heat will cause contacts in heat detectors to close and automatically actuate the fire suppression system. Manual system activation is possible by pulling the pin on the manual actuator and pushing the button down. This action electronically operates a solenoid on the extinguishing agent cylinder valve. The valve opens, allowing pressurized dry chemical to flow out lines leading to the discharge nozzles in the engine compartment. Upon system actuation the control panel green “System OK” LED extinguishes, a red “FIRE” LED illuminates and an audible alarm sounds. The audible alarm will continue to operate until the system is reset or the alarm silence button (PUSH TO SILENCE) is pushed. When pushed, as “Silence Engaged” LED is illuminated. The “FIRE” LED will remain illuminated.

☞ **NOTE:**
The silence feature cannot be operated in advance of a fire or fault.

Actuation of the Fire Suppression System will also cause the engine protection system to shut down the engine, ensuring that the fuel flow stops. Bring the vehicle to a safe stop and ensure that all passengers exit the vehicle safely.

During system discharge of the suppressant expect a high noise level and possibly a large cloud of extinguishing chemical.

☞ **NOTE:**
Avoid breathing the dry chemical dust. It will irritate the throat and lungs.

When the fire is extinguished and the heat detector contacts reopen, the green “System OK” LED will again illuminate. Both red and green LED’s remain illuminated until the system is serviced.

System Fault Indicators

If a fault condition occurs, indicator lights on the fire suppression control panel will react in one of three ways:

1. Both the red “System Activated” and the green “System OK” LED’s illuminate.
2. No lights appear on the panel.
3. The Service System indicator LED is lit.

These represent different conditions in the system that service personnel will recognize. Inform the transit authority if a fault condition occurs.

9. 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

CAUTION:

In temperatures below -20°F (-29°C) warm the transmission before operating by positioning the Idle Speed toggle switch to FAST until the engine reaches operating temperature.

CAUTION:

Stop the vehicle before shifting from drive [D] to reverse [R] or vice versa.

Selection of the automatic transmission operating ranges is electronically controlled by the shift selector on the instrument panel. Six click-in push button type switches illuminate to indicate the range selected and are labeled; [R] for reverse, [N] for neutral, and [D,3,2,1] for the forward ranges. Operate the transmission using the following procedure:

1. Before starting the engine
   a. Check that the transmission is in neutral.
   b. Check that the park brake is on.
   c. Apply the brake treadle.
2. With the engine running and idling at normal speed, apply firm pressure on the brake treadle and make the desired range selection. Release park brake and the brake treadle to proceed.
3. To change direction; bring the vehicle to a full stop, apply firm pressure on the brake treadle and make the desired range selection.

   ☞ **NOTE:**
   A back-up alarm activates when reverse [R] is selected.

4. When parking or shutting down the vehicle; come to a full stop, apply the parking brake and select neutral [N]. Release the 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 driveline 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 5 mph and engages with brake treadle application. Lightly pressing on the brake treadle (the first 5° to 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 5 mph will disengage the retarder. The retarder can also be disabled using the Retarder switch in the destination sign compartment.

☞ **NOTE:**
Consult your transit authority for specific operating conditions during which the Retarder switch should be used.

Anti-Lock Braking System

WARNING:

Keep stopping distances the same as those for similar non-ABS equipped vehicles.

The Anti-Lock Braking System (ABS) functions to bring the vehicle to a safe, controlled stop during emergency braking situations. Through computer monitoring of wheel speeds the system controls brake pressure to prevent wheel lock-up. If during brake application the ABS system senses imminent wheel lock-up it engages automatically thus increasing vehicle stability and control.

To operate under normal conditions use the standard braking technique. For emergency braking apply firm and constant pressure to the brake treadle. If required the ABS system will activate automatically producing a pulsing sensation to the brake treadle and a hissing sound. These are normal indications of ABS system operation. During emergency braking avoid “pumping” the brakes as this defeats the pulsing action of the ABS system and will increase your stopping distance.

If the ABS on one wheel malfunctions the system will retain normal braking on that wheel. Should the entire ABS system malfunction the system will also retain normal braking. The ABS Fail indicator on the instrument panel will illuminate if a malfunction occurs.

☞ **NOTE:**
After ABS System service the ABS Fail indicator will remain illuminated at engine start-up. Driving the vehicle above 4 mph should extinguish the indicator. If the indicator remains illuminated, contact service personnel.

Automatic Traction Control

The vehicle’s Automatic Traction Control (ATC) System activates automatically to prevent drive wheel spin when accelerating or starting the vehicle from a stand still.

The system uses components of the ABS System to apply the brakes to a drive wheel that loses traction and spins. This transfers the engine torque to the wheel with better traction. If both drive wheels spin, the system reduces engine torque to improve traction. The ATC indicator on the instrument panel illuminates to confirm system operation.

Starting the Engine

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.

To operate the vehicle the Battery Disconnect switches must be in the ON position. Check the switches by opening the battery disconnect access door at the rear of the vehicle. These connect the engine starter and vehicle electrical circuits to the battery power.

☞ **NOTE:**
Refer to Section 5: Driver's Check List before operating the vehicle.

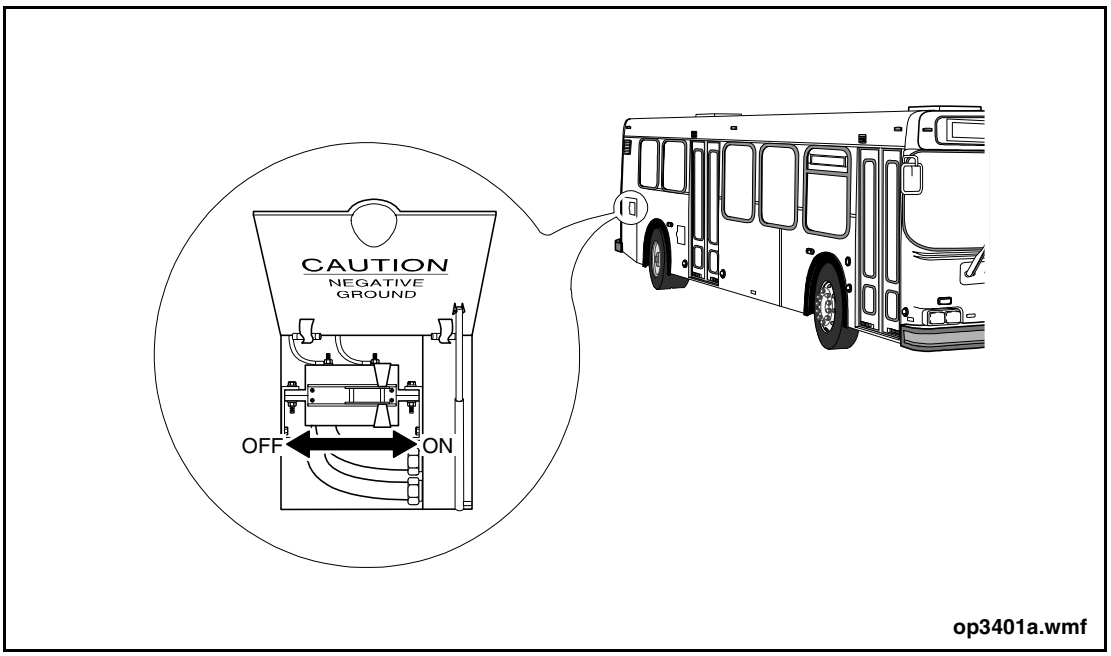


Figure 22: Battery Disconnect Switch

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 interval. Illuminated indicator lights and sounding alarms signify an active PLC System.

☞ **NOTE:**
When restarting less than 30 minutes after engine shut down, the PLC System responds instantly.

Start Push Button

⚠ **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.

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

When the engine starts, release the push button.

If the starter fails to operate, check the following:

- The Master Run switch is in the DAY-RUN or NIGHT-RUN position.
- The Transmission Selector indicator shows neutral [N].
- The engine compartment Engine Run switch is in the FRONT position.
- The parking brake is applied.

☞ **NOTE:**
The PLC limits continuous starter operation to 14 seconds; the starter circuit is then disconnected for 60 seconds to allow the starter to cool down.

Operational Checks

Once the engine is operating the operator should observe the following:

- 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).
- The no gen indicator is off when the engine is operating.
- Transmission Selector neutral [N] indicator remains illuminated.
- Parking brake and stop light indicator remain illuminated as long as the parking brake is applied.
- Door controller is operational.
- Position the Door Master switch to the OFF position and attempt to open the exit door by using the side console door controller. The exit door should not be operational; the entrance door should remain operational.
- Return the Door Master switch to the ON position.
- Wiper and washer controls are operational.
- Defroster/heater controls (on dash) are operational.
- Exterior lights operate during exterior light test. To conduct test, ensure engine is running and parking brake is applied, then press both turn switches simultaneously. All exterior lights will illuminate for two minutes.
- The destination sign controller is active.

Parking Brake

The parking brake indicator illuminates when the parking brake is applied. If the parking brake indicator is not illuminated, apply the parking brake by pulling up on the parking brake control valve knob. If the parking brake indicator does not illuminate, DO NOT OPERATE THE VEHICLE.

Press the brake treadle before releasing the parking brake. Release the parking brake by pushing down on the control knob. The parking brake indicator extinguishes.

☞ **NOTE:**
Reapply parking brake.

Stop Lights

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

Low Air

The Low Air indicator illuminates to warn 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 (724 kPa) during normal vehicle operation.

Check Engine

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

Shift Selector Display

At engine start-up the shift selector's red display shows [N] to indicate that the transmission is in neutral. This should occur automatically at each engine start-up.

No Gen

When illuminated, the no gen indicator signals that the alternator is NOT charging. The indicator remains illuminated until the engine starts. If the indicator fails to remain illuminated until the engine starts, DO NOT OPERATE THE VEHICLE.

Operator Display Keyboard (ODK) Messages

Check that the destination sign control unit correctly programs electronic destination sign messages.

Rear Door Open Indicator

Move the door controller to position #3, #4 or #5 to check that the Rear Door Open indicator 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. 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, check the following:

- 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).
- The no gen indicator is off when the engine is operating.
- Transmission Shift Selector neutral [N] indicator remains illuminated.
- Parking brake and stop light indicator remain illuminated as long as the parking brake is applied.
- Daytime running lights operation.
- Door controller operation.
- The Door Master switch, when placed in the OFF position, disables the exit door and inhibits the brake interlocks.
- Aisle lights operation.
- Return the Door Master switch to the ON position.
- Wiper and washer controls operation.
- Defroster/heater control (on dash) operation.

Night-Time Operation

For night-time operations, ensure 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 beam).
- Front and rear identification and marker lights.
- 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 Aisle Lights switch.

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 parking brake.
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 (620 kPa), the reading increases back to 90 psi (620 kPa) in less than three minutes.
   c. The air pressure gauge reading levels off at 120 to 125 psi (827 to 862 kPa).
3. Release the parking brake.
   a. Make multiple light brake treadle applications and check the following:
      i. The air pressure gauge reading stabilizes at 105 psi (724 kPa) 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 (448 kPa).
   b. Release the brake treadle and reapply the parking brake.
4. Allow the air system to fully recharge.
5. Stop the engine and proceed as follows.
   a. Release the parking 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 (124 kPa).

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

ii. The air pressure does not drop more than 3 psi (20 kPa) per minute.

iii. There are no audible air leaks.

c. Release the brake treadle and apply the parking brake.

6. Restart the engine.
   a. Set the Fast Idle switch to FAST to recharge the air system.
   b. When the reading levels off at 120 to 125 psi (827 to 862 kPa), switch off the fast idle.
   c. Release the parking brake.
7. 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 should be off.
3. Apply the brake treadle and release the parking brake. The parking brake indicator extinguishes.
4. Shift the Transmission Selector into the desired gear.

   ☞ **NOTE:**
   The neutral [N] indicator extinguishes and the appropriate range letter appears in the display.

5. Release the brake treadle and lightly apply the accelerator treadle to slowly move vehicle from the parking area. The stop lights indicator 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

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.

1. Bring the vehicle to a complete stop using the brake treadle. The stop lights indicator illuminates. Shift the transmission selector into neutral [N].
2. Apply the parking brake and release the brake treadle. The parking brake indicator 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. Open the front door control switch access door and activate the switch to close the door.

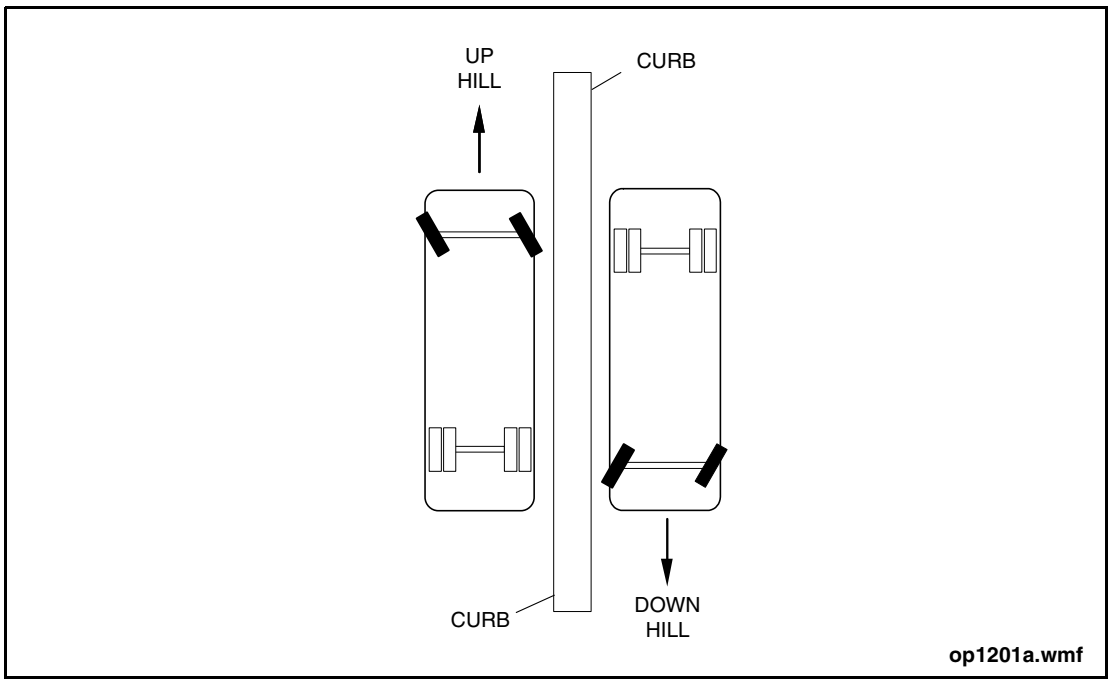


Figure 23: Parking on an Incline

Jump Start Connection

Behind the battery access door is a jump start connector to supply power to the batteries when normal engine starting is not possible. It uses a quick connect assembly to ensure a safe and correct electrical connection to the battery poles.

☞ **NOTE:**
Advise service personnel if starting difficulties occur.

Engine Protection System

⚠ **CAUTION:** ⚠

If engine shutdown occurs, DO NOT attempt an engine restart unless absolutely necessary. Continuing engine operation without fault correction may result in engine damage.

The New Flyer vehicle is equipped with an automatic shut down system to prevent engine damage. If the Stop Engine indicator illuminates, the Engine Protection System initiates a power reduction cycle that lasts 30 seconds. After that time the engine will shut down.

☞ **NOTE:**
Use the 30 seconds to remove the vehicle from traffic. Contact service personnel for further instructions.

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, put shift selector in neutral, apply the parking brake and set the door controller to Position #2 to open the entrance door. Kneeling will not be enabled if the door is closed.

☞ **NOTE:**
Brake and accelerator interlocks engage when the entrance door is open and kneeling is in process.

⚠ WARNING: ⚠

Prior to kneeling the vehicle, ensure that boarding passengers stand clear of the vehicle and no obstructions exist.

2. Lift the switch guard and hold the Kneel switch in the LOWER position until the vehicle is completely kneeled. Boarding passengers must stand clear and wait until the vehicle has lowered, before entering the vehicle.
3. Set the Kneel switch to the RAISE position and close the switch guard once passengers have safely boarded. The vehicle will raise automatically to its full ride height.

Kneeling Exterior Signal

Amber lamps located beside the front entrance and rear exit door indicate 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, exit stanchion push button and wheelchair area touch tape. 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 touch tape 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 exit door with the door controller in position #3, #4 or #5.
- Pushing the Stop Request switch to OFF.

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.

Stop Request Button

A stop request button is located on the exit door stanchion. Pressing the button activates the system.

Wheelchair Stop Request Touch Tape

Stop request touch tape is located under each longitudinal hinged seat in the wheelchair stations. Pushing the tape 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 curb lights. Moving the door controller to open a door activates these lights. The lights extinguish as the doors close.

☞ **NOTE:**
The exit door curb lights extinguish after a five second delay.

10.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.

⚠ 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.

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

- **Ensure passenger safety during the wheelchair ramp operations. Monitor the passenger's position during the operation cycle.**
- **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 are to board the ramp only when it's at ground level, and the "DEPLOY" cycle is complete.**

⚠ CAUTION: ⚠

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

The switch to control this feature is located on the instrument panel. The three positions of the switch enable 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.

☞ **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. Place the transmission shift selector in neutral [N].
4. Kneel vehicle if required.

☞ **NOTE:**
Parking brake and stop light indicators on the instrument panel will illuminate.

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.

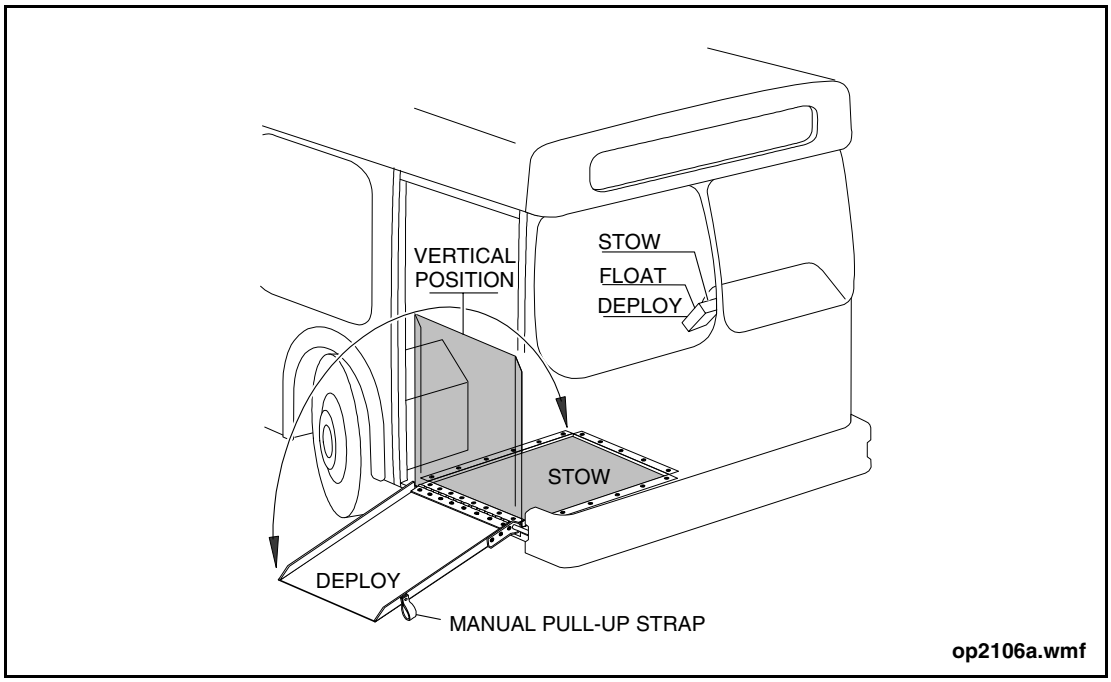


Figure 24: Wheelchair Ramp Operation

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.

   ☞ **NOTE:**
   An audible alarm sounds when the ramp is moving.

2. Raise the vehicle from the kneeling position.
3. Close the entrance door.
4. Disengage the parking brake and proceed to the next stop.

Ramp Emergency Procedures

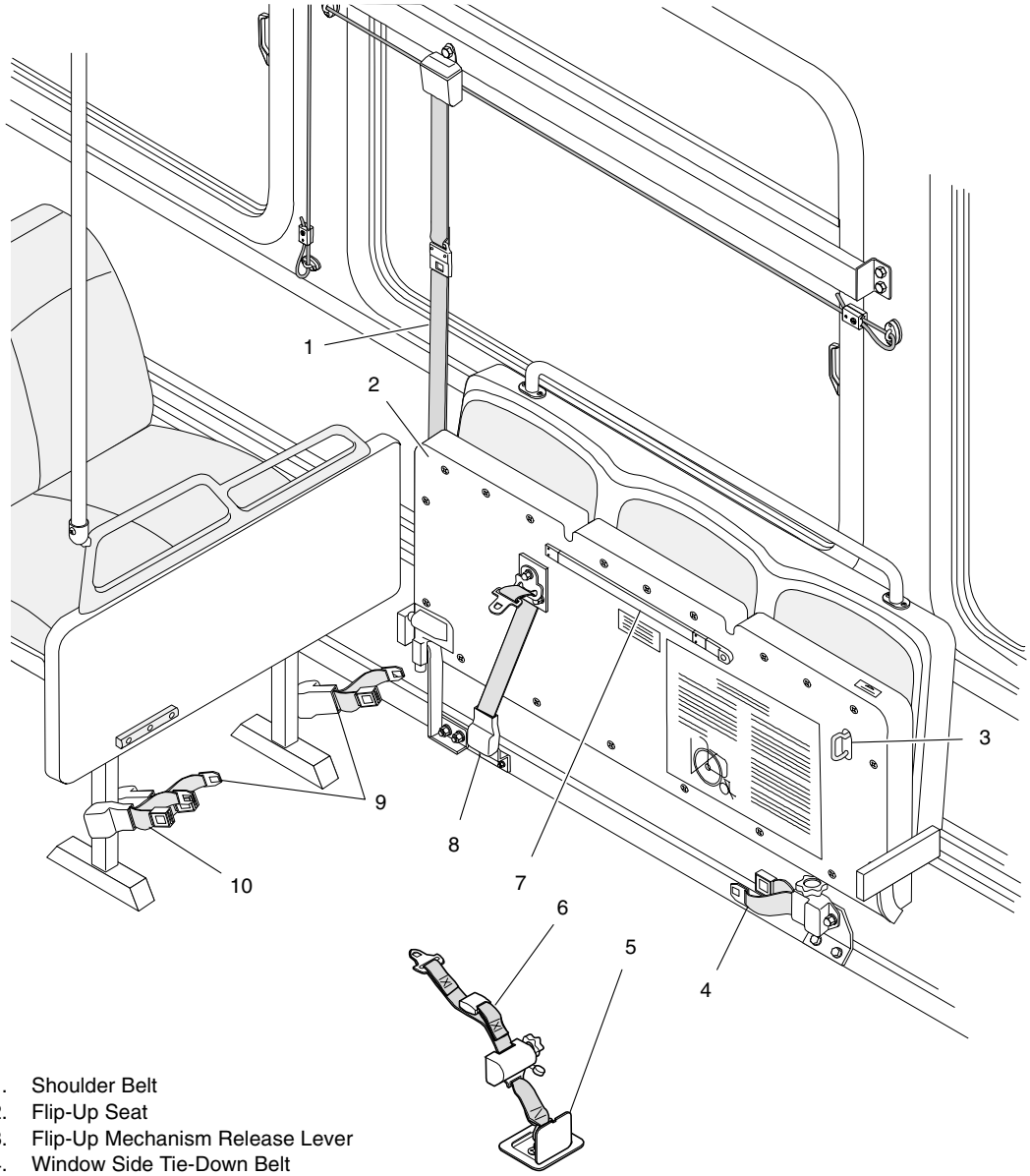
In case the wheelchair ramp power unit fails, the unit may be hand-operated by using a pull-up strap located on the ramp's corner.

Wheelchair 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 cushions up to the lock position.
2. Back the wheelchair into the restraint area and set the wheelchair brake.
3. Wrap the red belts under the barrier around solid rear frame members of the wheelchair and secure the belt clips into the belt buckles.
4. Attach the front tie-down belt on the window side as follows:
   a. Press the retractor release button and pull the belt to extend.
   b. Wrap the belt around a solid front frame member of the wheelchair and secure the belt clip into the belt buckle.
   c. Take up the belt slack by pressing the release button again.
   d. Turn the belt retractor knob until tight.
5. Attach the front tie-down belt on the aisle side as follows:
   a. Remove the aisle tie-down belt from storage.
   b. Attach the stud end securely into the floor anchor.
   c. Press the retractor release button and pull the belt to extend.
   d. Wrap the belt around a solid front frame member of the wheelchair and secure the belt clip into the belt buckle.
   e. Take up the belt slack by pressing the release button again.
   f. Turn the belt retractor knob until tight.
6. Secure the passenger by extending the window side lap belt across to the aisle side clip and fasten. The aisle side clip is attached to the barrier strut. Do not place belt over armrest.
7. Secure the passenger by extending the window side shoulder belt across to the aisle side clip and fasten. The aisle side clip is attached to the frame of the barrier.
8. Check the belt locks by pulling on each end to ensure they engage.



1. Shoulder Belt
2. Flip-Up Seat
3. Flip-Up Mechanism Release Lever
4. Window Side Tie-Down Belt
5. Floor Cover Plate
6. Aisle Side Tie-Down Belt
7. Touch Tape
8. Lap Belt
9. Wheelchair Restraint Belts
10. Passenger Belt Clip

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Figure 25: Wheelchair Restraint System

11.BIKE-RACK SYSTEM

WARNING:

Loading or unloading bike from the streetside endangers the passenger. LOAD OR UNLOAD THE BIKE FROM THE CURB-SIDE ONLY.

The bike-rack system allows the passenger to load and unload a bike without driver assistance. In the case of children under ten, however, have an adult assist in loading and unloading the bike.

Be sure to load and unload the bike from either the front of the rack or from the curbside.

Loading Operation

1. Remove water bottles, pumps or other loose items from bike prior to loading.
2. Squeeze bike rack handle UP to release latch.
3. Fold down bike rack.
4. Lift bike onto rack, fitting wheels into proper wheel slots.
5. Raise the support arm over the front tire so that the hook rests at the highest point on the front wheel. Bike is now held firmly in place.

Unloading Operation

1. Unload from curb or from in front of vehicle.
2. Raise support arm off the tire.
3. Lift bike out of wheel slots and set down.
4. If there are no other bikes on the rack, lift it until the rack swings into the lock position against the vehicle.

12.NOTES

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Printed in Canada